

GRAYBAR

ELECTRIC COMPANY

SUCCESSOR TO

Western Electric

ELECTRICAL

SUPPLY

YEAR

BOOK

1926-7

Western Electric

**ELECTRICAL
SUPPLY
YEAR
BOOK**

1926 - 1927

Western Electric Company
Offices in All Principal Cities

Western Electric

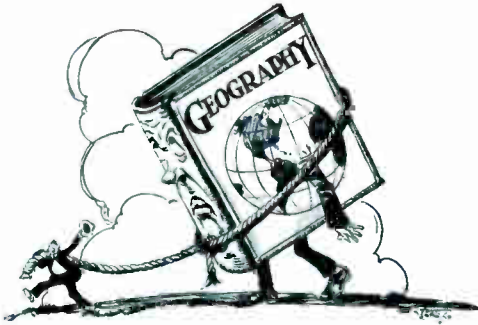
A NATIONAL ELECTRICAL SERVICE



Western Electric

Western Electric

A Service in Distribution that Has Tamed the Geography

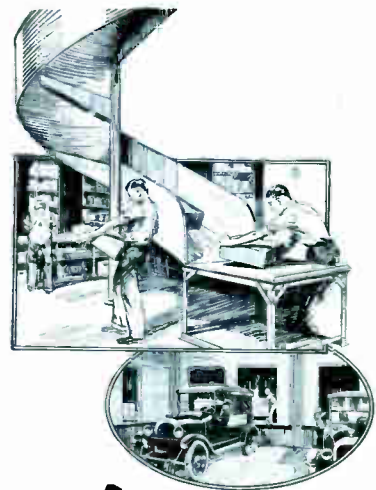


Through our chain of Distributing Houses, we have tamed geography for the buyer of quality electrical supplies. Whether the item desired is a fuse or a motor; a product made near by or a thousand miles distant — our nearest office stands ready to

see that the desire is fulfilled—promptly.

But Western Electric Service goes farther than prompt delivery. Careful selection and inspection insures the buyer of Western Electric merchandise of the same standards of quality that he himself would exact if he were able to visit all available markets. Buying electrical supplies from Western Electric is like retaining a staff of consulting purchasing engineers. Before any item gets on our shelves or is listed in the pages of the Year Book you are now reading, our experts must be satisfied that the product is right as to design and quality of workmanship and material.

The benefit of this consulting service of purchasing experts is gained by every purchaser of any Western Electric product. From fuses in cartons to poles in carloads, you can depend on your purchases from the house that has tamed the geography.

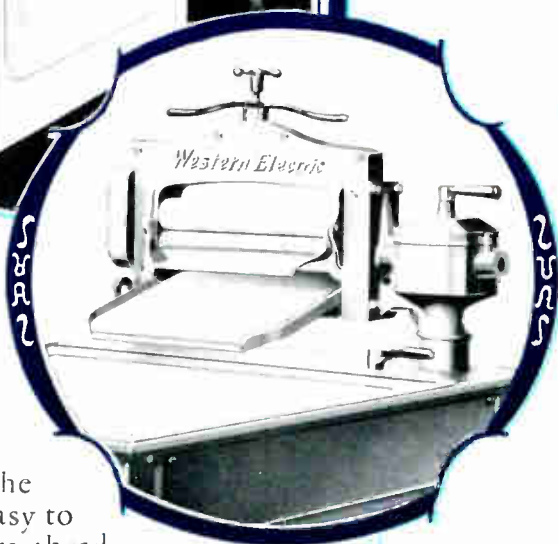


Western Electric

Quality Electrical Supplies

Offices in all Principal Cities

Western Electric



When a Woman Buys a Washer

She wants to be sure first of all that it washes clothes clean; she wants it simple to operate and easy to care for; and she thinks five years ahead and wants to be sure that it will do the work then.

The revolving-reversing cylinder principle is a tested and approved one. Clothes washed this way come out clean and whole. The new Models 3 and 3C Western Electric Clothes Washers are operated by two levers and the simplicity of design and construction minimizes the care of the washer. Any washer backed by a company with 57 years electrical experience must have a guarantee satisfactory to both dealer and consumer.

Full details are given elsewhere in this book

Western Electric



A Small Sized Low Priced Ironer

When this 28" Ironer was designed three things were accomplished. It was kept small enough to fit in the average kitchen; the cost was scheduled to come within the means of the average pocket book; and it was made to do all the ironing that can be done on a large Ironer. The open end takes care of that.

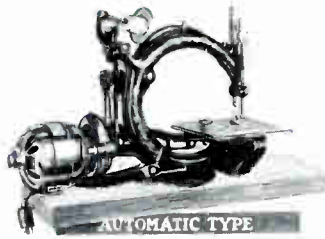
As for the Western Electric Iron—that's a staple. The long-lived heating element and the non-kink cord have a special appeal to the dealer as well as the user. Quick heating, even balance, and a comfortable always-cool handle are a few of the other commendable features of this iron.

*Detailed descriptions of both Iron and Ironer
will be found elsewhere in this book*

Western Electric



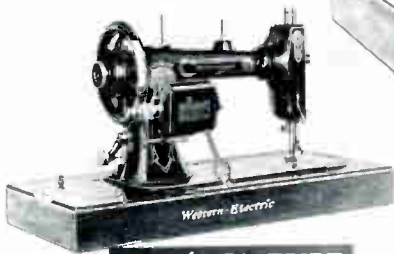
VIBRATOR TYPE



AUTOMATIC TYPE



TWO SPOOL TYPE



ROTARY TYPE



There's a Type to Meet Every Request

The particular sewing principle chosen is a matter of personal taste. The Western Electric line includes Portable Electric Sewing Machines of every type: Vibrator, Rotary, Automatic and Two-Spool. In addition there are two exceptionally attractive console Cabinet Machines which harmonize with the furnishings of any room. Each machine is equipped with an electric motor foot control and full set of attachments.

Complete details of these machines will be found elsewhere in this book

Western Electric



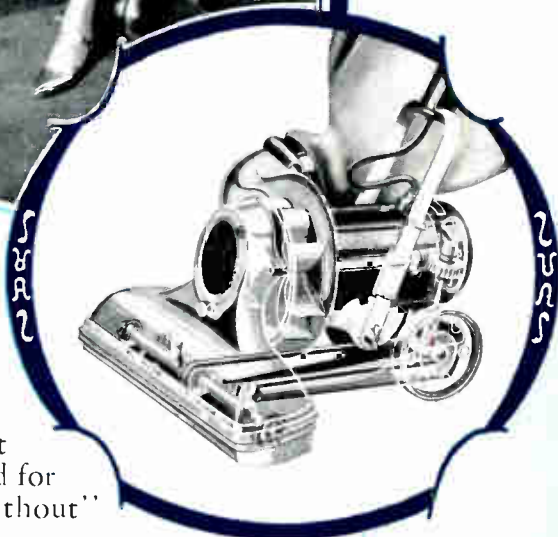
Equipped with the New Time and Temperature Controls

The new 18-91 and 16-81 Western Electric Crawford Ranges, can be equipped with the full Automatic Time and Temperature Controls. A decided step forward in the progress of Electric Cookery. The accuracy and dependability of these controls match the sturdiness of the range construction.

Another interesting feature is the "Hot Spot" top unit. When the switch is at medium the heat is concentrated in the center. Other Western Electric Models are designed to fit the narrow confines of apartments.

*For detailed descriptions of the complete line of ranges,
see the index in this book*

Western Electric



Western Electric Has Both

"Personal preference" has just about evenly divided the demand for Vacuum Cleaners "with and without" a brush.

If they like them "without" the No. 14 Straight-Air Cleaner is an exceptionally simple and efficient cleaner. It's the nozzle that's different. The extreme simplicity of design brings this cleaner down to a surprisingly low cost for a Quality Product.

If the demand is for the "Brush Type" the No. 12 with its gently-revolving motor-driven brush, that will not injure the finest rugs, will assure a satisfied customer.

Further details of both cleaners will be found elsewhere in this book

Western Electric



The 6025-B Amplifier

The 6025-B Amplifier consists essentially of a single stage amplifier with a self-contained current supply set for both the vacuum tubes used in it. It employs two Western Electric No. 205-D vacuum tubes, one as an amplifier and the other as a rectifier.

No batteries are required for the operation of this amplifier. The only current supply necessary is the ordinary 110-volt 60-cycle A. C. house lighting current. No other form of house lighting supply can be used with this apparatus. The house lighting supply is transformed, rectified and filtered by the self-contained current supply set so as to properly energize the amplifier without the use of batteries. The amplifier consumes about 40 watts, that is it takes about the same power as a medium sized incandescent bulb.

If satisfactory volume is obtained in a head set from the detector tube of a radio receiving set one stage of ordinary audio-frequency amplification plus the 6025-B Amplifier will operate a loud speaking telephone so as to be audible throughout a good sized room.

Comfort, Efficiency and Fine Appearance in This Telephone Head Set

In designing the Western Electric Head Set the dimensions and electrical characteristics of the windings have been fitted to the physical dimensions of the receivers in a manner that the efficiency is practically uniform over the whole audible range of frequencies.



Western Electric

Head Sets are remarkably uniform when compared one with another. Each head set is subjected to an exacting test before it leaves the factory, and any which does not meet this test is rejected. The inductance of each of the coil windings is held within exceedingly close limits by measurements made with a special type of alternating current Wheatstone bridge. The two coils employed in each receiver are each wound with copper wire to a direct current resistance of approximately 550 ohms. This gives a total of approximately 2,200 ohms D. C. resistance when the two receivers are connected in series. The alternating current impedance of the receivers connected in series when at voice frequencies is approximately 20,000 ohms. This impedance permits the head set to be connected in series with the plate circuit of the usual form of vacuum tube detector or amplifier, or with a crystal detector, and makes it possible to obtain the highest efficiency without the use of a transformer.

The Cone Type Loud Speaking Telephone



No. 540-AW Loud Speaking Telephone

The Western Electric Cone Type Loud Speaking Telephone consists of a projector within which the actuating mechanism is contained. The projector is made of two hollow cones (formed of specially selected material) having their bases cemented together. The apex of one is cut away to permit attaching to a bracket, which serves not only as a stand for the projector, but also as a mounting for the actuating mechanism which is of the balanced armature type.

Harmonizing in performance with the best—and in appearance with the finest in home furnishings, the instrument is not alone excellent for making the pleasures of radio available to a room-full of people. The awkward and unsightly curves of the conventional loud speaker are conspicuously absent, and this new loud speaking telephone fits into the home surroundings with the grace of a well chosen portable lamp.

As an adjunct to a radio receiving set, the Cone Type Loud Speaking Telephone may usually be connected direct to the second stage of amplification. When the receiving set is giving good volume and quality in the head phones, it will be found that with two additional stages of audio-frequency amplification the No. 540-AW will give satisfactory reproduction.

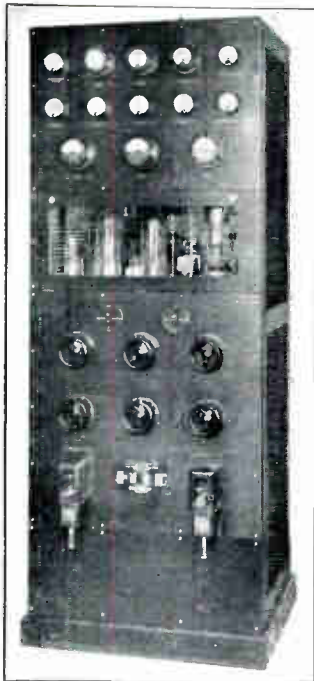
Western Electric

Radio Telephone Broadcasting Equipment

Few inventions have attained in so short a time either in national interest or importance the position reached by radio broadcasting. This is due in a large measure to the rapidly improving efficiency of radio apparatus.

Since the first 500-watt Western Electric Radio Telephone Broadcasting Equipment, (with which more than fifty of the best known broadcasting stations in the United States have been equipped), was designed and placed before the public, the engineers and scientists of the Bell Telephone Laboratories of the American Telephone and Telegraph Company and Western Electric Company have been studying the problems of the art with a view of improving the apparatus.

This research work has brought out three classes of equipment, known as the 103-C (50 watt); the 106-A (1000 watt) and the 104-A (5000 watt). Improved speech circuits, the reduction of harmonics, a quieter carrier wave and better facilities for monitoring and control make it capable of even higher quality transmission than that of the former equipment which has built up an enviable reputation for the stations that are now using it in the United States and other countries.



No. 6-A (1000 Watt)
Radio Transmitter



No. 3-A (50 Watt)
Radio Transmitter



(5000 Watt) Radio Transmitter

Western Electric

Partial List of Stations Equipped with Western Electric Apparatus

5000 Watt Stations

American Tel. & Tel. Co., N. Y.	WEAF-2XB
U. S. Playing Card Co., Cincinnati, Ohio	WSAI
Earle C. Anthony, Inc., Los Angeles, Cal.	KFI
The Crosley Radio Co., Cincinnati, Ohio	WLW
The Palmer School of Chiropractic, Davenport, Iowa	WOC
Zion Institution and Industries, (Wilbur Glenn Voliva) Zion, Ill.	WCBD
Peoples Pulpit Assn., Batavia, Ill.	WORKD
Washburn & Crosby Co., Minneapolis, Minn.	WCCO
Radiophone Broadcasting Corp., Chicago, Ill.	WHT
Sears Roebuck & Co., Chicago, Ill.	WLS
Paulist Fathers, New York, N. Y.	WLWL
Jewett Radio & Phono. Co., Detroit, Mich.	WJR
Bankers Life Insurance Co., Des Moines, Iowa	WHO
Consolidated Gas, Electric Light & Power Com- pany, Baltimore, Md.	WBAL

1000 Watt Stations

Detroit (Mich.) News	WWJ
The Atlanta (Ga.) Journal	WSB
Round Hills Radio Corp., So. Dartmouth, Mass.	WMAF
All American Radio Corp., Chicago, Ill.	WENR
Tenth Ave., Baptist Church, Oakland, Cal.	KTAB
Hale Brothers, San Francisco, Cal.	KPO
The National Life & Accident Ins. Co., Inc., Nashville, Tenn.	WSM
Larus & Bro. Company, Richmond, Va.	WRVA
Unity School of Christianity, Kansas City, Mo.	WOQ
Pasadena Star News, Pasadena, Cal.	
Wm. H. Taylor Finance Corporation, New York City	WHAP
Miami Beach Bayshore Co., Miami Beach, Fla.	WIOD
City of Jacksonville, Jacksonville, Fla.	
Kansas City Star, Kansas City, Mo.	WDAF
The Searchlight Publishing Co., Fort Worth, Texas	KFQB
Chicago Daily News, Chicago, Ill.	WMAQ
M. M. Johnson Company, Clay Center, Neb.	
Shoreland Company, Miami, Florida	

500 Watt Stations

Detroit (Mich.) Free Press	WCX
Kansas City (Mo.) Star (Wm. R. Nelson Estate)	WDAF
St. Louis (Mo.) Post Dispatch	KSD
Louisville (Ky.) Courier-Journal Co.	WHAS
L. Bamberger & Company, Newark, N. J.	WOR
John Wanamaker, Philadelphia, Pa.	WOO
Sweeney Automobile School, Kansas City, Mo.	WHB
Missouri State Marketing Bureau, Jefferson City, Mo.	WOS
Rensselaer Polytechnic Institute, Troy, N. Y.	WHAZ-2XAY
Fort Worth (Tex.) Star Telegram (Fort Worth Pub. Co.)	WBAP
The Chicago Daily News	WMAQ
Dallas (Tex.) News (A. H. Belo & Co.)	WFAA
Gimbel Brothers, Inc., Philadelphia, Pa.	WIP
Times Mirror Co., Los Angeles, Cal.	KHJ
City of Detroit (Mich.) Police Dept.	KOP
Oregonian Publishing Co., Portland, Ore.	KGW
Kaufman & Baer Co., and Pittsburgh Press	WCAE
Memphis (Tenn.) Commercial-Appeal	WMC
Sovereign Camp, Woodmen of the World, Omaha, Neb.	WOAW
Lit Brothers, Philadelphia, Pa.	WLIT
Chesapeake & Potomac Tel., Washington, D. C.	WCAP
The Outlet Co., (J. Samuels & Bro., Inc.) Prov- idence, R. I.	WJAR

500 Watt Stations—Continued

The Tribune Publishing Co., Oakland, Cal.	KLX
Echo Park Evangelistic Association, Echo Park, Los Angeles, Cal.	KFSG
Strawbridge & Clothier, Philadelphia, Pa.	WSUI
The State University of Iowa, Iowa City, Ia.	WCTS
C. T. Sherer & Co., Worcester, Mass.	WQJ
Calumet Baking Powder Co., Chicago, Ill.	WDWF
D. W. Flint, Providence, R. I.	KFDM
Magnolia Petroleum Co., Beaumont, Texas	WF1
Strawbridge & Clothier, Philadelphia, Pa.	WREO
Reo Motor Car Co., Lansing, Mich.	WEEI
The Edison Electric Illuminating Co., Boston, Mass.	WAHG
A. H. Grebe & Co., Richmond Hill, N. Y.	WGBS
Gimbel Bros., Inc., New York, N. Y.	KNX
Express Publishing Co., Los Angeles, Cal.	WPG
City of Atlantic City, Atlantic City, N. J.	KFUO
Concordia Seminary, St. Louis, Mo.	
Supreme Lodge of the World (Loyal Order of Moose), Moosheart, Ill.	WJJD
The Travelers' Insurance Co., Hartford, Conn.	WTIC
University of Kansas, Lawrence, Kan.	KFKU
Woodlawn Theatre, Chicago, Ill.	WMIBB
Hotel Arlington, Hot Springs, Ark.	KTHS
Kansas State Agricultural College, Manhattan, Kan.	WTG
Foster & McDonnell, Chicago, Ill.	WBCN
The Shephard Stores, Boston, Mass.	WNAC
Peoples Pulpit Assn., Rossville, N. Y.	WBRR
Stephens College, Columbia, Mo.	KFRU
Saenger Amusement Co., New Orleans, La.	WSMB
Fleetwood Hotel, Miami, Fla.	WMIBF
Goodyear Tire & Rubber Co., Cleveland, Ohio	WEAR
Universal Broadcasting Co., Philadelphia, Pa.	WCAU
Monarch Mfg. Co., Council Bluffs, Iowa	KOIL
Florida Cities Finance Co., Miami, Fla.	WGBU
Vaughan School of Engineering, Milwaukee, Wis.	WSOE
Varner Bros., Los Angeles, Cal.	KFWB
Experimenter Pub. Co., New York	WRNY
Congress Square Hotel, Portland, Me.	WCSH
May Seed and Nursery Co., Shenandoah, Iowa	KMA
Moody Bible Institute, Chicago, Ill.	
Berry Seed and Nursery Company, Clarinda, Iowa	
First Baptist Church, San Jose, Cal.	
Nicholas and Warriner, Long Beach, Cal.	KFON
Dallas Police and Fire Alarm Department, Dallas, Texas	WRR
Hotel Lassen, Wichita, Kansas	WEAH
G. H. Bowles, Clearwater, Fla.	
Chattanooga Radio Co., Chattanooga, Tenn.	WDOD

100 Watt Stations

Rochester (N. Y.) Democrat and Chronicle and Eastman School of Music, Rochester, N. Y.	WHAM
Round Hills Radio Corp., So. Dartmouth, Mass.	WSAQ
Edison Electric Illuminating Co., Boston, Mass.	WTAT
Tremont Temple Baptist Church, Boston, Mass.	WDDB
Wm. F. Gable Co., Altoona, Pa.	WFBG

50 Watt Stations

The Principia, St. Louis, Mo.	WFQA
Paris Dept. Store, San Francisco, Cal.	KFRC
First Baptist Church, Columbus, Ohio	WMAN
Dr. Louis L. Sherman, San Francisco, Cal.	KFUS
Pasadena (Cal.) Presbyterian Church	KPPC
Baxter Laundry, Grand Rapids, Mich.	WBDC
St. Paul's P. E. Church, Philadelphia, Pa.	WIBG
Glad Tidings Tabernacle, San Francisco, Cal.	
Brown Radio Shop, Portland, Ore.	

Western Electric

The Public Address System



A Western Electric Public Address System is Used in the Georgia House of Representatives

Public speaking plays an important part in our everyday commercial and social activities. Until the development of the Western Electric Public Address Systems, the number of persons who could be reached by a speaker was limited by the carrying power of his voice and the acoustic properties of the place where the audience was assembled. Western Electric Public Address Systems increase the range of

speakers' voices sufficiently to cover any requirements in regard to the size of the audience. (Audiences of over 200,000 have been enabled to hear clearly.) By permitting the speaker to reach his audience with natural tones these systems prevent voice strain and thus increase greatly the amount of speaking possible without voice fatigue or injury.

Western Electric Public Address Systems reproduce the voice of the speaker in clear, natural

tones. The speaker has a comparatively large amount of freedom. He is not hampered by having to speak in a loud voice nor does he have to direct his words into the mouthpiece of the telephone transmitter.

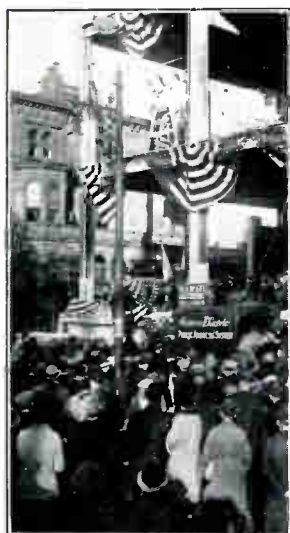
Large outdoor crowds can be easily handled. Individuals hundreds of feet from the speaker may be addressed and requested to come to the platform. Medical assistance may be summoned in the case of illness and descriptions of children lost or found may be broadcast.

In intervals between speeches music may be transmitted to the audience through the Public Address System.

The apparatus is rugged in construction and once installed requires only a moderate amount of attention from the persons who operate it.

Western Electric Public Address Systems are flexible in their application and can be arranged to serve large gatherings, either indoors or outdoors, or both, or overflow meetings to two or more meetings held simultaneously in different localities.

The Western Electric No. 1-A Public Address System is designed for use with the largest audiences outdoors and indoors. It is adapted for either permanent or temporary installation. The capabilities of this system were demonstrated during the inauguration ceremonies of the late President Harding on March 24, 1921, when by its use an audience of



Public Address System Being Used in Dedication of New Building

Western Electric



*Public Address System in Use at
Hotel Astor, New York*



A Church Application

more than 125,000 people gathered before the National Capitol at Washington, was enabled to hear distinctly the President's Inaugural Address.

The same system was used on March 4, 1925, when President Coolidge was inaugurated. This system not only made it possible for a gathering of many thousand people assembled on the Capitol grounds to hear the address, but in addition, through wire connections, the message was distributed to numerous radio broadcasting stations which broadcast the message over the greater part of the United States.

At both the Republican and Democratic Conventions of 1924, the Western Electric No. 1-A Public Address System served the purpose of transmitting the words of the speakers to the vast audiences present in the convention halls and to widely scattered radio audiences.

In addition to its temporary use on occasions of national importance, the Western Electric No. 1-A Public Address System is installed permanently in many large auditoriums and stadiums.

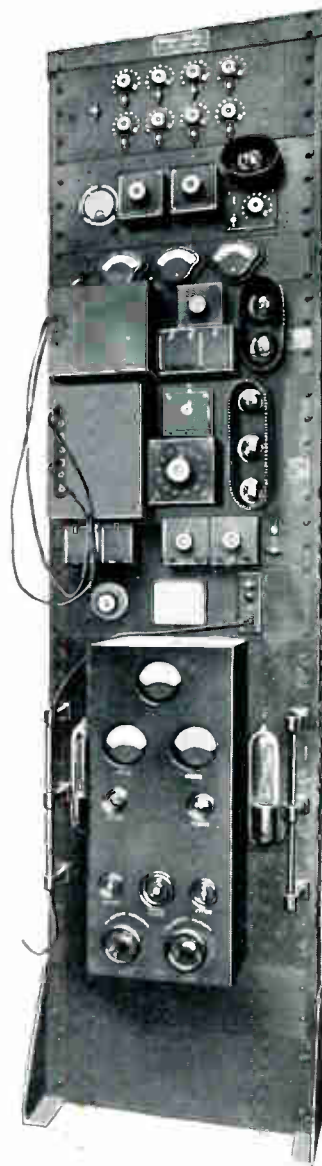
Though less powerful than the No. 1-A Public Address System, the No. 2-A is capable of taking care of large crowds either outdoors or indoors. The No. 2-A System is at present giving satisfactory service in many auditoriums and hotel banquet halls throughout the country.

A few of the many possible applications of the No. 2-A Public Address System follow.

Where the Western Electric No. 2-A Public Address System Can Be Used

Hotels, for use in Banquet Halls, for reproducing music of an orchestra in as many locations as desired and for paging guests or making announcements in cases of emergency. Theatres and other Auditoriums, Stock Markets and Trade Exchanges, Colleges and Schools for use in large lecture rooms for emergency announcements for directing class drills, Dance Halls, Steamships, Steamship Piers, Department Stores, Prisons, Hospitals, County Fairs, Private Pullman Car or Automobiles so audiences assembled around them may be addressed.

The Western Electric No. 3-A Public Address System is suitable for use in auditoriums, the cubical contents of which do not exceed 85,000 cubic feet. For example, an auditorium approximately 85 feet by 50 feet by 20 feet high. Where it is desired to transmit the sounds into adjoining rooms and corridors, the cubical contents of the combined space should be somewhat less than 85,000 cubic feet. But the total area over which satisfactory loudness and quality of sound can be maintained depends largely on the size and configuration of the separate areas and the amount of outside noise that may enter the rooms.



*Amplifier Equipment for
No. 2-A
Public Address System*

Western Electric

The Audiphone



Numbered among the many developments by the Bell Telephone Laboratories, Inc., the research and development laboratories of the American Telephone and Telegraph Company and the Western Electric Company, are devices such as vacuum tubes and improved forms of transmitters (microphones) and telephone receivers (head receivers) which have made possible the design of the Western Electric Audiphone.

The Audiphone is a special amplifying unit which intercepts sound waves and transmits them to the user's ears. By means of it, those with impaired hearing may perceive sound without noticeable loss of quality or naturalness. This apparatus gives results much superior to those heretofore obtainable.

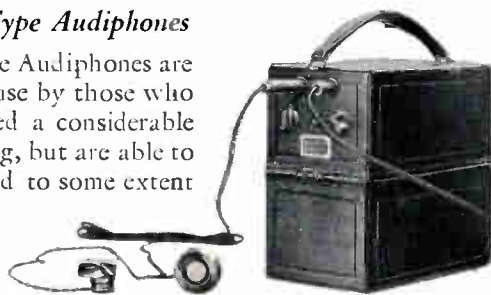
Types of Audiphones

To meet the more general demands for aids to hearing, the Western Electric Company manufactures different types of audiphones.

32-Type Audiphones

The 32-Type Audiphones are intended for use by those who have sustained a considerable loss of hearing, but are able to perceive sound to some extent in either ear.

The 32-Type Audiphones provide two stages of amplification. All of the apparatus, including the batteries for the plates and filaments of the vacuum tubes, is mounted within a carrying case measuring $7\frac{1}{4}$ inches long by 4 inches deep and 7 inches high and weighing 7 pounds.



Audiometer Measurements

It is obvious that no one form of audiphone will compensate for all degrees of impaired hearing. The Western Electric Company, therefore, recommends that any prospective purchaser of an Audiphone consult an ear specialist competent to make by means of the Audiometer or other efficient method an analysis of the impairment in the hearing of each ear. From such an analysis it will be possible for the specialist to determine quickly which form of Western Electric Audiphone will best suit individual needs.

Western Electric

The Audiometer

An Instrument for Measuring the Acuity and Quality of Hearing



Type No. 2-A



Type No. 3-A

A new precision instrument, capable of measuring the acuity and the quality of hearing has been developed for telephone work by scientists of the Bell Telephone Laboratories of the American Telephone and Telegraph Company and Western Electric Company in connection with their fundamental research in electrical communication.

Realizing the value of this apparatus in determining the condition of hearing, the development work was continued with the thought of making this instrument, the Audiometer, to the highest possible degree, a valuable contribution to the application and the increase of medical knowledge. In order to accomplish this result, each step of the development has been carried on in close contact with the medical profession in an effort to adapt the Audiometer, both in capacity and accuracy, to the technique and requirements of its various users.

Wherever hearing tests are required, one of the types of Audiometer can be used. Its combination of sustained tones automatically produced, and of pitch and intensity adjustable throughout a wide range, will be found of great usefulness, in the delicate functional and diagnostic measurements of otologists. It may also replace to advantage many of the manually operated instruments now in use for conducting the standard hearing tests. In the field of physical examination, the Audiometer should prove extremely valuable in determining, so far as impaired hearing is concerned, the fitness of applicants for insurance policies, automobile licenses, and for enlistment in the Army

and Navy; also in the life protection tests of railroad and steamship companies; and in the health corrective examinations of schools, colleges and gymnasiums.

A Universal Language for Recording Ear Tests

The Audiogram, a form of chart developed for use with this instrument, provides a method of plotting the results of measurements obtained by means of the Audiometer. Such a diagram accurately indicates at a glance the extent and the character of the deficiencies in acuity and quality of a patient's hearing.

Type No. 1-A

This type, which is the largest, was designed to fulfill the requirements for an extensive examination of the acuity and quality of hearing.

Type No. 2-A

The results are essentially the same as Type 1-A, except the maximum intensity is such that it covers only 70 per cent of the hearing range. It is portable.

Type No. 3-A

Adapted to the requirements of industrials, school boards, automobile examining boards and others interested in a single, quick test of acuity for hearing speech.

Type No. 4-A

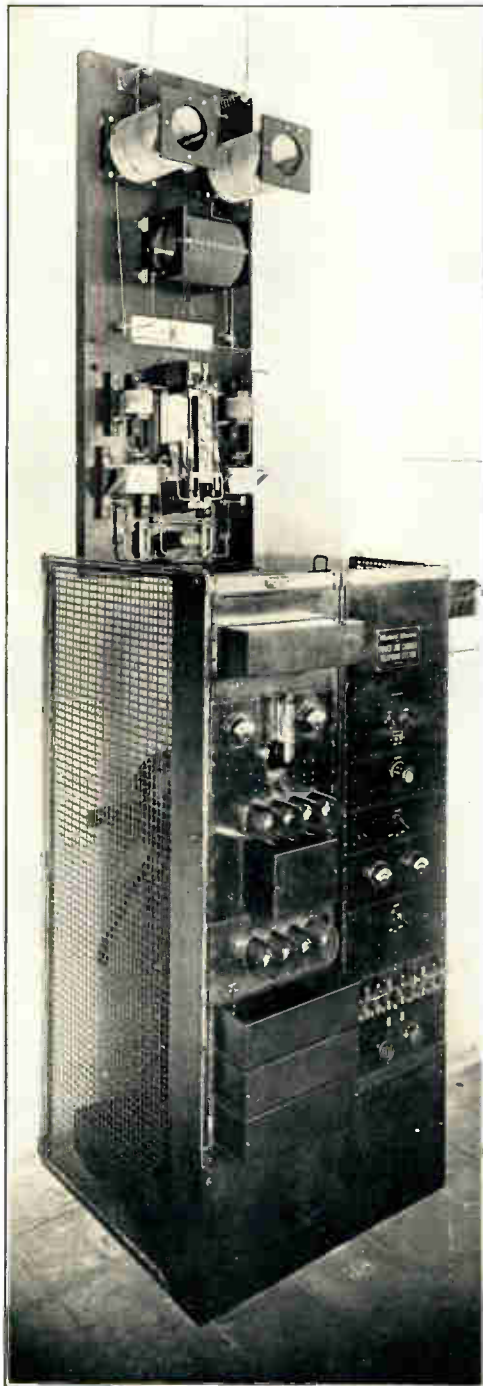
The No. 4-A or Phonograph Audiometer is a portable instrument for testing quickly and accurately the acuity of hearing of groups of school children.



Type No. 1-A

Western Electric

Power Line Carrier Telephone Systems



*Panel and Protective Equipment
Western Electric Power Line Carrier Telephone
System*

The Western Electric Power Line Carrier Telephone System which uses the power conductors as a transmission medium provides telephone service that is entirely automatic from the standpoint of the user and the quality of the transmission is equal to that afforded by high grade commercial circuits.

The equipment assures positive economical and efficient communication and precludes the necessity of erecting a line for communication purposes.

The development of the apparatus has been founded on many years of experience in the application of carrier current systems to telephone lines. The equipment has been designed primarily from the standpoint of simplicity and reliability as regards both its installation and operation. Selective ringing, or the ringing of all stations simultaneously for general orders, is obtained through the use of equipment now standardized in Western Electric train dispatching telephones throughout the world.

The telephone circuits may be extended through the private switchboards of the Power Company or direct extensions with full control of the carrier apparatus may be provided for load dispatchers located some distance from the equipment.

Provision has been made for the protection of the operator and apparatus from the high voltages.

Coupling between the carrier apparatus and the power line may be effected by means of coupling wires strung parallel to the power line but more efficient coupling may be obtained by high-voltage coupling condensers connected directly to the power conductors.

The equipment may be operated either from a storage battery, rendering its operation independent of any commercial supply, or from a motor-generator connected to the public service A.C. supply. In times of interruptions of the A.C. source, automatic means may be furnished to switch the motor-generator to the station battery until the A.C. is again available.

The carrier apparatus is mounted on vertical frames, permitting accessibility to all parts.

Prices

Prices found in this catalogue are revised to agree with the latest lists at the time of issue. It is understood that they are subject to change without notice and are, therefore, not offered by us as a quotation. It is contemplated that all prices are for shipment from our warehouse unless otherwise specified, except such goods as are shipped regularly direct from factories, in which cases prices are for factory delivery unless otherwise specifically agreed upon.

Orders

When possible, we have placed opposite each article a list number. When ordering material, kindly order by the list number and give a description of the article required.

You are requested to specify the routing over which you prefer shipments to be made. In the absence of specific instructions, we shall use our best judgment in selecting the route, but we are not responsible for extra drayage expenses at destination.

Terms

Our terms are 30 days net from date of invoice.

Payments may be made by check, bank draft, postal or express money order, drawn to the order of or endorsed to the order of the Western Electric Company.

Payments in currency through the mails even if registered are not recommended and are at sender's risk. We are not responsible for loss or miscarriage of the mails.

Receipts are not issued for remittances unless requested. Our endorsement on remittance is acknowledgment of the receipt of the funds.

We solicit new accounts on a credit basis, and in order to give prompt service, request that where you are not rated by the Commercial Agencies, references or other information of a credit character be forwarded with the order. These will be immediately acted upon, and the results held in strict confidence for our sole use and, when reasonably satisfactory, shipment will follow with all possible dispatch.

To avoid the delay incidental to communicating with references, etc., it would be mutually convenient, when immediate shipment is desired, to instruct us to ship C. O. D. by express, or parcel post (insured if so instructed) or by freight subject to sight draft through a local bank against bill of lading.

We shall advise the terms on future orders promptly after communications from references are received.

Returned Goods

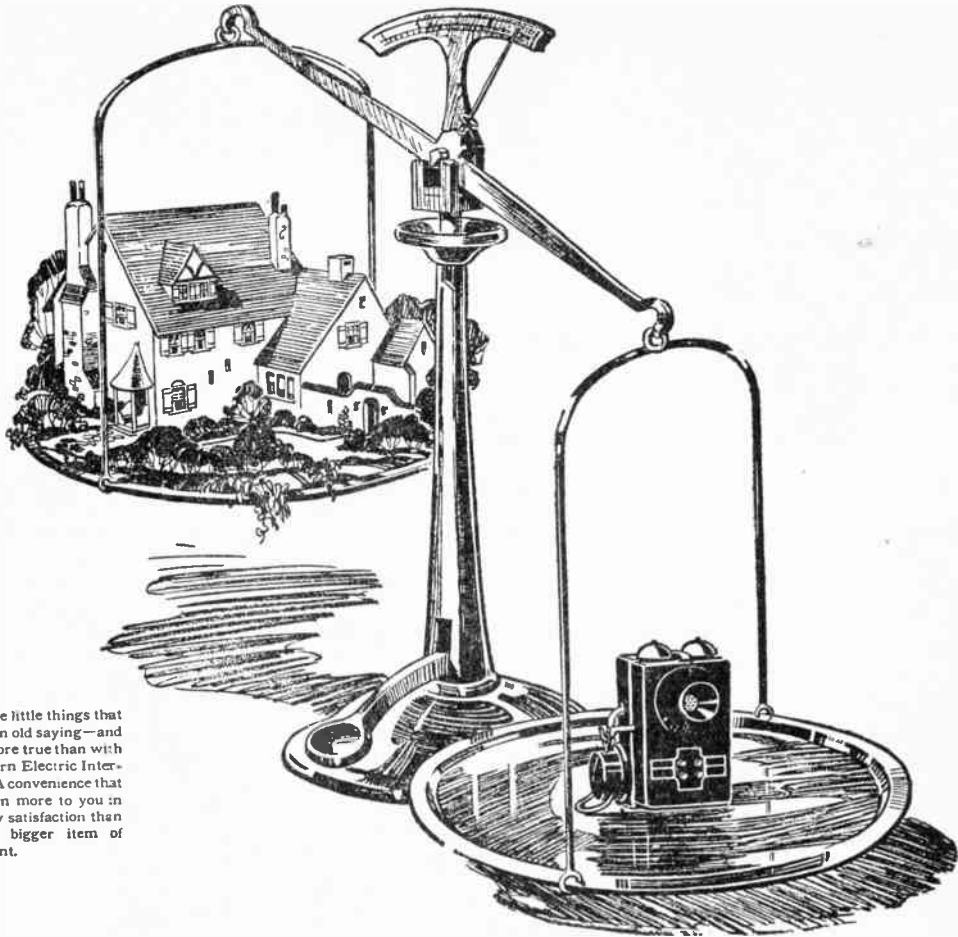
To save transportation charges, and to facilitate the handling of goods upon receipt, you are requested not to return goods without having obtained shipping instructions from us.

Shipments

As experienced packers are employed, and as reasonable care is used in packing, we cannot be held responsible for breakage in packages which are delivered in "good order" by the carrier.

Shipments of glassware are made at your risk.

Goods ordered to be shipped by parcel post will be sent only at the purchaser's risk of loss or damage



"It's the little things that tell", is an old saying—and never more true than with a Western Electric Inter-Phone. A convenience that will mean more to you in everyday satisfaction than many a bigger item of equipment.

Weighed in the balance —and found *not* wanting



Western Electric INTER-PHONE SYSTEMS

In the office or factory,
Inter-Phones put you in
direct touch with any de-
partment.

WHEN you build a house, the location and construction materials seem all-important. But after you get living there, isn't it often true that the small conveniences outweigh bigger things?

A Western Electric Inter-Phone is small, but it is mighty important in everyday convenience and time-saving. Install an Inter-Phone system and you can talk in comfort with anyone in any part of your house or garage.

Western Electric carries stocks

of everything electrical—little conveniences and big ones. Convenience outlets for the walls, lighting equipment, and dependable appliances that make housework easy.

For you men in industry too, Western Electric acts as an electrical supply storekeeper, backing you up with prompt and careful attention to your requirements for quality products.

Let us send you information on Western Electric supplies and service. Write now—right now.

Western Electric

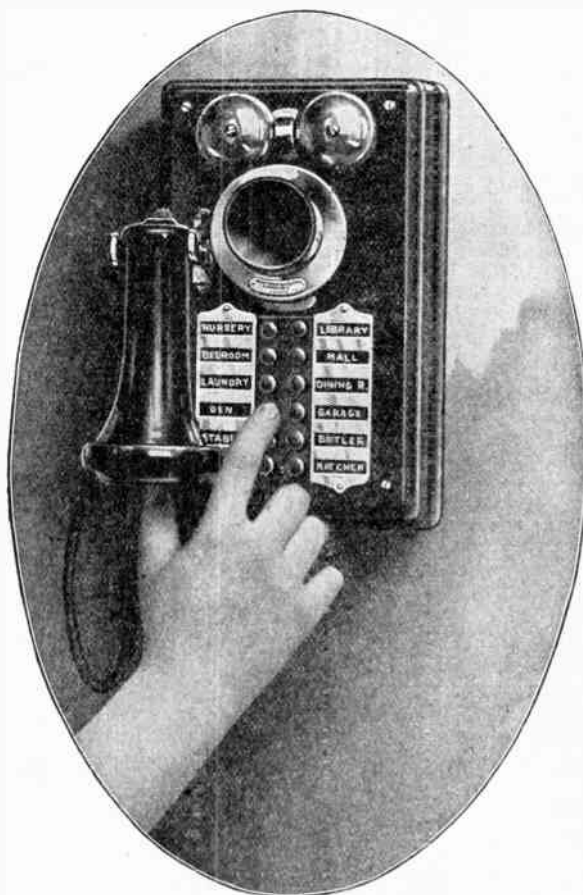
QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Western Electric

INTER-PHONES AND ACCESSORIES



Introductory

Fast and reliable telephonic communication is today such a well recognized essential that Inter-phones are considered a necessity in the modern business and home life. Schools, industries, offices, public institutions and the modern home require them, and they are considered a part of the building equipment by leading Architects in planning and designing new buildings. The user is the only operator required—pushing one button makes the desired connection.

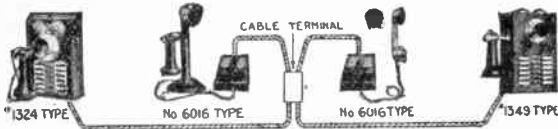
Western Electric Inter-phones can be relied upon to give perfect satisfaction. Our valuable and extensive experience in the telephone field for over half a century enables us to offer equipment which has proved its efficiency and reliability under most severe operating conditions.

Inter-phones described on the following pages are scientifically designed and carefully constructed in various styles and types to meet the service requirements in the home and office. The sets are regularly finished in dull black enamel with nickel trimmings. This finish is pleasing in appearance and will harmonize with any surroundings.

Western Electric Inter-phones
Picture Index of Inter-phone Systems

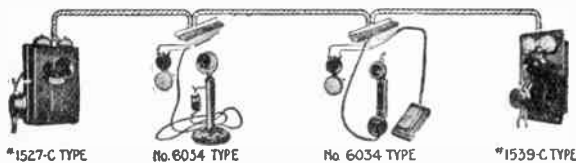
These diagrams are intended to show the Ringing Service provided for the various Inter-phone systems and should not be confused with the wiring diagrams, which are shown in a separate bulletin, "Installing and Maintaining Western Electric Inter-phones."

System No. 1
Selective Ringing—Selective Talking Service
For 3 up to 24 Stations



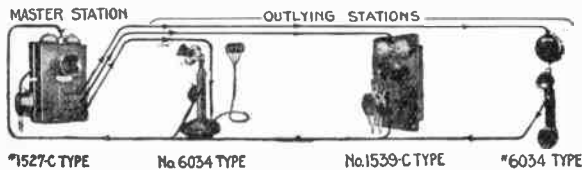
1. Any station can ring selectively any other station.
2. More than one conversation can take place simultaneously.
3. Apparatus, operation and appearance, the highest grade obtainable.
(For systems Nos. 7, 8, 9 and 10 see Apartment House Inter-phones.)

System No. 11
Selective Ringing—Common Talking Service
For 3 up to 8 Stations



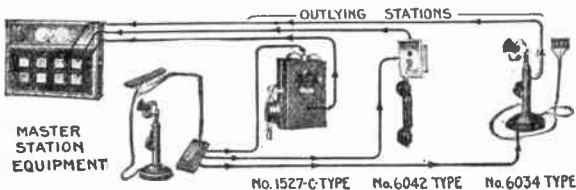
1. Any station can ring selectively any other station.
2. Only one conversation can be carried on at a time.
3. Apparatus pleasing in appearance and moderate in cost.

System No. 12
Master and Outlying Stations—Common Talking Service
For 3 up to 8 Stations



1. The "master station" can call any one of the "outlying stations," selectively and the outlying stations can call the master station (but not each other).
2. Wall, desk or hand set Inter-phones may be used interchangeably in this system for both the master and outlying stations.
3. Only one conversation can be carried on at a time.

System No. 12A
Master Annunciator and Outlying Stations
Common Talking Service
For 3 up to 20 Stations



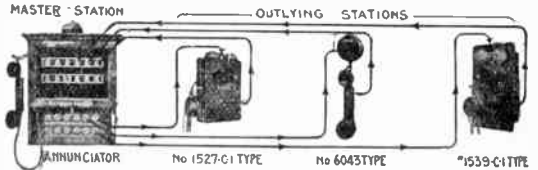
1. Adapted for schools where the principal must call the teachers individually and teachers must call the principal but not each other.
2. Same as System No. 12 except master station is equipped with an annunciator for identifying calls from the outlying stations.
3. The master station annunciator is of the Electrical Reset type.
4. Only one conversation can be carried on at a time.

Western Electric Inter-phones
Picture Index of Inter-phone Systems

Continued

These diagrams are intended to show the ringing service provided for the various Inter-phone systems and should not be confused with the wiring diagrams, which are shown in a separate bulletin, "Installing and Maintaining Western Electric Inter-phones."

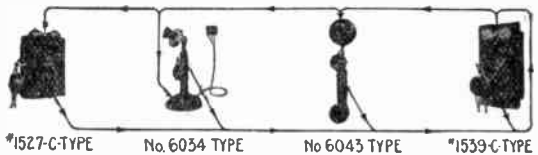
System No. 12B
Master Annunciator and Outlying Stations
Common Talking Service
For 3 up to 24 Stations



Formerly Known as Systems No. 16 B&C

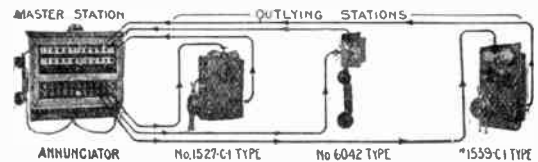
1. The "outlying stations" can ring the "master annunciator" station but not each other.
2. Master annunciator station may or may not have push buttons for calling any one of the outlying stations.
3. This system is also designed for replacing existing ordinary annunciator and push button systems (where the wiring is suitable).
4. Only one conversation can be carried on at a time.

System No. 15C
Code Ringing—Common Talking Service
For 2 up to 6 Stations



1. A simple private line system (requires only 3 line wires between stations).
2. When a button is pressed at any station the bells of all other stations will ring simultaneously.
3. The various stations are called by signalling each one with a different code.
4. Only one conversation can be carried on at a time.

System No. 18
Master Annunciator with Connecting Cords
For 10 up to 70 Stations



1. From the "master station annunciator" any one of the "outlying stations" can be called selectively, or the master station can be called from the outlying stations.
2. Communication can be established between any two outlying stations by means of connecting cords at the master station annunciator.

System No. 14
Private Line
For 2 Stations Only



1. For connecting two points separated by a mile or less.
2. Only two line wires are required for connecting between the two stations.
3. Either station can ring and converse with the other.

Western Electric Inter-phones

Western Electric Inter-phones

Picture Index of Inter-phone Systems

Picture Index of Inter-phone Systems

Continued

Continued

These diagrams are intended to show the ringing service only, and should not be confused with the wiring diagrams, which are shown in a separate bulletin, "Installing and Maintaining Western Electric Inter-phones."

These diagrams are intended to show the ringing service only, and should not be confused with the wiring diagrams, which are shown in a separate bulletin, "Installing and Maintaining Western Electric Inter-phones."

Apartment House Systems

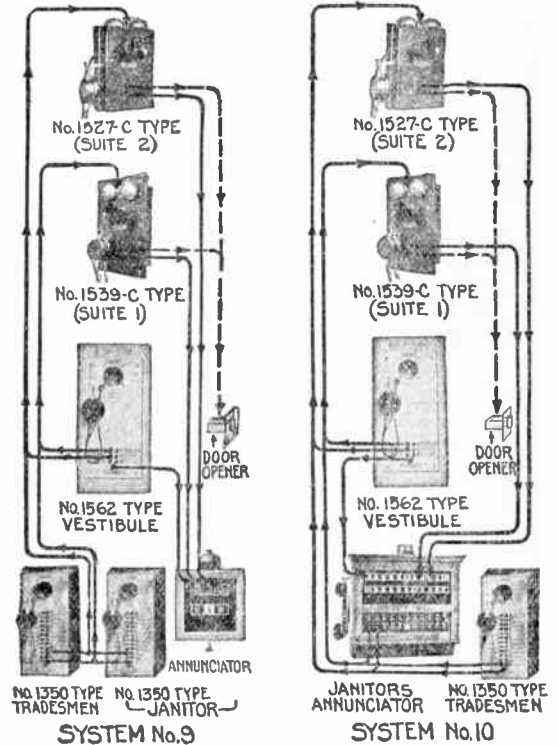
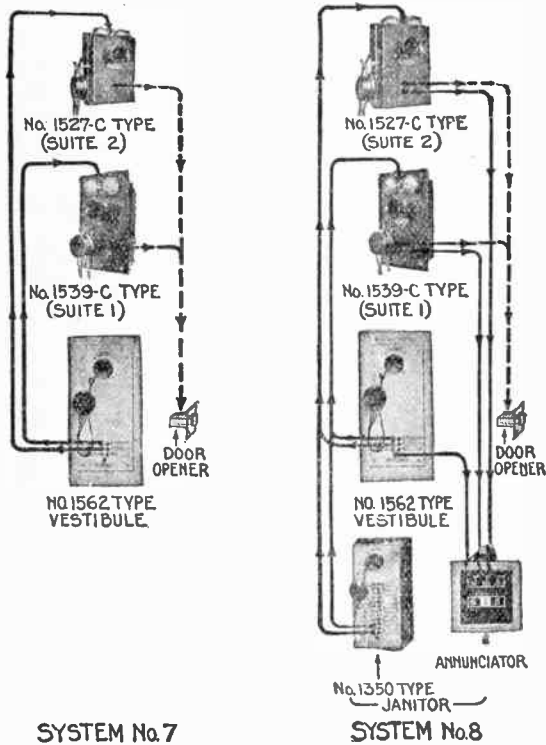
Apartment House Systems

Selective Talking—Non-interfering Service

Selective Talking—Non-interfering Service

Systems Nos. 7 and 8 will furnish selective ringing and talking (or non-interfering) service, making it possible for a number of conversations to take place simultaneously.

Systems Nos. 9 and 10 will furnish selective ringing and talking (non-interfering) service, making it possible for a number of conversations to take place simultaneously.



System No. 7—Non-interfering Service

One vestibule and up to 24 suite Inter-phones.

1. Vestibule can call apartments.
2. Apartments can open door, if desired.

System No. 8—Non-interfering Service

One vestibule, one janitor and up to 24 suite Inter-phones.

1. Vestibule can call apartments and janitor.
2. Apartments can call janitor and open door, if desired.
3. Janitor can call apartments.

System No. 9—Non-interfering Service

One vestibule, one janitor, one tradesmen's and up to 24 suite Inter-phones.

1. Vestibule can call apartments and janitor.
2. Apartments can call janitor and open door, if desired.
3. Janitor and tradesmen can call apartments.

System No. 10—Non-interfering Service

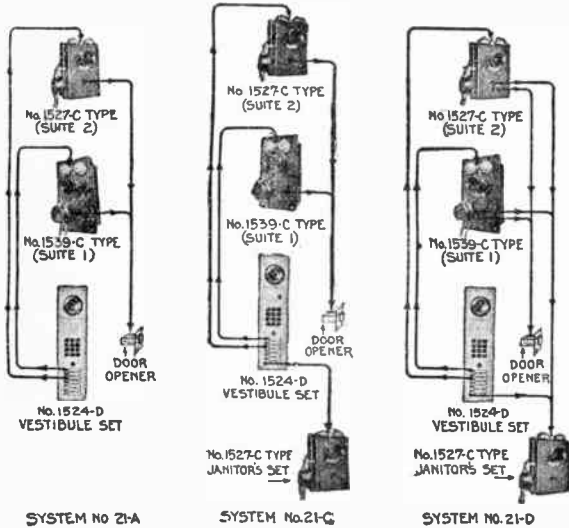
One janitor's switchboard, two or more vestibule and tradesmen's Inter-phones and any number of suite Inter-phones up to 70. A maximum of 24 suite Inter-phones can be connected to each vestibule set.

Western Electric Inter-phones
Picture Index of Inter-phone Systems
 Continued

These diagrams are intended to show the ringing service only, and should not be confused with the wiring diagrams, which are shown in a separate bulletin.

System No. 20 and 21
Selective Ringing—Common Talking Service

There are six combinations of the No. 20 and 21 System suitable for systems consisting of one vestibule and up to 24 suite Inter-phones.



SYSTEM NO. 21-A SYSTEM NO. 21-C SYSTEM NO. 21-D

System No. 20-A and 21-A

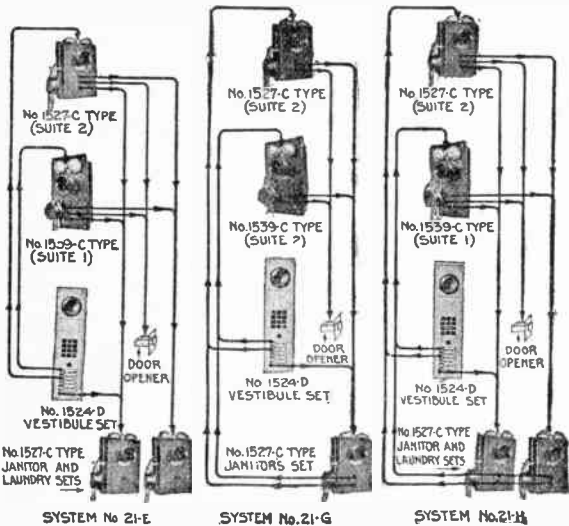
1. Vestibule can call apartments.
2. Apartments can open door.

System No. 20-C and 21-C

1. Vestibule can call apartments and janitor.
2. Apartments can open doors.

System No. 20-D and 21-D

1. Vestibule can call apartments and janitor.
2. Apartments can open door and call janitor.



SYSTEM NO. 21-E SYSTEM NO. 21-G SYSTEM NO. 21-H

System No. 20-E and 21-E

1. Vestibule can call apartments and janitor.
2. Apartments can open door and call janitor and laundry.

System No. 20-G and 21-G

1. Vestibule can call apartments and janitor.
2. Apartments can open door and call janitor.
3. Janitor can call apartments.

System No. 20-H and 21-H

1. Vestibule can call apartments and janitor.
2. Apartments can open door and call janitor and laundry.
3. Janitor and laundry can call apartments.

Western Electric Inter-phones
Description of System No. 1
Selective Ringing—Selective Talking Service



Inter-phones for the No. 1 System

Represent the highest standards of design, engineering and refined manufacture. Four types of Inter-phones are provided, namely, Surface Wall, Flush Wall, Desk and Hand Sets, and they may be used interchangeably in the same system. These sets all incorporate the same important refinements, as listed hereinafter.

Transmitter and Receiver

The same type and high grade of construction as those used for public telephone exchange service. Due to their character, the transmission is pleasingly uniform and clear throughout the system with a minimum of battery consumption. These transmitters and receivers are familiar to telephone users throughout the world.

Vibrating Bells and Buzzers

Wound to 10 ohms with enameled insulated wire, and have the following advantages (over the low resistance bells which are to be found on the market).

- (a) The current required to ring on long and short lines is more nearly equalized.
- (b) The trouble experienced with armature adjustment is decreased.
- (c) On account of the high resistance less ringing current is used and the life of the battery is lengthened, lowering the maintenance cost.
- (d) The enameled insulation on the windings being moistureproof, assures against current leakage, or short-circuiting due to moisture or poor insulation.
- (e) Avoids use of an excessive number of dry cells to ring the bells of distant stations and prevents harmful sparking at bells near the batteries (as would be the case with two or three ohm bells).

Terminal Block

Located in the base of the set; is made of hard maple which has been boiled in beeswax to make it impervious to moisture. After this treatment, it is given a coat of insulating varnish. On the terminal blocks are mounted terminal connections having a solder terminal and a screw terminal. To the solder terminal is connected the local wiring of the set, while the screw terminal provides an easy method of connecting to the Inter-phone cable, no soldering being required to make a permanent cable connection. All terminals are plainly marked on the terminal block in order to easily identify the local cabling and inter-phone wiring.

Local Wiring

Local wiring from the push button keys, transmitter, bell, retardation coil and switchhook to the terminal block is made by means of a neatly formed cable. Each wire is colored differently in order to easily trace the wiring or identify it in any part of the set. The wires in the local cable form are thoroughly treated to keep out moisture and then laced with linen cord to keep them in shape. The wiring to the apparatus and terminals is soldered to insure a permanent and reliable connection. The cable is so formed and enough slack left in it to allow the face plate to be opened and closed for inspection, without straining, bending or in any way interfering with the wiring. To further support the form and hold it in position, leather straps are fastened to the terminal base and ringing key frame.

Western Electric Inter-phones
Description of System No. 1—Continued
 Selective Ringing—Selective Talking Service

Interior Apparatus

Interior Apparatus such as the transmitter mounting, switchhook, vibrating bell, bell adjusting mounting, and retardation coil are (in the metal sets) also mounted on a treated maple block and fastened to the face plate. This method insulates the apparatus and affords uniform alignment. All terminals are marked in order to easily connect and trace cord and wire connections.

Retardation Coil

A retardation coil of 100 ohms resistance is contained in each Inter-phone. It furnishes talking current from one talking battery for all conversations, provides against "cross-talk" and reduces the drain from the battery to a minimum.

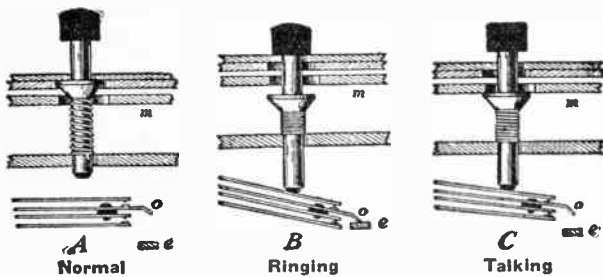
Housing

The housings of the metal wall sets and desk set key boxes are made of heavy sheet steel, formed and pressed into shape. The housing is then treated with a special copper plating process. This method is used to protect the metal from moisture so that rust cannot attack its surface. After the surface is copper plated it is finished with two coats of black japan which is baked on. The japan finish being baked on clings to the metal preventing cracking or peeling as is liable to happen when an air drying finish is applied.

It is standard Western Electric practice to treat the surfaces of all steel parts with either copper plating or an equally effective process, before applying the exterior finish, to protect the steel against rusting.

Push Button Keys

The push button keys and their operating mechanism, are mounted in a rigid metal frame. In designing this key two operations are arranged for (1) for ringing, and (2) for talking.



Each key consists of a hard rubber push button mounted on a metal plunger, which passes through a hole in a movable locking plate ("m"), (which is under the spring tension). When the button is completely depressed ("B") the spring ("o") makes contact with the ringing battery supply at ("e"), causing the ringing current to flow to the station to which this particular key is connected, and ringing the bell at that station. When the pressure is released, the plunger returns to an intermediate position ("C") breaking the ringing contact and placing the Inter-phone on the line of the station called ready for conversation. While the conversation is taking place, the plunger is automatically held in the talking position by the locking plate ("m") and held there until the plate is actuated by depressing another button. The pressing of another button causes the locking plate ("m") to release the key so that it assumes its normal position as shown in "A." Talking current for the Inter-phone is cut off as soon as the receiver is placed back on the switchhook.



Western Electric Inter-phones
Description of System No. 1—Continued
 Selective Ringing—Selective Talking Service

No. 1324 Type Wall Inter-phones
 Surface Mounting



No. 1324 Type

The No. 1324 type Inter-phone is an all metal set having a hinged face plate, movable transmitter and hand receiver. Finished black with nickel trimmings. The face being hinged, makes it possible to easily inspect all connections and apparatus, without disturbing the installation.

This Inter-phone is furnished in 6, 12, 16, 20 and 24 button sizes.

Code No.	No. of Buttons	DIMENSIONS, INCHES		
		Height	Housing Width	Depth
1324C-6	6	10	6 ³ / ₈	3 ¹ / ₈
1324C-12	12	10	6 ³ / ₈	3 ¹ / ₈
1324C-16	16	14 ⁵ / ₁₆	7 ¹ / ₈	3
1324C-20	20	14 ⁵ / ₁₆	7 ¹ / ₈	3
1324C-24	24	14 ⁵ / ₁₆	7 ¹ / ₈	3

No. 1355 Type Wall Inter-phones
 Flush Mounting



No. 1355 Type

The No. 1355 type Inter-phone is a flush mounting set having a steel face plate on which is mounted all of the talking and signalling apparatus and a sheet steel outlet box arranged for 3/4-inch conduit. The outlet box can be separated from the set and built into the wall during the construction of the building. The face plate is hinged at the bottom, making all terminals easily accessible for installation or inspection. The set is compact but not crowded, and designed to meet the most exacting requirements. Furnished in 16, 20 and 24 button sizes.

Dull black finish with nickel trimmings.

Code No.	No. of Buttons	DIMENSIONS, INCHES		
		Height	Housing Width	Depth
1355C-16	16	14 ¹ / ₂	6 ⁷ / ₈	...
1355C-20	20	14 ¹ / ₂	6 ⁷ / ₈	...
1355C-24	24	14 ¹ / ₂	6 ⁷ / ₈	...

Western Electric Inter-phones

Description of System No. 1—Continued

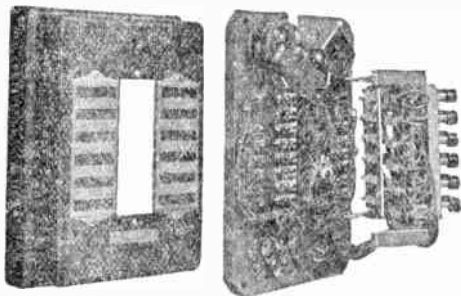
**Selective Ringing—Selective Talking Service
No. 6016 Type Desk Inter-phones**



Desk Inter-telephone

The No. 6016 type desk Inter-telephone consists of a desk stand and a metal key box which employ the same operating mechanism as described under "Push button keys."

The desk stand is finished in dull black. It is the same type of Western Electric desk stand that is generally used for public telephones, millions of which are in service, its efficiency and dependability being well known.



Construction of Key Box

The key box is finished in dull black with nickel trimmings and is provided with four rubber feet to keep the metal housing from scratching the table or desk. The connecting cord between the key box and the desk stand is six feet long. Cable entrances are provided at the bottom and ends of the box. Furnished in 6, 12, 16, 20 and 24 button sizes.

Code No.	No. of Buttons	Desk Stand	Cord, Ft.	INCLUDES			
				Key Box	DIMENSIONS, INCHES		
				Width	Length	Depth	
6016D-6	6	1120BE	6	328C-6	5	7 1/2	2 5/8
6016D-12	12	1120BE	6	328C-12	5	7 1/2	2 5/8
6016D-16	16	1120BE	6	328C-16	5 3/4	10 3/4	2 5/8
6016D-20	20	1120BE	6	328C-20	5 3/4	10 3/4	2 5/8
6016D-24	24	1120BE	6	328C-24	5 3/4	10 3/4	2 5/8

No. 6016 Type Hand Set Inter-phones

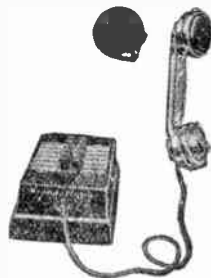
The No. 6016 type hand set Inter-telephone is the same as the No. 6016 desk set type, except that it employs a Western Electric No. 1001 type hand set and hanger instead of a desk stand.

The hand set is nickel plated, of pleasing appearance and extremely sturdy construction. This same type of hand set has been in use for years by telephone linemen and outside repairmen, which attests to its ability to withstand severe service and rough usage.

The hand set hanger is made of cast metal and finished in black. Furnished for supporting the hand set when not in use.

The key box is of the same type described above for use with the No. 6016 desk type Inter-telephone.

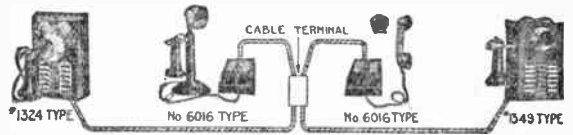
Code No.	No. of Buttons	Hand Set	Cord, Ft.	Hand Set Hanger	INCLUDES			
					Key Box	DIMENSIONS, INCHES		
					Width	Length	Depth	
6016H-6	6	1001J	6	1B	328C-6	5	7 1/2	2 5/8
6016H-12	12	1001J	6	1B	328C-12	5	7 1/2	2 5/8
6016H-16	16	1001J	6	1B	328C-16	5 1/4	10 3/4	2 5/8
6016H-20	20	1001J	6	1B	328C-20	5 1/4	10 3/4	2 5/8
6016H-24	24	1001J	6	1B	328C-24	5 1/4	10 3/4	2 5/8



Western Electric Inter-telephone Systems

System No. 1

Selective Ringing—Selective Talking



System No. 1—Showing 4 Stations in One System

SERVICE.—For use in business organizations, industries, stores, institutions, large residences, etc., where frequently, more than one conversation will take place at the same time, where instantaneous connections without loss of time are necessary and where the highest grade of transmission is required.

OPERATION.—Each station can (by merely pressing a button) selectively ring and talk with any other station without disturbing the rest of the stations in the system and as many separate conversations can be carried on simultaneously as there are pairs of Inter-telephones. For example, in a system consisting of six Inter-telephones, three separate conversations can be carried on at the same time.

For each station in the system, one push button key is required in each Inter-telephone. For detail description of these keys and method of operation, refer to the general description outlined previously.

CAPACITY.—The Inter-telephones are available in standard sizes of 6, 12, 16, 20 and 24 buttons.

TYPES OF INTER-TELEPHONES.—Wall, desk or hand set Inter-telephones may be used interchangeably in this system. The Inter-telephones listed below are described in detail elsewhere.



No. 1324-C Type Metal Wall Inter-telephone



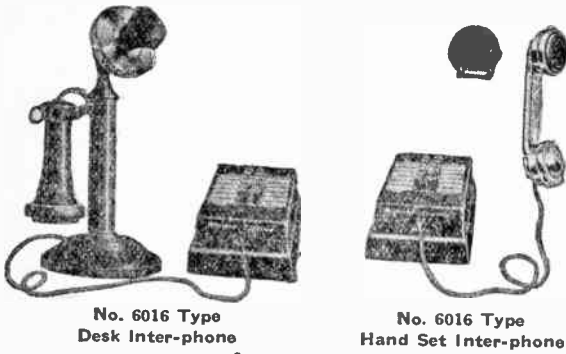
No. 1355-C Type Metal Wall Inter-telephone

No. of Buttons	WALL TYPE INTER-TELEPHONES		Desk Set Inter-phones	Hand Set Inter-phones
	Surface Metal	Flush Metal		
6	1324C-6	.....	6016D-6	6016H-6
12	1324C-12	.....	6016D-12	6016H-12
16	1324C-16	*1355C-16	6016D-16	6016H-16
20	1324C-20	*1355C-20	6016D-20	6016H-20
24	1324C-24	*1355C-24	6016D-24	6016H-24

*NOTE.—Dimensions of outlet boxes for these Inter-telephones are outlined on preceding page.

Western Electric Inter-phone Systems

System No. 1—Continued
Selective Ringing—Selective Talking



No. 6016 Type
Desk Inter-telephone

No. 6016 Type
Hand Set Inter-telephone

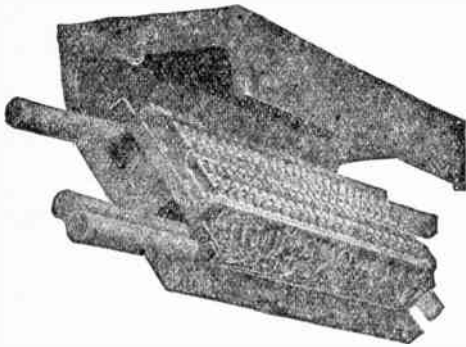
Accessories
Cable

For connections between the various stations, cable specially designed for Inter-phones can be supplied. A system requires a sufficient amount of cable for connection to each station, the cable being run by the shortest or most convenient route between the various station locations. This cable includes the necessary number of wire conductors (two pairs for battery leads and one pair for each station in the system) and is furnished in three different types to suit various locations and conditions:

Type	6 Stations	12 Stations	16 Stations	20 Stations	24 Stations
Fireproof braid . . .	No.134B	No.141B	No.157B	No.158B	No.136B
Green cotton braid.	No.155B	No.156B	.....	.....	.....
Lead covered	No.134B	No.141B	No.157B	No.158B	No.136B

These cables are listed in detail elsewhere.

Cable Terminals



No. 19B—Cable Terminal with Cable Connections

A cable terminal should be used wherever a junction is to be made between cables. For example: Where an outside lead-covered cable is connected to an interior cable, or wherever a branch is taken off from the main cable. In cases where the cable can be run direct to the Inter-telephone, no cable terminal is necessary. The number of cable terminals required should be determined by the installer.

For 6 and 12 button systems use the No. 19A cable terminals. For 16, 20 and 24 button systems use the No. 19B cable terminals.

Cable terminals are described in more detail elsewhere.

Batteries

Not more than twelve Blue Bell dry cells will be necessary for operating the system. (Five cells for the talking circuit; four to seven cells for the ringing circuit, depending upon length of line.)

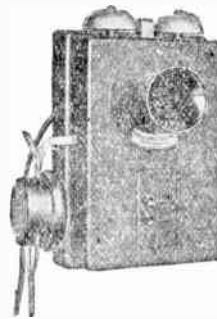
The cells can be placed in the basement or any other accessible place.

Detailed information for installing, including wiring diagrams, battery requirements, cable connections, etc., are included in our bulletin, "Installing and Maintaining Western Electric Inter-phones," which will be furnished upon request.

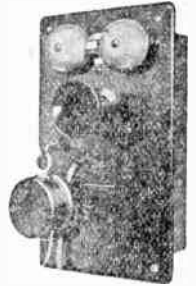
Western Electric Inter-phones

Description of Metal Wall Inter-phones
Nos. 1527C and 1539C Types

Selective Ringing—Common Talking Service



No. 1527C-2 Type



No. 1539C-1 Type

General

The Nos. 1527C and 1539C Inter-phones represent the highest development yet attained toward the standardization of design and construction of Common Talking Type Inter-phones.

This result is due to the exceptional engineering skill employed in producing a universal Inter-telephone that is simple, yet pleasing in design; compact, yet with every part accessible for instant inspection; rugged, yet light in weight and efficient in operation.

Construction and Flexibility

The principal features of these Inter-phones are:

Surface and flush type Inter-phones so wired as to be adaptable for use in any of our "Common Talking" Inter-telephone systems.

An interchangeable push button arrangement provides for readily furnishing Inter-phones from stock in capacities of 1, 2, 3, 4, 6 and 8 buttons as required.

Circuit labels in each Inter-telephone together with an envelope containing strap wires and a diagram of connections give clear, concise instructions for universally connecting the completely equipped sets for any of our Common Talking Systems.

The push button arrangement provides for the future growth of an Inter-telephone system by simply ordering push button units of the required capacities without having to remove or dismantle the sets from the system. (This assumes that cable including spare wires is originally installed.)

Finish of Inter-phones

The metal parts of the Nos. 1527C and 1539C Inter-phones with the exception of the transmitter and bells are treated with the Parker Rustproof Process. This consists of treating the parts in a hot chemical bath, which changes the surface of the metal to a non-rusting basic phosphate.

The protecting surface provided by the Parker Process does not add an additional coating of some other non-oxidizing material, but it is practically a part of the metal itself and prevents rust from spreading if it should start by the exposure of the bare metal at any spot.

Durable black enamel baked on (over the Parkerized surfaces) provides a tough elastic, non-chipping finish, two coats of the enamel being applied on surfaces exposed to view.

Of Interest to Contractors

The universal and flexible feature of these new metal wall Inter-phones is of special importance since it now enables contractors and dealers to carry complete stocks of Inter-phones for adoption to any of our Common Talking Systems with but a small amount of investment.

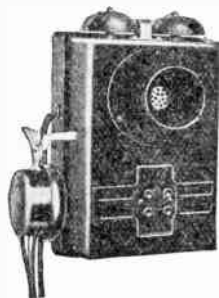
Western Electric Inter-phones

Description of Metal Wall Inter-phones

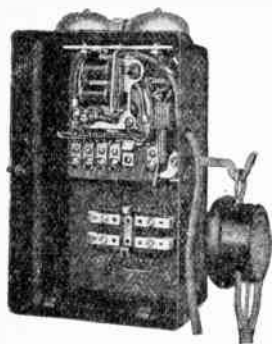
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No. 1527C Type Wall Inter-phones

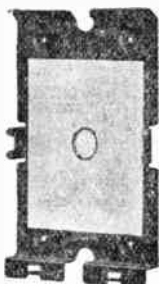
Surface Mounting



No. 1527-4 Type



Interior of Housing



Backboard

The No. 1527C Type Inter-phone has a surface mounting metal housing which contains all of the talking and signalling apparatus, also a metal backboard, which is furnished for mounting the set to the wall.

The housing of the set is of rugged construction, being formed out of sheet steel and is equipped with hinge hooks which match up with slots in the base of the metal backboard. This arrangement permits fastening the backboard in place on the wall and then mounting the housing unit to it.

The hinge arrangement of this set enables the installer to swing down the housing unit from the backboard (see illustration) for making connections to the terminals; also to permit interior inspection of the set at any time after its installation.

The metal backboard is designed to permit the entrance of wires or cabling from either the top, bottom or center of the set; also, a metal guide ring is located near the cable entrance at the base of the backboard so that the connecting wires may be looped through this ring to hold them in place and provide a proper bending point when the housing is swung forward.

The finish is durable dull black enamel with nickel trimmings (see general notes on "Finish of Inter-phones").

Code No.	No. of Buttons	For Systems	DIMENS. HOUSING, INCHES		
			Height	Width	Depth
1527C-0	0	7, 20 and 21	7½	5	2⅝
1527C-1	1	{ 7, 8, 9, 10, 12, 14, 15, 18, 20, and 21 }	7½	5	2⅝
1527C-2	2	8, 9, 10, 20 and 21	7½	5	2⅝
1527C-3	3	11, 12, 20 " 21	7½	5	2⅝
1527C-4	4	11, 12, 20 " 21	7½	5	2⅝
1527C-6	6	11, 12, 20 " 21	7½	5	2⅝
1527C-8	8	11, 12, 20 " 21	7½	5	2⅝

Western Electric Inter-phones

Description of Metal Wall Inter-phones

Continued

No. 1539C Type Wall Inter-phones

Flush Mounting



No. 1539C-2 Type



Outlet Box



Back of Face Plate

The No. 1539C type Inter-phone has a flush steel face plate on which is mounted all of the talking and signalling apparatus, also a metal outlet box which is furnished for mounting the set in the wall.

The outlet box is of unique design in that metal aligning strips are fastened at the top and bottom front of the box (see illustration), so as to properly align the set after the face plate unit is fastened to the outlet box (in case the outlet box is installed out of plumb). It is equipped with adjustable ears for mounting it in the wall, the same as are furnished on standard sectional outlet boxes. Knockouts are provided at both the top and bottom for the entrance of ½ inch conduit or connecting wires.

The face plate support for installer is an added feature of this set, consisting of a wire hook mounted on a small card with printed instructions for its use. This hook is for temporarily supporting the Inter-phone face plate, of flush type sets, during installation, so that the wires may be readily connected to the terminals by the installer.

The finish is durable dull black enamel with nickel trimmings (see general notes on "Finish of Inter-phones").

Code No.	No. of Buttons	For Systems	DIMENSIONS, INCHES					
			FACE PLATE Height	FACE PLATE Width	OUTLET BOX Height	OUTLET BOX Width	OUTLET BOX Depth	
1539C-0	0	7 and 20	9	5⅝	7½	4	2⅝	
1539C-1	1	{ 7, 8, 9, 10, 12, 14, 15, 18, 20 }	9	5⅝	7½	4	2⅝	
1539C-2	2	8, 9, 10 and 20	9	5⅝	7½	4	2⅝	
1539C-3	3	11, 12, and 20	9	5⅝	7½	4	2⅝	
1539C-4	4	11 and 12	9	5⅝	7½	4	2⅝	
1539C-6	6	11 " 12	9	5⅝	7½	4	2⅝	
1539C-8	8	11 " 12	9	5⅝	7½	4	2⅝	

Western Electric Inter-phones

Description of Inter-phones
 Selective Ringing—Common Talking Service
No. 6034 Type Desk Set Inter-phones



No. 6034-BE

No. 6034-P

A compact type of desk Inter-phone embodying all of the necessary talking and signalling equipment and retaining in design the same general appearance of the standard type of desk telephone.

The stands are equipped with watch-case receivers and finished in dull black enamel with nickel trimmings, presenting a neat and attractive appearance.

The desk stands of the Nos. 6034AP and BE Inter-phones are each equipped with a push button and buzzer. The push button is mounted in a convenient position in the stem of the stand for signalling purposes and the buzzer is mounted in the base of the stand for receiver calls.

The four and eight button types of Inter-phones have the push buttons mounted in the base of the desk stands (including blank name plates) for signalling the various stations in a system, also a separate bell is furnished for receiving the calls.

INCLUDES

Code No.	No. of Buttons	DESK STAND Code No.	Cord Ft.	Bell	Connecting Block	For System
6034AP	1	1020BG	6	*	2 No. 11A	12
6034BE	1	1420BG	6	*	12A	14 and 15C
6034M	4	1020AS	6	11B	8E	11, 12
6034P	8	1020AT	6	11B	8F	11, 12

*Buzzer in base of desk stand.



No. 6034 Type Hand Set Inter-phones

These Inter-phones are for the same service as the four and eight button desk types as described above except that a hand set and a separate push button block are furnished in place of the desk stand.

INCLUDES

Code No.	No. of Buttons	HAND SET Code No.	Cord Ft.	PUSH BUTTON Code No.	BLOCK Cord Ft.	Bell	Connecting Block	For System
6034AZ	4	1003K	6	104AC	6	11B	8G	11, 12
6034BB	8	1003K	6	108AC	6	11B	8H	11, 12

Nos. 6042 and 6043 Types Hand Set Inter-phones

The Inter-phone transmitter and receiver are a part of the hand set, which can be held and operated with one hand, leaving the other free. A bar marked "Press to talk" mounted in the hand set handle is held down by the natural position of the hand while talking. When not in use, the hand set can be hung on a hook or laid down in any position. The hand set is finished in dull black.

Western Electric Inter-Phones

Description of Inter-phones—Continued
 Selective Ringing—Common Talking Service
Nos. 6042 and 6043 Types—Hand Set Inter-phones
 Apparatus Unit (or Box). In connection with most "one button" hand sets it is necessary to use Apparatus Units containing terminals and other accessories. Two types can be furnished.

Surface Mounting



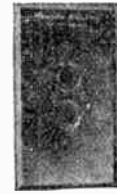
No. 383 Type

Surface mounting apparatus Units (No. 383 type) are equipped with an insulated base, black finished round metal cover and nickel hook. Approximate size $3\frac{1}{8}$ inches in diameter by $1\frac{5}{8}$ inches deep.

Flush Mounting



No. 382 Type Apparatus Unit



No. 12007 Face Plate



Type AA Switch Box

Flush mounting apparatus Boxes (No. 382 type) are intended to be set in the wall and are equipped with a brush brass finished face plate. These boxes consist of three parts—a Gem A Union sectional switchbox, an apparatus unit and a face plate. The face plate is $4\frac{1}{2} \times 2\frac{3}{4}$ inches, the wall box $2 \times 3 \times 3$ inches deep.

An important point to be observed is that wall box and face plate are the same as those used in electric light wiring for push button switches. This feature is of special importance to the contractor, since it allows him to draw on his own stock of Union sectional switchboxes and face plates. For this reason we are prepared to furnish sets either complete, including wall box and face plate, or minus these parts.

How Hand Sets Are Connected to Apparatus Units



With the surface apparatus unit the hand set cord is permanently attached to the hand set and apparatus unit.

With the flush apparatus box the hand set cord is permanently attached to the box. Except the Numbers 6042E and K (systems 12A and 12B). These cords are equipped with plugs. The plug can be inserted or removed from the receptacle located in the center of the face plate.

This feature makes it possible to discontinue telephone service at any point by simply removing the plug and the hand set.



No. 6042 Type Hand Set

No. 6042 Flush Types

No. 6043 Type Hand Set

No. of Buttons	HAND SET			APPARATUS (FLUSH TYPE)			For Systems
	Code No.	Code No.	Cord Ft.	Code No.	Switchbox	Face Plate No.	
1	6042E	**1003G	3	382E	None	None	12 & 12A
	or 6042K	**1003G	3	382EB	Gem A	12007	
1	6042D	1003K	3	382J	None	None	12B
	or 6042M	1003K	3	382JB	Gem A	12007	
1	6042AE	1003AA	3	382JB	None	None	14 & 15C
	or 6042AF	1003AA	3	382J	Gem A	12007	
1	6042G	1003C	3	382J	None	None	18
	or 6042L	1003C	3	382JB	Gem A	12007	

*Notes. Switch boxes $2 \times 3 \times 3$ inches deep (standard).
 **Hand set cord equipped with plug.

No. 6043 Surface Types

No. of Buttons	Code No.	Hand Set	Cord Ft.	Apparatus Box (Surface Type)	For Systems
1	6043E	1003J	3	383J	12 & 12A
1	6043D	1003E	3	383J	12B
1	6043P	1003AB	3	383J	14 & 15C
1	6043G	1003P	3	383J	18

Western Electric Inter-phones

Western Electric Inter-phones

Annunciators for Systems Nos. 8, 9, and 12B

Description of Annunciators



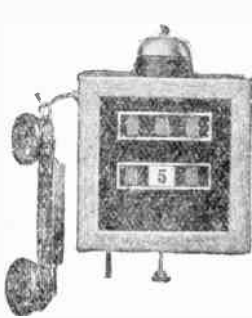
No. 36005 Master Station Two-way Service

Selective Ringing—Common Talking Service

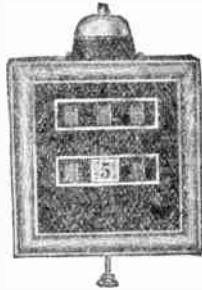
The finish of the annunciators used for our various Inter-
phone systems is light golden oak and the cabinets are neat
and attractive in design. Special finishes can be furnished on
order at a slight additional expense.

The drops used in all hand reset annunciators are gravity
type and made of decarbonized steel and brass, constructed
to withstand the most severe service. The drops are shallow
in design to permit neatness and compactness in the annun-
ciator, also they remain locked against all vibration, falling
only when current passes through the magnet.

The drops used in the electrical reset annunciators are the
Semaphore gravity type. Two lock drops are combined in
one unit, self-locking in either position. When energized,
the right-hand magnet throws and locks the shutter to the
left-hand side. The left-hand magnet, when operated by the
reset button of the annunciator, returns the shutter to its
original position.



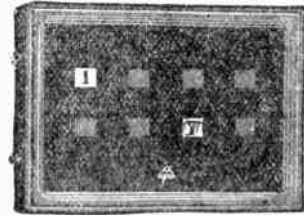
No. 360011 Master Station One-way Service



Janitor's Annunciator Nos. 361332-361339

Annunciators for System No. 12A

Nos. 401 and 407 Types



No. 401 Type Annunciator

Hand reset type wooden case annunciators with golden oak
finish. Other finishes can be furnished on order at a slight
additional expense.

The Nos. 360000 to 360008 series are for use in System
No. 12B two-way ringing service.

The Nos. 360009 to 360017 series are for use in System
No. 12B one-way ringing service.

The Nos. 361332 to 361339 series are for use in apartment
house Systems Nos. 8 and 9.

An electrical reset type annunciator for use in connection
with our No. 12A system master station and may also be
used for other purposes where a standard type of electrical
reset annunciator is desired.

The drops (as described above) are mounted on the back-
board and are regularly furnished with the reset for the total
number of drops.

The finish of the wood case (No. 401 type) is golden oak.
The finish of the metal case (No. 407 type) is dull black.
Other finishes are "special."

No. of Drops	USED FOR		Systems Nos. 8 and 9 List No.	Drop Arrangement (Horizontal Rows)
	SYSTEM No. 12B Two-way Service List No.	One-way Service List No.		
2	360000	360009	.....	1
4	360001	360010	361332	1
6	360002	360011	361333	2
8	360003	360012	361334	2
10	360004	360013	361335	2
12	360005	360014	361336	2
15	360006	360015	361337	3
18	.....	.....	361338	3
20	360007	360016	.....	2
24	360008	360017	.....	2
25	.....	.....	361339	5

NOTE.—Larger sizes can be furnished on order.

Each of the above List Nos. (360000 to 360017) cover the
annunciators only and do not include the hand set which must
be ordered separately, as follows:

Hand Set Inter-phones For System No. 12B Annunciators

- No. 1003D, hand set, black finish, 3 foot cord.
- No. 141A, hook furnished on order for hanging hand set.

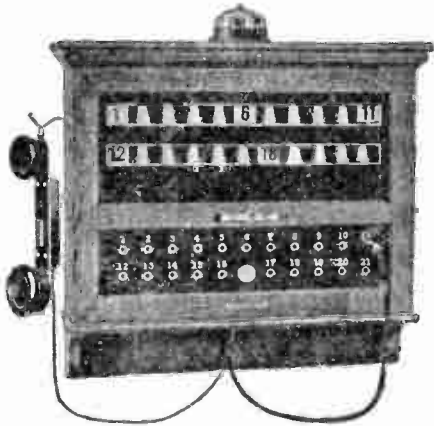
No. of Drops	ARRANGEMENT		DIMENSIONS		
	Across	Down	High	Wide	Deep
4	2	2	9 ³ / ₈	7 ¹ / ₄	2 ¹ / ₂
6	3	2	9 ³ / ₈	9 ¹ / ₂	2 ¹ / ₂
8	4	2	9 ³ / ₈	11 ³ / ₄	2 ¹ / ₂
10	4	3	11 ³ / ₈	11 ³ / ₄	2 ¹ / ₂
12	4	3	11 ³ / ₈	11 ³ / ₄	2 ¹ / ₂
15	5	3	11 ³ / ₈	14 ¹ / ₂	2 ¹ / ₂
16	6	3	11 ³ / ₈	16 ¹ / ₄	2 ¹ / ₂
18	6	3	11 ³ / ₈	16 ¹ / ₄	2 ¹ / ₂
20	5	4	13 ³ / ₈	14	2 ¹ / ₂
22	6	4	13 ³ / ₈	16 ¹ / ₄	2 ¹ / ₂
24	6	4	13 ³ / ₈	16 ¹ / ₄	2 ¹ / ₂

NOTE.—Intermediate or larger sizes in sets of two drops
can be furnished.

Western Electric Inter-phones

Annunciators for Systems Nos. 10 and 18

Selective Ringing—Common Talking Service



Master Station Annunciator
Nos. 1028 and 1051

A hand reset type wooden case annunciator with golden oak finish, presenting a neat and attractive appearance. Other finishes can be furnished on order at a slight additional expense. The annunciators are equipped with a number of drops and jacks, a push button for ringing, a hand or desk set Inter-phone (which must be ordered separately) and a cord and plug for calling and answering calls.

The drops and jacks will be numbered from one up, unless otherwise specified. The number of vestibule drops for System No. 10 must be specified on order. The combined resistance of bell and drops in series is 10 ohms resulting in lengthening the life of the battery and lowering the maintenance cost.

The Nos. 1028 to 1039 series are for use in System No. 18. For details of operation, see listing of that system.

The Nos. 1040 to 1051 series are for use in System No. 10. For details of operation, see listing of that system.

No. of Drops	System No. 18 List No.	System No. 10 List No.	ARRANGEMENT OF DROPS AND JACKS		OUTSIDE DIMENSIONS, INCHES		
			Across	Down	Height	Width	Depth
10	1028	1040	5	2	23 1/4	12 1/2	5 3/4
12	1029	1041	6	2	23 1/4	14	5 3/4
14	1030	1042	7	2	23 1/4	16	5 3/4
18	1031	1043	9	2	23 1/4	18 1/2	5 3/4
20	1032	1044	10	2	23 1/4	20	5 3/4
24	1033	1045	12	2	23 1/4	23	5 3/4
30	1034	1046	10	3	29 1/2	20	5 3/4
36	1035	1047	12	3	29 1/2	23	5 3/4
42	1036	1048	14	3	29 1/2	26	5 3/4
48	1037	1049	12	4	31 1/2	23	5 3/4
56	1038	1050	14	4	31 1/2	26	5 3/4
60	1039	1051	12	5	40 3/4	23	5 3/4
70			14	5	40 3/4	23	5 3/4

NOTE—Larger sizes can be furnished on order.

Each of the above List Nos. cover the annunciator only and does not include the Inter-phone, which must be ordered separately as follows:

Desk or Hand Set Inter-phones
For Systems Nos. 10 and 18 Annunciators

- No. 1003K, hand set, black finish, 3 foot cord.
- No. 1320BF, desk stand, black finish, 5 1/2 foot cord.

Hooks

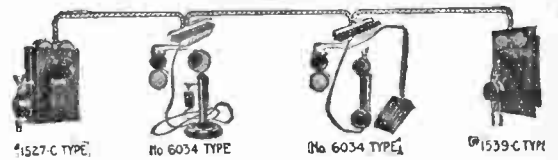
A No. 141A hook can be furnished for hanging the hand set to the side of the annunciator.

Connecting Cords

One or two pairs of connecting cords can be furnished when specified on order. These cords are for use only in System No. 18 as described under listing of System No. 18.

Western Electric Inter-phone Systems

System No. 11
Selective Ringing—Common Talking



System No. 11—Showing 4 Stations in One System

SERVICE.—For use in establishments where conversations can be limited to one at a time.

OPERATION.—Each Inter-phone in the system is equipped with a number of push buttons (one for each other station in the system). By depressing the button marked with the name or number of the station wanted, the bell at that station will ring and there only.

Any station in the system can selectively ring any other station. Only one conversation can be carried on at a time.

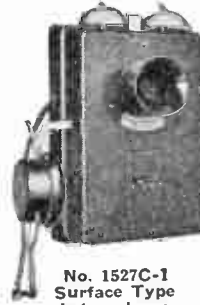
CAPACITY.—The wall type Inter-phones can be furnished in capacities of 2, 3, 4, 6 and 8 buttons, accommodating 3, 4, 5, 7 and 9 stations respectively in a system.

The desk and hand set Inter-phones are furnished in capacities of 4 and 8 buttons, accommodating 5 and 9 stations respectively in a system.

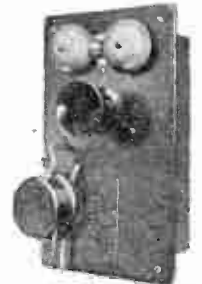
TYPES OF INTER-PHONES.—Wall, desk or hand type Inter-phones may be used interchangeably in the same system. The Inter-phones as coded below are described in detail elsewhere.

No. of Buttons	WALL TYPE INTER-PHONES		Desk Set	Hand Set
	Surface	Flush	Inter-phones	Inter-phones
2	1527C-2	*1539C-2	.....	.....
3	1527C-3	*1539C-3	.....	.....
4	1527C-4	*1539C-4	6034M	6034AZ
6	1527C-6	*1539C-6	.....	.....
8	1527C-8	*1539C-8	6034P	6034BB

*NOTE.—For dimensions of outlet boxes, refer to another page.



No. 1527C-1
Surface Type
Inter-phone



No. 1539C-3 Flush
Type Inter-phone

Accessories

Retardation Coils

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

Cables

For connection between the various stations, cable especially designed for Inter-phones can be furnished. This cable includes 3



No. 51-H

common wires and one individual wire for each station.

Description	Code, Nos.		
	With Fire-proof Braid	With Green Cotton Braid	With Lead Covering
For 3 and 4 Button Systems	161	142	161
" 6 " 8 " "	162	...	162

NOTE.—Cables are described in detail elsewhere.

Connecting Blocks

Where a junction is to be made between cables, or wherever a branch is taken off the main cable, a connecting block should be used. In cases where the cable can be run direct to the Inter-phone, the connecting block is not required.

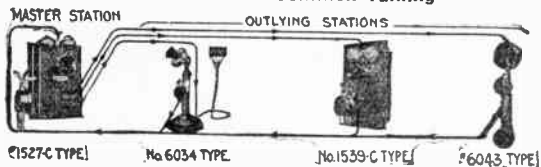
Batteries

Five Blue Bell dry cells are required for the operation of this system, when the distance between the two stations farthest apart is 750 feet or less, and Inter-phone cable, listed above, is used. On lines of greater length it is recommended that instead of increasing the number of battery cells to more than five, larger wire be used.

Western Electric Inter-phone Systems

System No. 12

Master Station—Common Talking



SERVICE.—Consists of one centrally located "Master Station" Inter-phone to which are connected other "outlying station" Inter-phones. The system provides for communication from a central point to different stations and vice versa.

OPERATION.—The Master Station Inter-phone is equipped with a number of push buttons; one for each outlying station in the system. By depressing the button marked with the name or number of the outlying station wanted, the bell at that station will ring and there only.

The outlying stations are equipped with only one button which will ring the master station when depressed.

Only one conversation can be carried on at a time.

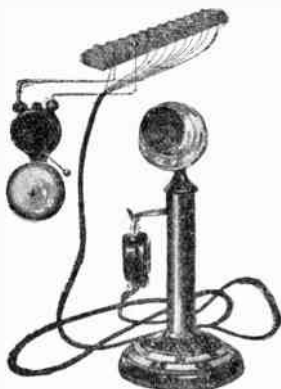
CAPACITY.—One Master Station and from two to eight outlying stations.

TYPES OF INTER-PHONES.—Wall, desk and hand set Inter-phones may be used in this system for either the master or outlying stations. The Inter-phones listed below were described in detail previously.

Master Stations



No. 6034 Hand



No. 6034 Desk

No. of Buttons	METAL WALL TYPE INTER-PHONES Surface	INTER-PHONES Flush	Desk Set Inter-phones	Hand Set Inter-phones
2	1527C-2	*1539C-2	.....	.....
3	1527C-3	*1539C-3	.....	.....
4	1527C-4	*1539C-4	6034M	6034AZ
6	1527C-6	*1539C-6	.....	.....
8	1527C-8	*1539C-8	6034P	6034BB

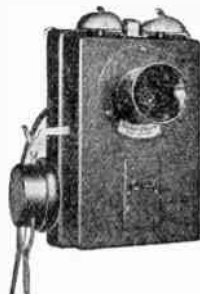
*NOTE.—For dimensions of outlet boxes refer to separate listing of these Inter-phones.

Western Electric Inter-phone Systems

System No. 12—Continued

Master Station—Common Talking

Outlying Stations



No. 1527C-1 Surface Type



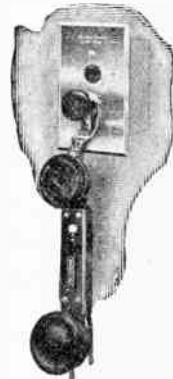
No. 1539C-1 Flush Type



No. 6043E Hand Set



No. 6034 Desk Type



No. 6042K Hand Set

No. of Buttons	Metal Wall Type Inter-phones Surface	Flush	Desk Set Inter-phones	Hand Set Inter-phones
1	1527C-1	*1539C-1	6034AP	*6042K
.....	.....	.....	.....	**6042E
.....	.....	.....	.....	6043E

NOTE.—*For dimensions of outlet boxes refer to separate listing of these Inter-phones.

**No. 6042E is same as No. 6042K, but without face plate and wall box. For details see listing elsewhere.

Accessories Retardation Coils



No. 51-H

A No. 51H retardation coil must be ordered separately with each master station Inter-phone and installed near the battery of the system.

Wiring

For connections between the outlying stations and the master station either cable or insulated wires can be used, depending largely upon the layout of the system. Three common wires are required throughout the system, and in addition, one individual wire from the master to each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable, and at all distributing and junction points, to install connecting blocks. From these connecting blocks separate wires can be run to the Inter-phones. The sizes of cable and the number of connecting blocks required should be determined in accordance with the installation instructions. Cables and connecting blocks are described elsewhere.

Batteries

Five Blue Bell dry cells are required for the operation of this system when the distance between the master station and most distant outlying station is 750 feet or less and No. 22 B. & S. gauge wire (as in the case of Western Electric cable), is used.

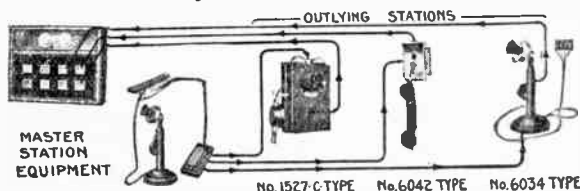
On lines of greater length it is recommended that instead of increasing the number of battery cells to more than five, larger wire be used. This should be determined in accordance with the installation instructions.

The Blue Bell dry cells can be placed in the basement or any other accessible place.

NOTE.—Detailed information covering wiring diagrams, connection of wires and cables, connecting blocks, etc., can be found in our booklet, "Installing and Maintaining Western Electric Inter-phones," which will be furnished upon request.

Western Electric Inter-phone Systems

System No. 12A
Master Annunciator System
Two-way Ringing—Common Talking



SERVICE.—Especially adapted for schools where the principal may call the teachers individually and the teachers can call the principal.

Similar to the No. 12 System except that the master station includes an annunciator for identifying the calls from the outlying stations.

Only one conversation can be carried on at a time.

OPERATION.—The master station Inter-phone includes a push button block having as many buttons as there are outlying stations, also one extra button for electrically resetting the annunciator drops. To call an outlying station, the push button marked with the name or number of the party wanted is depressed. This rings the bell at the station selected and there only.

Each outlying station Inter-phone is equipped with a push button which signals the master station when depressed. This call will also be registered at the master station by the operation of the annunciator drop corresponding to station calling.

CAPACITY.—One master station and 3 up to 20 or more outlying stations.

Types of Inter-phones

Master Stations

To consist of the following:

1. A desk set Inter-phone with a 5½-foot flexible conductor cord.
2. A push button block with or without weighted base and having a flexible conductor cord of any length desired.
3. A connecting block.
4. A surface type annunciator.

Each item must be ordered

separately and in accordance with the following code numbers and capacities; larger capacities can be furnished.

No. of Outlying Stations	No. of Buttons	Push Button Block	Connecting Block	ANNUNCIATOR
		Code No.	Code No.	Type
3	4	104A	7900	1320BF 6G 401
5	6	106A	7900	1320BF 6G 401
7	8	108A	7910	1320BF 6G 401
10	12	.....	7921	1320BF 6B 401
14	16	.....	7930	1320BF 6B 401
17	20	.....	793	1320BF 6F 401

*One button of the push-button block is required for every 8 annunciator drops for electrically resetting drops.

**Connecting cords for push-button blocks may be ordered separately in any length (6 feet of cord being the average length).

Outlying Stations

Wall, Desk or Hand Set Inter-phones may be used. The Inter-phones are the same as specified for the Outlying Stations of System No. 12.

Accessories
Retardation Coils

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

Wiring

Two common wires are required throughout the system and in addition two individual wires from the master to each outlying station. Cable or insulated wires may be used. Where there is a long run of a large number of wires, it will be found economical to use cable and at all distributing and junction points, to install connecting blocks. From these connecting blocks separate wires can be run to the Inter-phones.

Batteries

The batteries for this system are same as for System No. 12.



No. 51-H

Western Electric Inter-phone Systems

Master Annunciator System No. 12B

One-way or Two-way Ringing—Common Talking
Formerly Known as Inter-phone Systems Nos. 16B and C

SERVICE.—Provides for communication between a master station annunciator and a number of outlying stations.

The master station annunciator (Mechanical Reset Type) is equipped with a hand set Inter-phone, and can be obtained with or without push buttons, depending upon the kind of ringing service required as follows:

Two-way Ringing

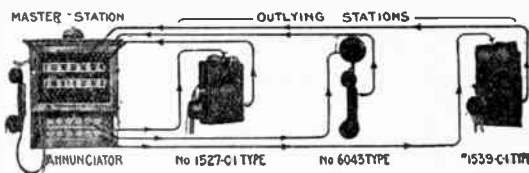


Fig. 1

Annunciator equipped with push buttons, one for each outlying station) enabling the outlying stations to ring the master station and the master station to ring the outlying stations individually.

One-way Ringing

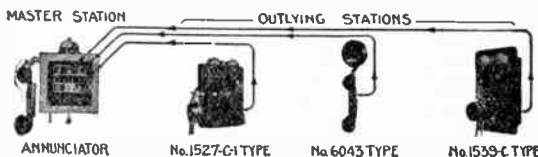


Fig. 2

(Annunciator without push buttons) enabling the outlying stations to ring the master station but the master station cannot ring the outlying stations.

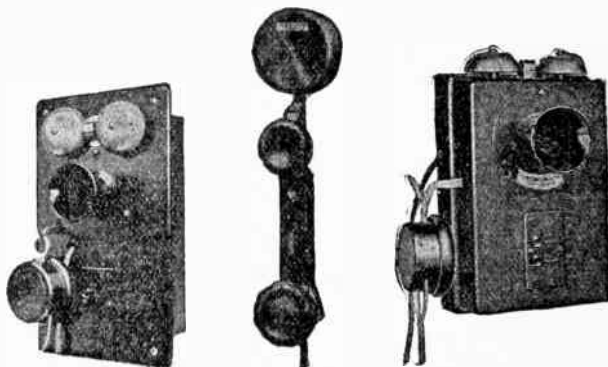
Operation

Each outlying station is equipped with a push button which signals the master station when depressed. The call will also be registered at the master station by the operation of the annunciator drop corresponding to the station calling.

Only one conversation can be carried on at a time.

Capacity

One master station and any number of outlying stations up to 24 or more.



No. 1539 C-1
Wall Inter-phone

No. 6043
Hand Set Inter-phone

No. 1527 C-4
Wall Inter-phone

Western Electric Inter-Phone Systems
Master Annunciator System No. 12B—Continued
 Two-way or One-way Ringing—Common Talking



No. 360005—Two-way

Master Station

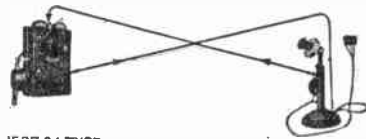
This consists of a black finished hand set with a three-foot cord and an annunciator with hook for holding the hand set.

The annunciator and hand set must be ordered separately.

Finish of annunciator is golden oak. Light or dark oak finish can be furnished without additional charge.

Western Electric Inter-Phone Systems
System No. 14

Two-station Private Line



No 1527-C1 TYPE

No 6034 TYPE

SERVICE.—For use where only two stations are required and where the sets are distantly located from each other.

Only two wires are used for connecting the Inter-phones; dry cells being required at each station.

NOTE.—Refer also to other pages for description of Inter-phones outfits composed of two wall or hand set Inter-phones and the necessary installing material complete.

OPERATION.—Either station can ring the other by simply depressing the push button of the set.

TYPES OF INTER-PHONES.—Wall, desk or hand set Inter-phones may be used interchangeably.

The Inter-phones listed below are described in detail where listed separately.

Annunciators

Two-way		One-way	
List No.	No. of Drops	List No.	No. of Drops
360000	2	360009	2
360001	4	360010	4
360002	6	360011	6
360003	8	360012	8
360004	10	360013	10
360005	12	360014	12
360006	15	360015	15
360007	20	360016	20
360008	24	360017	24

NOTE.—For dimensions of annunciators see listing of separate annunciators.

One drop for each outlying station.

Two-way station is also equipped with push buttons corresponding to the number of drops.

Hand Sets

A No. 1003D hand set must be ordered separately with each annunciator. This set is equipped with a three-foot cord, and can be hung on the hook on the side of the annunciator.

Outlying Stations

Wall or hand set Inter-phones may be used. The Inter-phones listed below are described in detail where listed separately.

No. of Buttons	WALL TYPE INTER-PHONE (METAL)		HAND SET INTER-PHONES	
	Surface	Flush	Surface	Flush
1	1527C-1	*1539C-1	6043D	6042M
				*6042D

*No. 6042D is the same as No. 6042M, but without face plate and wall box.

Wiring

For one-way ringing service (annunciator without push buttons) one wire, common to all stations in the system and in addition, one individual wire from the master station to each outlying station.

For two-way ringing service (annunciator equipped with push buttons) one-wire, common to all stations in the system also two individual wires from the master station to each outlying station.

Batteries

Only one battery is required for the operation of the system. This should consist of three or four Blue Bell dry cells, where the distance between the master station and the farthest outlying station is 250 feet or less and No. 22 B. & S. gauge copper wire is used. On lines of greater length it is recommended that instead of increasing the number of dry cells to more than four, larger wires be used as follows:
 250 to 400 ft. use 20 B. & S. gauge copper wire
 400 to 600 ft. use 13 B. & S. gauge copper wire
 600 to 1000 ft. use 16 B. & S. gauge copper wire



No. 6034 Type Desk Set



No. 6043 Type Hand Set



No. 6042 Type Hand Set

No. of Buttons	WALL TYPE INTER-PHONES (METAL)		Desk Set Inter-phones	HAND SET INTER-PHONES	
	Surface	Flush		Surface	Flush
1	1527C-1	*1539C-1	6034BE	6043P	6042AE
					*6042AF

*No. 6042AF is same as No. 6042AE but without face plate and wall box.

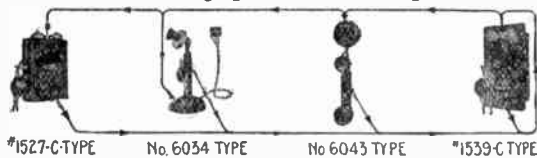
Wiring and Battery Requirements

A battery of three Blue Bell cells is required at each station to furnish current for talking and ringing if the length of line is less than 750 feet. If the length of the line is increased, additional dry cells are required at each station to insure satisfactory ringing. The following list indicates the additional dry cells required at each station:

Length of Line Between Stations	ADDITIONAL NUMBER OF CELLS FOR EACH STATION —B. & S. GAUGE COPPER WIRE—			
	No. 12	No. 14	No. 16	No. 18
750 to 1000 ft.	1	1	1	2
1000 " 1500 "	1	1	1	3
1500 " 2000 "	1	2	3	..
3000 " 4000 "	2	3	..	..
4000 " 5000 "	2	..	..	..
5000 " 6000 "	3	..	..	..

Western Electric Inter-phone Systems

System No. 15-C
Code Ringing—Common Talking



Showing 4 Stations in One System

SERVICE.—A simple and inexpensive system for small residences, warehouses, stores or mercantile establishments, where only a few stations are required and the number of calls between the stations are not frequent.

Requires only three line wires throughout the system for two or more stations.

Only one conversation can be carried on at a time.

OPERATION.—Each station is equipped with one push button which, when depressed rings the bells at all the other stations.

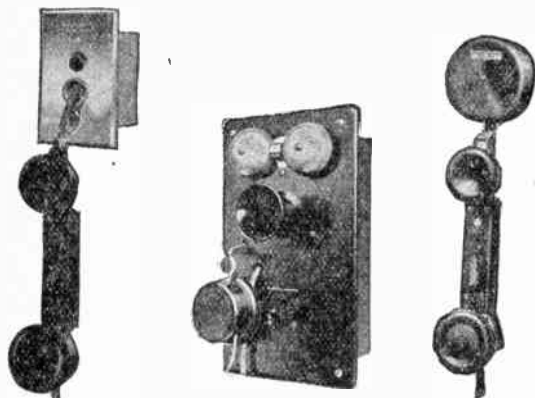
The various stations are called by signalling each one with a different code ring; for instance: Two rings for Station No. 2, three rings for Station No. 3, etc.

If more than six stations are in service, signalling code mistakes are likely to occur, due to the possibility of misunderstood signals. System No. 11 is recommended where the initial installation comprises more than four or six stations.

NOTE.—In case only two stations are required (wall or hand set Inter-phones), complete equipment ready for installation can be obtained by referring to Inter-phone outfits.

CAPACITY.—Two to six stations may be operated in this system. More stations can be added but at the expense of ease and certainty in signalling.

TYPES OF INTER-PHONES.—Wall, desk or hand set Inter-phones may be used in the system. The Inter-phones coded below are described in detail elsewhere.



No. 6042 Type No. 1539C-1 No. 6043 Type

No. of Buttons	METAL WALL TYPE INTER-PHONES		Desk Set Inter-phones	HAND SET INTER-PHONES	
	Surface	Flush		Flush	Surface
1	1527C-1	*1539C-1	6034BE	*6042AE	6043P
				**6042AF	

NOTE.—*For dimension of outlet boxes refer to separate listings elsewhere.

**No. 6042AF is same as 6042AE, but without face plate and wall box, see separate listing of Hand Sets.

Accessories
Retardation Coil

A No. 51H retardation coil must be ordered separately and installed near the battery of the system.

Wiring

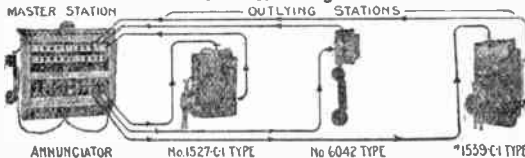
Three wires are required for connecting the Inter-phones for two or more stations.

Batteries

Five Blue Bell dry cells are required for the operation when the length of the line is 750 feet or less, and not more than four stations are to be used, connected by Nos. 20 or 22 B. & S. gauge copper wire. If more than four Inter-phones are required or if the line is longer than 750 feet, larger wires should be used in accordance with the installation instructions. The Blue Bell dry cells can be placed in the basement or any other accessible place.

Western Electric Inter-phone Systems

Master Annunciator System No. 18
Non-Interfering



Showing Master and 3 Outlying Stations

SERVICE.—For use in hotels, clubs, schools, hospitals, etc., to provide for communication between a central or master station and a larger number of outlying stations, as follows:

1. The Master Station can selectively ring and talk with any of the outlying stations and the outlying stations can call the Master Station.

2. Communication can be arranged between any two outlying stations through the medium of one or two connecting cords at the Master Station.

No connection can be made between this system and a public telephone system.

OPERATION.—The Master Station Annunciator consists of a number of drops and jacks (one for each outlying station in the system), a push button for ringing, a hand set Inter-phone and a cord and plug for calling and answering.

1. To call an outlying station, the Master Station operator inserts the plug into the jack corresponding to the station wanted and depresses the ringing button of the annunciator. The operator converses with the outlying station by pressing the talking lever of the Hand Set Inter-phone.

2. Each outlying station Inter-phone is equipped with a push button for ringing the Master Station and at the same time operating one of the annunciator drops, thereby registering the call. The Master Station operator answers by inserting the answering plug into the jack corresponding to the drop operated and pressing the talking lever of the hand set.

3. If one outlying station wishes to converse with another outlying station, a connection can be established by means of a pair of connecting cords (equipped as part of the annunciator when so specified), each cord terminating in separate plugs. This connection is effected as follows:

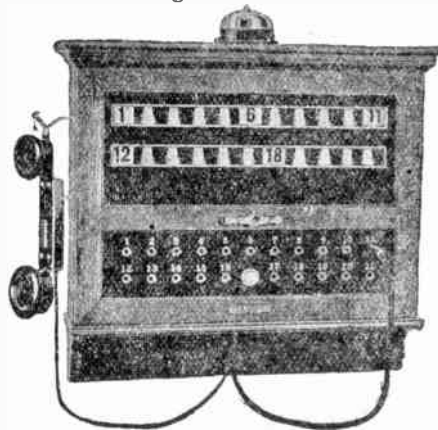
The Master Station operator withdraws the answering plug from the jack of the station calling, inserting in its place one of the connecting cord plugs, and proceeds to call the station wanted as explained above, in item 1. Having secured an answer from the station wanted, the operator again withdraws the answering plug and inserts in its place the other plug end of the connecting cord. This completes the connection between the two outlying stations.

No annunciator supervisory features are provided to indicate the termination of a conversation between outlying stations, it being assumed that such connections are required only on special occasions. Where a large number of connections are required between outlying stations, our No. 1801 lamp signal, Private Exchange Switchboard, is recommended.

CAPACITY.—One master station and 10 to 70 or more outlying stations.

Master Station Annunciators

Wood case with standard oak finish. Other special finishes can be furnished. Drops and jacks will be numbered from one up, unless otherwise specified. For further description see annunciator listings elsewhere.



List No.	No. of Drops
1028	10
1029	12
1030	18
1031	20
1032	24
1033	30
1034	36
1035	42
1036	48
1037	56
1038	60
1039	70

Number covers annunciator only; hand set Inter-phone not included.

Western Electric Inter-phone Systems

Master Annunciator System No. 18—Continued
Non-Interfering

Hand Set Inter-phone for Annunciator

This consists of a No. 1003K hand set.

Hook

A No. 141A hook can be used for supporting the hand set, the hook to be screwed into the side of the annunciator.

Connecting Cords

If Inter-communication between outlying stations is desired, one or two pairs of connecting cords may be ordered as described under Operation (Item 3).

Outlying Stations



No. 1527C-1



No. 1539C-1



No. 6042 Type Hand Set

Wall or hand set Inter-phones may be used. The Inter-phones as coded below are described in detail elsewhere.

No. of Buttons	METAL WALL INTER-PHONES		HAND SET INTER-PHONES	
	Surface	Flush	Flush	Surface
1	1527C-1	1539C-1	6042L	6043G
..	.....	.....	*6042G	.....

*No. 6042G is same as No. 6042L, but without face plate and wall box.

Wiring

One wire, common to all stations in the system is required, and, in addition, two individual wires between the master and each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable and install cable terminals or connecting blocks at all distributing and junction points. From there, the installation can be continued by means of separate wires to the various outlying stations. The size of cable and number of connecting blocks should be determined by the installer in accordance with the installation requirements.

Cables, cable terminals and connecting blocks are listed elsewhere in detail.

Batteries

Five or more Blue Bell dry cells are required for operating the system. The cells can be placed in the basement or any other accessible place.

Detailed information for installing, including wiring diagrams, battery requirements, cable connections, etc., are included in our bulletin, Installing and Maintaining Western Electric Inter-phones, which will be furnished upon request.

Western Electric Inter-phones

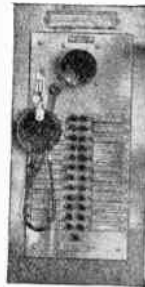
Description of Apartment House Inter-phones
Selective Talking—Non-Interfering Service
Vestibule Inter-phones for Systems Nos. 7, 8, 9, and 10



The vestibule equipment for Systems Nos. 7, 8, 9 and 10 consists of the No. 1562 type Inter-phone and any number of letter boxes.

No. 1562 Type Vestibule Inter-phones

With Armored Receiver Cord



No. 1562 Type Inter-phone

The No. 1562 type vestibule Inter-phone has a metal case with bronze brass finish, arranged for flush mounting. This Inter-phone is provided with the same type of push button keys as the No. 1 System Selective Ringing—Selective Talking System and permits the Vestibule and Suites as well as the Janitor and Suite Inter-phones to carry on conversations at the same time without interference with each other.

The Inter-phones are furnished in 7, 13, 17, 21 and 25 button keys, each button representing one apartment, except the last or odd button which represents the janitor. The function of each of these keys, when operated is to establish connections between the Vestibule and the called Station. When a push button is pressed all the way down the bell on the corresponding station is rung. When the pressure is released, the key assumes an intermediate position, thereby breaking the ringing contact and connecting the called line for conversation. The key is automatically held in this intermediate position by a locking plate until the operation of another button releases the key and restores it to its normal position. Talking current is cut off when the receiver is replaced on the switchhook. The lower or odd button (for calling the janitor) is non-locking in the operating position. This provides a means for releasing the other buttons in the set should some one maliciously operate all of them at one time. The Vestibule Inter-phone is provided with a watch-case receiver and flush type transmitter. The receiver is equipped with a flexible armored cord for its protection.

Brush Brass Finished Face Plate and Metal Outlet Box

Code No.	No. of Buttons	DIMENSIONS, INCHES	
		Height	Width
1562C-7	7	19 1/2	10
1562C-13	13	19 1/2	10
1562C-17	17	19 1/2	10
1562C-21	21	19 1/2	10
1562C-25	25	19 1/2	10

The armored receiver cord complete with receiver is coded as "No. 524W receiver."

Vestibule Mail Boxes

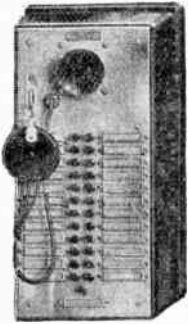
The mail boxes may be obtained in groups of 3 to 12, being assembled complete in units and master-locked for mounting in single or double rows. The boxes are finished in bronze brass, other finishes are special.

The overall dimensions of the individual mail boxes are 5 inches in width and 19 1/2 inches in height.

Write nearest distributing house for bulletin and prices.

Western Electric Inter-phones

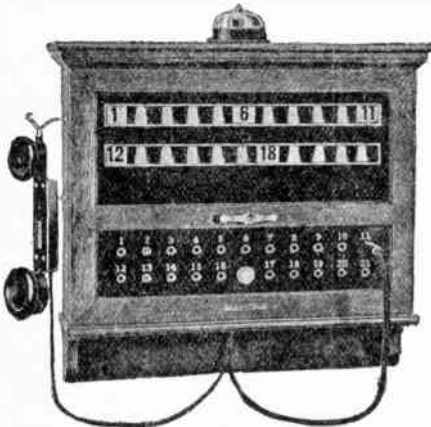
Description of Apartment House Telephones—Cont.
 Selective Talking—Non-interfering Service
 Janitors' and Tradesmen's Inter-phones



No. 1350C-25 Type Inter-phone



Janitor's Annunciator Nos. 361332-361339



Janitor's Annunciator

No. 1350 Inter-phones—Surface Type

The No. 1350 type janitor's and tradesmen's wall Inter-phone has a surface mounting metal case with black finish. No bell is provided in this set as it is used with an annunciator (Nos. 361332 to 361339 type) when calls are to be received at this station. These Inter-phones are made in 7, 13 and 25 button sizes, the construction and operation being the same as outlined under Vestibule Inter-phones. The lower or odd button in each Inter-phone is non-locking in operation and provides connection with the vestibule Inter-phone.

No. of Buttons	Code No.	SYSTEM NO.		DIMENSIONS OF HOUSING, INCHES		
		For Janitor	For Tradesmen	Height	Width	Depth
7	1350C-7	8 and 9	9 and 10	14 5/8	7 1/8	3
13	1350C-13	8 " 9	9 " 10	14 5/8	7 3/8	3
25	1350C-25	8 " 9	9 " 10	14 5/8	7 3/8	3

JANITOR'S ANNUNCIATORS.—Annunciators for systems 8, 9 and 10 are described elsewhere.

Coil and Condenser Box

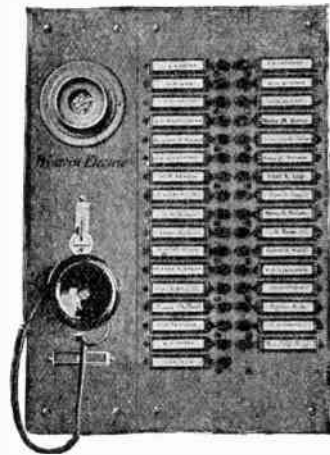
The coil and condenser box is required for each vestibule, janitor's (either wall Inter-phone or annunciator) or tradesmen's station. This apparatus is necessary in order that separate conversations may be carried on simultaneously between the vestibule, janitor and tradesman's Inter-phone and three apartments, without having the conversations interfere with each other. The condenser provides a path for the high frequency talking currents, which cannot pass through the high impedance retardation coil.

Wooden case furnished in golden oak.

Code No.	Containing	System No.
295BC	1 Coil and 1 Condenser	7
295AS	2 Coils " 2 Condensers	8
295BD	3 " " 3 " "	9 and 10

Western Electric Inter-phones

Description of Apartment House Inter-phones
 Common Talking Service
 Vestibule Inter-phones for No. 20 Systems



No. 1520U Vestibule Inter-phone with Push-button Plate

Vestibule Equipment

The larger size letter boxes now required for apartment house service will not permit, in most cases, the proper mounting of the vestibule inter-phone on the same wall with the letter boxes, due to the usual limited vestibule wall space available for that purpose. The smaller dimension vestibule inter-phone No. 1520U has been retained and a push-button plate of the same dimensions has been designed to mount with it.

The inter-phone equipment consisting of the No. 1520U set and a push-button plate of the required capacity may be mounted together on the vestibule wall in a convenient position separate from the mail boxes or where mail boxes are not required.

No. 1520U Vestibule Inter-phones with Armored Receiver Cord

The No. 1520U Inter-phone consists of a flush mounting brush brass finish face plate with a push-button for signalling the janitor. The transmitter unit is mounted on the back of the face plate and an embossed metal mouthpiece is provided. The receiver used is of the watch-case type and the cord of the receiver is protected with a flexible armor. The switch-hook is mounted in the center of the face plate, supporting the receiver in the most convenient position. The receiver and armored cord complete is coded as the No. 524W receiver.

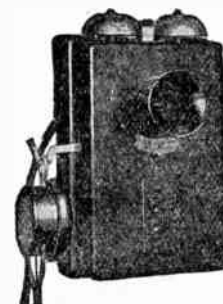
Vestibule Push-button Plates

Push-button plates are furnished to mount on either side of the No. 1520U Vestibule Inter-phone.

A card holder is provided opposite each button. The face plate has a brass lacquered finish, other finishes will be considered special.

The over all dimensions of the push-button plate are 5 7/8 inches in width and 12 3/8 inches in height.

No.	No. of Buttons	No.	No. of Buttons
207A	7	221A	21
213A	13	229A	29



No. 1527C-2

Suite, Janitor and Laundry Inter-phones

The No. 1527C (surface) and No. 1539C (flush) suite, janitor and laundry Inter-phones for System No. 20 are described elsewhere in detail.



No. 1539C-3

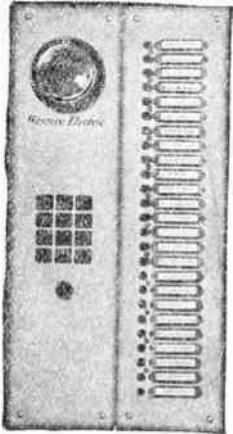
Western Electric Inter-phones

Description of Apartment House Inter-phones

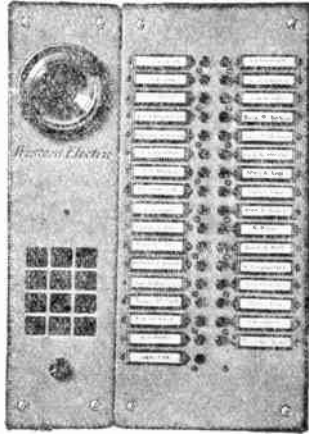
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Used in System No. 21

Common Talking Service



No. 1524C with Push-button Plate



No. 1524A with Push-button Plate

Selection of Vestibule Equipment

System No. 21

The vestibule equipment for the No. 21 systems consists of the following units, each of which must be ordered separately.

1. A No. 1524 type loud speaking inter-phone (as selected).
2. A push-button plate (except when No. 1524D inter-phone is selected).
3. Mail boxes (as required).

The inter-phone and push-button units are furnished in two distinct sizes depending upon the installation requirements as follows:

1. Installing the inter-phone and push-button plate with the mail boxes, or
2. Installing the inter-phone and push-button plate separate from the mail boxes or where mail boxes are not required.

In the former the inter-phone and push-button plates are of the same dimensions as the new standard size mail boxes. In the latter case, the inter-phone and push-button plates are of smaller dimensions so as to mount together in a convenient position in the vestibule where wall space will not permit mounting the mail boxes on the same wall.

The apparatus to be selected from the following groups.

No. 1524 Type Loud Speaking Vestibule Inter-phone System No. 21

The No. 1524 Inter-phone is designed to eliminate as far as possible, all projecting and removable parts, such as the transmitter, receiver and switch-hook; also to safeguard the theft of the receiver and the cords.

The set consists of a flush mounting face plate. A push button is mounted at the bottom of the plate for talking and listening purposes. The transmitter and receiver units mount on the back, and an embossed metal transmitter mouthpiece is located on the upper section of the face plate. The receiver unit contains a loud speaking horn; the flare end of the horn is attached to the lower part of the face plate which is perforated and covered with a protecting screen. An outlet box is furnished for mounting the set in the wall.

Code No.	No. of Buttons	Finish	DIMENSIONS, INCHES	
			Height	Width
1524A	0	Brush Brass	12 7/8	3 1/2
1524C	0	Bronze "	19 1/2	5
1524D	7	" "	19 1/2	5

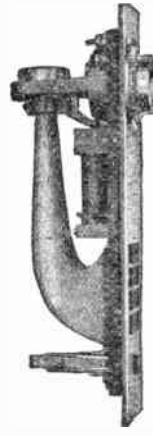
Western Electric Inter-phones

Description of Apartment House Inter-phones

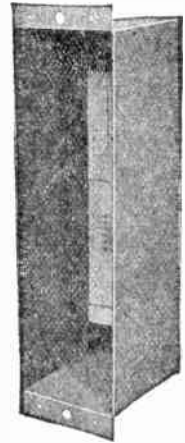
Continued

Used in System No. 21

Common Talking Service



Side View
No. 1524 Vestibule Inter-phone



Wall Box
No. 1524 Inter-phone

Vestibule Push-button Plates

The push-button plates for the No. 21 systems are designed to mount on either side of the vestibule inter-phone. A card holder is provided opposite each button. The push-button plates can be obtained in two different sizes as described under the No. 1524 inter-phones, as follows:

For Use with No. 1524A Inter-phones

Brass lacquered finish. Other finishes special. Over all dimensions, 5 7/8 inches in width and 12 7/8 inches in height.

Code No.	No. of Buttons	Code No.	No. of Buttons
207A	7	221A	21
213A	13	229A	29

For Use with Nos. 1524C and D Inter-phones

Bronze brass finish. Other finishes special. Over all dimensions, 5 inches in width and 19 1/2 inches in height.

Code No.	No. of Buttons	Code No.	No. of Buttons
313A	13	325A	25
321A	21	...	...

Vestibule Mail Boxes

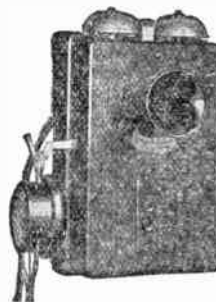
Mail boxes may be obtained in groups of 3 to 9, being assembled complete in units and master-locked for mounting in single or double rows. The boxes are finished in bronze brass, other finishes being considered special.

The overall dimensions of the individual letter boxes are 5 inches in width and 15 1/2 and 19 1/2 inches in height.

Group Code No.	No. of Mail Boxes	Group Code No.	No. of Mail Boxes
333	3	337	7
334	4	338	8
335	5	339	9
336	6	...	...

Suite, Janitor and Laundry Inter-phones

The No. 1527C (surface) and No. 1539C (flush) suite, janitor and laundry inter-phones for System No. 20 are described elsewhere in detail.



No. 1527C-2



No. 1539C-3

Western Electric Apartment House Inter-phones Systems 7, 8, 9 and 10

Selective Ringing—Selective Talking—Non-interfering Service



No. 1362 Vestibule Inter-Phone
With Letter Boxes

SERVICE.—Apartment house Inter-phones are designed to provide service between the vestibule apartments, janitor and tradesmen. The systems are planned throughout with the utmost care to give the most reliable service.

Systems Nos. 7, 8, 9 and 10 cover the practical service requirements of most apartment houses. One system may be expanded into another at any time by the use of additional apparatus.

These systems are designed for selective ringing and talking or non-interfering service, making it possible for the master station, such as the vestibule, the tradesmen and the janitor to communicate with different apartments simultaneously without interference with each other.

OPERATION.—The vestibule, janitor's and tradesmen's Inter-phones are equipped with push button keys (one for each apartment station). By depressing the button marked with the name or number of the apartment desired, the bell at that station will ring and there only.

The apartment Inter-phones can be provided with one or two push buttons for ringing the janitor's station or operating an electric door opener.

Separate conversation may take place simultaneously between the vestibule, janitor or tradesmen and different apartments.

TYPE OF INTER-PHONES.—Wall type Inter-phones are specified throughout for the various systems.

TYPES OF SYSTEMS.—See descriptions on following pages.

Accessories for Systems Nos. 7, 8, 9 and 10.

Coil and Condenser Box

One retardation coil and one condenser are required for each vestibule, janitor's (either wall Inter-Phone or master annunciator) or tradesmen's station. See for description of coil and condenser boxes elsewhere.

Cable

For connecting the various stations, either cable or insulated wires can be used, depending largely upon the layout of the building. Where there is a long run of a large number of wires (for instance, between the janitor, vestibule, and tradesmen Inter-phones or for the vertical riser from floor to floor) it will be found economical to use cable, and to install cable terminals or connecting blocks at all of the distributing and junction points.

For connecting the Inter-phones of the various apartments to these distributing points, insulated wires (No. 22 B. & S. gauge) can be used. The number of wires is outlined in the description of each system on the following pages. This data should be used when selecting the cable.

Cable Terminals

Cable terminals and connecting blocks are described in detail elsewhere.

Batteries

Not more than 12 Blue Bell dry cells will be necessary for operating any of the above systems (5 cells for the talking circuits and 4 to 7 cells for the ringing circuits, depending upon the length of the line). The cells can be placed in the basement or any other accessible place.

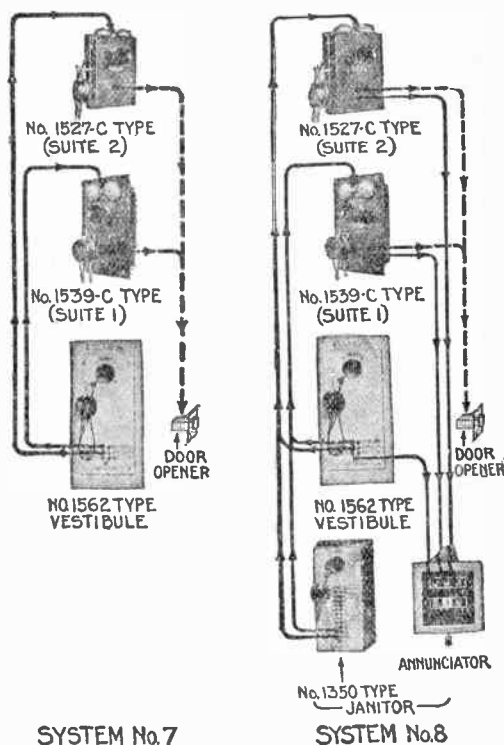
Door Opener

If a door opener is included in the system, additional dry cells will be required. Generally two or three cells have been found sufficient for this purpose.

Any standard type of door opener may be used.

Western Electric Apartment House Inter-phones Systems 7, 8, 9 and 10—Continued

Non-interfering Service



SYSTEM No. 7

SYSTEM No. 8

System No. 7

SERVICE.—Vestibule can call apartments. Apartments can open door, if desired.

CAPACITY.—One vestibule and any number of suite Inter-phones up to 24.

Inter-Phone Apparatus Required for System No. 7

- Vestibule
- 1 No. 1362 type Inter-Phone and letter boxes as required.
- Appartments
- 1527C-0 Surface type Inter-phones or
- 1527C-1 Surface type Inter-phones, 1 button (for door) or
- 1539C-0 Flush type Inter-Phone or
- 1539C-1 Flush type Inter-Phone, 1 button (for door).

Miscellaneous

- 1 No. 295BC coil and condenser box.

Wiring and Battery Requirements

- *2 wires common to entire system.
- 1 wire for each suite Inter-Phone.
- Battery to furnish operating current.
- 1 door opener and miscellaneous installing material.

System No. 8

SERVICE.—Vestibule can call apartments and janitor. Apartments can call janitor and open door, if desired. Janitor can call apartments.

CAPACITY.—One vestibule, one janitor and any number of suite Inter-phones up to 24.

Inter-Phone Apparatus Required for System No. 8

- Vestibule
- 1 No. 1362 type Inter-Phone and letter boxes as required.
- Appartments
- 1527C-1 Surface wall Inter-Phone, 1 button (for janitor) or
- 1527C-2 With 2 buttons (for janitor and door).
- 1539C-1 Flush wall Inter-Phone, 1 button (for janitor) or
- 1539C-2 With 2 buttons (for janitor and door).

Janitor

- 1 No. 1350 Type Inter-Phone, 1 janitor's annunciator and
- 1 No. 295AS Coil and condenser box.

Wiring and Battery Requirements

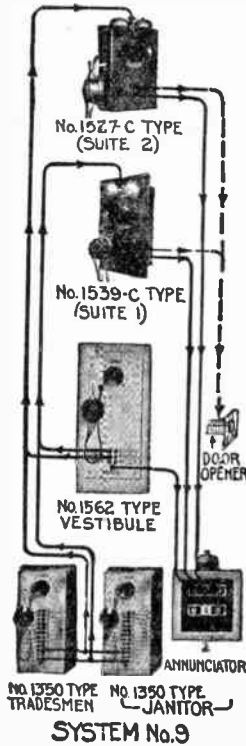
- *2 wires common to entire system.
- 2 wires for each suite Inter-Phone.
- 4 wires for connecting vestibule to janitor and coil and condenser box. Battery to furnish operating current.
- 1 door opener and miscellaneous installing material.
- NOTE.—*1 common wire to be omitted when door opener is not required.

Western Electric Apartment House Inter-phones

Systems 7, 8, 9 and 10—Continued

Selective Ringing—Selective Talking
Non-interfering Service

System No. 9



SERVICE.—Vestibule can call apartments and janitor. Apartments can call janitor and open door, if desired. Janitor and tradesmen can call apartments.
CAPACITY.—One vestibule, one janitor, one tradesman and any number of suite Inter-phones up to 24.

Inter-phone Apparatus Required for System No. 9

Vestibule

1 No. 1362 Type Inter-phone and letter boxes as required.

Apartments

- 1527C-1 Surface wall Inter-phone, 1 button (for janitor) or 1527C-2 Surface wall Inter-phone, 2 buttons, for janitor and door or
- 1539C-1 Flush wall Inter-phone, 1 button for janitor or 1539C-2 Flush wall Inter-phone, 2 buttons, for janitor and door.

Tradesmen

1 No. 1350 Type Inter-phone.

Janitor

1 No. 1350 Type Inter-phone, 1 janitor's annunciator and 1 No. 295BD coil and condenser box.

Wiring and Battery Requirements

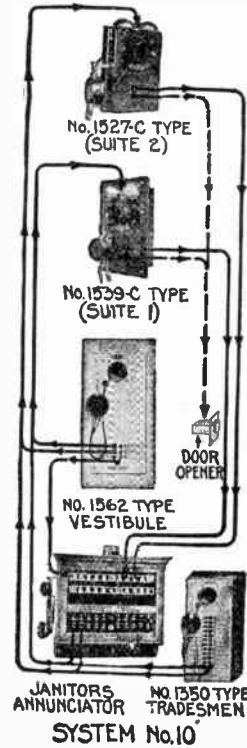
- *2 wires common to entire system.
- 2 wires for each suite Inter-phone.
- 4 wires for connecting vestibule to janitor, tradesmen's set and coil and condenser box.
- Battery to furnish operating current.
- 1 door opener and miscellaneous installing material.

Western Electric Apartment House Inter-phones

Systems 7, 8, 9 and 10—Continued

Selective Ringing—Selective Talking
Non-interfering Service

System No. 10



SERVICE.—Provides the same service as outlined under System No. 9, but on a larger scale, intended for use where several vestibules in the same or adjoining apartment houses are to be served by one janitor. The janitor's equipment consists of a master annunciator.
CAPACITY.—One janitor's switchboard, two or more vestibule and tradesmen's Inter-phones and any number of suite Inter-phones up to 70.

Inter-phone Apparatus Required for System No. 10

Vestibule

2 or more No. 1362 type Vestibule Inter-phones and letter boxes as required.

Apartments

- 1527C-1 Surface wall Inter-phone, 1 button for janitor or 1527C-2 Surface wall Inter-phone, 2 buttons, for janitor and door or
- 1539C-1 Flush wall Inter-phone, 1 button for janitor or 1539C-2 Flush wall Inter-phone, 2 buttons, for janitor and door.

Tradesmen

2 or more No. 1350 type Inter-phones.

Janitor

1 annunciator switchboard and
*1 or more No. 295 type coil and condenser boxes.

Wiring and Battery Requirements

- *2 wires common to entire system.
- 2 wires for each suite Inter-phone.
- 5 wires for connecting each vestibule to janitor, tradesmen's sets and coil and condenser box.
- Battery to furnish operating current.
- 1 door opener and miscellaneous installing material.
- NOTE.—**One retardation coil and one condenser are required for the janitor's annunciator and each vestibule and tradesmen's Inter-phone.
- *One common wire can be omitted if door opener is not required.

Western Electric Apartment House Inter-phones
System No. 20
 Selective Ringing—Common Talking



No. 1520 Type Vestibule Inter-phone

SERVICE.—The No. 20 Inter-phone Systems are designed to provide an inexpensive and reliable means of communication between vestibule, apartments, janitor's quarters, laundry and tradesmen's entrance. This system differs from Systems Nos. 7, 8, 9 and 10 (as described on the preceding pages) in that only one conversation can be carried on at a time, as all sets are connected to one talking circuit.

There are six combinations of the No. 20 System, differing from each other in the number of locations in the apartments which are to be connected for inter-communicating service. The operation of each of these combinations, however, is the same.

OPERATION.—The vestibule Inter-phone is equipped with a push button for calling the janitor. Each letter box is provided with two or three compartments and below each compartment a push-button is mounted. To call an apartment, the push-button having the name of the apartment wanted is depressed; this rings the bell at the apartment selected and there only.

The apartment Inter-phones can be provided with push-buttons for operating the door opener, calling the janitor, laundry or any other station in accordance with the combination selected.

The janitor's, laundry and tradesmen's Inter-phones can be arranged either for receiving calls from the other stations without being able to signal back, or for receiving calls and for signalling back to any one of the apartments.

Only one conversation can be carried on at a time.

TYPES OF INTER-PHONES.—Wall type Inter-phones are specified throughout for the No. 20 Systems.

TYPES OF SYSTEMS.—(See descriptions on following pages.)

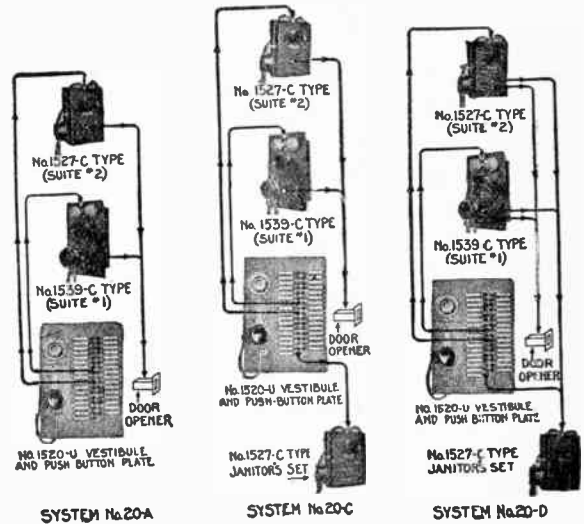
Accessories for No. 20 Systems

The cabling, terminals, door opener (if required) for these systems are the same as outlined for Systems 7, 8, 9 and 10.

Battery Requirements

For the operation of each system a battery of not more than five Blue Bell dry cells is required. These can be placed in the basement or any other accessible place.

Western Electric Apartment House Inter-phones
System No. 20—Continued]
 Selective Ringing—Common Talking



SYSTEM No. 20A

SYSTEM No. 20C

SYSTEM No. 20-D

System No. 20A

SERVICE.—Vestibule can call apartments; apartments can open door.

Vestibule

1 No. 1520U Inter-phone and 1 or more No. 3 type letter boxes.

Code No.

Apartment

- 1527C-0 Surface Wall Inter-phone, or
- 1527C-1 Surface Wall Inter-phone (button for door), or
- 1539C-0 Flush Wall Inter-phone, or
- 1539C-1 Flush Wall Inter-phone (button for door).

Wiring and Batteries

*3 wires common to all Inter-phones. 1 wire for each apartment Inter-phone, batteries to furnish operating current, 1 door opener and miscellaneous installing material.

System No. 20C

SERVICE.—Vestibule can call apartments and janitor; apartments can open door.

Code No.

Apartment

- 1527C-0 Surface Wall Inter-phone, or
- 1527C-1 Surface Wall Inter-phone, 1 button (for door opener), or
- 1539C-0 Flush Wall Inter-phone, or
- 1539C-1 Flush Wall Inter-phone, 1 button (for door opener).

Janitor

1 No. 1527C-0 Surface Wall Inter-phone.

Wiring and Batteries

*3 wires common to all Inter-phones, 1 wire for each apartment Inter-phone, 2 extra wires for connecting battery with vestibule and janitor's Inter-phone.

System No. 20D

SERVICE.—Vestibule can call apartments and janitor; apartments can open door and call janitor. Inter-phone apparatus.

Vestibule

1 No. 1520U Inter-phone and 1 or more No. 3 type letter boxes.

Code No.

Apartment

- 1527C-1 Surface Wall Inter-phone, 1 button (for janitor), or
- 1527C-2 Surface Wall Inter-phone, 2 buttons (for janitor and door), or
- 1539C-1 Flush Wall Inter-phone, 1 button (for janitor), or
- 1539C-2 Flush Wall Inter-phone, 2 buttons (for janitor and door).

Janitor or Laundry

1 No. 1527C-0 Surface Wall Inter-phone.

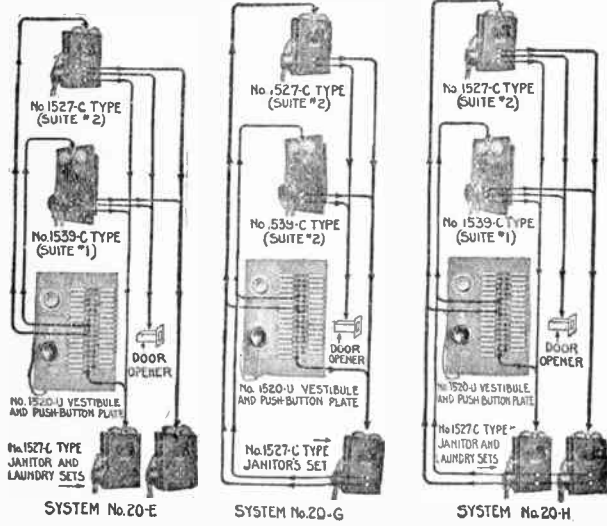
Wiring and Batteries

*4 wires common to all Inter-phones. 1 wire for each apartment Inter-phone, batteries to furnish operating current, 1 door opener and miscellaneous installing material.

*One wire may be omitted if door opener is not used.

Western Electric Apartment House Inter-phones

System No. 20—Continued
Selective Ringing—Common Talking



System No. 20E

SERVICE.—Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry.

Vestibule

1 No. 1520U Inter-phone and 1 or more No. 3 type letter boxes.

- Code No. **Apartments**
- 1527C-2 Surface Wall Inter-phone, 2 buttons.
 - 1527C-3 Surface Wall Inter-phone, 3 buttons.
 - 1539C-2 Flush Wall Inter-phone, 2 buttons.
 - 1539C-3 Flush Wall Inter-phone, 3 buttons.

Janitor and Laundry

2 No. 1527C-0 Surface Wall Inter-phones.

Wiring and Batteries

*Five wires common to all Inter-phones. A wire for each apartment Inter-phone, batteries to furnish operating current, one door opener and miscellaneous installing material.

System No. 20G

SERVICE.—Vestibule can call apartments and janitor; apartments can open door and call janitor, and janitor can call apartments.

Vestibule

1 No. 1520U Inter-phone and 1 or more No. 3 type letter boxes.

Apartments

- 1527C-1 Surface Wall Inter-phone, 1 button.
- 1527C-2 Surface Wall Inter-phone, 2 buttons.
- 1539C-1 Flush Wall Inter-phone, 1 button.
- 1539C-2 Flush Wall Inter-phone, 2 buttons.

Janitor and Laundry

1 Nos. 1527C-2 to 1527C-3 surface wall Inter-phones (depending upon number of push buttons required).

NOTE.—For more than 8 buttons, add push button block.

Wiring and Batteries

*Four wires common to all Inter-phones. One wire for each apartment Inter-phone, batteries to furnish operating current, one door opener and miscellaneous installing material.

System No. 20H

SERVICE.—Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry; janitor and laundry can call apartments.

Vestibule

1 No. 1520U Inter-phone and 1 or more No. 3 letter boxes.

Apartments

- 1527C-2 Surface Wall Inter-phone, 2 buttons.
- 1527C-3 Surface Wall Inter-phone, 3 buttons.
- 1539C-2 Flush Wall Inter-phone, 2 buttons.
- 1539C-3 Flush Wall Inter-phone, 3 buttons.

Janitor and Laundry

1 Nos. 1527C-2 to 1527C-3 Surface wall Inter-phones (depending upon number of push buttons required).

NOTE.—For more than 8 buttons, add push button block.

Wiring and Batteries

*Five wires common to all Inter-phones. One wire for each apartment Inter-phone, batteries to furnish operating current, one door opener and miscellaneous material.

*One wire may be omitted if door opener is not used.

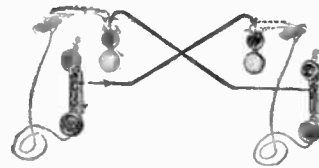
Western Electric Inter-Phone Outfits

GENERAL.—Where intercommunication is desired between two points in the home or in business, Western Electric Inter-phones can be furnished in "a-pair-in-a-package" outfit; that is, two Inter-phones complete with all the installing materials and instructions necessary to put them up. The outfits do not, however, include batteries, which must be ordered separately. For average conditions four or five dry cells will be sufficient.

SERVICE.—Consists of two wall or hand set type Inter-phones suitable for a private telephone line between house and barn or garage, or for a line that is wholly within a house, also for use in offices or shops between two buildings or in one building.

OPERATION.—Either station can ring and talk to the other.

Outfit No. 17



This outfit consists of 2 No. 1003 type hand sets with all material required to install a simple intercommunicating system between 2 points not over 80 feet apart, and where the wire will be wholly indoors and not exposed to weather conditions or moisture. The material, in addition to the hand sets, consists of 2 connecting blocks with mounting screws, 80 feet of insulated twisted pair copper wire, 60 insulated nails for fastening wire, 2 hooks for holding hand sets, 2 bells, 2 battery connectors and illustrated installing instructions.

Outfit No. 30



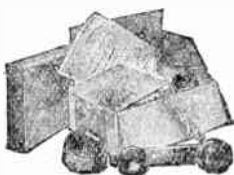
No. 1527C-1 Inter-phones

This outfit includes 2 surface wall No. 1527C-1 inter-phones and 1 No. 51H retardation coil in one box but no installing or wiring material.

Western Electric Inter-phone Outfits

Continued

Outfit 31



No. 6043P Inter-phones

This outfit includes 2 hand set type No. 6043P inter-phones and No. 51H retardation coil in one box but no installing or wiring material.

Outfits Nos. 30A and 31A

These outfits are for use where the wiring is to be run entirely under cover and not exposed to moisture or weather.

Outfit No. 30A includes one No. 30 outfit in one box and another box containing installing material (described below).

Outfit No. 31A includes one No. 31 outfit in one box and another box containing installing material (described below).

The wiring material furnished with the No. 30A and No. 31A outfits consists of 75 feet of insulated 3-conductor copper wire, 2 battery connectors, insulated nails for fastening wires and illustrated installing instructions.

Outfits Nos. 30B and 31B

These outfits are for use where the wiring is to be run in the open between or outside of buildings, and exposed to weather and moisture.

Outfit No. 30B includes one No. 30 outfit in one box and another box containing installing material (described below).

Outfit No. 31B includes one No. 31 outfit in one box (described above) and another box containing installing material (described below).

The wiring material furnished with the No. 30B and No. 31B outfits consists of 150 feet of outside 3-conductor copper wire, 2 brackets with screws, hooks and knobs to attach wires to building, 2 porcelain tubes to insulate wires when entering building, 2 battery connectors, 25 insulated nails for fastening wires inside building, and illustrated installing instructions.

This standard package idea for Inter-phones has been devised as a means of assisting purchasers in selecting the proper equipment for their needs without requiring them to make a study of the subject. At the same time it assures them of getting uniformly good materials, and in the proper amounts. The outfits are packed in a box ready to be sold over the counter or mailed by parcel post.

Western Electric Inter-phone Systems

Apartment House Service

System No. 21

Selective Ringing—Common Talking



No. 1524A Inter-phone with Two 3 Nest Letter Boxes

General Information

The No. 21 Inter-phone Systems are designed to provide communication between vestibule, apartments, janitor's quarters, laundry and tradesmen's entrance.

This system has the same service requirements as system No. 20, except that the vestibule equipment consists of a loud-speaking, cordless type Inter-phone which eliminates all projecting parts and provides against theft of receivers and cords. In addition to these features, the telephone set proper has a locking-in arrangement which further protects against theft of the complete unit.

There are six combinations of the No. 21 system, differing from each other in the number of locations in the apartments which are to be connected for inter-communicating service. The operation of each of these combinations, however, is the same.

The vestibule Inter-phone is equipped with a push-button for talking and listening. Each letter box is provided with two or three compartments, and below each compartment a push-button is mounted. One of the letter box compartments and its associated push-button must be used for signalling the janitor.

To call one of the apartments from the vestibule, the letter box push-button (under the name of the party wanted) is depressed, which rings the bell of that apartment. The vestibule party next depresses the button at the bottom of the telephone set, and keeps it depressed while awaiting reply, and while conversing with the apartment party.

The apartment Inter-phones can be provided with push-buttons for operating the door opener, calling the janitor, laundry, or any other station in accordance with the combination selected.

The janitor's, laundry, and tradesmen's Inter-phones can be arranged either for receiving calls from the other stations without being able to signal back, or for receiving calls and for signalling back to any one of the apartments.

Only one conversation can be carried on at a time.

Wall type Inter-phones are specified throughout for the No. 21 systems.

Accessories for No. 21 Systems

The cabling, terminals, and door opener, if required, for these systems are the same as outlined for systems 7, 8, 9 and 10.

Battery Requirements

For the operation of each system three sets of dry batteries are required, each set to consist of three dry cells. The batteries can be placed in the basement, or any other accessible place.

Detailed information covering wiring diagrams, connections of wires and cables, connecting blocks, etc., can be found in our booklet, "Installing and Maintaining Western Electric Inter-phones," which will be furnished upon request.

Western Electric Inter-phone Systems

Apartment House Service—Continued

System No. 21A

Selective Ringing—Common Talking

Vestibule can call apartments; apartments can open door.

Vestibule

No. 1524A inter-phone, push button plate and mail boxes as required.

Apartments

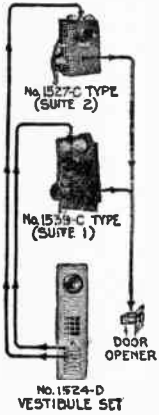
Code No.	Description
1527C-0	Surface Wall Type
*1527C-1	" " " "
1539C-0	Flush Wall Type
*1539C-1	" " " "

*Button for door.

Wiring and Batteries

†Three wires common to all inter-phones; one wire for each apartment inter-phone; batteries to furnish operating current; one door opener and installing material.

SYSTEM No. 21-A



System No. 21C

Vestibule can call apartments and janitor; apartments can open door.

Vestibule

No. 1524A inter-phone, push button plate and mail boxes as required.

Apartments

Code No.	Description
1527C-0	Surface Wall Inter-phone.
1527C-1	" " One Button for Door.
1539C-0	Flush Wall Inter-phone.
1539C-1	" " One Button for Door.

Janitor

No. 1527C-0 Surface Wall Inter-phone.

Wiring and Batteries

†Three wires common to all inter-phones; one wire for each apartment inter-phone; batteries to furnish operating current; one door opener and installing material.

System No. 21D

Vestibule can call apartments and janitor; apartments can open door and call janitor.

Vestibule

No. 1524A inter-phone, push button plate and mail boxes as required.

Apartments

Code No.	Description
*1527C-1	Surface Wall Inter-phone.
**1527C-2	" " " "
*1539C-1	Flush Wall Inter-phone.
**1539C-2	" " " "

*One button for janitor.

**Two buttons for janitor and door.

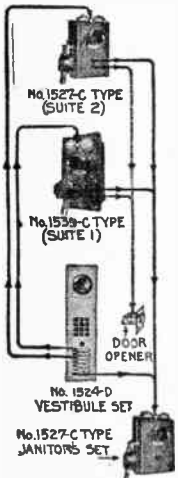
Janitor or Laundry

No. 1527C-0 Surface Wall Inter-phone.

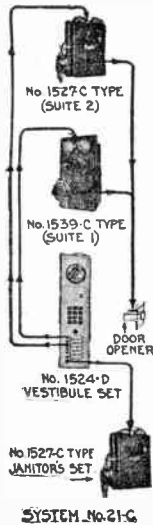
Wiring and Batteries

†Four wires common to all inter-phones; one wire for each apartment; batteries to furnish operating current; one door opener, installing material.

†One wire may be omitted if door opener is not used.



SYSTEM No. 21-D



SYSTEM No. 21-C

Western Electric Inter-phone Systems

Apartment House Service—Continued

System No. 21E

Selective Ringing—Common Talking

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry.

Vestibule

No. 1524 inter-phone, push button plate and mail boxes as required.

Apartments

Code No.	Description
*1527C-2	Surface Wall Type
**1527C-3	" " " "
*1539C-2	Flush Wall Type
**1539C-3	" " " "

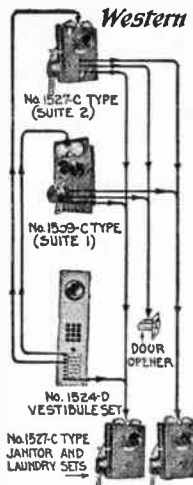
*Two buttons, janitor and laundry.
**Three buttons, janitor, laundry door.

Janitor and Laundry

Two No. 1529C-0 Surface Wall Inter-phones.

†Five wires common to all inter-phones, one wire for each apartment inter-phone, batteries to furnish operating current, one door opener, and miscellaneous installing material.

SYSTEM No. 21-E



System No. 21G

Vestibule can call apartments and janitor; apartments can call janitor and open door, and janitor can call apartments.

Vestibule

*One No. 1524A inter-phone, push button plate and mail boxes as required.

Apartments

Code No.	Description
*1527C-1	Surface Wall Type
**1527C-2	" " " "
*1539C-1	Flush Wall Type
**1539C-2	" " " "

*One button for janitor.
**Two buttons for janitor and door.

Janitor and Laundry

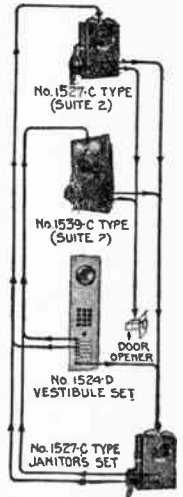
One Nos. 1527C-2 to 1527C-8 Surface Wall Inter-phones, depending upon number of push buttons required.

NOTE.—For more than 8 buttons add push button block.

Wiring and Batteries

†Four wires common to all inter-phones, one wire for each apartment inter-phone, batteries to furnish operating current, and one door opener.

SYSTEM No. 21-G



System No. 21H

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry; janitor and laundry can call apartments.

One No. 1524 inter-phone, push button plate and mail boxes as required and one or more No. 3 type letter boxes.

Apartments

Code No.	Description
1527C-2	Surface Wall Type, 2 Buttons for Janitor and Laundry.
1527C-3	Surface Wall Type, 3 Buttons for Janitor, Laundry and Door.
1539C-2	Flush Wall Type, 2 Buttons for Janitor and Laundry.
1539C-3	Flush Wall Type, 3 Buttons for Janitor, Laundry and Door.

Janitor and Laundry

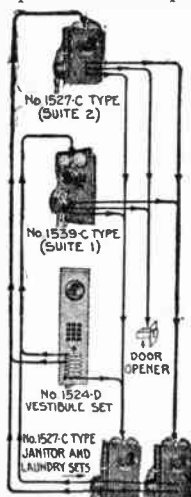
One Nos. 1527C-2 to 1527C-8 Surface Wall Inter-phones, depending upon number of push buttons required.

NOTE.—For more than 8 buttons add push button block.

Wiring and Batteries

†Five wires common to all inter-phones, one wire for each apartment inter-phone batteries.

†One wire may be omitted if door opener is not used.
One nest of letter boxes to be provided for signaling purposes.



SYSTEM No. 21-H

Western Electric Inter-phone Accessories
No. 6 Type Connecting Blocks



Consists of brass studs embedded in a hard composition base. Studs fitted with two nuts (one a split check nut) and two washers.

Code No.	Capacity in Pairs	Length In.	Width In.	Code No.	Capacity in Pairs	Length In.	Width In.
6G	6	4 $\frac{7}{8}$	1 $\frac{7}{8}$	6C	16	12 $\frac{3}{8}$	1 $\frac{7}{8}$
6B	11	8 $\frac{3}{4}$	1 $\frac{7}{8}$	6D	21	16 $\frac{1}{8}$	1 $\frac{7}{8}$
6F	13	10 $\frac{1}{8}$	1 $\frac{7}{8}$	6E	26	19 $\frac{1}{8}$	1 $\frac{7}{8}$

Nos. 11 and 12 Types Connecting Blocks

These consist of a composition base in which the screw terminals are embedded. Each terminal consists of two screw bushings electrically connected by means of a metal strip, and provided with screws and washers.



Code No.	No. of Terminals	Size In.
11A	2	1 $\frac{1}{8}$ x1 $\frac{5}{8}$
11B	Same as No. 11A	except equipped with a cover.
12A	3	1 $\frac{1}{6}$ x1 $\frac{5}{8}$
12B	Same as No. 12A	except equipped with a cover.

No. 1B Hand Set Hanger

A black finish hanger for holding No. 1001 type hand set.



No. 141A Hand Set Hook

A hook to be screwed into wall for holding No. 1003 type hand set.

Wood Push Button Blocks

For use with Inter-phone Systems Nos. 12A, 20G and 2011, also in private installations and for call bell service.

Stock finish of this type is dark golden oak with nickel trimmings. The directory plate is backed with a strip of transparent celluloid to protect the directory list.

No. of Buttons	Wood Base Code No.	Weighted Base Code No.
4	7900	7980
6	790	798
8	7910	7990
12	7921	79010
16	7930	79020
20	793	7902



Green mercerized cord per foot per button and attaching cord per button, are furnished at extra charge.

Metal Push Button Blocks

A black finished metal box, bushed for the entrance of connecting cord or wires. A base plate is provided having two punched holes for mounting, if desired. Felt pads are attached to the bottom of the plate.

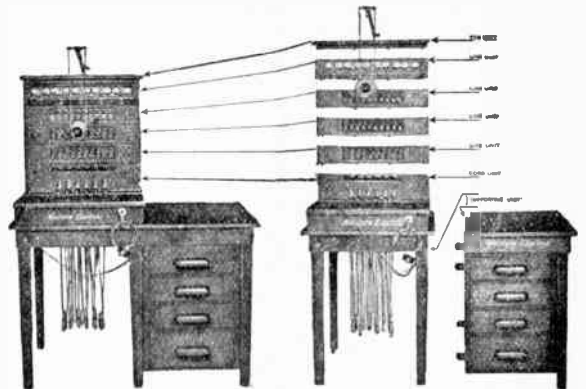
The push button groups and escutcheons, also the finish of these boxes are the same as specified for Unit Wall Inter-phones on the preceding pages. The box is 3 $\frac{3}{4}$ x4 $\frac{1}{4}$ x1 $\frac{3}{8}$ inches in size.



Without Cords			
Code No.	No. of Buttons	Code No.	No. of Buttons
101A	1	104A	4
102A	2	106A	6
103A	3	108A	8
With 6 Foot Cords			
104AC	4	108AC	8

Western Electric Magneto Non-multiple Switchboards

No. 1800 Sectional Unit Type



Method of Assembling No. 1800 Switchboard to 35 Line Capacity

The unit or sectional type construction for the small switchboard was introduced by the Western Electric Company a number of years ago, and since that time has been supplying the demand of discriminating buyers for a small switchboard that would meet their traffic requirements and eliminate the necessity of buying an "oversize switchboard."

The capacity of the No. 1800 Unit Type Switchboard is from 10 to 50 lines. While 50 lines has been set as an arbitrary maximum it is safe to assume that with a normally low calling rate as many as 70 or 80 lines can be handled conveniently. While the No. 1800 Unit Type Switchboard is small in size (Floor space required only 2 feet x 2 $\frac{1}{2}$ feet), this does not mean that this board receives less consideration or care in manufacture than a larger switchboard, for the same quality of material, skilled workmanship and rigid inspection are applied to all of the Western Electric products regardless of size. Red oak lumber, which has been kiln-dried, thoroughly seasoned and given a dark rubbed finish, is used in the construction of the units. The inside of the units have been specially treated to preserve wood and prevent warping or cracking.

To meet various requirements, there are different types of base or supporting units, cord units, line units and top units. To assemble a switchboard of 10 lines capacity for example it is only necessary to select units as follows:

- 1 Supporting Unit
- 1 Cord Unit
- 1 Line Unit
- 1 Top Unit

These units are easily assembled into a complete switchboard which presents a neat, compact and serviceable appearance and can be arranged to meet any service condition. Line units can be added at any time.

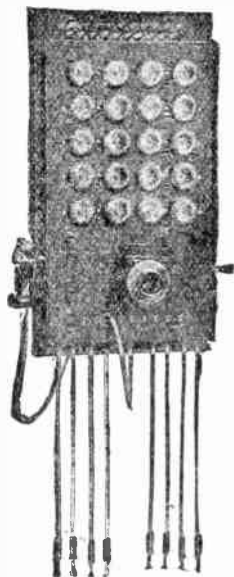
All of the apparatus and terminals associated with the operator's cord and telephone circuits are mounted in the cord unit.

The circuits used are very simple. A diagram of each circuit is pasted to the inside of the rear doors for convenient reference. The back of each unit is hinged and, when open, all of the wiring and equipment are easily accessible.

This switchboard is specially recommended for small, rapidly growing telephone exchanges where the ultimate capacity cannot be definitely determined.

No. 1012 Western Electric Magneto Wall Switchboards

Ringer Type



This switchboard is intended for use in exchanges having 10 lines or less, and where the number of calls does not warrant having a regular telephone operator in attendance.

It has been installed by numerous rural companies who desire a switching station established in the country in which case it is installed in a farmer's home and the calls are answered by members of the family.

Being equipped with ringers, constant attendance at the switchboard is not necessary as the bells can be heard at some distance from the board.

In addition to this ringer, indicators are supplied with each ringer which gives a visible signal showing which bell has been ringing.

The cabinet is well constructed of thoroughly seasoned, quarter sawed oak, which is given a durable light finish. The front is hinged and the apparatus and wiring is within easy reach for inspection or maintenance.

Equipment

Each line is provided with a jack and a 1000 ohm ringer, although 1600 or 2500 ohm ringers can be furnished if required. Four-cord circuits, with a listening-in jack bridged across the tip and ring, and a listening cord are provided for handling the calls, no supervisory or ring off signals being provided. A powerful five-bar hand generator is furnished for ringing purposes. The operator's telephone set consists of the regular long distance transmitter and receiver.

Operation

Subscribers are called by ringing with the hand generator over the listening cord with which the operator answers calls and listens in for supervisory purposes. Connections are made with the other cords, without the use of keys.

No. 1240-D Western Electric Magneto Switchboards

Non-multiple—Automatically Restored Line Signals

Capacity, 165 Lines 15 Cord Circuits



Front View

as to be within easy reach of the operator, reducing that work to a minimum.

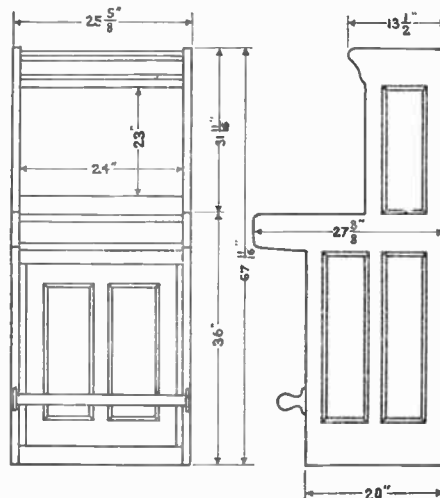
The lumber used in the construction of the cabinet is red oak, thoroughly seasoned and kiln dried to prevent warping or cracking.

The exterior of the cabinet is given a dull golden oak finish which is very serviceable. As an added precaution against warping, cracking or decay the interior surfaces are coated with shellac.

The steel framework which supports the face equipment is copper plated as a protection against corrosion or rust, also insuring a positive ground connection for the apparatus.

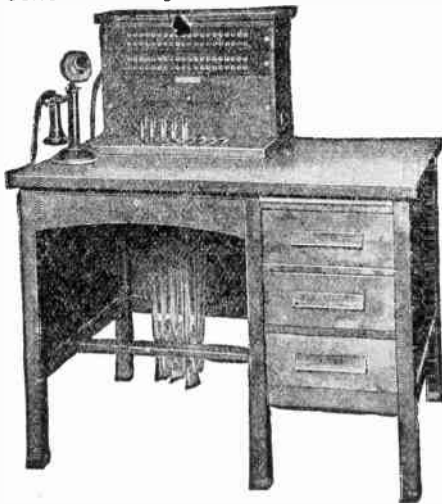
An apparatus and terminal board is mounted in the rear of the switchboard on which are mounted the repeating coils, night alarm bell, and large screw terminals where all power wiring such as power ringing, transmitter battery, night alarm battery, monitor taps, etc., are terminated.

The No. 1240-D non-multiple magneto switchboard is furnished with either single or double supervision cord circuits. Single supervision boards may, if desired, be equipped with five cord circuits having toroidal repeating coils and switching keys. Double supervision boards may be equipped with either the condenser type non-hang-up cord circuits, or the condenser repeating coil type non-hang-up, non-ring-through cord circuits. The present switchboard, if arranged for single supervision, may be changed to a double supervision board simply by installing the necessary additional apparatus.



Dimensions

No. 1801 Western Electric Private Exchange Switchboards
Central Battery—Sectional Unit Type



Systems A, B, C or D

The No. 1801 sectional unit type switchboard (like the No. 1800) was originated by the Western Electric Co., and introduced to the telephone trade to supply the demand for a small flexible and economical switchboard. Adaptable to many conditions, this switchboard has been installed by small telephone companies, as private branch exchanges, for hotels, factories, public schools and institutions or any place where telephone service was required and the ultimate capacity could not be definitely determined.

Being of the unit type, with construction somewhat similar to the sectional book case, and so arranged that additional units may be readily added when required, this switchboard is adaptable to many line and traffic conditions which are met on the small exchange. The rear of the units is permanently closed. The front panels of all units are held in place with thumb screw locks and are hinged to permit access to the wiring, terminals and apparatus. All connections are made under screw terminals.

The No. 1801 has lamps for the line and supervisory signals. Birch lumber, with a mahogany finish, or quarter sawed red oak which has been kiln dried and thoroughly seasoned to prevent warping and cracking is used in the construction of the units.

Four systems—"A," "B," "C" and "D" have been devised to handle the various classes of service required in this type of switchboard. Telephones which can be used with the systems are



System A

listed under heading: Central Battery Telephones.

SYSTEM A.—This system provides for communication between the switchboard and stations only. There are no facilities for inter-communication between stations or for connections to a central office.

SYSTEM B.—This system embodies all of the features of System "A" and in addition has facilities or intercommunication between stations.

SYSTEM C.—This system embodies all of the features of system "B" and in addition two plug ended trunks are provided which may be equipped for connections to either magneto or central battery central offices.

NOTE.—Direct current is used for ringing the telephone bells in Systems A, B, and C.

SYSTEM D.—This system has all of the features of system "C" except that it employs the regular two wire line circuit, and alternating current is used for ringing purposes.

The telephone sets used with this system are the regular central battery sets used with central office systems.

Write our nearest house for particulars. State which system is best suited for your requirements.

No. 1962 Western Electric Private Branch Exchange Switchboards
Sanitary Type

Capacity: 200 Central Battery Local Lines,
 8 Trunk Lines, 12 Cord Circuits



This switchboard is designed for use as a private branch exchange connecting with a public telephone system. It is of the central battery type, making use of lamp line signals and lamp supervisory signals. The line signal is associated directly with the corresponding line jack. The lamp supervision is

positive as the signal is closely associated with the corresponding cord. This arrangement provides for rapid and reliable operation.

This type of board is furnished with either plug or jack-ended trunks. The plug-ended trunks provide for reducing the number of connecting cords and are an efficient means of providing inter-connections with a city exchange system. The jack-ended trunks afford high-class connections and are somewhat less expensive than plug-ended trunks. They also require the furnishing of a somewhat greater number of connecting cord circuits. These trunks may be supplied for connection to either a magneto or a central battery office. When plug-ended trunks are furnished, holding jack circuits are also supplied to enable an operator to hold the exchange trunks when all four lines happen to be busy.

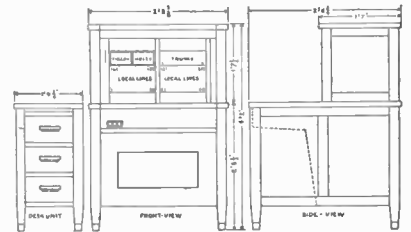


DIAGRAM SHOWING DIMENSIONS OF NO. 1962 SWITCHBOARD.

Dimensions

This type of switchboard is furnished only in a single position section, but two sections can be lined up together to appear as one section and a drawer unit can be supplied at either or both ends of a one or two position line-up. The key-shelf is 30½ inches high, which permits the use of an ordinary office chair, also provides for lining up the switchboard with standard office desks.

The standard wood work is birch with mahogany finish, or quarter sawed oak, light finish.

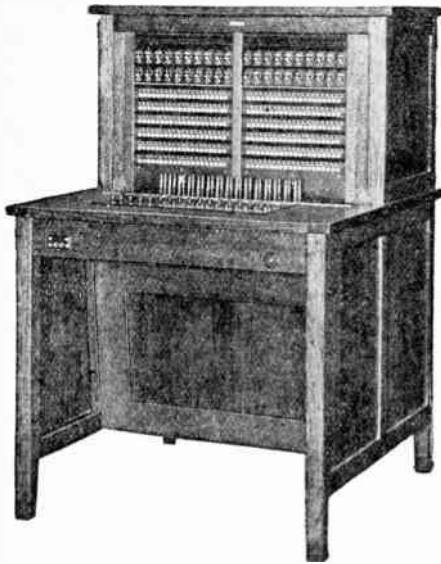
Built along the lines of modern office furniture it will harmonize with the surroundings in any modern office.

The No. 1962 switchboard being universally wired is adaptable to the varied requirements of private branch exchange service. It is designed to handle all practical service conditions which have arisen since the advent of the private branch exchange idea.

In addition to including all of the popular features adapted to private branch exchange service the No. 1962 switchboard is of the "Sanitary Desk Type" of construction which represents the Western Electric Company's most recent development and departure from old manufacturing methods. This switchboard is evidence of the continuous efforts being exerted by the Western Electric engineers toward the development of modern switchboards which will meet the exacting demands of discriminating buyers, and still retain the simplicity of operation, quality of material, skilled workmanship and low maintenance cost, which have been characteristic of Western Electric products in the past.

No. 1948 Western Electric Central Battery Non-multiple Switchboards Sanitary Type

Capacity: 240 Central Battery Lines, 40 Toll or Rural Lines, 20 Transfer Trunks



The No. 1948 Switchboard is designed to provide the small telephone companies who desire central battery service with modern, efficient and reliable equipment. It is built along the lines of the modern office desk, having square lines generally, square legs (metal capped at bottom) and a clearance underneath for cleaning purposes, hence the term "Sanitary Type" and is the Western Electric Company's latest departure from old methods of small switchboard manufacture. Meeting the demands of exacting buyers as it does is evidence of the confidence enjoyed by this company in the development of a much needed small central battery switchboard which is easy to operate, economical to maintain and constructed of the same materials which enter into the construction of the larger boards upon which the Western Electric Company's reputation for quality products is built and maintained.

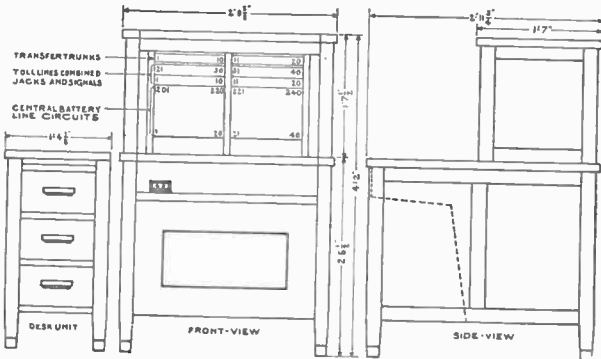


DIAGRAM SHOWING DIMENSIONS OF NO. 1948 SWITCHBOARD.

Dimensions

Cord circuits are arranged with lamp supervisory signals, giving positive supervision. Any or all cord circuits can be arranged to operate as straight central battery or full universal.

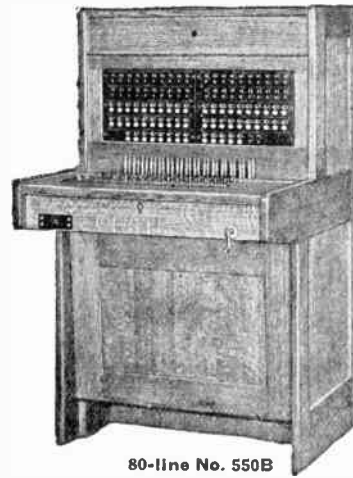
In the universal circuits, toroidal type repeating coils will be furnished if specified. When these are furnished, cutout key may be used so that if two magneto lines are connected, the repeating coil may be either cut in or out of circuit. When a magneto and central battery line are connected, the repeating coil equipment will serve to minimize noise.

Various ringing combinations are available. To provide for any of these, universal wiring is installed.

Suspended type transmitters are usually furnished, but chest type transmitters will be supplied, if ordered.

Write our nearest house for particulars.

No. 550 Type Western Electric Private Branch Exchange Non-multiple Switchboards



80-line No. 550B

The No. 550B switchboard in both the 30 and 80-line capacities makes an ideal installation in any city or town where the present equipment of the main central office is of the manual central battery type.

It has end panels permitting the lining up of two boards.

Red oak lumber with a rich dark finish or birch with mahogany finish is used for all exposed wood-work parts.

If there is a possibility of a change from manual to machine switching telephone equipment the

purchase of the No. 550C switchboard, which has trunks arranged for connection to machine switching offices, including the necessary dialing features, is recommended.

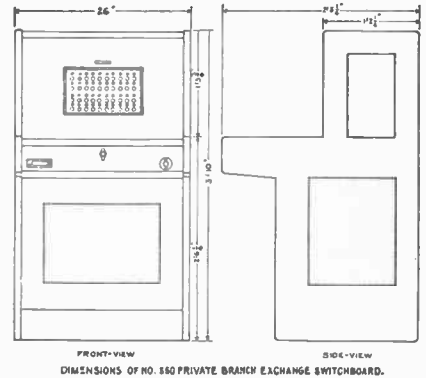
Types and Capacity

	550B(30)	550B(80)	550C(30)	550C(80)
Station lines total.	30	80	30	80
†Station lines.				
wired for relays.	10	20	10	20
Trunk lines.....	10	15	10	15
*Cord circuits.....	10	15	10	15

*The cord circuits in the No. 550B board can be equipped for either single or double supervision while those in the No. 550C board are arranged for double supervision only.

†Certain lines are wired for relays to be used on lines where the telephone is located considerable distance (800ft.) from the switchboard. Relays are not provided unless specified.

The equipment, such as relays, resistances, retard coils, etc., associated with the trunk, line, cord, night alarm, dialing, auxiliary and operator's telephone circuits, is mounted on a swinging relay gate which is constructed of a single piece of cold drawn galvanized steel bent in



Dimensions

the proper shape and mounted on a heavy steel bracket securely fastened to the switchboard.

The line circuits are simple and terminate on screw terminals located on a hinged connecting rack which can be opened for inspection. Jack ended trunk circuits are used in all No. 550 boards. The cord circuits embody all of the features required for the successful operation of the private branch exchange. Connections between stations and from stations to trunks are easily established.

Individual line jacks and associated lamp sockets are used in all boards on trunk and line circuits.

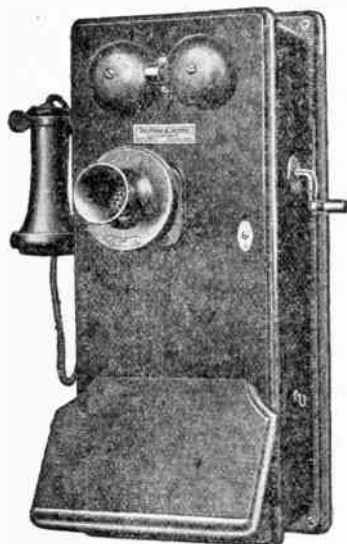
The jacks and lamp sockets are individually mounted as in the line circuits.

The dial may or may not be used as desired it being easily installed when needed. It is connected to the local cable by means of a flexible cord and the dial itself held in place by a spring clip which is screwed to the keyshelf. When the dial is not equipped the hole for the cord is suitably covered with an apparatus blank.

Western Electric Magneto Telephones

No. 1317 Type

General Description



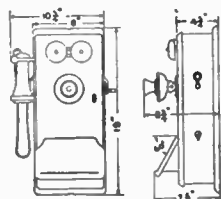
2-Cell, Closed View

The No. 1317 type telephone represents the highest development attained in magneto telephone design and construction. It has been standard with the Western Electric Company for more than a decade, and its high efficiency, reliability and long life have been thoroughly proven by the hundreds of thousands in service.

2 and 3 Cell Types

No. 1317 telephones are made in two styles, namely, the "2 cell" and the "3 cell." The talking circuits of these two types are identical, i.e., they employ the same transmitters, receivers and induction coils. The battery compartment of the "3 cell" type is sufficiently large to take three standard dry cells, whereas only two dry cells can be placed in the "2 cell" type. The larger cabinet of the "3 cell" type also permits the mounting of the No. 43 type (5 bar) generator, while the "2 cell" type employs the No. 50 type (large 3 bar) generator, while intended primarily for use on medium loaded lines, is exceptionally powerful, and is capable of giving satisfactory service on about 90 per cent of the lines now in use. For example this generator will ring thirty 2500 ohms ringers connected to a No. 12BB iron metallic telephone line 15 miles in length (provided, of course, that the line is properly installed and in good condition).

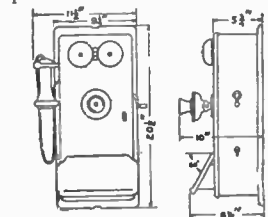
It will operate more tele-
phones on a line than many four or five bar generators.



2-Cell Dimensions

WOODWORK AND FINISH.—The cabinet is made of quarter sawed oak and given three coats of high-grade varnish rubbed down by hand. Unexposed surfaces of the telephone are also given a protective finish so as to prevent warping.

WIRING.—All terminals including those for the transmitter, receiver, cord, line wires, etc., are plainly marked so that



3-Cell Dimensions

there can be no possible mistake when making connections. The various cords, such as those of the transmitter and receiver and the flexible leads running to the condenser are all furnished with cord tips.

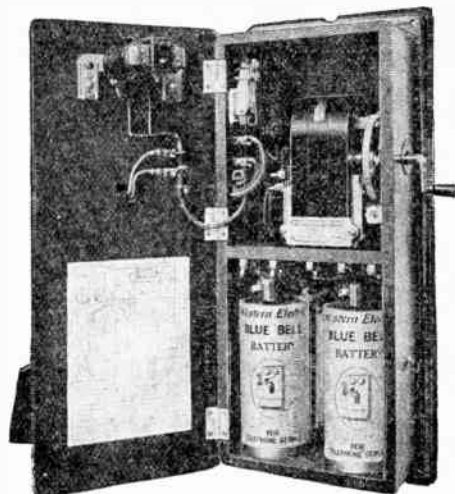
A complete and explanatory circuit label is pasted on the inside of the door of each telephone in addition to which a booklet is furnished giving complete instructions for installation and maintenance.

METAL FINISH.—The transmitter bracket, gongs, switch hook, generator, crank and lock escutcheon are given an extremely durable and pleasing black finish.

ADJUSTMENT.—These telephones are carefully adjusted in the factory, and should, therefore, be satisfactory for service as received by the customer unless unusual service conditions should be encountered, in which case only the ringer will require readjustment. The adjustment of the ringer is a very simple matter and instructions furnished in the booklet are so clear that no difficulty will be encountered.

Western Electric Magneto Telephones

No. 1317 Type—Continued



No. 1317 Three-cell Type

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-AH	38-AG	1000	22-A	.....
1317-N	38-FG	1600	48-A	.....
1317-R	38-FG	1600	48-A	21-W
1317-P	38-BG	2500	48-A	.....
1317-S	38-BG	2500	48-A	21-W
1317-BA	38-FG	1600	48-A	.....

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-AH	Code	Code	Light
1317-N	"	"	Medium
1317-R	"	"	"
1317-P	"	"	Heavy
1317-S	"	"	"
1317-BA	*C. O. Selective	"	Medium

No. 1317C Two-cell Type

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-CH	53-AG	1000	22-BA	.....
1317-CN	53-FG	1600	50-F	.....
1317-CR	53-FG	1600	50-F	21-W
1317-CP	53-BG	2500	50-F	.....
1317-CS	53-BG	2500	50-F	21-W

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-CH	Code	Code	Light
1317-CN	"	"	Medium
1317-CR	"	"	"
1317-CP	"	"	"
1317-CS	"	"	Heavy

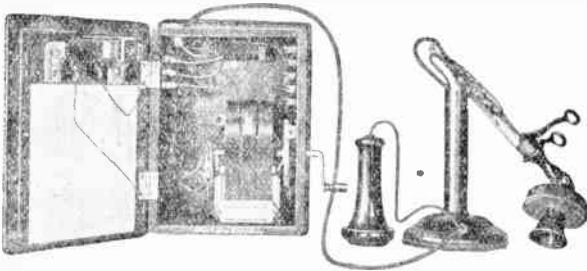
In addition to the above-mentioned apparatus all of these telephones are equipped with the following apparatus:

- No. 13 Induction Coil.
- No. 323-BW Transmitter.
- No. 8A Transmitter Bracket.
- No. 143-AW Receiver.
- No. 143Y Switchhook.

*Equipped with No. 1006A push button. Telephone user can signal central office secretly or not as desired and can signal other parties on same line by code ringing.

Western Electric Magneto Telephones

Nos. 6003 and 6004 Desk Types



Interior View of No. 6004D

The Nos. 6003 and 6004 type desk telephones consist of a No. 1020AL Desk Stand and a No. 300 or 315 type Desk Set Box. These telephones comprise the combinations of desk stands and desk set boxes that are most used, and therefore for convenience in ordering, are covered by a single code number.

Combinations of apparatus differing from those covered by these code numbers listed may be obtained by ordering the separate items that will make up the desk telephone desired. The following items of apparatus are the electrical equivalent of the No. 1020AL Desk Stand and may therefore be used in connection with any of the desk set boxes listed below.

- No. 1020CC Telephone Arm
- “ 1048AA “ “
- “ 1048AB “ “
- No. 1048AC Telephone Arm
- “ 1001C and H Hand Sets
- “ 1002AC Hand Set



No. 300 Type Desk Set Box and No. 1048-AC Telephone Arm

CONTENTS OF DESK SET BOX

Code No.	Desk Stand	Desk Set Box	CONTENTS OF DESK SET BOX				Bias Feature
			Generator	Code No.	Resistance (Ohms)	RINGER	
6003B	1020AL	315II	22A	51AG	1000	None	
6003C	1020AL	315J	22E	49BG	2500	Spring and Screws	
6004B	1020AL	300K	48A	51BG	2500	None	
6004C	1020AL	300L	48A	51FG	1600	None	
6004D	1020AL	300AA	50A	51BG	2500	None	
6004E	1020AL	300AB	50A	51FG	1600	None	

Code No.	DESK SET BOX (CONTINUED)		CLASS OF SIGNAL SERVICE		Line Condition as Regards Load
	Ringer Gong	Condenser Coil	Telephones to Central Office	Central Office to Telephones	
6003B	29A	None	Code Ringing Can Only Signal Central	Code Ringing Four Party Selective	Lightly Loaded
6003C	29A	“	“	“	“
6004B	29A	“	Code Ringing	Code Ringing	Heavily Loaded
6004C	29A	“	Code Ringing	Code Ringing	Medium Loaded
6004D	29A	“	Code Ringing	Code Ringing	Medium Loaded
6004E	29A	“	Code Ringing	Code Ringing	Medium Loaded

NOTE.—In the case of the Nos. 300AA, 301AB, 315H, and 315J Desk Set Boxes provision is made for inserting a one microfarad condenser (see No. 21W condenser) in series with the receiver. However, condensers are not furnished unless so ordered.

Western Electric Central Battery Telephones

Nos. 1533 and 6054 Types

Telephones representing the highest and most modern development in central battery telephone design are found in the Nos. 1533 and 6054 types.

In addition to the superior features represented by the individual pieces of apparatus and circuits, these telephones embody a number of features that are particularly worthy of note, namely:

Ringer and gongs are enclosed within the case thereby preventing tampering, reducing maintenance and greatly improving the appearance.

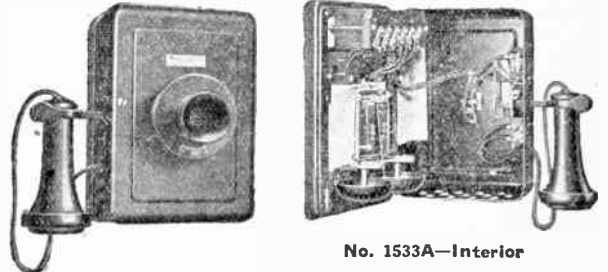
Case is made of heavy sheet steel, copper plated and finished with two coats of extremely durable black enamel (baked on) especially developed for this particular purpose.

The case is constructed so that every part of the interior is easily accessible when the cover is opened.

The base is flanged thereby giving greater rigidity and preventing base from cutting into plastered surfaces.

Unit type of construction and universal terminal block employed. This permits of the telephone being readily converted from one class of service to another. This also permits of a desk set box being converted into a wall telephone or vice versa by a substitution of covers.

No. 1533 Type Telephones



No. 1533A—Interior

No. 1533A

Telephone Code No.	Transmitter	Receivers	RINGER		Condenser
			Code No.	Res. (Ohms)	
1533A	323BW	143AW	8AG	*1400	21AP
1533K	323BW	171W	8AG	*1400	21F
1533Y	.....	.....	8AG	*1400	21AP
1533AR	323BW	143AW	42AG	....	21AP
			41SG		
			33 1/2 cycles		
			41TG		
			50 cycles		
			41UG		
			66 2/3 cycles		
			41RG		
			16 2/3 cycles		

Telephone Code No.	Induction Coil	Talking Circuit	Kind of Ringing	Ring Current
1533A	46	Standard		
1533K	None	{ Series Central Battery	{ Single Party	
		{ Central Battery Signalling Local Battery Talking	{ 2 Party Selective	
1533Y	13		{ 4 Part Semi-Selective	A.C.
1533AR	46	Standard	{ 4 Party Selective	P.C.
1533E			{ Harmonie	
1533F			{ 4 & 8 Party	H'rm'nic
1533G	..	Standard	{ Selective	
1533H				

All of these telephones are equipped with the No. 7A transmitter bracket, Nos. 547 and 548 six-inch transmitter cords and a 30-inch No. 521 receiver cord.

*NOTE.—The No. 8AG ringers were formerly wound to 1000 ohms instead of 1400 ohms. The 1000 and 1400 ohms ringers have the same impedance and may be used interchangeably in service.

See separate listing for “Central Battery Telephones for Use with No. 1801 Switchboards.”

Western Electric Central Battery Telephones

No. 6054 Desk Type



No. 6054 Desk Telephone—No. 1020AL Desk Stand Partially Dismantled

The No. 6054 desk type telephones consist of a No. 1020 type desk stand and a desk set box. These telephones comprise the combinations of desk stand and desk set boxes that are most used and, therefore, for convenience in ordering are covered by a single code number.

Combinations of apparatus differing from those covered by the No. 6054 series of code numbers may be obtained by ordering a desk stand and a desk set box as separate items, also a telephone arm or a hand set may be used in place of the desk stand if desired.

For example, any of the desk set boxes that will function with the No. 1020AL desk stand will also function with the following:

1020CC ... Telephone arm

1048AA ... Telephone arm

1048AB ... Telephone arm

1048AC ... Telephone arm

1001C, and H { Hand sets (See Hand Set Hangers)

1002AC ... Hand set

Telephone Code No.	TELEPHONE CODE NO.—COVERS		CONTENTS OF DESK SET BOX RINGER		
	Desk Stand	Desk Set Box Code No.	Code No.	Res. (Ohms)	Condenser
6054A	1020AL	534A	8AG	*1400	21AP
6054AR	1020AL	534AR	42AG	{ 1000 and 3000 }	21AP
6054E	1020AL	534E	41SG	}	21F
6054F		534F	33 3/4 cycles		
6054G		534G	41TG		
6054H		534H	50 cycles		
6054K	1020AH	534K	66 2/3 cycles	*1400	21F
	DESK SET BOX (CONTINUED)		41RG		
			16 2/3 cycles		
			8AG		

Code No.	Induction Coil	Talking Circuit	Kind of Ringing	Ringings Current
6054A	46	Std. C.B.	{ Single party and 2 party selective }	A.C.
6054AR	46	Std. C.B.	4 party selective	{ P.C. (Pulsating current) }
6054E	46	Std. C.B.	{ Harmonic 4 party selective or 8 party semi-selective . . . }	Harmonic
6054F				
6054G				
6054H				
6054K	None	{ Series Central Battery }	{ Single party and 2 party selective }	A.C.

NOTE.—See listings of No. 534 type desk set boxes, No. 1020 desk stands and protectors.

*The No. 8AG ringers were formerly wound to 1000 ohms instead of 1400 ohms. The 1000 ohm and 1400 ohm ringers have the same impedance and may be used interchangeably in service.

Western Electric Central Battery Telephones

For Use with No. 1801 Switchboard



No. 6000AE



No. 1539A

Systems A and B

The telephones for No. 1801 Switchboard Systems A and B are of the series talking circuit type and equipped with 140 ohm vibrating bells which operate on direct current.

Code No.	Case and Finish	Mounting	Receiver
1527A	Metal, Black	Surface Wall	Watch Case Type
1539A	Metal, Black	Flush Wall	Watch Case Type
1533N	Metal, Black	Surface Wall	Hand Receiver
6034AU	No. 1020BJ Stand	Desk	Watch Case Type

NOTE.—Information on hand set type telephones and desk telephones equipped with hand receivers will be furnished on application.

System C

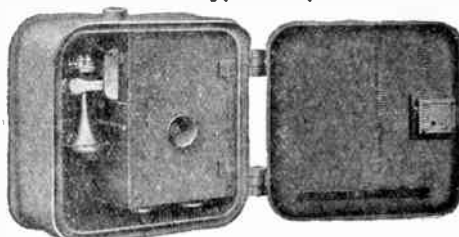
The telephones for No. 1801 Switchboard System C may be of the same types as used for Systems A and B, but in case the system is connected to an outside exchange, telephones equipped with standard central battery induction coil talking circuit should be used in order to obtain satisfactory transmission, as follows:

Code No.	Case and Finish	Mounting
1533M	Metal, Black	Surface Wall
6000AE	No. 1120CN Stand	No. 295AU Box

System D

Any standard central battery telephone with ringers operated by alternating current either induction coil or series types can be used with System D. The No. 1533A wall type and No. 6054A desk type telephones may be selected for this system.

No. 1320 Type Telephones



No. 1320A Outer Door Open

The No. 1320 type is a metal case weatherproof telephone for central battery service. It was designed primarily for the Police Patrol Service but will be found very satisfactory for general central battery service where a weatherproof telephone is required.

The apparatus is mounted on a metal frame which is removable as a unit from the case. An inner door protects the apparatus from the weather when the outer door is open. The overall dimensions are 6 1/8 inches deep by 13 1/2 inches high by 12 3/4 inches wide.

A loud ringing extension bell may be connected in multiple with the ringer of this telephone thereby providing means of signaling a patrolman from a distance (see extension bells).

A tapped hole is provided in each end of the case for receiving conduit. Four holes are drilled in the back of the case for receiving mounting screws or mounting clamps. The lock on the outer door is designed so that the key cannot be removed until the door is closed.

Outer door is not marked. Standard finish, gray paint.

Special No. 1320A telephones may be obtained with outer doors marked (raised characters cast on door) in accordance with customer's requirements; color of finish, as specified.

Western Electric Magneto Mine Telephones

Western Electric Magneto Mine Telephones



General

A reliable telephone system in a mine will enable the superintendent to communicate instantly with all the important parts of the plant. The saving in time and money which it effects by reliably transmitting routine orders or when there is a temporary suspension of power, a shutdown of some part of the plant, an accident or an emergency

affecting both life and property, justifies many times over the investment required.

Mine Laws

That the Legislatures of many of the States have made the installation of mine telephones and signals a requirement for mine operation, is in itself sufficient endorsement of their usefulness. Those farsighted operators who so quickly and wisely responded to these demands are realizing the benefits of the increased operating efficiency that they effect in their mines along with the insurance against loss of life which was the primary object of the legislative acts.

Mine Telephone Systems

In the Superintendent's office, engine house and other dry and protected parts of the Plant, which should have communication with each other and the mine, the use of standard wall and desk type magneto telephones is recommended.

In cases where all the telephones of the system are connected to a single line (party line) the telephone used should be designed for use on heavily loaded lines—for example:

No. 1336J telephones for service below ground and in exposed locations above ground.

No. 1317S telephones (wall type) (5 bar generator) for service above ground in unexposed locations, or

No. 6004B telephones (desk types).

In cases where the size of the plant warrants it, the preferable arrangement is to employ a number of lines and a switchboard instead of a party line. These lines may each have a number of telephones connected to them but the most satisfactory arrangement is to have the most important telephones of the system (for example, the engine room telephone and the Superintendent's telephone) connected to individual lines.

In cases where a switchboard is employed, the telephones used below ground should be of the No. 1336 type but the lines above ground, if lightly loaded, may be equipped with telephones having 3 bar generators. For example:

No. 1317AH Telephones (wall type), or

No. 6003B Telephones (desk type).

No. 1336 Type Telephones

Briefly, these are metal case magneto telephones having all apparatus and parts treated to resist the action of moisture. They are primarily designed for use on heavily loaded lines where code ringing is employed and, while they are intended chiefly for mine service they are also recommended for outdoor use as in railway service, etc.

Moisture-Proofing

Experience has shown that moisture will condense on the inside surfaces of mine telephones regardless of whether or not they are of so called "Air Tight" construction. In view of this, the practice of employing gaskets, stuffing boxes, etc. was abandoned a number of years ago in favor of the design illustrated by the No. 1336 type. In this design small openings are provided which permit air to circulate through the telephone without exposing it to the chance of trouble due to the entrance of foreign material. An opening is also provided so that water may drain off instead of remaining in the telephone.

Protectors

The telephones installed above ground should be equipped with protectors consisting of open space cut outs (for example the No. 60AP protector) to prevent damage to the telephone by lightning. In case there is a chance of contact between the telephone line and a power circuit protectors consisting of open space cut outs and fuses (for example the No. 58AP protector) should be used.

Continued

No. 1336 Type



No. 1336 with Outer Door Open

Code No.	Transmitter	Receiver	Receiver Cord	Condenser	RINGER	
					Code No.	Resistance
1336A	312W	144AW	10½ in.	None	None	2500
1336E				None	45BG	2500
1336J				21W	{ (Spl.) 45BG	1600
1336K				21W	{ (Spl.) 45BG	1600

Code No.	Ringer Operating On	Generator Code No.	Current	Signalling Service	For Line Load
1336A	A. C.	48C	A. C.	{ Code Ringing Code Ringing	{ Heavily Loaded Medium Loaded
1336E					
1336J					
1336K	A. C.	48C	A. C.	{ Code Ringing Code Ringing	{ Heavily Loaded Medium Loaded

In addition to the apparatus listed above the No. 1336 type telephones are equipped with a No. 143J switchhook and a No. 31 induction coil.

Special No. 1336 type telephones equipped with a heavy brass padlock with two keys are obtainable. The padlock is attached to the chain in place of the latch pin. Orders for these telephones must state that padlocks are desired.

The No. 1336A telephone is not equipped with a ringer as it is intended for use where an extension bell is preferred to the regular telephone ringer, also for service where all the calls will be outgoing.

The No. 1336E differs from the No. 1336A in that it is equipped with a ringer and an iron hood for protecting the gongs.

The No. 1336J differs from the No. 1336E only in that a condenser is provided to permit the ringers of this telephone as well as others on the same line, being rung even though its receiver may have been left off the switchhook.

To add a condenser to a No. 1336 type telephone that was not originally so equipped the following apparatus and parts should be ordered:

No. 21W Condenser. One Condenser Strap P-43065. Two Round Head Machine Screws P-110187.

RINGING.—The No. 1336A telephones are intended for standard bridging service on heavily loaded lines, i.e., the generators and ringers are of such design that forty or more telephones can be operated successfully as far as the ability to ring one another and converse is concerned. It is, however, understood that as many telephones as these on a line would be undesirable.

RINGERS AND EXTENSION BELLS.—The ringers used in these telephones may be readily adjusted if necessary with a screwdriver. The gongs emit a loud distinct ring, which can be heard a long distance, particularly so underground. However it is often desired to provide loud ringing extension bells in connection with mine telephones and for this purpose the No. 392 and No. 342 type extension bells are recommended as they are designed to withstand the severe conditions encountered in mine service.

Western Electric Magneto Mine Telephones

Continued

DRY CELLS.—Two standard size dry cells are required for each telephone to furnish current for talking. Western Electric Blue Bell Dry Cells are specially designed for telephone service and are recommended because they last longer and are more efficient for this class of service than other dry cells.

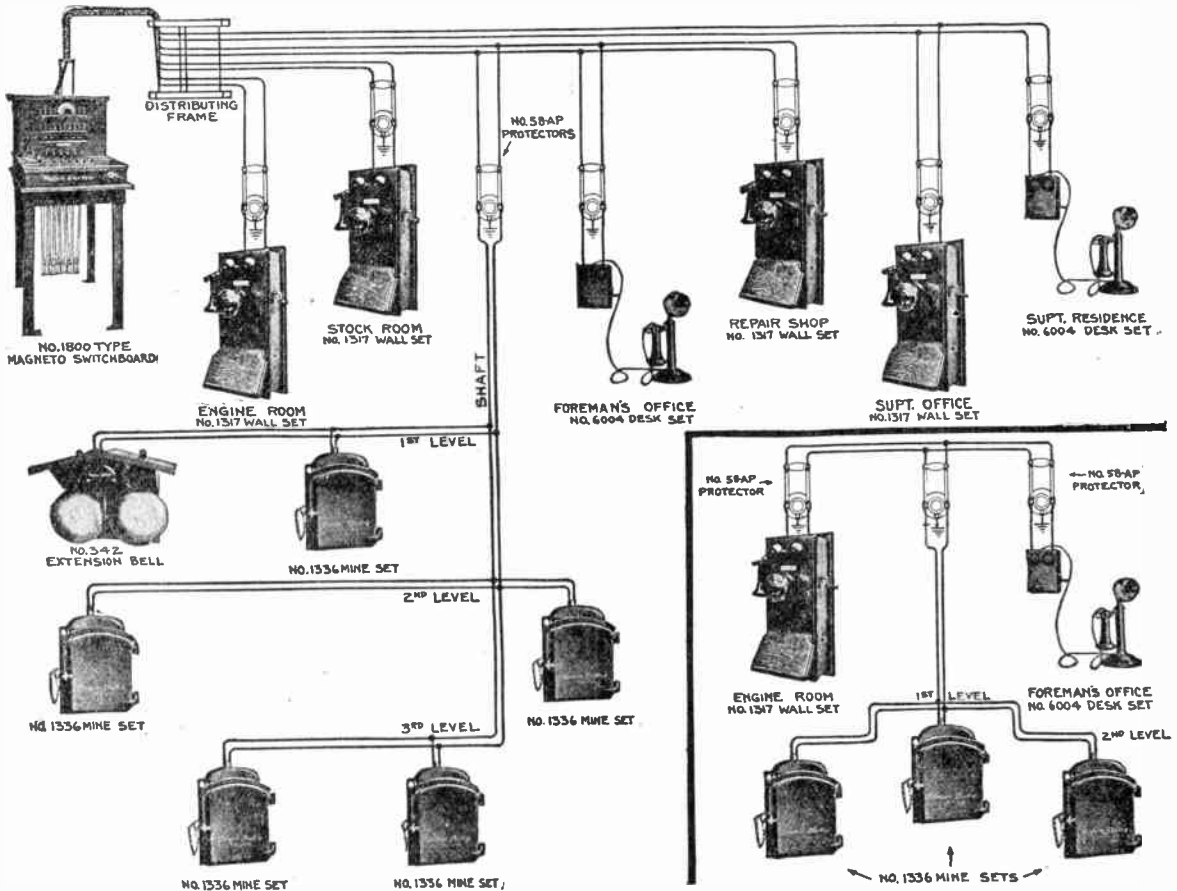
Two special Blue Bell Dry Cell cartons, impregnated with moisture-proofing compound, are furnished with each No. 1336 type telephone. These are to be substituted for the standard cartons furnished on the dry cells. These cartons resist the action of any moisture that may form on the inside of the case and prevent current leakage and rapid deterioration.

CASE.—The box, outer door, inner door and gong hood are of cast iron heavily coated with a rust resisting finish. When the outer door is closed only the metal transmitter mouthpiece, receiver, receiver cord and the generator handle are exposed. When the outer door is closed these parts are protected from mechanical injury. When using this telephone it is, of course, evident that only the outer door need be opened.

ENTRANCE FOR LINE WIRES.—The line wires may be brought in either at the top or the bottom of the case. A short length of pipe is screwed into the top of the case and is covered with a pipe cap. This cap prevents water running into the set by following the line wires. In case the line wire is to be run to the telephone in pipe (conduit) no difficulty will be encountered in joining the conduit to the telephone as the wire entrance hole at the bottom as well as the top of the case is tapped.

MOUNTING.—Wrought iron mounting bars are secured to the back of the case. The upper end of these have "pear" shaped holes, and with this arrangement the telephone can be readily mounted by one man and without any danger of damaging it. This is accomplished by driving two lag screws into the mounting surface until their heads project about 1/2 inch. The telephone may then be hung upon these mounting screws (the heads of the lag screws will pass through the large end of the "pear" shaped holes) after which the lower mounting screws may be driven into place through the holes in the lower end of the mounting bars. Wrought iron mounting bars are employed as they are less subject to breakage than if lugs were cast on the case.

Typical Western Electric Mine Telephone Systems



Typical Diagram Showing Method of Connecting Telephones to a Switchboard

Typical Party Line Mine Telephone System

Gray Telephone Pay Stations

Non-electrical—For Local or Central Battery Service



No. 7 Mounted on a Central Battery Telephone

No. 11 Mounted on a No. 1317 Wall Telephone



No. 14 Mounted with a No. 1020 Desk Stand

The operation of these pay stations is accomplished without the aid of moving parts or electrical connections, the signals being produced by the coins striking gongs or chimes, the sound of which is transmitted to the central office operator through the transmitter of the telephone at which the pay station is located. In view of the simplicity and reliability of these pay stations, their maintenance cost is extremely low.

(These pay stations cannot be used for pre-payment service, as the coin is not under the control of the central office operator, as in the Western Electric No. 7 and No. 50 type Coin Collectors.)

No. 7

This will be drilled to take standard transmitter arms.

Gray Code No.	Type of Telephone Used On	Coins Arranged For	Approx. Size In.
7	Wall	Nickels, Dimes and Quarters	9x4½x3

No. 8A

This pay station will not be provided with a mounting bracket unless specifically so ordered.

8A	Wall	Nickels	7x3¾x3¼
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Bracket for No. 8A Pay Station.

In ordering this bracket, specify the make and code number of the telephone on which the pay station is to be used in order that the proper form of bracket may be furnished.

No. 11

A mounting plate is included with this pay station for mounting it at the side of a telephone, as shown in cut.

11	Wall	Nickels, Dimes and Quarters	9x4½x3
----	------	-----------------------------	--------

No. 13A

This equipped with two clamps of such size as to fit the stem of a standard desk telephone. In ordering, specify the type and make of desk telephone with which it is intended for use.

13A	Desk	Nickels	9½x3½x3¼
-----	------	---------	----------

No. 14

Fittings will be furnished with this pay station to permit of attachment to standard types of desk telephones. In ordering, specify the type and make of desk telephone with which it is intended for use.

14	Desk	Nickels, Dimes and Quarters	11x4½x3¼
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No. 20

This pay station will be equipped with fittings to permit of its being attached to a standard type of desk telephone. Fittings are arranged so that the unit thus formed may be fastened to a counter or telephone booth shelf. In ordering, specify the type and make of desk telephone with which it is intended for use.

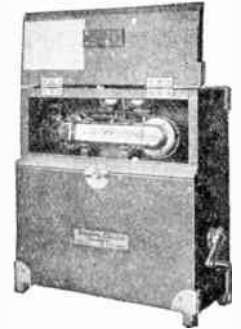
20	Desk	Nickels, Dimes and Quarters	10¾x4¼x3¼
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The above code numbers cover pay station boxes only.

Western Electric Portable Magneto Telephones



No. 1330E Closed



No. 1330E Open

Nos. 1330 and 1331 Types

These are complete magneto telephones mounted in substantial wooden cases. They are primarily for use in railway service and are designed to withstand the jarring and rough handling incident to train service. In addition to railway service these telephones are suitable for any service where a substantial type of portable telephone is required. While these telephones are not waterproof they are designed to withstand ordinary weather conditions.

The Nos. 1330F and 1331F telephones are equipped with a six-foot waterproof cord and No. 146 plug for connecting them to a telephone line through a No. 186 pole jack.

The Nos. 1330E and 1331E telephones are intended primarily for use where connection to the line will be made with a line pole.

No. 1375 Type

The No. 1375B is especially adapted for use in cases where the telephone user must carry the telephone considerable distances. While it is primarily intended for use on moderately loaded lines, the design of the generator is such that it may be satisfactorily operated on heavily loaded lines.

The generator, induction, coil buzzer and terminal block are mounted on an aluminum frame and secured in the case by means of machine screws.

The case is made of high grade leather and is designed to withstand considerable rough handling.

Code No.	Hand Set	Plug	Cord for Plug	RINGER OR BZZZER Code No.	Resistance (Ohms)
1330E	1001C	None	None	32B Ringer (A.C.)	2500
1330F		No. 146	No. 509 6-ft.		
1331E		None	None	3B Buzzer (A.C.)	2500
1331F		No. 146	No. 509 6-ft.		
1375B	1001H	.....	.....	D-21141 Buzzer (A.C.)	2150

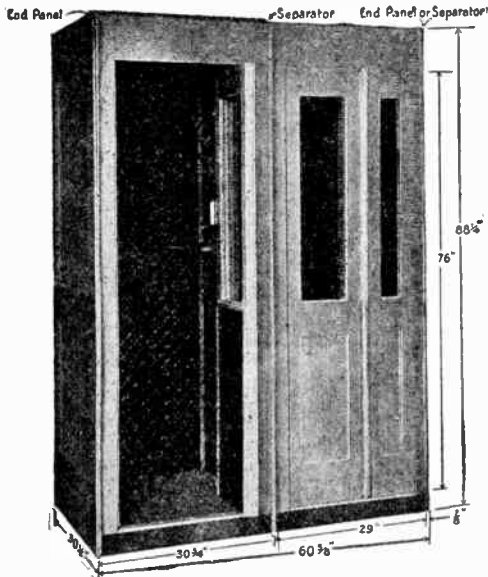
Code No.	GENERATORS Code No.	Current	Ind. Coil	Conden-sar	Battery Used*	Approx. Wt.Lbs.
1330E	{ 48A (5 Bar)	A.C.	29	{ 21F (None)	2 Blue Bell Dry Cells*	28
1330F						
1331E						
1331F	{ 22A (3 Bar)	A.C.	29	{ 21F (None)	2 No. 790 Eveready batteries*	17
1375B	.29E	A.C.	D-17624	None	One No. 703 Eveready Battery*	10½

Code No.	Over All Dimensions In.	Line Conditions as Regards Load	Signalling
1330E	12½x13½x5¼	For heavily loaded lines	Telephone signals and is signalled by code ringing
1330F			
1331E		For lightly loaded lines	
1331F			
1375B	9¾x 7¼x4¼	{ Medium and heavily loaded	Telephone signals and is signalled by code ringing

*Batteries are not included in the price of the telephone and are furnished only when specified in the order.

Western Electric Telephone Booths

No. 1 Type Folding Door



The No. 1 type booths are designed for installation in groups being built in units with unfinished sides. They are placed with separators between adjacent units and assembled with panels at either end of the group of compartments. The backs of the units are finished as indicated in

the code listings. The hardwood back can be equipped with an upper panel of glass upon request, at an extra charge.

The folding door construction makes these booths particularly desirable for use in narrow hallways or passages as the door opens and closes in a space only three inches beyond the front surface of the booth. This door will remain as placed in any position. The sides, ceiling and the lower panel of the door on the inside are lined with sheet metal. The floor and front base-board are covered with linoleum and the threshold is protected with a safety tread.

The ceiling of the booth is 4 1/2 inches below the roof and the intervening space may be used as a wiring chamber and to house an electric light relay or door switch equipment when these features are required.

These booths are strong and substantial in construction.

The special folding door design not only economizes space but protects the user.

Standard No. 1 Type Booths Consist of the Following

No. Code	Description
1-A	Light Mahogany Booth Unit with Hardwood Back
1-B	" " " Softwood
1-C	Quartered Oak " " " Hardwood
1-D	" " " Softwood
1-E	Dark Mahogany " " " Hardwood
1-F	" " " Softwood

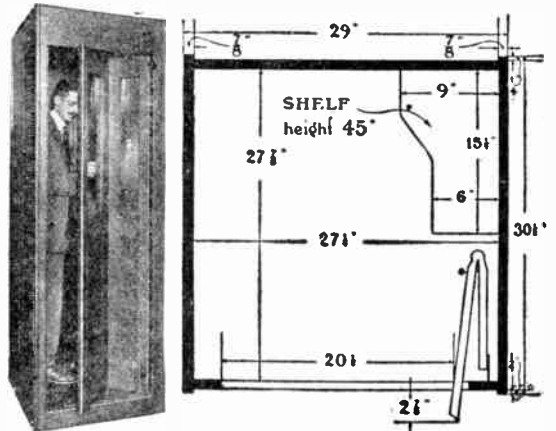
The above listings of No. 1 type booths do not include end panels, separators, seats, locks, keys and lighting equipment. These items must be ordered separately.

Booth Switches

Code No.	Description
1A	This switch is used for disconnecting a telephone, located in a booth or pole box, from the line when the booth or pole box is locked. It operates when a hasp is placed over the staple and held in place by a padlock. It guards the telephone set against injury from lightning discharges. The approximate dimensions of the switch case are: width, 3 1/2 inches; depth, 1 inch; and length, 4 1/2 inches.

Western Electric Telephone Booths

No. 2 Type Folding Door



Half Closed Booth Over All Height, 88 1/4 Inches

The No. 2 type booth is built as a single unit and presents a neat and pleasing appearance from all points of view. Several of these booths may be placed next to each other to form a group, such booths being ordered without glass panels in the sides, that is, they would have glass panels in the door only.

The following points should be noted in considering the advantages of this form of booth construction.

The movement of the Folding Door takes but three (3) inches of space beyond the front of the booth, making it possible to use this type of booth in narrow passageways.

Design is such that door is open at all times when booth is not in use. This is the only practical plan for booth ventilation. The point where the 2 leaves of the Folding Door meet is of such design as to prevent any chance of injuring the fingers or hand. One of the distinctive advantages of the Folding Door is that it can be both closed and opened by pulling on the handle. This feature is possible only with this type of door.

The Folding Door does not require the use of tracks in the floor, consequently eliminating the main cause of trouble formerly experienced with the booth equipped with sliding doors. The design of the Folding Door is such that it will remain open or closed without the use of latches or catches.

The Folding Door folds within the booth; consequently, there is no interference with adjacent doors.

Standard No. 2 Type Booths Consist of the Following

Code No.	Description
2-A	Plain Oak with 3 Lights (Glass) (2 Left Side and 1 Right Side)
2-B	Birch—Dark Mahogany Finish with 3 Lights (Glass) (2 Left Side and 1 Right)
2-C	Birch—Light Mahogany Finish with 3 Lights (Glass) (2 Left Side and 1 Right)
2-G	Plain Oak has Solid Sides (No Glass in Panels)
2-II	Birch—Dark Mahogany Finish has Solid Sides (No Glass in Panels)
2-J	Birch—Light Mahogany Finish has Solid Sides (No Glass in Panels)

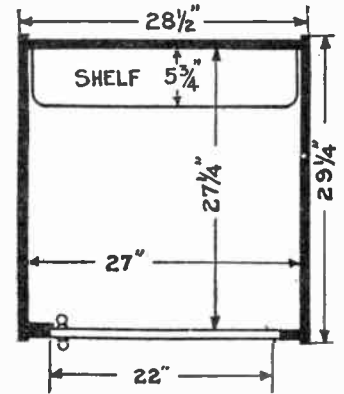
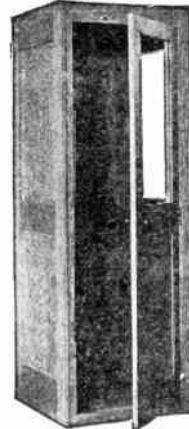
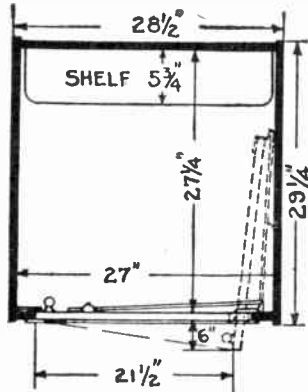
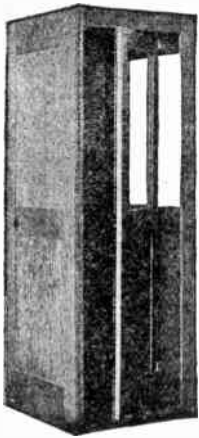
The above listings of No. 2 type booths do not include end panels, separators, seats, locks, keys and lighting equipment. These items must be ordered separately.

Equipment

- INTERIOR.—Sides, back and ceiling lined with sheet metal.
- FLOOR.—Hardwood flooring.
- THRESHOLD.—Protected with safety tread.
- DOOR.—Always hinged on right-hand side (facing booth).
- SHELF.—Furnished with each booth. Shelf is intended only as an elbow rest.
- WIRING.—Space between ceiling and roof (27 1/4 inches wide, 27 1/8 inches deep, 4 1/4 inches high) is provided as a wiring chamber, and as a housing for electric light relay or door switch equipment. A wiring slot is provided back of inside corner moulding. Ceiling of booth is bored for electric light fixture, and to receive a door switch designed to operate an electric light by movement of the door.
- SEAT.—Made of oak or birch.
- LOCK.—Designed especially for Folding Door booths. Furnished only when specified.

Western Electric Telephone Booths
No. 3 Churchill Type Receding Door

Western Electric Telephone Booths
No. 4 Churchill Type Swinging Door



Booth Half Closed

Dimensions
Over All Height, 83 1/2 Inches

Booth Half Closed

Dimensions
Over All Height, 83 1/2 Inches

The Churchill No. 3 type receding (or sliding) door telephone booth is built as a single unit and is especially characteristic in its design. It is made throughout of genuine kiln dried selected plain white oak or birch equipped with a reinforced back panel for mounting a wall telephone or coin collector set. It also has a writing-shelf. This receding door booth construction makes these booths especially desirable for use in narrow hallways or passages as the door only extends a maximum of six inches beyond the front surface of the booth when open. The No. 3 type has no grooves in the floor where dirt can accumulate and interfere with the operation of the door and it is provided with mechanical devices to permit the door being opened and closed in a smooth and easy manner. When the door is in closed position, it is only necessary to push on the right-hand side of the door. This feature from a user's standpoint is important.

Several of these booths may be placed adjoining each other to form a group or battery, such booths being ordered without glass panels in sides.

OUTSIDE DIMENSIONS.—(Booth assembled). 83 1/2 inches high, 28 1/2 inches wide and 29 1/4 inches deep.

INSIDE DIMENSIONS.—80 1/2 inches high, 27 inches wide and 27 1/4 inches deep.

DOOR OPENING.—77 1/2 inches high, 23 inches wide.

DOOR EQUIPMENT.—The door is equipped with patented steel, nickel-plated hardware consisting of:

1 swivel roller guide and track on top of door, 1 sliding guide on bottom of door which operates on outside edge of tread, 2 roller hinges on back edge of door which operate on tracks fastened to side of cabinet, 1 handle for inside of door, 1 lead aluminum tread at front edge of bottom.

FINISH.—The booth is thoroughly finished inside and out in following manner:

The sides and front are stained, filled, then given one coat of shellac and a final coat of flat varnish, producing a smooth satin finish. The back and top are stained, filled and given one coat of varnish. The floor is thoroughly oiled.

SHIPPING.—The booths are shipped "knocked down" in a substantial crate, ready for assembly, upon receipt at destination. Orders for this type of booth should specify the following code and descriptive information (state "Churchill Type").

Code No.	Material	Finish	Description
3A	Plain Oak	Medium Oak	1 Glass Panel in Door, 1 Glass in Right Side.
3B	Birch	Dark Mahogany	1 Glass Panel in Door, 1 Glass in Right Side.
3C	"	Light Mahogany	1 Glass Panel in Door, 1 Glass in Right Side.
3D	Plain Oak	Medium Oak	1 Glass in Door, 1 in Right Side, 1 in Left Side.
3E	Birch	Dark Mahogany	1 Glass in Door, 1 in Right Side, 1 in Left Side.
3F	"	Light Mahogany	1 Glass in Door, 1 in Right Side, 1 in Left Side.
3G	Plain Oak	Medium Oak	1 Glass Panel in Door Only.
3H	Birch	Dark Mahogany	1 " " " " "
3J	"	Light " "	1 " " " " "

BOOTH CONSTRUCTION.—The No. 4 type telephone booth is made throughout of genuine kiln dried plain white oak (with medium oak finish) or birch (with a light or dark mahogany finish). All sides are framed and paneled 3-ply. The door is equipped with a glass upper panel. The right or left sides of the booth are interchangeable and can also be equipped with glass upper panel if desired.

This booth is equipped with a reinforced back for mounting either a wall telephone or coin collector set. A writing-shelf 5 3/4 inches wide is also supplied which affords means for mounting a desk telephone.

OUTSIDE DIMENSIONS.—(Booth assembled). 83 1/2 inches high, 28 1/2 inches wide and 29 1/4 inches deep.

INSIDE DIMENSIONS.—80 1/2 inches high, 27 inches wide and 27 1/4 inches deep.

DOOR OPENING.—77 inches high and 23 inches wide.

DOOR EQUIPMENT.—The door is attached to the door-frame with three substantial hinges, finished in black japan and the mortise lock with knob on each side is finished in japan.

A lead aluminum door tread is supplied on this booth.

FINISH.—The booth is thoroughly finished inside and out in the following manner:

The sides and front are stained, filled, then given one coat of first coat shellac and finished in flat varnish producing a smooth satin finish. The back and top are stained, filled, and given one coat of varnish.

The floor is thoroughly oiled.

SHIPPING.—The booth is shipped "knocked down" in a substantial crate, ready for assembly upon receipt at destination. A card giving full instructions for the assembly of the booth is packed with each unit.

ORDERS for this type of booth should specify the following Code and Descriptive information (state "Churchill Type").

Code No.	Material	Finish	Description
4A	Plain Oak	Medium Oak	1 Glass Panel in Door, 1 Glass in Right Side.
4B	Birch	Dark Mahogany	1 Glass Panel in Door, 1 Glass in Right Side.
4C	"	Light Mahogany	1 Glass Panel in Door, 1 Glass in Right Side.
4D	Plain Oak	Medium Oak	1 Glass in Door, 1 in Right Side, 1 in Left Side.
4E	Birch	Dark Mahogany	1 Glass in Door, 1 in Right Side, 1 in Left Side.
4F	"	Light Mahogany	1 Glass in Door, 1 in Right Side, 1 in Left Side.
4G	Plain Oak	Medium Oak	1 Glass in Door Only.
4H	Birch	Dark Mahogany	1 " " " " "
4J	"	Light Mahogany	1 " " " " "

**Western Electric Street Railway Telephones
Magneto and Battery Types**



No. 1278 type telephones employ weatherproof iron boxes and are provided with "insulated" circuits. They are intended principally for exterior use by street railway companies operating telephone lines on which there is a chance of crosses with low voltage power circuits. This type telephone is arranged so that its circuit is cut off from the line except when its door is opened. When the telephone is in use a repeating coil is interposed between the line and the telephone circuit proper, so as to protect the user, as far as possible, from the chance of injury should the line become crossed with a low voltage circuit. When the door is opened, a line switch is released which connects one winding of the repeating coil across the line and connects two fuses and two open space cut-outs into this circuit. The telephone circuit proper is connected to the second winding of the repeating coil and has no direct contact with the line circuit. The fact that a repeating coil is interposed between the line circuit and the telephone circuit reduces the efficiency of the telephone to some extent and, therefore, the use of these telephones is not recommended on heavily loaded lines, except where the protective feature is essential. See No. 1336 type telephones. In case a car is held up awaiting orders from the dispatcher the door of the telephone is left open so as to permit of the telephone being signalled. (It is impossible for the telephone to be signalled when its door is closed.) As the talking circuit is only closed when the push button in the hand set is depressed, the battery in the telephone is not wasted under the above condition. The apparatus of this telephone is mounted on an iron shelf, which may be removed as a unit from the telephone for inspection. The connection between the apparatus on the shelf and the line and ground terminals is made through the medium of clips which register with contacts mounted on a terminal block secured to the back of the case. The case and door are of cast iron and have a galvanized finish. Both the top and bottom ends of the case are tapped for receiving 1/2 inch conduit.

The F, G and J telephones are equipped with a lock which is arranged so that the key cannot be removed until the door of the telephone is closed. The No. 1278H is equipped with a hasp, staple and pin similar to that used on No. 1336 type telephones, but padlock is not included.

For Magneto Service

Code No.	Hand Set	Code No.	Resistance (Ohms)	Generator	Ind. Coil	Repeating Coil	Lock	Class of Signal Service	For Line Load
1278 F					13	25E	5B	†Code Medium	
1278 G	1001H	51AG	1000	†48C	29	25E	5B		
1278 H					29	25E	*None		

For Local Battery Talking and Central Battery Signalling

1278 J	1001H	51AG	1000	None	13	25E	5B	†Code Medium
--------	-------	------	------	------	----	-----	----	--------------

Designed for medium line load. In addition to the apparatus listed above these telephones are each equipped with: A special door switch. A special protector.

- 2 D. & W. No. 5001 Type C fuses—500 volt 1 ampere.
- 2 No. 2 protector blocks.
- 2 No. 1 protector blocks.
- 2 No. 3 protector micas.

Dry cells must be ordered as a separate item.

*Equipped with hasp, staple and pin the same as No. 1336 type telephones. †Ringer is disconnected from the line when door of telephone is closed. ‡Generators have special mounting brackets.

No. 8 Type Western Electric Cable Terminals

Without Protectors

This terminal is for open wire distribution from lead-covered aerial cable, and is arranged for attaching to poles. No arrangement is made for protective devices. A six-foot No. 22 B. & S. gauge cable stub is standard.



Code No.	Capacity Pairs	Over All Height Less Cable Stub	Diam. of Hood In.
8A	10	15 3/8	6 1/4
8B	16	15 3/8	6 1/4
8C	26	19 1/8	6 1/4
8D	31	19 1/8	6 1/4
8E	51	28 1/8	6 3/4

No. 14 Type Western Electric Cable Terminals

Without Protectors

This is for open wire distribution from lead-covered aerial cable, and is intended to be mounted on poles or buildings. No arrangement is made for protective devices. A six-foot No. 22 B. & S. gauge cable stub is standard.

Code No.	Capacity Pairs	Length Including Nipples	Width of Cover In.
14B	11	10 3/8	7 7/8
14C	16	12 1/8	7 7/8
14D	26	17 3/8	7 7/8



No. 18 Type Western Electric Cable Terminals

With Protectors

This is a protected terminal for open wire distribution from lead-covered aerial and underground cable. Inclosed in a black finished galvanized iron cover approximately 8 3/8 inches in diameter, provided with a safety chain fastened to the mounting base.

Arranged for mounting on poles. Equipped with: No. 7A fuses (7 ampere unless otherwise specified). No. 1 protector blocks. No. 2 protector blocks. No. 3 protector micas.

A six-foot No. 22 B. & S. gauge cable stub is standard.

Code No.	Capacity Pairs	Length Inches	Code No.	Capacity Pairs	Length Inches
18A	10	19 3/8	18D	30	33 1/8
18B	15	22 1/8	18E	50	46 3/8
18C	25	23 3/8	18F	60	53 1/8



Western Electric Unmounted Condensers

Used in on party lines where ringing trouble occurs due to "listening in" or leaving receivers off hook.

Telephones equipped with one of these condensers wired in series with the receiver overcome this difficulty, and it is possible to ring satisfactorily on a line with several receivers off.

Code No.	Capacity Micro Farads	Tested on Voltage	Use
21D	2	500 D. C.	Telephone Sets
21E	2	500 D. C.	General
21F	1	500 D. C.	Telephone Sets
21L	2	500 D. C.	Coil Racks
21M	1	500 D. C.	"
21W	1	350 D. C.	Magneto Receiver Sets
23A	1	1000 A. C.	Railway Sets
21AN	1	500 D. C.	Telephone Sets
21AP	1	500 D. C.	"
21K	1	500 D. C.	General
21AA	1	100 A. C.	Railway Sets
21AC	0.5	500 D. C.	Used with No. 1200 Type Switchboard
21AK	0.5	1000 A. C.	Telegraph
21Y	0.25	1200 A. C.	Telegraph
21H	0.1	1200 A. C.	Used With No. 84 Type Interrupter
21E	0.1	500 D. C.	General
21U	0.05	1200 A. C.	Railway Sets

NOTE.—In addition to the 21W condenser, a condenser strap P-43065 and two 8 x 1 1/2-inch round head wood screws should be ordered separately in case it is desired to mount this condenser in a wooden telephone set box.



Western Electric Telephone Cords

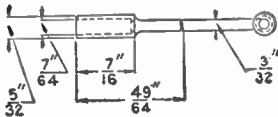
There is a Western Electric cord to fit any telephone set or switchboard. If none of the cords described below meet your requirements, write us, sending if possible a sample cord or a sketch, paying particular attention to the kind of tip required. Always specify length of cord when ordering.

Wall Telephone Receiver Cords

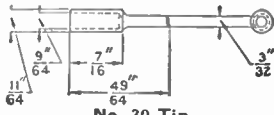
Code No.	Description	Used with	Standard Length	Cord Tip	No.
10	Two Conductor Tinsel Cord, Green Silk Covering.	Receiver on Wall Set	2 1/2 Ft.	29	(Receiver End)
		Receiver on Wall Set	6 Ft.	62	(Set End)
92	Two Conductor Tinsel Cord, Brown Worst Covering.	Receiver on Wall Set	2 1/2 Ft.	30	(Receiver End)
454	Same as No. 92, Except for Tips.	Receiver on Wall Set	2 1/2 Ft.	30	(Both Ends)
		Receiver on Wall Set	6 Ft.	62	(Both Ends)

Desk Stand Cords

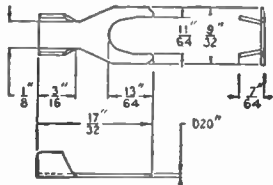
549	Two Conductor Tinsel Cord, Brown Silk Covering.	Receiver on No. 1020 Desk Stand	2 1/2 Ft.	62	(Stand End)
		Receiver on No. 1020 Desk Stand	6 Ft.	29	(Receiver End)
547	Single Conductor Tinsel Cord, Green Silk Covering.	Transmitter on No. 10209 Desk Stand	7/8 In.	62	(Stand End)
		Transmitter on No. 10209 Desk Stand	5 1/2 Ft.	56	(Transmit. Ends)
550	Three Conductor Tinsel Cord, Brown Silk Covering.	Stand to connect with Desk Set Box	8 Ft.	62	(Both Ends)
		Stand to connect with Desk Set Box	5 1/2 Ft.	62	(Both Ends)



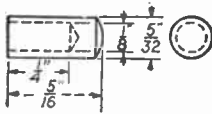
No. 29 Tip



No. 30 Tip



No. 62 Tip



No. 80 Tip

**Western Electric Desk Set Boxes
Nos. 300 and 315 Types**

For Use with Desk Stands, Telephone Arms, Etc., on Magneto or Central Battery Lines

Used with No. 1020AL desk stand and Nos. 1020CC, 1048AA, AB and AC telephone arm. Oak boxes equipped with induction coil, and with ringer, generator and condenser as indicated below.



Ringers Operated by Alternating Current

Code No.	Ringer Resistance Ohms	Type Generator	Code Ringing	Con-denser	Service
315H	1000	No. 22 (3 Bar A. C.)	.....	.....	Light Loaded Lines
300K	2500	" 48 (5 " " )	.....	.....	" " " "
300N	2500	" 48 (5 " " )	.....	1 Mf.	" " " "
300L	1600	" 48 (5 " " )	.....	.....	Medium Loaded Lines
300M	1600	" 48 (5 " " )	.....	1 Mf.	" " " "
300AA	2500	" 50 (3 " " )	.....	.....	Heavy " " "
300AA	1600	" 50 (3 " " )	.....	.....	Medium " " "



Western Electric Desk Stands

No. 1040AL

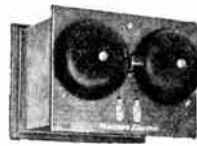
For regular bridging magneto or common battery service. Insulated transmitter. Includes 1 No. 40AL desk stand, 1 No. 323W transmitter, 1 No. 143AW receiver and cords. Bower-barff finish.

Western Electric A. C. Extension Bells

Intended for auxiliary use in connection with wall, desk or telephone arm telephones. They consist of a ringer on a suitable mounting and two line terminals or binding posts. For magneto bridging non-selective service only.

No. 127 Type

Ringer mounted in an oak box. Approximate dimensions, width 6 1/2 inches; height 4 3/8 inches; depth 4 5/8 inches.



Code No.	Ringer No.	Resistance Ohms
127E	38AG	1020
127F	38BG	2500
127G	38FG	1600

No. 392 Type

Moisture-proofed loud ringing bells having a black finish metal cover and base with galvanized finish gongs.

When the extension bell is to be used on a central battery line a 2 M.F. condenser must be connected in series with the ringer coils.

Base is arranged for mounting a No. 21D condenser. Condenser is not furnished, however, unless so ordered.

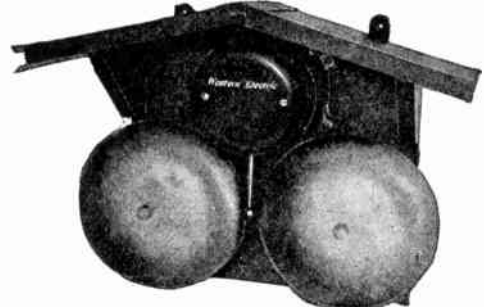
The connecting leads to the ringer coils are so arranged that the condenser can be easily connected in series with the ringer without disturbing the line wires when desired.



Code No.	Resistance Ohms	Diameter Gongs, In.
392A	1000	6
392B	2500	6
392E	1600	6
392G	1000	8
392H	2500	8

Biasing attachment for selective ringing can be added.

No. 342 Type



Loud ringing bells for use in mines and other places where a bell protected from weather is desired. Consists of a No. 392 type bell mounted on a No. 149A backboard having a sloping roof which protects the bell.

Code No.	Bell Used	Resistance Ohms	Diam. Gongs, In.	Code No.	Bell Used	Resistance Ohms	Diameter Gongs, In.
342G	392G	1000	8	342J	392A	1000	6
342H	392H	2500	8	342K	392B	2500	6

**Western Electric Tubular Fuses
Fiber Shell Type**



No. 7T



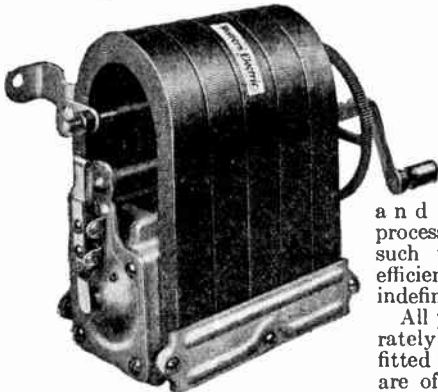
No. 7A

No. 11C

These fuses are carefully made from especially selected materials. The use of lead fuse wire prevents the possibility of overheating the shell. These fuses will carry their rated currents indefinitely without injury and will act reliably on one and one-half times their rated current values. Fuses of the same code number and rated capacity will give consistent performance as to rated and operating current values.

Code No.	Rated Capacity Amperes	Used with
7A	1 to 8 as Specified	Nos. 61, 77, 1074A and 1078 Protectors
7T	7	B Cable Terminals.
11C	7	Nos. 58AP and 1079AP Protectors

Western Electric Hand Generators



No. 48A

Western Electric hand generators are correct in both mechanical and electrical design and the materials used and manufacturing processes employed are such that their high efficiency is retained indefinitely.

All parts are accurately machined and fitted and the bearings are of such size that no trouble due to the

armature scraping on the pole pieces will be encountered even after years of service. The gears are accurately cut.

All metal parts are given a protective finish and the armature winding is moistureproofed. The magnets are made from steel which was developed especially for this purpose.

No. 22 Type Generators

The No. 22 type generator is used on lightly loaded magneto lines and may be obtained for alternating or pulsating current.

These generators have three magnets except the No. 22E, which has only two.

No. 29 Type Generators

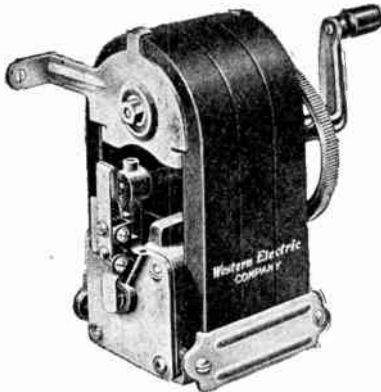
The No. 29 type generators are used where light weight is essential as in linemen's test sets, and portable telephones.

No. 48 Type Generators

The No. 48 is our most powerful hand generator and is used in telephone for heavily loaded line service.

No. 50 Type Generators

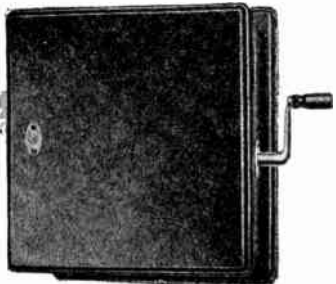
The No. 50 type generator was designed for use on moderately loaded lines and while it only has three magnets, it is considerably more powerful than a good many five-bar generators on the market, and will be found satisfactory for use on all but the very heaviest loaded lines. On a line of 12000 ohms, the No. 50 generator will operate six 2500 ohms Western Electric ringers and will operate thirty-five 2500 ohms Western Electric ringers on a line of about 1000 ohms.



No. 50A

The No. 50 generator is approximately 75% as powerful as the No. 48 type.

Western Electric Hand Generator Boxes

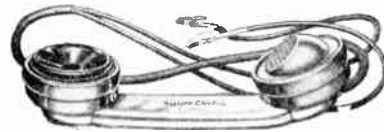


A hand generator box consists of a generator mounted in an oak cabinet having a hinged cover.

The leads from the generator are connected to terminals mounted close to the inside edge of the box.

Code No.	Generator	Current	DIMENSIONS OF BOX, INCHES		
			Width	Depth	Length
299F	48A	A. C.	8	6	9
299G	48B	A. C. and P. C.	8	6	9
303A	22A	A. C.	6 $\frac{5}{8}$	4 $\frac{1}{2}$	8 $\frac{1}{2}$

No. 1001 Type Western Electric Hand Sets



No. 1001A

The No. 1001 type hand sets have been manufactured for over fifteen years. They were originally intended for the use of linemen and are designed to with-

stand the rough handling, incidental to such service. This design proved to be so satisfactory that it is now used extensively for a number of different purposes, as described below.

The handles are made of brass tubing with drawn brass end pieces and the transmitters and receivers are provided with drawn brass cases equipped with screw clamping rings, thereby making an instrument that is extremely rugged.

The No. 1001-C, and H hand sets are provided with a push button switch which is connected so that these hand sets function the same as the No. 1020-AL desk stand. In view of this, they may be used in connection with our regular magneto and central battery desk set boxes in place of a desk stand, in cases where the service conditions are such that a hand set is required. These hand sets have a nickel-plated finish.

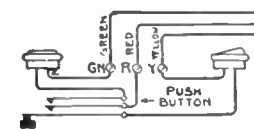
No. 1001A

Used by linemen as a test set on central battery lines. The cord is equipped with spring connection clips.



Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001A	244W	131W	243	8 in.	None
			2-574	3 ft.	
			(Waterproof)		

Nos. 1001C and 1001H



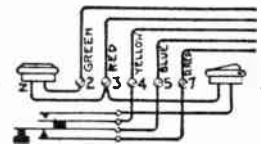
No. 1001C is used with Nos. 1330 and 1331 portable magneto telephones.

No. 1001H is used with No. 1375B portable magneto telephone.

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001C	285W	131W	366	6 ft.	2 Make
1001H	244W	131W	422	5 ft. 2 in.	2 Make
			(Waterproof)		

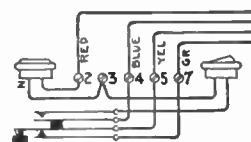
No. 1001E

Used with desk type Inter-phones where (5-conductor cord is required).



Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001E	244W	131W	398	6 ft.	1 Make and 1 Break

No. 1001J



No. 1001J is used with desk type Inter-phones.

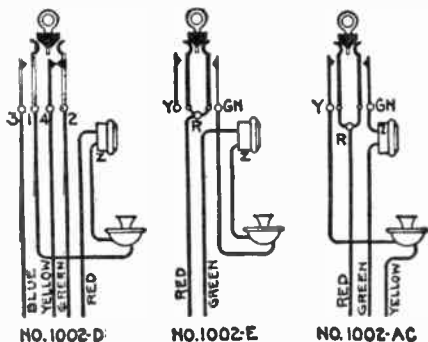
Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001J	144W	131W	502	6 ft.	1 Make and 1 Break

No. 1002 Type Western Electric Hand Sets



No. 1002AC

The transmitter and receiver of the No. 1002 type hand sets are mounted on a nickel plated tubular brass frame, equipped with a hard rubber handle. A switch mounted within the frame is actuated by a plunger which terminates in a ring by which the hand set is suspended, when not in use. When the hand set is removed from the hook, the switch is automatically closed. These hand sets function the same as certain desk stands, and, therefore, may be used in place of desk stands, if required. A hook (No. 141A switch-hook) is furnished with each hand set.



No. 1002D

Used in place of desk stands and telephone arms in connection with Interphones. Also for general use.

Code No.	Transmitter	Receiver	Cords		Switch Combination
			Code No.	Length	
1002D	267W	141W	336	14 ins.	1 make and 1 break
			402	8½ ins.	
			429	4 ft. 6 ins.	
			(4 conductors)		

No. 1002E

Used in connection with a janitor's switchboard in apartment house equipment. Also for general use.

Code No.	Transmitter	Receiver	Cords		Switch Combination
			Code No.	Length	
1002E	267W	141W	402	8½ ins.	1 make contact
			336	14 ins.	
			430	4 ft. 6 ins.	
		(2 conductors)			

No. 1002AC

Used in place of local battery bridging or central battery desk stands. Functions same as No. 1020AL desk stand. Also No. 1801 swbd.

Code No.	Transmitter	Receiver	Cords		Switch Combination
			Code No.	Length	
1002AC	267W	141W	318	4 ft.	2 make
			(3 conductors)		
			414	4¼ ins.	
			415	9½ ins.	

No. 1003 Type Hand Sets

NOTE.—The No. 1003 type hand sets are listed under Interphones.

Western Electric Hand Set Hangers

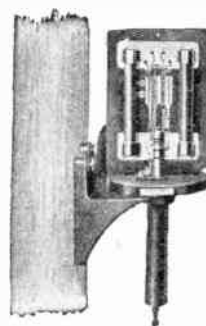
No. 1B mounts on a vertical surface for holding a No. 1001 type hand set when not in use. The hand set is suspended by its receiver, which fits into a recess in the hanger. Cast brass; black finish. Overall dimensions, 3¼ inches wide, 2½ inches deep and 3¾ inches high.

No. 1C is the same as the No. 1B, except that it is equipped with rubber studs and a spring, so arranged as to prevent the hand set from swaying. Used principally on steamships.



No. 1B

No. 186 Western Electric Weatherproof Telephone Jacks



Weatherproof jack designed for mounting poles; affords a means of connecting a portable telephone to the line. Contains protective apparatus. Lock will be furnished if specified in order.

Western Electric Telephone Protectors

No. 58AP



Designed for protection against lightning and crosses with electric circuits.

Consists of 2 No. 11C-7 ampere fuses, 2 each Nos. 26 and 27 protectors and Nos. 16, 29 and 43 mountings.

No. 60AP



Designed for protection against lightning. Consists of 2 each Nos. 26 and 27 blocks and mounting No. 49.

NOTE.—The No. 58AP is recommended in all cases except where the entire telephone system is entirely removed from all other electric lines. In these cases the No. 60AP can be used.

Western Electric Telephone Protector Blocks

Nos. 1 and 2



No. 1



No. 2

Code No.	Description	USED WITH	
		Protector Blocks, No.	Protector Micas, No.
1	Plain Carbon Block with Fuse Metal	2	3
2	Grooved Carbon Block without Fuse Metal	1	3

Protectors, Nos. 12A, 58A, 60A, 12A, 58A, and 60AP.

Western Electric Telephone Protector Blocks
[Nos. 19 and 20]



No. 19



No. 20

Code No.	Description	USED WITH		
		Protector Blocks, No.	Protector Micas, No.	Protectors, Nos.
19	Plain Copper Block with Two Pins	20	10	58B, 60B
20					19	10	58B, 60B
	Grooved Copper Block with Two Bushings			

Nos. 26 and 27



No. 26



No. 27

Provides better telephone service through fewer interruptions of operation. They are used together without a separator (protector mica) and form an open space cutout which will afford the highest grade of protection against high potentials due to lightning.

The No. 26 protector block is a solid piece of hard non-dusting carbon. The face of the block is especially ground to present a smooth surface. The No. 26 protector block is mounted on the ground side of the protector mounting.

The No. 27 protector block consists of a porcelain frame with a countersunk hard carbon plug which is fastened in place with low temperature fusing cement. The surface of the frame which bears against the No. 26 block, when assembled in a mounting, is finished by grinding. The air gap between the carbon insert in the No. 27 block and the face of the No. 26 block is held to close limits by this grinding process and the consistent operation of the cutouts at the proper voltage is thereby insured.

Ordinary lightning discharges will cause an arc across the air gap between the carbon blocks but will not heat them sufficiently to melt the cement used for holding the carbon plug in place. A cross with an electric light or power line, however, will cause a discharge or repeated discharges, of such duration that the heating of the carbon insert of the No. 27 blocks will melt the cement holding it in place and allow the mounting spring to push it into direct contact with the No. 26 block, thus permanently grounding the line.

Code No.	Description	Used with Protectors, Nos.
26	Carbon Block	{ 12AP, 58AP, 60AP, 76AP, 1268A and 1269A
27	{ Porcelain Frame with Carbon Insert	

The new blocks are interchangeable with the old combinations of No. 1 protector block, No. 2 protector blocks and No. 3 protector mica in all subscribers' set protector mountings and are therefore available for improving protective equipment already in service, during the normal replacements. All orders for replacements of Nos. 1 and 2 blocks and No. 3 micas in subscribers' telephone station protectors should specify the Nos. 26 and 27 protector blocks; no separator (protector mica) is needed with the new design of block.

Protector Micas



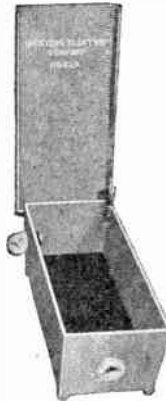
No. 3



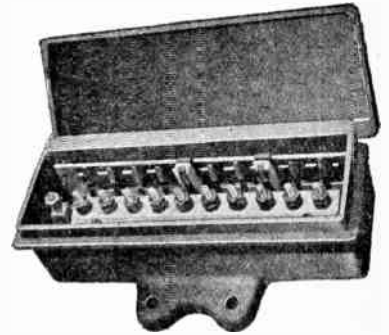
No. 10

Code No.	Protector Blocks, Nos.	USED WITH	
		Protectors Nos.	Protectors Nos.
3	1 and 2	12A, 58A, and 60A	58B and 60B
10				19, 20 and 21

Western Electric Telephone Protector Mountings



No. 82A



No. 83A

No. 82A

This protector mounting consists of a cast iron galvanized case approximately 11 1/2 x 4 3/4 x 4 5/8 inches over all with hinged cover and a wooden backboard. It is used for mounting the No. 58 protector at telephone stations located out of doors.

No. 83A

Designed to protect drop wires between the overhead lines and the subscribers telephone set from lightning. This protector mounting consists of an iron box approximately 8 3/4 x 3 1/2 x 2 1/2 inches deep with a hinged cover having a No. 84A protector mounted within it. Arranged to mount 10 pairs of No. 26 and 30 protector blocks or No. 19 and 20 blocks with No. 11 mica. This protector mounting provides for the protection of 5 pairs of wires. The box mounts directly underneath the crossarms on the poles. Two mounting lugs are provided for this purpose.

Western Electric Hand Receivers

***No. 143AW**

Concealed binding post hand receiver, composition case. Used with telephone sets, desk stands, telephone arms, etc.

***No. 144AW**

With hard rubber case.

*Cord not included; ordered separately.



Western Electric Head Receivers

No. 528BW

Standard bipolar head receiver, hard rubber case with improved wire type headband.

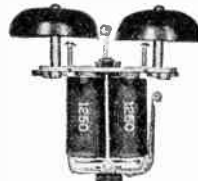
Used with operator's telephone set and all switchboards.



Western Electric Ringers

Have gong posts suitable for either 1/2 or 5/8-inch woodwork; spacers can be furnished to adapt the No. 53 type to 3/8 inch woodwork and the Nos. 38 or 51 types to either 3/8 or 1/2-inch woodwork. Black finish gongs are furnished as standard, but nickel finish gongs can be supplied if desired.

Used with central battery (magneto) telephones.

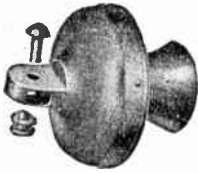


No. 53 Type

Code No.	Approx. Resistance Ohms	GONGS		Mounts in Woodwork In.
		Code No.	Diam. In.	
38AG	1000	26A	3	5/8
38BG	2500	26A	3	5/8
38FG	1600	26A	3	5/8
53AG	1000	29A	2 1/2	5/8
53BG	2500	29A	2 1/2	5/8
53FG	1600	29A	2 1/2	5/8

Western Electric Transmitters

No. 323BW



High resistance, insulated transmitter. Provided with mounting lug and clamping bolt. Black case. Designed for use on magneto and central battery desk stands and telephone arms.

No. 353BW

High resistance, insulated, bracket type transmitter. Black case with black finished bracket and arm. Designed for use on magneto and central battery wall telephones, requiring a bracket type transmitter.



Western Electric, Testing Sets

Type 90500

Each set consists of a hand generator and a ringer, wired in series, and inclosed in a wooden case.



No. 90530

Code No.	Will Ring Through Ohms	Consists of
90530	10000	1 No. 22K Generator
		1 " 19B Ringer
90510	35000	1 " 22K Generator
		1 Special No. 19 Ringer
90511	50000	1 No. 22N Generator
		1 " 19A Ringer
90512	100000	1 " 22N Generator
		1 " 19B Ringer

Size of case is 5 3/4 x 6 5/8 x 5 1/4 inches.

It is finished in birch.

No. 1017 Type Western Electric Test Sets



No. 1017B

No. 1017 Type

A wooden box telephone test set equipped with a regular local battery talking circuit consisting of a No. 266W transmitter, No. 13 induction coil, No. 145W receiver and a special three-cell dry battery unit.

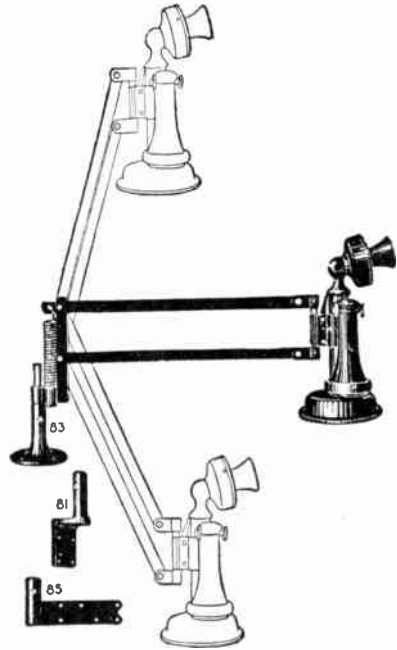
NOTE.—The No. 1017C test set differs from the No. 1017B only in that it is equipped with a specially designed high efficiency generator. The No. 1017B will, under ordinary conditions, be found entirely satisfactory, but in case a more powerful set is required to meet unusual conditions, the No. 1017C set has been developed.

No. 1017B. For lightly loaded lines—it will ring 15, 2500 ohm bells over a 15 mile No. 12BB iron metallic line.

Code No.	Wt. Including Battery Pounds	Size of Case, Inches	Finish
1017B	8	4 3/4 x 6 3/8 x 7 3/8	Birch Mahogany
1017C	8	4 3/4 x 6 3/8 x 7 3/8	Birch Mahogany

No. 1017C. For moderately loaded lines—it will ring 33 2500 ohm bells over a 15 mile No. 12BB iron metallic line.

Telephone Brackets



Brackets

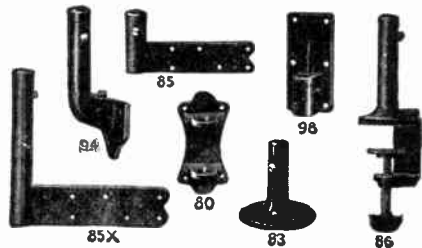
This is a substantial and serviceable telephone arm. With this bracket the telephone can be lowered below the base as well as raised above it.

Has nickel-plated finish with black enamel trim. Can be had in all black finish when so desired. Furnished in 24-inch length only.

Bracket is complete with Nos. 83, 84, 85, 85X, 88 or 94 mounting and any style clamp.

Add 50 cents to price when No. 86 mounting is wanted. Price, No. 95.....each \$3.50

Mountings and Clamps



No.	Use	Price
80	Used on Wall, Post, Window Frame, etc.	each \$.75
83	" " Top of Flat Top Desk.	
85	" " Side " Roll " "	" 1.25
85X	" " " " " "	
86	Clamps on Edge of Desk.	
94	Used on Desk or Wall	
98	" " Window Ledge, Railing, etc.	

Clamps



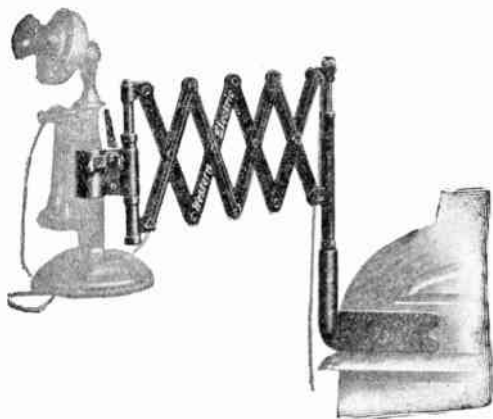
Clamps are for holding desk stands of different designs.

Letter	Use	Price
B	For Any Desk Telephone with Straight Stem.	each \$.35
G	" Old Style Automatic Stand with Bulging Stem.	
H	Clamp for Box Telephone or for Attaching to Flat Surface.	

Receiver Forks

Auxiliary receiver hook furnished with telephone arms free. Price, if Furnished Separate.....each \$.10

**Western Electric Telephone Brackets
S Type**



Equipped with No. 1 Mounting and No. 20 Clamp

Brackets

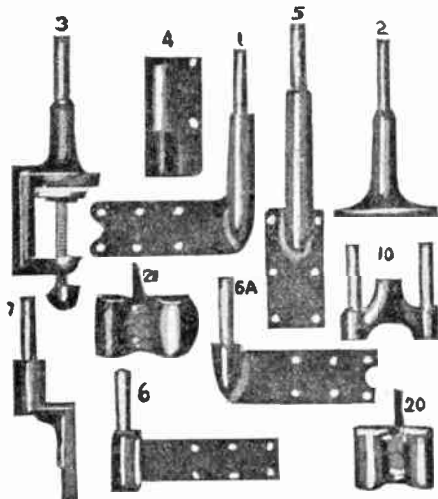
This bracket is of the "folding gate" type, and is arranged so as to revolve on its base. Furnished in 24 and 36-inch lengths. The desk stand swivels on the front rod. The bracket will be furnished with any of the mountings described below and with either of the clamps listed.

When ordering specify the letter of the clamp and mounting that is wanted in addition to the code number of the telephone bracket.

Complete equipment consists of bracket, one mounting, one receiver hook, one telephone clamp, one set of eyelets for holding cord, but does not include desk stand.

Code No.	Length of Bracket Extended, Inches	Approximate Shpg. Wt., Lbs.
S-8	24	5
S-14	36	6 1/2

Mountings

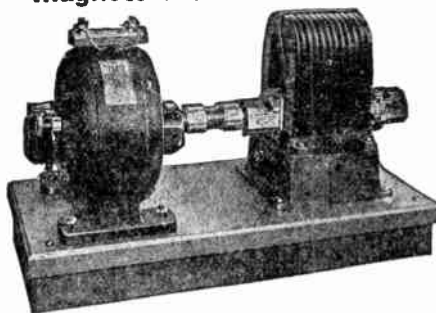


- | Code No. | Use |
|----------|--|
| 1 | For use on side of flat or roll top desk. |
| 2 | " " " top of flat top desk. |
| 3 | *Clamps on edge of flat top desk. |
| 4 | For use on wall or partition. |
| 5 | * " " " side of flat top desk. |
| 6 | * " " " " roll top desk. |
| 6A | * " " " " flat or roll top desk. |
| 7 | * " " " " " top desk. |
| 10 | * Attachment fits any mounting and holds two brackets. |

Clamps

- | Code No. | Use |
|----------|--|
| 20 | { Fits Telephones with a Cylindrical Stem Such as the No. 1020 Type. |
| 21 | { Fits Telephones with Convex Shaped Stems. |
- *Not stocked. Furnished on order only.

Magneto Motor Generator Ringing Sets



Motor generator ringing sets consist of direct current or single phase 60-cycle alternating current motors direct connected to magneto ringing generators. These sets furnish alternating ringing current only at 80 volts, 19 cycles. An at-

tachment for obtaining positive and negative pulsating current is, however, available.

List No.	Motor	Volts	Output Watts	Type
310087	110	15	{	Motor—S. P. 60 cycles A. C., 1150 R.P.M.
310088	220	15	{	Generator—80 volts, 19 cycles, S. P.
310093	110	15	{	Motor—S.P., 25 cycles A. C., 1400 R.P.M.
310094	220	15	{	*Generator—110 volts, 23 cycles, S. P.
310081	115	15	{	Motor—D.C., 1150 R.P.M.
310082	230	15	{	Generator—80 volts, 19 cycles, S.P.
310110	†12	15	{	Magneto Generator—80 Volts, 19 Cycles S.P., 1150 R.P.M. Belt Tightening Sub-base and 2 1/2 x 1 1/2 Inches Play Pulley.

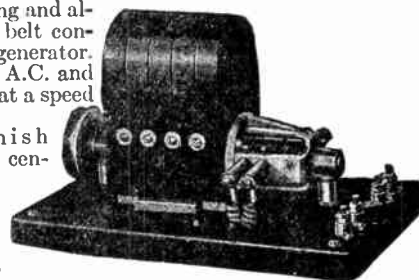
*This higher voltage is advisable on account of the higher frequency produced by the necessary excess speed of the 25-cycle over the 60-cycle. †Twelve bars.

No. 16A Magneto Ringing Generators

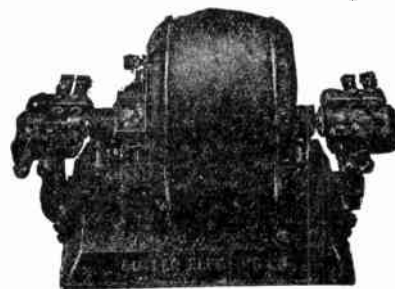
A 5-bar, pulsating and alternating current, belt connected power generator. Delivers 106 volts A.C. and 72 volts pulsating at a speed of 1000 R.P.M.

Used to furnish power ringing for central offices.

Mounted on a wood base 7x11 inches. Height, 7 inches. Has a cover for protection against dust and dirt. 2-inch grooved pulley.



Pole Changers



These rotary pole changers are in reality rotating interrupters, consisting of a direct or alternating current motor with a commutator for interrupting the current. They are suitable for use in telephone central offices, serving a maximum of 1500 subscribers.

Code No.	Voltage Required to Operate	Power Consumption Watts	Special Transformer Required	Kind of Current Furnished
A-24	24 D.C.	8	Yes	A.C. only
A-36	36 D.C.	8	Yes	A.C. "
A-110 D.C.	110 D.C.	8	No.*	A.C. "
A-220 D.C.	220 D.C.	8	Yes	A.C. "
A-110 A.C.	110 A.C.	8	Yes	A.C. "
A-220 A.C.	220 A.C.	8	Yes	A.C. "
S-24	24 D.C.	8	Yes	} A.C. and pos. and neg. puls.
S-36	36 D.C.	8	Yes	
S-110 D.C.	110 D.C.	8	No.*	
S-220 D.C.	220 D.C.	8	Yes	
S-110 A.C.	110 A.C.	8	Yes	}
S-220 A.C.	220 A.C.	8	Yes	

*Transformer required if one side of lighting circuit is grounded.

Ringing current for A.C. 110 and A. C.220 must be taken from exchange batteries. Orders should read: No. . . . rotary pole changer to operate from . . . volts . . . cycles, with special transformer for . . . volts D.C.

Western Electric Inter-phone Accessories

Inter-phone Cable



For Interior Use



For Outside Use

The conductors are provided with single silk and single cotton insulation, which is colored in such a way that each pair and each single wire can be identified. The cable is then impregnated with a wax compound and is covered with servings of paper and a heavy braiding, which is given a heavy coat of fireproofing paint.

The impregnation with wax prevents the insulation from fraying when the cables are installed. It also serves to protect the formed ends against moisture.

Three general types of cable are provided. Each type has its particular use, and care should be taken to order the proper cable for any desired purpose. These types are as follows:

1. Interior Cable with outside braiding treated with gray fireproofing paint. Use only in dry places.
2. Interior cable with green glazed cotton outside braiding. Use only in dry places where exposed to view.
3. Outside cable, lead covered. Always use this cable outside, and inside in every case where there is apt to be moisture even in a small degree. In conduit installations lead covered cable should be used.

Lead-covered cables are not listed with separate Code Nos. Any fireproofed type of cable may be ordered with a lead sheath.

All cables are provided with a standard color scheme, so that each pair can be distinguished from any other. The pairs are properly twisted to prevent inductive disturbances. Each cable contains two spare pairs of No. 22 gauge conductors.

Code No.	CONDUCTORS, B. & S. GAUGE		Covering	Approx. Outside Diam., In.
	No. 22	No. 18		
185B	4 singles	.....	Fireproofed braid	1/4
161B	8 "	.....	" "	5/16
161B (Lead)	8 "	.....	Lead sheath	5/16
142B	8 "	.....	Green cotton braid	5/16
162B	12 "	.....	Fireproofed braid	3/8
162B (Lead)	12 "	.....	Lead sheath	3/8
164B	6 "	2 pair	Fireproofed braid	3/8
164B (Lead)	6 "	2 "	Lead sheath	3/8
134B	6 pair	2 "	Fireproofed braid	3/8
134B (Lead)	6 "	2 "	Lead sheath	3/8
155B	6 "	2 "	Green cotton braid	7/16
141B	12 "	2 "	Fireproofed braid	7/16
141B (Lead)	12 "	2 "	Lead sheath	7/16
156B	12 "	2 "	Green cotton braid	7/16
157B	16 "	2 "	Fireproofed braid	7/16
157B (Lead)	16 "	2 "	Lead sheath	7/16
158B	20 "	2 "	Fireproofed braid	9/16
158B (Lead)	20 "	2 "	Lead sheath	9/16
136B	24 "	2 "	Fireproofed braid	5/8
136B (Lead)	24 "	2 "	Lead sheath	5/8
140B	31 "	2 "	Fireproofed braid	5/8
140B (Lead)	31 "	2 "	Lead sheath	5/8

No. 19 Type Cable Terminals

The No. 19 type cable terminal is admirably suited for interior distributing work. It was designed after a great deal of study, and is thought to be the best of its kind on the market. Made of hard wood, numbered and shellacked, and equipped with a japanned sheet metal cover.

Code No.	Capacity in Pairs	Length In.	Width In.	Depth In.
19A	14	8	5 7/8	2 1/2
19B	26	14	5 7/8	2 1/2

Western Electric Lead Covered Telephone Cable



The outside plant is a very important part of any telephone system. Unless satisfactory material is used in its construction, it is impossible for a telephone company to furnish satisfactory service even though the central office and substation equipment is of the best. Lead covered cable represents not only a large part of the capital invested in the outside plant, but also a most important part of the construction due to its function of being the transmitting medium for telephone messages.

These are certain characteristics which lead covered cable must possess in order to properly and efficiently function in a telephone system:—

1. It must be so constructed that it will have long life and thereby reduce depreciation to a minimum.
2. It must be designed to transmit telephone messages with a minimum transmission loss.

The Western Electric Company manufactures cable designed to conform to the above requirements and by virtue of the fact that its experience in this field covers the entire period since the first successful installation of lead cable for telephone use, its product is as nearly perfect as present day knowledge of the telephone art permits.

The Western Electric Company occupies an important position in the manufacture of lead covered cable for telephone use by virtue of the following facts:

1. It is the largest manufacturer of this commodity.
2. It has specialized on, and developed this product since its origin.
3. It manufactures for the largest users.
4. It is responsible for practically every important development and improvement.
5. Conscientious careful inspection and testing make sure that specifications are rigidly adhered to.
6. The design and development work is done by the largest force of telephone experts in the world.

Cable for aerial and underground telephone use is composed of copper conductors, insulated with paper, twisted into pairs and enclosed in a lead sheath. In general, cable with single wrapped conductors is recommended, since its electrical and mechanical characteristics are perfectly satisfactory for most conditions, and the cost is less than cable with double wrapped conductors.

Cable for interior construction usually has the conductors insulated with two servings of silk and one of cotton.

The sheath is made of pure lead, lead antimony alloy or lead tin alloy. Experience has shown that while either lead antimony or lead tin is satisfactory for aerial or underground cable, the former alloy, being somewhat cheaper, is more generally used. While pure lead cannot be recommended where the cable is subjected to vibration, it is satisfactory for use within buildings.

Extra Pairs

Extra pairs are placed in all cables containing conductors smaller than No. 16 to take care of any pairs which may become defective in manufacture. In the majority of cables all or part of the extra pairs will often be found good and may be used for additional circuits. All pairs of No. 16 A.W.G. and larger except in submarine cable are guaranteed to meet the specification requirements when the cable leaves our factory.

The coding of all cables is on the basis of the actual number of pairs. Actual and guaranteed number of pairs in the various sizes of standard cables containing conductors smaller than No. 16 A.W.G. are as follows:

Actual Pairs	Guaranteed Pairs
6 to 121	Actual pairs less one
152 " 242	" " " two
253 " 333	" " " three
364 " 444	" " " four
485 " 505	" " " five
606	" " " six
909	" " " nine
1212	" " " twelve

Western Electric Lead Covered Telephone Cable

Continued



Cable Yard at Hawthorne Works

Transmission

The transmitting efficiency of telephone cable, considered as a separate unit, depends principally upon its electrostatic capacity and conductor resistance. When telephone cable forms a portion of a completed telephone connection, the transmitting efficiency of the cable portion is modified somewhat by its relative position in that circuit and also by the type of other construction to which it is connected.

The following data is based upon average standard conditions and may be used for approximate calculations. In the case of circuits involving several different types of construction and considerable investigation, we recommend consulting our engineers.

As a measure of transmission efficiency, standard No. 19 A.W.G. cable, having a loop resistance of 88 ohms and a mutual electrostatic capacity of .054 M.F. per mile is used as a basis.

Thirty miles of this cable is considered the maximum distance over which commercial transmission can be secured. One mile of this cable is approximately equivalent to the following:

- 3.3 miles of No. 12 B.W.G. —B.B. galvanized iron circuit.
- 4.1 " " " 10 " " " " " " " " " "
- 8.0 " " " 14 N.B.S. or 12 A.W.G. hard drawn bare copper circuit.
- 12.7 miles of No. 12 N.B.S. or hard drawn bare copper circuit.

It then follows that 99 miles is the theoretical commercial limit for No. 12 B.W.G.—B.B. galvanized iron wire circuit.

Under each listing is given the respective transmission equivalent in terms of standard No. 19 A.W.G. cable.

Electrostatic Capacity

Consideration of capacity is a measure of that property possessed by a conductor of storing a greater or lesser charge of electricity, important, because it determines to a large extent the length of cable through which it is possible to transmit speech. For subscribers' cables not more than two miles in length it is generally considered economical to use fairly high capacity cable, since the decrease in transmission, due to the capacity, will be only a small percentage of the total loss in the circuit. For long lengths of cable or for those carrying important toll lines, lower capacity is usually specified.

The electrostatic capacity may be specified either as "mutual," that is, the capacity between two wires of a pair, or as "grounded," that is, the capacity between a wire and all the other wires and the sheath. Mutual capacity is a better criterion of the quality of the cable for telephone transmission, since the conductors are used in pairs as a metallic circuit and seldom, if ever, singly as grounded lines. The ratio of mutual to grounded capacity is approximately 1,1.6 but this ratio varies somewhat for different cables.

Western Electric Lead Covered Telephone Cable

Electrostatic Capacity

Continued

Electrostatic capacity may be measured by means of alternating current or direct current. The Western Electric Co. recommends the use of the alternating current method of determining the mutual capacities of telephone cable conductors since by its use true capacities at telephonic frequencies are determined. This is important as the efficiency of the cable for telephone purposes is based on that mutual capacity. For this reason the Alternating Current Method is superior to either the Direct Current Charge Method or the Direct Current Discharge Method. With the Direct Current Discharge Method improper manipulation of the testing equipment can be made to produce untrue capacity values indicating lower capacities than the conductors actually possess.

We strongly advise the specifying of the capacity requirements a given cable shall meet, including the testing method to be employed in making the tests and whether the rating shall apply to single conductors as grounded capacity or to pairs as mutual capacity. Unless otherwise specified in the order, all cables will be tested for mutual capacities by means of alternating current.

The purchaser, when requesting prices, should always mention the type of cable wanted or give a full description.

Special Cables

Special conditions often require cables with different characteristics from those which have been standardized and coded. If your condition necessitates special cable including any of the special types briefly outlined below write our nearest house giving full details and information and price will be furnished.

Submarine Cables

Paper insulated submarine telephone cable may be divided into three general classes, depending upon the use for which they are intended.

1. High dielectric strength, tight core cable, designed for use in comparatively long lengths, where the cost of repairing a break in the cable will be less than the cost of an entirely new cable.
2. High dielectric strength, loose core cable, designed for use in comparatively short lengths, where high transmission efficiency and high dielectric strength are of importance; for example: a short river crossing cable connecting important open wire cables.
3. Single paper insulated loose core cable designed for use in comparatively short lengths where so high a dielectric strength is not necessary; for example: a short river crossing cable connecting land cables.

Either single or double armored cable can be furnished. In many cases, single armor gives sufficient mechanical protection. Double armor is used only in cases of extremely severe mechanical requirements. In still water with a mud bottom, single armor will be sufficient. With a rocky or uneven bottom, or with strong tides or currents, double armor should be considered.

Composite Cables

Composite cable, that is, composed of conductors of two or more gauges can be furnished if desired. The combinations of pairs which will utilize the space within the lead sheath most economically are somewhat limited and our cable engineers will make recommendations along this line upon receipt of detail information as to the conditions to be met.

High Dielectric Strength Cables

Paper insulated cable designed to withstand test potentials up to 1500 volts A.C. is supplied for special circuits such as for telegraph or signal circuits.

Terminating Cables

The general practice of terminating paper insulated cable in the past has been to splice on a short piece of wool insulated cable. It has been found, however, that double silk and single cotton insulation is satisfactory for this purpose and it is less expensive. Double wool insulation can be furnished, if desired.

Prices

Owing to the fluctuations of the market price of raw material, it is impracticable to list prices on cable in a catalogue. Full information and prices will be furnished on request.

Western Electric Lead Covered Telephone Cable

Type ANA Cable

For Aerial or Underground Use

Conductors No. 22 A. W. G., single dry paper tape insulation, with color groups depending upon size. Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .079 microfarad; approximate equivalent grounded capacity, .130 microfarad; insulation resistance not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 700 volts A. C.

Transmission is equivalent to 1.60 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approx. Wt. per Ft., Lbs.	Convenient No. of Ft. on Reels
ANA-11	10	.070	.45	.47	2500
ANA-16	15	.070	.52	.56	2500
ANA-26	25	.070	.61	.70	2500
ANA-31	30	.070	.64	.76	2500
ANA-41	40	.075	.71	.93	2000
ANA-51	50	.075	.78	1.05	2000
ANA-56	55	.075	.81	1.11	1500
ANA-61	60	.080	.85	1.23	1500
ANA-76	75	.080	.94	1.42	1500
ANA-91	90	.080	1.00	1.56	1500
ANA-101	100	.085	1.05	1.73	1500
ANA-111	110	.085	1.08	1.81	1200
ANA-121	120	.085	1.14	1.94	1200
ANA-152	150	.090	1.24	2.30	1200
ANA-182	180	.090	1.34	2.57	1200
ANA-202	200	.095	1.41	2.86	1000
ANA-222	220	.095	1.47	3.04	1000
ANA-242	240	.095	1.53	3.23	1000
ANA-303	300	.105	1.71	4.00	800
ANA-333	330	.105	1.77	4.24	800
ANA-364	360	.105	1.84	4.48	800
ANA-404	400	.115	1.95	5.12	700
ANA-444	440	.115	2.04	5.47	700
ANA-455	450	.115	2.07	5.57	700
ANA-485	480	.115	2.11	5.77	600
ANA-505	500	.115	2.14	5.92	600
ANA-606	600	.125	2.34	7.09	600

Type NM Cable

For Aerial or Underground Use

Conductors No. 24 A. W. G., single dry paper tape insulation, with color groups depending upon size.

Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .075 microfarad. Approximate equivalent grounded capacity .125 microfarad; insulation resistances not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 500 volts A. C.

Transmission is equivalent to 1.94 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance, per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath, Inches	Mean Outside Diameter, Inches	Approx. Wt. per Foot, Lbs.	Convenient No. of Feet on Reels
NM-11	10	.070	.44	.43	3500
NM-16	15	.070	.48	.50	3500
NM-21	20	.070	.53	.57	3500
NM-26	25	.070	.56	.61	3500
NM-31	30	.070	.61	.68	3500

Western Electric Lead Covered Telephone Cable

Type NM Cable

Continued

For Aerial or Underground Use

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Wt. Lbs. per Foot	Convenient No. of Feet on Reels
NM-41	40	.076	.68	.83	2400
NM-51	50	.075	.73	.92	2400
NM-56	55	.075	.76	.97	1900
NM-61	60	.075	.79	1.02	1900
NM-76	75	.080	.86	1.20	1900
NM-91	90	.080	.93	1.33	1900
NM-101	100	.080	.97	1.42	1900
NM-111	110	.080	1.00	1.49	1200
NM-121	120	.085	1.05	1.64	1200
NM-152	150	.085	1.15	1.88	1200
NM-182	180	.090	1.24	2.17	1200
NM-202	200	.090	1.31	2.32	1000
NM-222	220	.095	1.38	2.57	1000
NM-242	240	.095	1.41	2.68	1000
NM-303	300	.105	1.59	3.34	900
NM-333	330	.105	1.65	3.53	900
NM-364	360	.105	1.71	3.73	900
NM-404	400	.105	1.77	3.97	700
NM-444	440	.105	1.87	4.23	700
NM-485	480	.115	1.95	4.76	600
NM-505	500	.115	1.98	4.88	600
NM-606	600	.115	2.14	5.49	600

Type SM Cable

For Underground Use

Conductors No. 24 A. W. G., single dry paper tape insulation, with color groups depending upon size. Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .085 microfarad; approximate equivalent grounded capacity, .135 microfarad; insulation resistances not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 500 volts D. C.

Transmission is equivalent to 2.10 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance, per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Wt. per Foot, Lbs.	Convenient No. of Feet on Reels
SM-909	900	115	2.23	6.38	600
SM-1212	1200	125	2.63	8.46	600

Type ANB Cable

For Aerial or Underground Use

Conductors No. 19 A. W. G., single dry paper tape insulation, with color groups depending upon size. Lead-antimony sheath.

Characteristics Per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .072 microfarad; approximate equivalent grounded capacity, .120 microfarad; insulation resistance not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 700 volts A. C.

Transmission is equivalent to 1.13 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance, per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Wt. Lbs. per Foot	Convenient No. of Feet on Reels
ANB-6	5	.070	.48	.50	2500
ANB-11	10	.070	.61	.69	2500
ANB-16	15	.075	.71	.89	2500
ANB-26	25	.080	.85	1.19	2000
ANB-31	30	.080	.91	1.31	1500
ANB-41	40	.085	1.05	1.64	1500
ANB-51	50	.085	1.14	1.85	1500
ANB-56	55	.085	1.17	1.94	1200
ANB-61	60	.090	1.21	2.12	1200
ANB-76	75	.090	1.34	2.43	1200
ANB-91	90	.095	1.47	2.86	1200

Western Electric Lead Covered Telephone Cable

Type ANB Cable—Continued

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Wt. per Foot	Convenient No. of Feet on Reels
ANB-101	100	.095	1.53	3.05	900
ANB-111	110	.105	1.62	3.48	900
ANB-121	120	.105	1.68	3.67	900
ANB-152	150	.105	1.84	4.21	900
ANB-182	180	.115	2.01	5.05	900
ANB-202	200	.115	2.11	5.40	700
ANB-222	220	.115	2.20	5.76	700
ANB-242	240	.125	2.31	6.46	700
ANB-303	300	.125	2.53	7.46	600

**Type BNB Cable
For Underground Use**

Conductors No. 19 A. W. G., single dry paper tape insulation, with color groups. Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. testing) .090 microfarad; approximate equivalent grounded capacity .144 microfarad; insulation resistance not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 700 volts A. C. Transmission is equivalent to 1.21 miles of standard 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance, per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness Sheath Inches	Mean Outside Diameter Inches	Approx. Wt. per Foot	Convenient No. of Feet on Reels
BNB-455	450	.125	2.63	8.90	600

Type TH Cable

For Long Aerial and Underground Lines

Conductors No. 16 A. W. G., single dry paper tape insulation, covering on pairs colored blue, green and red paired with orange.

Two tracer pairs in each length of cable—one near the center and one in the outside layer. Colors of insulation orange and gray. Lead-antimony sheath.

Transmission is equivalent to 0.78 mile of standard No. 19 A. W. G. gauge cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance per mile.

Details of Type TH Cable

Code No. and Guaranteed No. of Pairs	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approx. Wt., per Ft. Lbs.	Convenient No. of Ft. on Reels
TH-11	1/8	1 5/16	1.77	2000
TH-16	1/8	1 1/8	2.10	1500
TH-21	1/8	1 5/32	2.38	1500
TH-26	1/8	1 1/4	2.65	1500
TH-31	1/8	1 11/32	2.92	1200
TH-36	1/8	1 13/32	3.13	1200
TH-51	1/8	1 19/32	3.77	1200
TH-61	1/8	1 3/4	4.26	1000
TH-101	1/8	2 5/32	5.78	800
TH-111	1/8	2 1/4	6.14	600
TH-121	1/8	2 3/8	6.57	600
TH-152	1/8	2 17/32	7.46	600

Type TJ Cable

For Long Aerial and Underground Lines

Conductors No. 13 A. W. G. gauge, single dry paper tape insulation, covering on pairs colored blue, green and red paired with gray.

Two tracer pairs in each length of cable—one near the center and one in the outside layer. Colors of insulation orange and gray. Lead-antimony sheath.

Transmission is equivalent to 0.55 mile of standard No. 19 A. W. G. gauge cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance per mile.

Western Electric Lead Covered Telephone Cable

Type TJ Cable—Continued

Details of Type TJ Cable

Code No. and Guaranteed No. of Pairs	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approximate Wt. per Ft., Lbs.	Convenient No. of Ft. on Reels
TJ-11	1/8	1 3/16	2.452	1500
TJ-16	1/8	1 11/32	3.937	1200
TJ-26	1/8	1 3/8	3.906	1200
TJ-31	1/8	1 15/16	4.400	900
TJ-36	1/8	1 7/8	4.74	900
TJ-41	1/8	2	5.10	900
TJ-51	1/8	2 3/16	5.86	900
TJ-71	1/8	2 9/16	7.33	600
TJ-76	1/8	2 5/8	7.63	600

Types TH and TJ

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .071 microfarad; approximate equivalent grounded capacity, .115 microfarad; insulation resistance not less than 500 megohms. Dielectric strength. Insulation capable of withstanding a test potential up to 500 volts D. C. All pairs are guaranteed good.

Type F Cable

For Inside Construction

Conductors No. 22 A.W.G., double silk and single cotton insulation, covering on each pair colored white and red white. Pure lead sheath.

Characteristics per Mile of Cable

Insulation resistance, 100 megohms.

Details of Type F Cable

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath In.	Mean Outside Diameter, In.	Approx. Wt. Per Ft., Lbs.	Convenient No. of Ft. on Reels
F-6	5	3/4	3/8	.272	2500
F-11	10	3/4	7/16	.343	2500
F-16	15	3/4	1/2	.414	2500
F-21	20	3/4	9/16	.490	2500
F-26	25	3/4	5/8	.533	2500
F-31	30	3/4	11/8	.582	2500
F-41	40	3/4	1 1/8	.701	2000
F-51	50	1/2	1 1/8	.991	2000
F-56	55	1/2	1 1/8	1.050	1500
F-61	60	1/2	1 1/8	1.102	1500
F-76	75	1/2	1 1/8	1.240	1500
F-91	90	1/2	1 3/8	1.410	1500
F-101	100	1/2	1 1/2	1.491	1500
F-111	110	1/2	1 5/8	1.610	1200
F-121	120	1/2	1 3/4	1.685	1200
F-152	150	1/2	1 7/8	1.968	1200
F-182	180	1/2	1 7/8	2.220	1200
F-202	200	1/2	1 7/8	3.140	1000
F-222	220	3/2	1 9/8	3.300	1000
F-242	240	3/2	1 5/8	3.501	1000
F-253	250	3/2	1 1/2	3.636	1000
F-303	300	1/2	1 7/8	4.985	800

Type G Cable

For Inside Construction

Conductors No. 22 A.W.G., double silk and single cotton insulation, colored in accordance with a standard color scheme so that each pair is distinguishable from other pairs in the cable. Pure lead sheath.

Characteristics per Mile of Cable

Insulation resistance, 100 megohms.

Details of Type G Cable

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approx. Wt., Per Ft., Lbs.	Convenient No. of Ft. on Reels
G-6	5	3/4	3/8	.272	2500
G-11	10	3/4	7/16	.343	2500
G-16	15	3/4	1/2	.414	2500
G-21	20	3/4	9/16	.485	2500
G-26	25	3/4	5/8	.533	2500
G-31	30	3/4	11/8	.582	2500
G-41	40	3/4	1 1/8	.701	2000
G-51	50	1/2	1 1/8	.991	2000

Western Electric Lead Covered Telephone Cable
Type NR Cable

Conductors No. 22 A. W. G., single paper insulation, covering on pairs colored red and gray. Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity not greater than (A. C. Testing) .095 microfarad; approximate equivalent grounded capacity, .155 microfarad; insulation resistance not less than 500 megohms; dielectric strength. Insulation capable of withstanding 500 volts D. C.

Transmission is equivalent to 1.83 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance per mile.

Details of Type NR Cable

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approx. Wt. per Ft., Lbs.	Convenient No. of Ft. on Reels
NR- 6	5	5/64	3/8	.388	2500
NR- 11	10	5/64	13/32	.523	2500
NR- 16	15	5/64	1/2	.584	2500
NR- 21	20	5/64	17/32	.644	2500
NR- 26	25	5/64	17/32	.742	2500
NR- 31	30	5/64	5/8	.803	2500
NR- 41	40	5/64	11/16	.924	2000
NR- 51	50	5/64	3/4	1.046	2000
NR- 61	60	5/64	25/32	1.129	1500
NR- 76	75	5/64	7/8	1.312	1500
NR-101	100	3/32	1	1.776	1500
NR-152	150	3/32	1 3/16	2.281	1200
NR-177	175	3/32	1 1/4	2.486	1200
NR-202	200	3/32	1 1/16	2.691	1000
NR-253	250	3/32	1 1/8	3.106	1000
NR-303	300	1/8	1 3/8	4.286	800
NR-404	400	1/8	1 29/32	5.173	700

Type NP Cable

Same as Type NR cable except double instead of single paper insulation.

Details of Type NP Cable

NP- 6	5	5/64	13/32	.426	2500
NP- 11	10	5/64	15/32	.525	2500
NP- 16	15	5/64	17/32	.624	2500
NP- 21	20	5/64	9/16	.685	2500
NP- 26	25	5/64	19/32	.746	2500
NP- 31	30	5/64	21/32	.847	2500
NP- 41	40	5/64	23/32	.970	2000
NP- 51	50	5/64	25/32	1.093	2000
NP- 61	60	5/64	13/16	1.177	1500
NP- 76	75	5/64	29/32	1.362	1500
NP-101	100	3/32	11/8	1.839	1500
NP-152	150	3/32	1 1/32	2.353	1200
NP-177	175	3/32	1 3/32	2.562	1200
NP-202	200	3/32	1 3/8	2.817	1000
NP-253	250	3/32	1 1/2	3.241	1000
NP-303	300	1/8	1 11/16	4.458	800
NP-404	400	1/8	1 29/32	5.364	700

Type ASA Cable—For Underground Use

Conductors No. 22 A. W. G., single paper insulation with color groups depending upon size. Lead-antimony sheath.

Characteristics per Mile of Cable

Mutual electrostatic capacity no greater than (A. C. Testing) .089 microfarad; approximate equivalent grounded capacity, .140 microfarad; insulation resistance not less than 500 megohms; dielectric strength. Insulation capable of withstanding 500 volts D. C.

Transmission is equivalent to 1.71 miles of standard No. 19 A. W. G. cable having a mutual electrostatic capacity of .054 microfarad, and 88 ohms resistance per mile.

Code No. and No. of Pairs	No. of Pairs Guaranteed	Thickness of Sheath, In.	Mean Outside Diameter, In.	Approx. Wt. per Ft., Lbs.	Convenient No. of Ft. on Reels
ASA-404	400	.105	1.80	4.53	700
ASA-444	440	.105	1.87	4.81	700
ASA-485	480	.115	1.98	5.45	600
ASA-505	500	.115	2.01	5.60	600
ASA-606	600	.115	2.16	6.32	600
ASA-909	900	.125	2.63	8.87	600

Premier Handy Ball Bearing Electric Vacuum Cleaner and Blower



The Premier Handy Easily Takes the Dust from the Apparatus in the Switchboard

The Premier Handy Ball Bearing Vacuum Cleaner and Blower will clean switchboards, multiple cable ringing and charging machines and other central office equipment.

The Premier Handy is light in weight, powerful and easy to use. It can be changed from a suction cleaner to a blower in a few seconds. This cleaner has the added advantage of a high speed ball bearing motor, that does not have to be oiled. Price, with Ball Bearing Motor.....each \$40.00

No. 1002C Western Electric Telephone Head Sets



The No. 1002C head set is of the same design as those supplied to the U. S. Army and Navy during the war.

The cases of the individual receivers are of brass nickel-plated.

The inductance of each of the coil windings is held within exceedingly close limits by measurements made with a special type of alternating current Wheatstone bridge. The 2 coils employed in each receiver are each wound with copper wire to a direct-current resistance of approximately 550 ohms. This gives a total of approximately 2200 ohms D. C. resistance when the 2 receivers are connected in series. The alternating current impedance of the receivers connected in series when measured at voice frequencies is approximately 20000 ohms.

The pole pieces of the receiver are made of a special grade of silicon steel which insures the maximum alternating magnetic field with a minimum loss due to eddy currents.

Head band is made to fit comfortably. Head pieces are formed of non-corrosive phosphor bronze spring wire, covered with a heavy textile webbing and are equipped with adjustable yokes, slide rods and thumb screws to clamp the yokes in any desired position. Cord is covered with a black mercerized cotton braid and is equipped with tips which are concealed when attached at the receiver end, and with pin tips on the apparatus end. Cord is arranged to connect the receivers in series.

Replacement Parts

- 509W, Complete Receiver Units
- P-99768, Ear Cap
- P-98387, Diaphragm
- No. 1B, Head Band
- No. 763, Cord

Prices upon application.

No. 543W Western Electric Loud Speaking Telephones



The Western Electric No. 543W Loud Speaking Telephone is a simple form of high impedance instrument.

When used as an adjunct to a radio receiving set and supplied with sufficient energy, at audio frequencies, it will produce a volume of sound distinctly audible in every part of the living room of the average home.

This instrument meets the demand for an inexpensive loud speaking telephone for direct connection to the ordinary forms of vacuum tube receiving sets.



Bottom View of Base Showing Unit

The No. 543W loud speaking telephone may be used satisfactorily to reproduce radio telephone broadcast entertainments, such as music and news, when a radio receiving set of sufficient output energy is available.

Provision for adjusting the unit to the current output of the radio receiver enables the No. 543W loud speaking telephone to operate at maximum efficiency at all times.



Method of Adjustment

The No. 543W loud speaking telephone consists of a telephone unit placed inside a base, with a horn for projecting the sound.

The horn and the base are 23 inches high over all. The opening at the large end of the horn is 10 inches in diameter.

The telephone unit has a direct resistance of 1100 ohms and an impedance of 11000 ohms to alternating currents of average frequency.

It may, therefore, be connected without a transformer in the plate circuit of the ordinary vacuum tube amplifier.

Prices upon application.

No. 540AW Western Electric Loud Speaking Telephones



The No. 540AW loud speaking telephone is a portable sound projecting device mounted on a metal stand suitable for placing on the table of a living room.

The projector consists of 2 cones of specially selected material, having their bases cemented together. The apex of one cone is connected by a driving rod to an electro magnetic unit that responds to current impulses from the radio receiving set and thereby causes the cones to vibrate and reproduce the sound that is being sent out by radio telephony.

The design of the No. 540AW loud speaking telephone is such that the low notes of the 'cello, organ and piano and the brass instruments of the lower register are faithfully reproduced. This gives to the reproduction of instrumental music true depth and richness, thus making it satisfy the most exacting. But while particular stress has been laid on the reproduction of the low notes, because this is the more difficult, it should be borne in mind that the No. 540AW loud speaking telephone reproduces the high notes of the scale with great fidelity.

This telephone may be used in connection with any radio receiving set or audio-frequency amplifier capable of operating an ordinary type of loud speaker. As a rule 2 stages of audio-frequency amplification will be sufficient.

However, to obtain the best volume and quality of reproduction, it is advantageous to use a receiving set or amplifier which contains a power tube in the last stage.

The cones are approximately 18 inches in diameter and the distance between the apex of the front cone and the grating at the back is about 5 inches. The whole assembly stands approximately 21 inches high and weighs 7 pounds. No additional battery is required to operate this loud speaking telephone.



Replacement Parts

P-205745, Paper Cone

P-204895, Thumb Screw

No. 862 cord, 6 feet long unless otherwise specified.

No. 15A Bracket

Consists of the parts required for mounting the No. 540AW loud speaking telephone on a wall. Bracket mounts to the wall by means of 2 round head wood screws or 2 nails fastened in a vertical line approximately 5 1/8 inches apart.

Prices upon application.

**No. 6025B Western Electric Amplifiers
for Loud Speaking Telephones**



A good loud speaking telephone requires more electrical energy for its proper functioning than most audio-frequency amplifiers in common use are able to deliver without overloading the vacuum tube in the last stage.

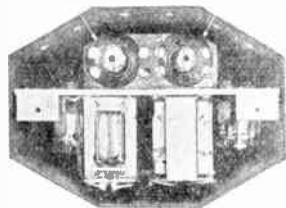
It is generally possible to secure ample volume with these amplifiers, but at the expense of the quality of reproduction due to the distortion which results from this overloading. The No. 6025B amplifier is intended for use as an adjunct to a loud speaking telephone to furnish sufficient undistorted electrical energy at audio-frequencies so that the loud speaking telephone may function at maximum capability.

It consists essentially of a single stage amplifier with a self-contained current supply set for both the vacuum tubes used in it. It employs 2 Western Electric No. 205D vacuum tubes, one as an amplifier and the other as a rectifier.



Bottom View Showing Connections

No batteries are required for the operation of this amplifier. The only current supply necessary is the ordinary 110-volt, 60-cycle A. C. house lighting current. No other form of house lighting can be used with this apparatus. The house lighting supply is transformed, rectified and filtered by the self-contained current supply set so as to properly energize the amplifier without the use of batteries. The amplifier consumes about 40 watts, that is, it takes about the same power as a medium sized incandescent bulb.



Top View with Cover Removed

When used in conjunction with a radio receiving set this amplifier is not intended to provide all the audio-frequency amplification necessary for proper loud speaking telephone operation, but only that portion of the amplification where there is most likely to be overloading, that is, the last stage. Thus if satisfactory volume is obtained in

a headset from the detector tube of a radio receiving set one stage of ordinary audio-frequency amplification plus the No. 6025B amplifier will provide sufficient energy to operate a loud speaking telephone so as to be audible throughout a good sized room.

The amplifier is equipped with a cord to connect it to a radio receiving set and also a cord with a plug to connect it to the lighting circuit. A switch in the latter cord is furnished to turn the power on or off and is the only control on the amplifier. The apparatus is contained in a metal cabinet.

Replacement Parts

No. 205D vacuum tubes (orders should state "intended for use in No. 6025B amplifier.")

No. 196 cord, 6 feet long.

If a complete cord, switch and plug assembled together for connecting the amplifier to the lighting circuit are required they may be obtained from a dealer or the nearest Western Electric House and should be ordered as follows:

P-168816 cord and plug assembly.

Prices upon application.

**Western Electric No. 224-A Vacuum Tubes
Cathode Ray Oscillograph Tube**

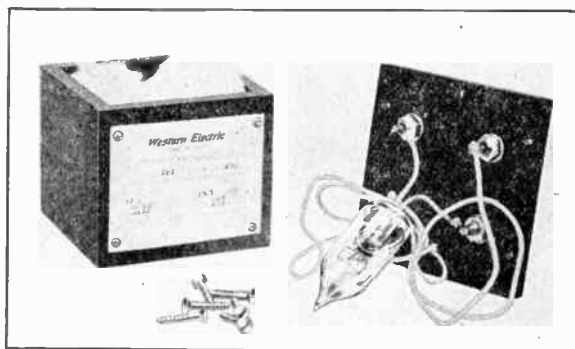


The Western Electric No. 224-A Vacuum Tube is a Cathode Ray Oscillograph Tube which may be used to obtain the performance characteristics of nearly every kind of electrical apparatus. It particularly fills the need for an oscillograph operating at frequencies up to a million or more cycles per second.

The spot of light produced by the cathode ray on a screen within the tube may be moved simultaneously in 2 directions by varying voltages applied to 2 pairs of internal deflector plates, or by current passing through external coils, the resulting trace giving the relation between the 2 currents or voltages. A deflection of one inch is produced by 25 volts on a pair of deflector plates or by 25-ampere turns in suitable coils.

The power equipment required for the tube is a 300-volt B battery and a 6-volt storage battery.

Western Electric Vacuum Thermocouples



The Western Electric Vacuum Thermocouple is a hot wire instrument for use in making accurate measurements of the values of feeble alternating currents.

Vacuum thermocouples are manufactured in 16 standard types. Each of these types may be assembled in any of 3 different types of containers known as the 20, 21 and 22 types. Type 20 container consists of a square mahogany box with binding posts mounted on the cover. Type 21 container consists of a cylindrical metal can with a hard rubber base through which the terminals project and to which leads may be soldered. Type 22 container is similar to type 21 except projecting terminals are designed to make contact with the springs of a standard vacuum tube socket.

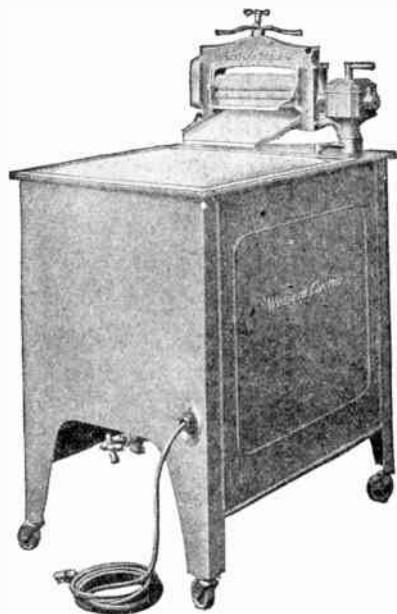
By the proper choice of these instruments used in connection with a 12-ohm galvanometer having a scale length of 130 millimeters and a full scale deflection on a current of 200 microamperes, any current from .0005 to 1 ampere may be measured with an accuracy of plus or minus 1 per cent of the minimum deflection.

Below is a table which shows the principal characteristics of each type of vacuum thermocouple. From these values the range of each vacuum thermocouple with the particular type of galvanometer with which it is associated can be determined by the application of Ohm's law.

Type	Heater Resistance Ohms	Couple Resistance Ohms	ELECTROMOTIVE FORCE OF		Type	Heater Resistance Ohms	Couple Resistance Ohms	ELECTROMOTIVE FORCE OF	
			.005 V. Amp.	.015 V. Amp.				.005 V. Amp.	.015 V. Amp.
			MAX. CURRENT THROUGH HEATER TO PRODUCE AN OPEN CIRCUIT					MAX. CURRENT THROUGH HEATER TO PRODUCE AN OPEN CIRCUIT	
A	.3	3	.500	1.00	J	600	12	.002	.005
B	.6	3	.25	.50	K	750	12	.0018	.005
C	5	3	.0375	.075	L	1000	12	.0016	.004
D	35	12	.008	.016	M	1120	12	.0035	.007
E	43	30	.0075	.015	N	46.5	12	.0075	.015
F	46.5	30	.0075	.015	P	600	45	.002	.005
G	200	12	.0065	.015	R	1.3	12	.085	.166
H	400	12	.0035	.007	S	10	12	.017	.035

Western Electric Clothes Washers

No. 2 Western Electric 28-inch ironers



Operates on the revolving cylinder principle. Made in one size only. The washer is 37 inches high and occupies a floor space 24 1/8 x 33 inches. Has a capacity of 6 sheets or the equivalent.

Four straight panels conceal all mechanism. The machine itself is finished in dull gray enamel. The wringer is aluminum.

TANK.—Either of 26-gauge galvanized iron, rust resisting, or of 23-ounce cold rolled copper, tinned on inside to prevent corrosion.

FRAME.—All metal. Angle iron frame with sheet steel panels.

WRINGER.—Aluminum frame, soft rubber rolls, 11 3/4 inches long.

CYLINDER.—Well designed, non-corrosive metal cylinder.

CONTROL.—Separate control levers for cylinder and wringer. Either can be reached from any side of washer.

SWINGING WRINGER.—Has 5 operating positions.

SAFETY WRINGER RELEASE.—A touch of the wringer release bar instantly releases tension of rolls.

CORD.—10 feet water-proof cord and attachment plug.

MOTOR.—1/6-h.p. Western Electric Motor, A.C. or D.C.

Cst. No.	Tank	Size Wringer Inches	Net Wt. Lbs.	Ship. Wt. Lbs.	PRICE, EACH	
					East of Rockies	West of Rockies
3	Galv. Steel	11 3/4	215	270	\$145.00	\$155.00
3C	Tinned Copper	11 3/4	215	270	155.00	165.00

Electric Washerpumps



The washerpump is a small, motor driven pump that empties the water from the washing machines into the sink or set tub at the rate of eight gallons per minute.

Used on either stationary or moving tub washers. It is attached to the stationary tub type by merely screwing it on the drain valve. In the

case of the moving tub a small clamp is furnished to mount the washer pump on the washer framework below the drain valve. A short piece of hose is then used to connect the pump intake with the washer drain. This hose is arranged so that it can be easily disconnected from the washer drain before the tub is set in motion, and easily connected again when the tub is to be emptied.

Price.....each \$15.00

An electrically driven gas heated ironer small enough to fit into the majority of kitchens or laundries and yet do the work of a larger ironer—at the small cost of 2 1/2 cents an hour.

SIZE.—This ironer is made in one size only. Length of roll, 28 inches. Occupies a floor space of 37 1/2 x 24 inches.

APPEARANCE.—The frame is finished in dull gray and black enamel. The feed board is natural wood varnished.

REVERSIBLE ROLL.—Made of metal thickly padded and covered with muslin. It is hollow and well ventilated—stronger than wood and cannot warp. It turns at an ironing speed of 9 feet per minute.

The reversible roll is an exclusive feature of Western Electric Ironer. It simplifies operation of the ironer. For instance, if goods going through the ironer—start to wrinkle a snap of the control switch reverses the roll and the goods back out.

OPEN END ROLL.—Makes it possible to iron ruffles, collar bands, etc., and provides for the overhang of goods wider than the roll.

THE SHOE.—Cast iron machined to shape and highly polished. Heated by a gas burner.

PRESSURE SPRING.—Automatically adjusts the pressure of the shoe, thus allowing for varying thicknesses of cloth.

ELECTRIC SWITCH.—Mounted on feed board. Starts and stops motor and causes roll to turn either forward or backward.

HAND CONTROL.—An upright lever convenient and easy to operate, need only be used to bring shoe against roll or to throw shoe back when through ironing.

FOOT CONTROL.—Separates shoe from roll when starting thick goods. Use of foot control leaves hands free for adjusting goods.

FEED BOARD.—Comfortable height for the average woman.

RECEIVING BOARD.—Prevents the ironed clothes from dropping on the floor or in the operator's lap. Built so the operator can comfortably sit at machine or stand close to feed board.

ACCESSIBILITY OF SHOE.—The shoe can be thrown back to a horizontal position that makes the entire surface accessible for cleaning.

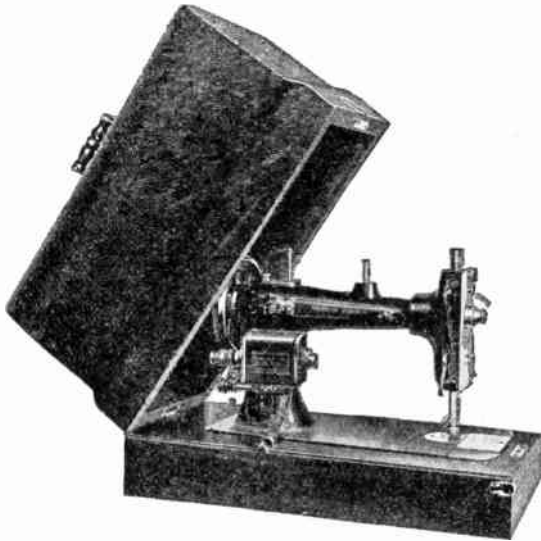
ENCLOSED GEARS AND BELT.—Eliminate all danger. The mechanism is practically noiseless and requires no attention.

MOTOR.—A 1/10-h.p. reversible motor controlled by electric switch on feed board. Drives the ironer through a heavy V shaped belt and a silent worm gear. The belt tension is regulated by adjusting bolts. Motors can be furnished for either A.C. or D.C.

Net weight, 187 pounds; shipping weight, 230 pounds.

Price, No. 2	each	
	East of Rockies	West of Rockies
	\$125.00	\$140.00

Western Electric Portable Sewing Machines



The Western Electric Portable Sewing Machine is a high grade Sewing Machine of national repute.

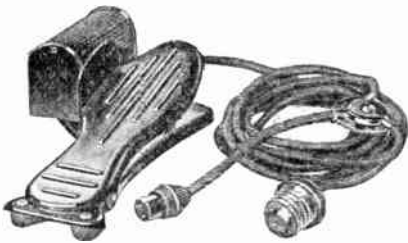
The machine is mounted on a compact wooden base that can be placed on any table. A cover with a handle locks on making it convenient to carry.

PORTABILITY.—The portability of the machine makes it possible to sew wherever there is an electric outlet convenient.

COMPACTNESS.—The machine can be put in a closet out of sight and out of the way.

EASE OF OPERATION.—The most vital thing is the ease of operation. All laborious, and annoying pedaling is done away with by the electric motor.

THE MOTOR.—A $\frac{1}{20}$ h. p. universal motor—runs on either direct or alternating current. It is supported on a swinging bracket. Uses approximately $\frac{1}{8}$ cent worth of electricity an hour.



FOOT CONTROL. A small foot treadle controls the motor. A touch of the foot starts the motor, increases the speed, or lessens it. Removing foot pressure stops it.

Types—

- No. 1 Vibrator—Lock stitch
- No. 2 Rotary—Lock stitch
- No. 3 Automatic—Chain stitch
- No. 4 Two Spool—Lock stitch

ATTACHMENTS.—A full set of attachments comes with every machine, together with a cloth guide, six needles, three bobbins, thread cutter, full oil can, two screw drivers and instruction book.

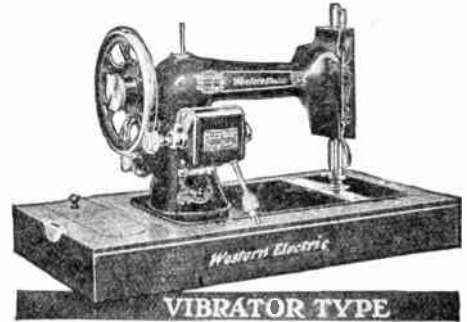
PROPER NEEDLES FOR SEWING MACHINE—

No. 1 VIBRATOR TYPE.—Western Electric No. 1 or Eldredge F. S. needles sizes 1 to 8 inclusive.

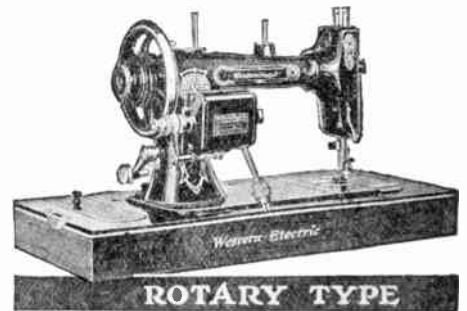
Nos. 2 AND 5 ROTARY TYPE.—Western Electric No. 2 or "B" Eldredge Rotary N.S. sizes 1 to 8 inclusive.

No. 3 AUTOMATIC TYPE.—Eldredge automatic needles, sizes 0 to 4 inclusive.

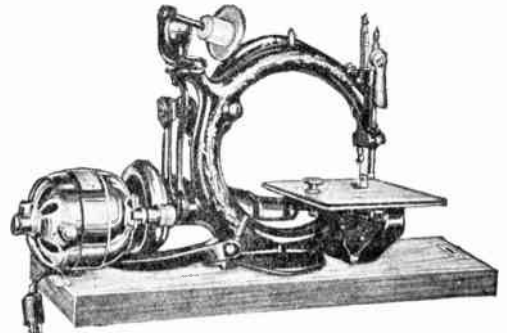
Nos. 4 and 6 TWO SPOOL TYPE.—Eldredge two spool needles, sizes 00-0-B- $\frac{1}{2}$ and 1 to 4 inclusive.

Western Electric Portable Sewing Machines
No. 1 Vibrator—Lock Stitch

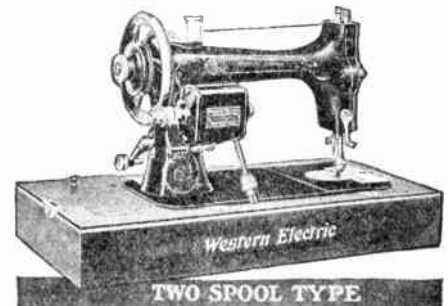
Reciprocating shuttle; $\frac{3}{4}$ size head; automatic tension release; automatic bobbin winder; enclosed needle bar; positive take up; speed of 1-800 stitches per minute; finish—high grade walnut, flat varnish finish.

No. 2 Rotary—Lock Stitch

Rotating bobbin; full size head; increased speed—1-1200 stitches per minute; smoother operation; automatic tension release; improved stitch regulator; simple construction; finish—dark walnut on oak.

No. 3 Automatic—Chain Stitch

Single thread machine; no bobbin; very silent operation; triple strength stitch; stitch very elastic; automatic tension; smaller size and lighter weight.

No. 4 Two Spool—Lock Stitch

Full size head; rotating principle; all improvements of Rotary; no bobbins to wind; sews direct from two spools; finish—dark walnut on oak.

Western Electric Console Type Sewing Machines



The console type machine is for the woman who wants a cabinet type machine rather than a portable machine—and appreciates an attractive piece of furniture.

The Western Electric Console type is in appearance a beautiful table that will harmonize in any room.

By simply raising the lid it is transformed into an Electric Sewing Machine with either improved Rotary or Two Spool head.

It has two pockets on the inner side of door—writing desk style.

A drawer in the cabinet is provided for the



attachments—and a convenient pigeon hole for the foot control.

The cover is hinged and when opened for sewing is supported by a gate leg that swings to one side and is not visible when cabinet is closed. The sewing surface—provided by the table and cover is more than adequate.

It is built of American walnut or mahogany any rubbed satin finish.

The No. 7 Console sewing machine has

smaller oak cabinet in dark walnut finish. Same rotary sewing head and foot control as No. 2 portable.

Full set of sewing attachments, needles, etc. furnished as with other models.

Prices complete with set of attachments.

Cat. No.	Type	Net Gross Weight		Price, Each	
		Lbs.	Lbs.	East of Rockies	West of Rockies
1	Vibrator	32	60	\$57.50	\$60.00
2	Rotary	38	65	70.00	72.50
3	Automatic	30	45	80.00	82.50
4	Two Spool	42	70	80.00	82.50
5	Console Rotary	75	150	130.00	135.00
6	" Two Spool	77	152	140.00	145.00
7	" Rotary	65	130	97.50	99.75

SE-TO-SO Sewing Lamps

An aid to proper sewing illumination. Small, neat, compact and convenient.

Yellow light, free from glare, eliminating eyestrain.

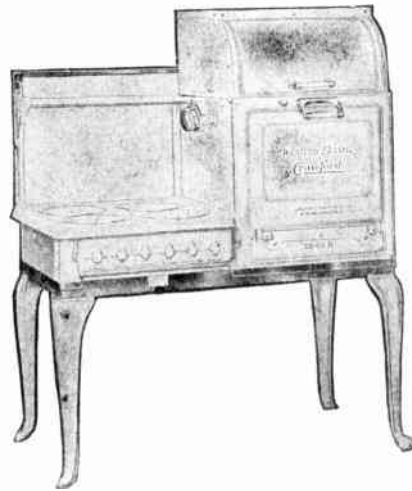
Attaches to any light socket.

Lamp furnished complete with shade 110 to 120-volt bulb, universal attachment bracket, cord and plug.

Packed, 1 to box, 12 to carton, weighing 15 pounds. Price, Nickel-plated Finish each \$4.50



Construction Features of Crawford Electric Ranges



HEATING UNITS.—Crawford type open coil construction. High grade resistance wire. Interchangeable and easily removed.

***CLOSED TYPE ELEMENTS.**—Are furnished optionally for cooking top hot plates at cost of \$7.00 extra per unit. Cast in resistor coils fully concealed. Flat cast iron surface. Unit protected from short circuiting spilled material.

SWITCHES.—Most improved type reciprocating switches; turn either way.

SWITCH PANELS.—Single casting swing out mounting panels, quickly expose backs of switches and wiring connections for inspection and ready repair.

FUSES.—On models fuse equipped. Concealed arrangements under front edge of cooking top. Exposed for inspection or replacement by lifting front nicked rail.

OVEN DOORS.—Drop doors where furnished equipped with patent adjustable tension arrangement for balancing weight of doors. All oven doors equipped with lock tight door handles for keeping heat in oven.

OVEN FLUES.—Crawford system of oven flues used on all models for even heat distribution inside oven. Insures uniform baking results, and efficient use of electricity.

OVEN INSULATION.—High grade insulated wall construction to prevent radiation of oven heat. Adds fuel efficiency and keeps kitchen cool.

OVEN VENTILATORS.—Ventilators with front control dampers for external connected vents furnished on Models 18-91, 16-81 and 18-70.

OVEN HEAT INDICATORS.—Furnished standard on all models.

***APPLIANCE RECEPTACLE.**—Convenient for connection of electric appliances. Standard equipment on all models except Model 16-80.

*Heating units of wattage other than specified furnished when desired. Prices on application.

*NOTE.—Extra and optional equipment.

Model 18-50 Crawford Electric Ranges



Model 18-70 Crawford Electric Ranges



A low oven type of smaller dimensions than the Model 18-60. Two hot plate cooking tops suitable for the small kitchen or kitchenette. Same high quality construction throughout as other Crawford models. Swing out switch panel. Reciprocating 3-heat switches. Swing type oven door. Insulated oven of heat distributing flue construction.

Open coil heating units: cooking top, one of 1500 watts, one of 1000 watts; double unit oven of 1000 watts each. Floor space, 16½x28½ inches. Cooking top height, 32 inches. Size of oven, 18x12x13 inches high

Description	Price Each	On Application
Black Japan Finish.....		
Semi-enamel ".....		
High Shelf and Splasher, Extra.....		
Indicate current to be used.		
Not furnished for time and temperature control.		

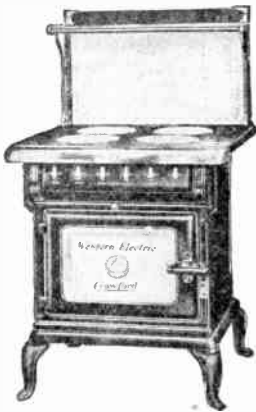
Since 1920 this has been the feature Crawford range. It has been sold in sufficient quantities to make it generally and favorably known.

Equipped with patented adjustable height broiler. Unit swing out switch panel with 3-heat reciprocating switches. Fuses concealed beneath hinged nickel plated front rail. Temperature indicator. Crawford improved oven with heat distributing flues and insulation. Swing door.

Open coil heating units: cooking top, 2 of 1000 watts; 2 of 1500 watts; oven unit 2000 watts. Oven location right or left as desired. Size of oven, 18x17x13 inches high. Floor space, 26x49½ inches. Shipping weight approximately 400 pounds.

Description	Price, Ea.	On Application
Black Japan Finish.....		
Semi Enamel ".....		
Hot Closet and Canopy, Extra.....		
Indicate current to be used. Not furnished for time and temperature control.		

Model 18-60 Crawford Electric Ranges



Models 16-80 and 16-81 Crawford Electric Ranges



A low oven type for use in limited space. Has the quality and high grade features of other Crawford Ranges. Cooking capacity about the same as 18-70 range.

Open coil heating units: cooking top, 2 of 1000 watts, 2 of 1500 watts; oven, 1 of 1500 watts and upper unit of 1000 watts for broiling.

Floor space, 26½x28½ inches. Cooking top height, 32 inches. Size of oven, 18x17x13 inches high.

Shipping weight approximately 300 pounds.

Description	Price, Ea.	On Application
Black Japan Finish.....		
Semi Enamel ".....		
High Shelf and White Splasher, Extra.....		
Indicate current to be used.		
Not furnished for time and temperature control.		

A simplified range of highest quality. Smaller than Model 18-91 but ample in size for a family of 6. Oven construction incorporates principles peculiar to all Crawford ranges with high efficiency heat insulation. Quick and uniform baker. Can be furnished with time and temperature controls described on another page. No fuses furnished at range.

Open coil heating units: cooking top, one of 1000 watts, 2 of 1500 watts; oven and broiler, 2 of 1500 watts.

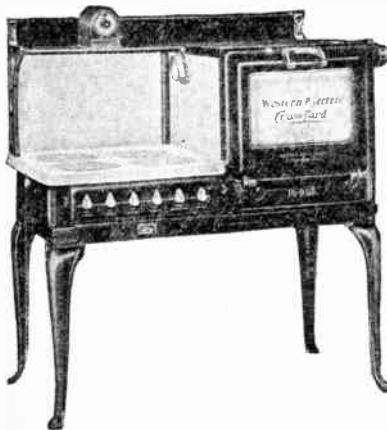
Oven location, right or left as desired.

Size of oven, 16x17x14 inches high. Floor space, 23x41 inches. Height of cooking top, 32 inches. Adjustable tension drop style oven door. White top and hot closet furnished if specified. Shipping weight, approximately 260 pounds.

Description	Price Each
Black Japan Finish.....	\$134.00
" " " with Temperature Control....	184.00
" " " " Time and Temperature Control.....	214.00
White Top, Extra.....	12.50
Hot Closet ".....	16.00

Indicate current to be used.

Model 18-91 Crawford Electric Ranges



A late model improved range with ample cooking capacity for a household up to 12 persons. Compact and attractive in appearance. Options of equipment and finish in this range provide desirable combinations to meet most home requirements. Furnished with either or both time and temperature controls (see description on another page) making it completely self acting. This range is not fused.

Open coil heating units: cooking top, 2 of 1000 watts, 2 of 1500 watts; oven and broiler, 2 of 1500 watts. Appliance receptacle, standard equipment for 1000 watts. Oven location, right or left as desired. Size of oven, 18x18x15 inches high. Temperature indicator standard equipment. Floor space, 25½x45½ inches. Height to cooking top 32½ inches. Adjustable tension drop style oven doors. Reciprocating switches, no fuses at range. Hot closet furnished at option. Shipping weight approximately 350 pounds.

Description	PRICE, EACH	
	Black Japan Finish	Enameled Finish
Without Time and Temperature Control ..	\$220.00	\$310.00
With Temperature Control ..	270.00	360.00
" Time and Temperature Control	300.00	390.00
Hot Closet, Extra	16.00	40.00

Indicate current to be used.

Automatic Time Control

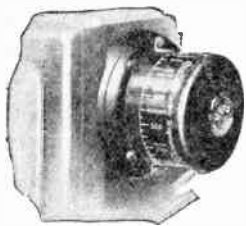


Furnished in conjunction with temperature control when specified for Models 18-91 and 16-81 ranges only.

Timing mechanism of rugged construction. Invisible clock operates only when control of range is desired. Complete setting accomplished by single knob. The hour when heat is to be turned off is fixed by turning knob to the right. The number of hours for cooking is fixed by turning knob to the left. Marked and calibrated dial aid pointers provide hourly indications required. Key wound timing mechanism. Automatic circuit closing switch and circuit breaker controlled by timer mounted beneath range.

Price, Timer Complete with Temperature Control

Temperature Control



A highly perfected and reliable mechanism for self regulation of oven temperature. Available only for Models 18-91 and 16-81. Will keep oven temperature and even heat as set. Graduated for any temperature from 100 to 600 degrees Fahrenheit. Control functions through self acting circuit control switch mounted beneath range. Entire setting accomplished by convenient knurled knob located at right side of oven.

Price, Completely Installed on Models 18-91 or 16-81

Indicate current to be used.

Crawford Hot Plates

Crawford Hot Plates are companions to the Western Electric Range line in quality and rugged construction, but are designed to furnish portable electric heating units.

Made in single, double, and triple unit models, they may be had in glossy black or white enamel and nickel finish. The heating units are standard range construction built to withstand severe service.

The best grade of reciprocating snap switches are furnished with these hot plates.

Black Finish



Type 1-B

Cat. No.	HEATING UNITS		Total Wattage	Dimensions Over All Inches	Height Inches	Shipping Weight Pounds	Price Each
	1000	1500					
1-B	1	..	1000	14x14	6½	23	\$17.50
2-B	1	1	2500	14x23	6½	38	32.00
3-B	2	1	3500	14x33	6½	50	46.00

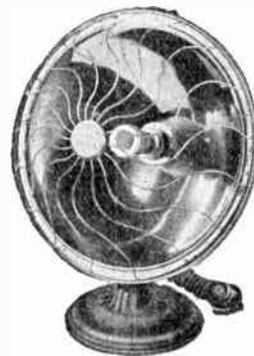
White Enamel and Nickel Finish



Type 2-E

Cat. No.	HEATING UNITS		Total Wattage	Dimensions Over All Inches	Height Inches	Shipping Weight Pounds	Price Each
	1000	1500					
1-E	1	..	1000	14x14	6½	23	\$25.00
2-E	1	1	2500	14x23	6½	38	42.00
3-E	2	1	3500	14x33	6½	50	58.00

No. 75 Western Electric Reflector Heaters



This large bowl type electric heater is very neat and attractive. Its solid copper bowl is illuminated to a deep glowing red when heated and reflects the heat rays in a uniform and highly satisfactory manner.

The nichrome wire wound coil is mounted on a 2-piece ventilated porcelain core supported centrally of the bowl in an Edison screw type socket. The heater will give off all the heat its current rating of 550 watts is capable of developing. The screwed-in element may be readily replaced if broken or when one of a different voltage is required. A welded copper plated wire guard, which is detachable, effectively protects the element and eliminates danger. A heavy cast iron base lends stability and a friction hinge yoke for supporting the bowl permits ready adjustment for your needs.

Old bronze mottled (crackled) finish.

Furnished with a glossy dark brown cord with attachment plug.

Packed in individual cartons and cases of 6.

Cat. No.	Diameter Bowl Inches	Wattage	WEIGHT, POUNDS		Price Each
			Net	Shipping	
75	14	640	6½	10	\$7.50

No. 2 Western Electric Irons



No. 2 Iron

The No. 2 Western Electric Iron is well designed and attractive in appearance.

Full nickel finish.
HEATING ELEMENT.—Perforated mica hand laced with nichrome wire.
CONTACT PINS.—Standard spacing—round—removable without disassembling iron.

PRESSURE PLATE.—Made of cast iron—holds heat a

baffle and heating element tight against bottom of iron.

HEAT BAFFLE.—Novel arrangement of asbestos sheet packing between element and pressure plate to prevent passage of heat upwardly. Directs heat to sole plate and provides greater efficiency and a quicker heating iron.

COMFORTABLE HANDLE.—Dull black finished wood, shaped to fit the hand. Stays cool.

BAIL.—Shaped to prevent discomfort to hand.

SMOOTH IRONING SURFACE.—Machined, ground, nicked and polished.

REVERSIBLE STAND.—Either side may be used—high edges prevent iron from slipping off.

CORD.—High grade brown cotton covered heater cord constructed to give maximum of flexibility and wear.

STANDARD VOLTAGES.—Nominal ratings 95, 110, 125, 220, 250 volts.

SPECIAL VOLTAGES.—All voltages other than above, including 32-volt, are special.

Packed individually in attractive blue and white cartons, 6 cartons in a case.

Cat. No.	Voltage	Watts	WEIGHT, Net	POUNDS, Shipping	Price Each
2	Standard	550	6	8	\$3.95
2	Special	550	6	8	4.50

NOTE.—32-volt irons have permanently attached cord.

No. 6½B American Beauty Irons



The 6½-pound iron is the exact size, weight, and shape for general all around household and laundry use.

Extra large ironing surface. Has large, comfortable, always cool wood handle. Has round noncorroding contacts and a durable composition switch plug, always cool enough to handle.

Made in the following standard voltages: 95-104, 105-120, 121-130, 190-209, 210-240, 241-260.

Cat. No.	Size Inches	Watts	Net Wt., Lbs.	Approx. Shipping Wt., Lbs.	Case of Six Shipping Wt., Lbs.	Price Each
6½B	6½x3¾	525	6½	8¼	51	\$7.50

No. 3B American Beauty Irons



The 3-pound Little Beauty Iron is ideal for light ironing, such as handkerchiefs and laacs. Convenient for travelers.

Made in the following standard voltages: 95-104, 105-120, 121-130, 190-209, 210-240, 241-260.

Furnished complete with stand and cord having detachable composition plug and attachment plug.

Cat. No.	Size Inches	Watts	Net Wt., Lbs.	Approx. Shipping Wt., Lbs.	Case of Six Shipping Wt., Lbs.	Price Each
3B	5⅞x3⅞	350	3	5	31	\$7.00

No. 1446 M-B Improved Electric Irons

Nickel plated. With detachable plug and 6½ feet of cord.

The element is embedded in special cement.

The handle is kept cool by a heat insulator over the element.

Balance of the iron and shape of the point have been carefully designed. Plug construction is designed to eliminate terminal troubles. Designed to operate on 110 volts. Can also be furnished for 220 or 250 volts.

With new design reversible stand.

Cat. No.	Watts	Net Wt., Lbs.	Shp. Wt., Lbs.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1446	550	6	8¼	6	52	\$6.50



American Beauty Soldering Irons



Element core and shank of copper tip are heat treated and will not readily

corrode or oxidize. The heating element of nickel chromium ribbon, insulated with pure mica, is kept in intimate contact with core by means of a patented compression winding, preventing overheating of the element. Complete with 6-foot cord and attachment plug. Copper tips are of standard size drawn copper rod, 3/8, 5/8, 7/8 inches respectively in diameter.

Made in the following standard voltage ranges: 95-104, 95-104, 105-120, 121-130, 190-209, 210-240, 241-260.

Cat. No.	Watts	Diam. Tip Inches	Length Over All Inches	Weight Ounces	Price Each	Extra Tips Price Each
3138	100	3/8	12 1/8	18	\$8.00	\$.85
3158	200	5/8	12 3/8	26	9.25	1.50
3178	300	7/8	13 1/2	42	11.50	2.30
3198	550	1 1/8	15 1/4	72	19.50	3.00

American Beauty Electric Glue Pots



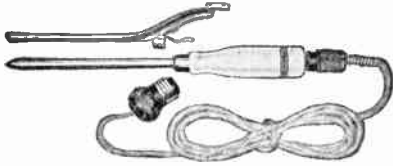
The outer body of these pots is cast iron, thoroughly galvanized before painting. The heating element is readily removable and is attached to the bottom of the inner cast iron receptacle, thus allowing all heat generated to be efficiently utilized. The inner vessel is of seamless copper, spun in one piece and is equipped with a bail and wiping rod.

Arranged for three heats, with multiple series winding. Full heat maximum wattage, intermediate one half maximum and low heat one quarter maximum. The latter is arranged to give just enough heat to keep the glue contents at a proper working temperature.

Made in the following standard voltages: 95-104, 105-114, 115-125, 190-209, 210-229, 230-250.

Cat. No.	Capacity Quarts	Max. Watts	Heats	Shp. Wt., Lbs.	Price Each
181	1	440	3	18	\$30.00
182	2	570	3	25	38.00
145	4	880	3	50	58.00

Ivory Wavette Curling Irons and Waver Rods



Nichrome element. The ivory wavette is 11½ inches long. Waver rod is ¾ inch in diameter. All metal parts highly nickel-plated, hand buffed and polished. Handle, white Pyralin enamel finish. Cord connector plug in handle. Has brown bakelite, two piece, separable attachment plug. Packed one in box.

Standard package, 12. Weight, standard package, 9 pounds. Price.....each \$3.50

Torrid Electric Marcel Waving Irons

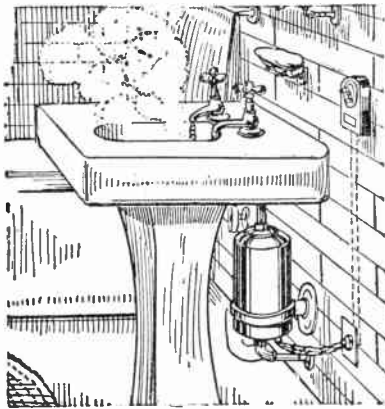


Duplex waving rods in which genuine Nichrome heating elements are incorporated. Detachable Bakelite plug in handle. Ventilated, coil steel cooling rest. Two-piece, separable attachment plug. Extra length connecting cord.

Wood handle, ebonized finish. All metal parts are highly nickeled, buffed and polished.

Packed complete in an attractive box. Standard package 12. Weight, standard package, 12 pounds. Price.....each \$3.50

Hotvent Water Heater



The Reservoir Type Hotvent Heater is attached to any faucet in offices, apartments, stores, soda fountains, residences, lavatories, etc. Shuts off automatically, thus saving electricity.

- Economical, compact and neat in appearance.
- No special wiring required. Capacity, 1200 watts.
- Yields 6 quarts of hot water any time of day or night.
- Will heat over 100 gallons of water in 24 hours.

Takes the place of the tea-kettle on the kitchen range and shuts off automatically with a thermostat or time switch control to prevent waste.

Attach directly to present water and electric systems.

No special rate is required, the regular lighting service is all that is needed.

Prices upon application.

Minneapolis Heat Regulators

The Minneapolis Heat Regulator consists of an attractively designed thermostat (a mechanical automatic thermometer) placed on the wall of living room and connected by a small concealed electric cable to motor in the basement. The motor performs the work of operating drafts, dampers, etc., of the heating plant.

Model 77 Eight-day Duplex Thermostat



No. 77

The operation of Model 77 eight-day Duplex Thermostat is similar in principle to the 1-day thermostat, the only difference being that the clock makes 2 actions, lowering the indicator at night and raising it in the morning. The clock has a jeweled movement with 7 rubies and sapphires, with genuine bi-metallic balance. The finest Breguet hairspring is used. All pivots and pinions are polished, every part is extra heavy, insuring rigidity to the movement, long life and excellent time-keeping qualities. The clock is adjusted to heat and cold and to isochronism. Adjustment of the time set on the thermostat can be made almost instantly and the automatic throw of the indicator is adjustable either backwards or forwards. The Model 77 Thermostat is finished in dull silver.

Model 47 One-day Thermostat

Model 47 One-day Thermostat is equipped with a reliable 24-hour clock, which, when set, will change the indicator at any predetermined hour in the morning to the day temperature desired. For night temperatures the thermostat must be set by hand. The clock is easily removed for winding. Finished in sand blast bronze.



No. 47

Model 55 Thermostat

Model 55 Thermostat is equipped with a dependable non-jewel clock. The thermostat indicator can not only be lowered to any desired degree of temperature, but can also be raised to any degree of temperature. This is possible only with the Minneapolis 8-day thermostat. The Model 55 is finished in sand blast bronze.

Model 40 Thermostat

Model 40 Thermostat is designed for operation where clock attachment is not necessary or desired, as in case of large residences with hot water heat, for churches, etc., where certain fixed temperature is to be maintained at all times. The Model 40 has the same basic construction as all Minneapolis Thermostats, with only one moving bearing, thus eliminating faulty action and lost motion. Model 40 Thermostat is finished in sand blast bronze.

No. 65 Hydrostat



No. 65

No. 65 Hydrostat is used to maintain a uniform temperature in hot water heating and hot water supply systems. Set indicator at desired temperature and when the water starts to go above that temperature, the device automatically checks fires. When the water falls below that temperature, the device advances the fires. The standard model has a range of 100 to 240 degrees Fahrenheit.

No. 70 Pressurestat

No. 70 Pressurestat is used to maintain uniform pressure in steam and vapor heating systems. It is operated by pressure as the No. 65 Hydrostat is operated by water temperature. Standard model has a range of 0 to 10 pounds, but can be furnished up to 160 pounds.



No. 70

Model	Description	PRICE, EACH		
		MOTOR EQUIPMENT		
		Electric	Spring	Gravity
77	Duplex Thermostat	\$90.00	\$74.00	\$66.00
55	Non-jeweled Thermostat	80.00	64.00	56.00
47	One-day Thermostat	68.00	52.00	44.00
40	Plain Thermostat	61.00	45.00	37.00
65	Hydrostat	60.00	44.00	.....
70	Pressurestat	65.00	49.00	.....
	Price, Model 65 Hydrostat Only	each \$20.00		
	" " 70 Pressurestat Only	" 25.00		

No. 333930S M-B Percolator Sets



Nickel silver, heavily silver plated.

Set consists of four pieces. Size of tray 20x14 inches. Carrying space 14½x10½ inches. Height of urn, 14¼ inches. Fitted with automatic cut-off protection.

Percolators will function satisfactorily on any voltage from 104 to 115. These percolators may be also furnished for 220 or 250 volts at 50 cents additional.

Butler finish.

When ordering always state voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	Price Each
333930 S	Set 4 Pieces.....	\$70.00
33393 S	Percolator, 9 Cups.....	36.00
3291 S	Sugar.....	8.00
3291 S	Cream.....	8.00
11420 S	Tray.....	18.00

No. 332930S M-B Percolator Sets



Nickel silver; heavily silver plated.

Enclosed heater, one heat, 400 watts. Set consists of four pieces. Size of tray, 20x14 inches. Carrying space 14½x10½ inches. Height of urn, 14¼ inches.

Sugar bowl and creamer are gold lined. Equipped with detachable plug and six feet of cord.

Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	PRICE, EACH	
		Bright Finish	Butler Finish
332930S	Set 4 Pieces.....	\$67.00	\$67.00
33293S	Percolator, 9 Cups.....	35.75	35.75
3091S	Sugar.....	7.25	7.25
3091S	Cream.....	7.25	7.25
11020S	Tray.....	16.75	16.75

M-B Percolator Sets

Silver-plated and Nickel-plated



The border is a relief design embossed on the percolator, sugar, cream and tray.

Equipped with detachable plug and 6 feet of cord.

Enclosed heaters, one heat, 400 watts.

Cream and sugar are gold lined. Tray is 14 inches.

Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering, specify voltage required.

Shipping weights: No. 345920S, 10½ pounds; No. 345930S, 11 pounds.

CATALOGUE No.	Price, Each	Description	Price, Each
Silver	Nickel		Silver
345920S	345920	Set 4 Pieces.....	\$46.00
345930S	345930	" 4 "	48.00
34592S	34592	Percolator, 6 Cups.....	27.00
34593S	34593	" 9 "	29.00
4591S	4591	Sugar.....	5.50
4591S	4591	Cream.....	5.50
11914S	11914	Tray.....	8.00

No. 343930S M-B Percolator Sets



Heavily silver-plated on nickel silver in Butler finish, only. The border is a relief design embossed on the percolator, sugar, cream and tray. Ivory finish handles on the percolator and tray.

Equipped with detachable plug and 6 feet of cord. Enclosed heater, one heat, 400 watts.

Sugar and cream are gold lined. Tray, 20 inches. Carrying space of tray, 14½x10½ inches.

Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering specify voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	Price Each
343930S	Set 4 Pieces.....	\$62.50
34393S	Percolator, 9 Cups.....	31.50
3991S	Sugar.....	7.50
3991S	Cream.....	7.00
12016S	Tray.....	16.50

No. 330930 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Also with automatic cut-off protection. Enclosed heaters, one heat, 400 watts.

Percolator has ebonized handles. Sugar and cream are gold lined. Tray is 20x14 inches. Carrying space 14½x10½ inches. Urn is 14¼ inches high.

Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering always specify voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	PRICE, EACH	
		Nickel Plated	Polished Copper
330930	Set 4 Pieces	\$46.00	\$49.50
33093	Percolator	25.00	26.50
3091	Sugar	5.75	6.25
3091	Cream	5.75	6.25
11020	Tray	9.50	10.50

No. 330936 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Also with automatic cut-off protection. Enclosed heaters, one heat, 400 watts.

Percolator has ebonized handles. Sugar and cream are gold lined. Tray is 20x14 inches. Carrying space 14½x10½ inches. Urn is 14¼ inches high.

Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

Always state voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	PRICE, EACH	
		Nickel Plated	Polished Copper
330936	Set 4 Pieces	\$44.50	\$47.75
33093	Percolator	25.00	26.50
3091	Sugar	5.75	6.25
3091	Cream	5.75	6.25
11520	Tray	8.00	8.75

No. 339936 M-B Percolator Sets



Nickel plated.

Equipped with detachable plug and six feet of cord. Enclosed heaters, one heat, 400 watts.

Cream and sugar are gold lined. Tray is 20 inches.

Carrying space of tray, 14x10½ inches.

Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Can also be furnished for 220 or 250 volts at 50 cents additional.

When ordering specify voltage required.

Shipping weight, 13 pounds.

Cat. No.	Description	Price Each
339936	Set of 4 Pieces	\$42.00
33993	Percolator, 9 Cups	22.50
3991	Sugar	6.00
3991	Cream	5.50
11520	Tray	8.00

Nos. 382946 and 382936 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Enclosed heaters, one heat, 400 watts.

Mahoganite handles. Sugar and cream are gold lined. Tray 20x14 inches. Carrying space of tray 14x10½ inches. Regularly furnished for 110 volts. When ordering always state voltage required.

Shipping weight, No. 382946, 12½ pounds; No. 382936, 12 pounds.

Cat. No.	Description	PRICE, EACH			
		Nickel Plated	Polished Copper	Bright Silver	Butler Silver
382946	Set 4 Pieces, 9 Cups	\$40.50	\$43.75	\$55.50	\$55.50
382936	" 4 "	38.50	41.75	53.50	53.50
38294	Percolator, 9 Cups..	21.50	23.00	27.00	27.00
38293	" 6 "	19.50	21.00	25.00	25.00
3391	Sugar	5.75	6.25	7.50	7.50
3391	Cream	5.25	5.75	7.00	7.00
11520	Tray	8.00	8.75	14.00	14.00

Nos. 334926 and 334936 M-B Percolator Sets



Equipped with detachable plug and 6 feet of cord. Enclosed heaters, one heat, 400 watts.
 Sugar and cream gold lined. Tray 20 inches. Carrying space of tray 14x10½ inches. Set includes 4 No. 164 cups.
 Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.
 When ordering always state voltage required.
 Shipping weight: No. 334926, 14 pounds; No. 334936, 14½ pounds.

Cat. No.	Description	Price, Each		
		Nickel Plated	Polished Copper	Bright Silver
334926	Set 8 Pieces	\$41.00	\$45.25	\$58.00
334936	" 8 "	43.00	47.25	60.00
33492	Percolator, 6 Cups	18.00	19.50	24.00
33493	" 9 "	20.00	21.50	26.00
6641	Sugar	4.00	4.50	5.00
6641	Cream	4.00	4.50	5.00
11520	Tray	8.00	8.75	14.00

No. 335937 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Enclosed heaters, one heat, 400 watts.
 Cream and sugar are gold lined. Tray is 14 inches.
 Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.
 When ordering specify voltage required.
 Shipping weight, 11 pounds.

Cat. No.	Description	Price, Each		
		Nickel Plated	Bright Silver	Butler Silver
335937	Set 4 Pieces	\$28.50	\$40.25	\$40.25
33593	Percolator, 7 Cups	18.50	24.00	24.00
691	Sugar	3.50	4.75	4.75
691	Cream	3.00	4.00	4.00
6314	Tray	3.50	7.50	7.50

Nos. 318930 and 318940 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Enclosed heaters, one heat, 400 watts.
 Ebonized handles. Sugar and cream are gold lined. Tray, 14 inches.
 Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional. When ordering always state voltage required.
 Shipping weight: No. 318930, 10 pounds; No. 318940, 10½ pounds.

Cat. No.	Description	Price Each
		Nickel-plated
318930	Set 4 Pieces	\$27.50
318940	" 4 "	29.00
31893	Percolator, 6 Cups	17.50
31894	" 9 "	19.00
691	Sugar	3.50
691	Cream	3.00
6314	Tray	3.50

Nos. 334920 and 334930 M-B Percolator Sets



Equipped with detachable plug and six feet of cord. Enclosed heaters, one heat, 400 watts.
 Sugar and cream are gold lined. Tray is 14 inches.
 Fitted with automatic cut-off protection. Regularly furnished for 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.
 When ordering specify voltage required.
 Shipping weight: No. 334920, 10 pounds; No. 334930, 10½ pounds.

Cat. No.	Description	Price, Each		
		Nickel Plated	Polished Copper	Butler or Bright Silver
334920	Set 4 Pieces, 6 Cups	\$29.50	\$32.50	\$41.50
334930	" 4 " 9 "	31.50	34.50	43.50
33492	Percolator, 6 Cups	18.00	19.50	24.00
33493	" 9 "	20.00	21.50	26.00
6641	Sugar	4.00	4.50	5.00
6641	Cream	4.00	4.50	5.00
6314	Tray	3.50	4.00	7.50

No. 327934 M-B Percolator Sets

Nickel-plated set of four pieces. Capacity, seven cups. Enclosed heater, one heat, 400 watts.

Size of tray, 14 inches. Sugar bowl and creamer, gold lined. Automatic cut-off protection. Plug and six feet of cord. Furnished for 110 volts. For 220 or 250 volts, add 50 cents. State voltage required. Shipping weight, 10½ pounds.



Cat. No.	Description	Price Each
327934	Set.....	\$23.50
32793	Percolator..	15.00
115	Sugar.....	3.25
115	Cream.....	2.50
11114	Tray.....	2.75

No. 32093 M-B Percolators

Ebonized handles. Equipped with automatic cut-off protection.

Furnished with detachable plug and six feet of cord. Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

Always state voltage when ordering.



Cat. No.	Description	Cap. Cups	Watts	Ship. Wt., Lbs.	Price Each
32093	Nickel-plated	7	400	4¾	\$17.00
32093	Polished Copper	7	400	4¾	18.50
32093S	Silver-plated	7	400	4¾	22.50

Nos. 32192 and 32193 M-B Percolators

Nickel plated.

Ebonized handles.

Furnished with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Can also be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.



Cat. No.	Cap. Cups	Watts	Ship. Wt., Lbs.	Price Each
32192	6	400	4¾	\$14.00
32193	9	400	5⅞	15.50

No. 32793 M-B Percolators

Nickel-plated with ebonized handles.

Height, 12½ inches.

Fitted with automatic cut-off protection, detachable plug and 6 feet of cord.

Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering specify voltage required.



Cat. No.	Cap. Cups	Watts	Shipping Wt., Lbs.	Price Each
32793	7	400	4½	\$15.00

No. 33593 M-B Percolators

Plated handles.

Furnished with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Can also be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.



Cat. No.	Cap. Cups	Watts	Ship. Wt., Lbs.	Price, Each		
				Nickel Plated	Bright Silver	Butler Silver
33593	7	400	5	\$18.50	\$24.00	\$24.00

No. 31093 M-B Percolators

Ebonized handles.

Equipped with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.



Cat. No.	Description	Cap. Cups	Watts	Ship. Wt., Lbs.	Price Each
31093	Nickel-plated	7	385	4¼	\$15.00

No. 30893 M-B Percolators

Aluminum. Ebonized handles. Equipped with automatic cut-off protection.

Furnished with detachable plug and 6 feet of cord. Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

Always state voltage when ordering.



Cat. No.	Cap. Cups	Watts	Ship. Wt., Lbs.	Price Each
30893	7	400	3½	\$9.00

Nos. 31592 and 31593 M-B Percolators

Ebonized handles.

Furnished with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.



Cat. No.	Description	Cap. Cups	Watts	Ship. Wt., Lbs.	Price Each
31592	Nickel-plated	6	400	4½	\$14.50
31593	"	9	400	5	16.00

No. 31793 M-B Percolators



Ebonized handles.

Equipped with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Will be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.

Cat. No.	Description	Cap. Cups	Watts	Shp. Wt., Lbs.	Price Each
31793	Nickel-plated	7	400	4 1/4	\$11.00

Nos. 31392 and 31393 M-B Percolators

Nickel plated.

Ebonized handles.

Furnished with automatic cut-off protection. Detachable plug and six feet of cord.

Designed to operate on 110 volts. Can also be furnished for 220 or 250 volts at 50 cents additional.

When ordering always state voltage required.



Cat. No.	Cap. Cups	Watts	Shp. Wt., Lbs.	Price Each
31392	6	400	4 1/2	\$13.50
31393	9	400	5	15.00

No. 1303/24 M-B Chafing Dishes

Furnished with six-inch detachable stove, three heats consuming 550 watts. Equipped with six feet of cord.

Capacity of chafing dish is three pints.

Regularly furnished for 110 volts.

Mahoganite handles.



Cat. No.	Description	Shipping Wt., Lbs.	Price Each
1302/23	Nickel-plated	9	\$17.00

No. 34767 M-B Water Kettles



Nickel-plated with mahoganite handle.

Height, 10 inches.

Fitted with automatic cut-off protection, detachable plug and 6 feet of cord.

Designed to operate on 110 volts. Will be furnished for 220 and 250 volts at 50 cents additional.

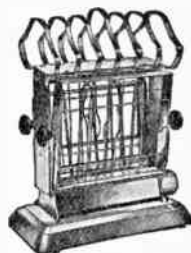
When ordering specify voltage required.

Cat. No.	Capacity Pints	Watts	Shipping Wt., Lbs.	Price Each
34767	3	400	3 1/4	\$13.50

M-B Reversible Door Toasters



No. 1225



No. 1226

These toasters are so constructed that the toast can be turned without touching it with the fingers.

Nichrome wire unit consumes 600 watts. Designed to operate on 110 volts. State voltage when ordering.

Equipped with a detachable plug and six feet of cord. Nickel-plated finish.

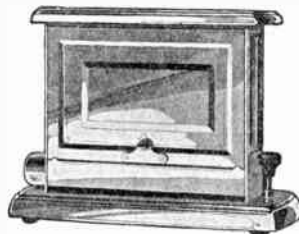
Cat. No.	DIMENS. INCHES		Shipping Wt., Lbs.	Price Each
	Width	Height		
1225	7 3/4	7 1/2	3	\$8.00

No. 1226

This type is the same as No. 1225 but has toast rack on top.

1226	7 3/4	9 3/4	3	\$8.50
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No. 1227 M-B Electric Toasters
Double-action
550 Watts



This toaster has two heating elements so that it toasts both sides of the bread at once.

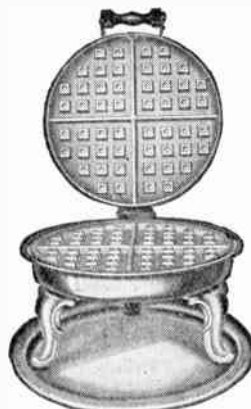
Sides lift right off the toaster so that crumbs and dust are easily removed.

Has automatic release. A cool button at the end of the toaster automatically pops toast out at the top.

Finished in nickel plate. Furnished complete with cord and attachment plug. Packed one in a box; weight, 4 lbs. 6 oz. Carton contains 6 individually packed; weight, 30 lbs.

Price, No. 1227.....each \$8.50

No. 1615 M-B Waffle Irons



This iron has cast aluminum grids, requiring no grease. Cooks waffles in two or three minutes right on the table. Colonial design, nickel-plated. Consumes 600 watts and operates on 110 volts.

Can be furnished for 220 or 250 volts at 50 cents additional. Detachable switch plug and 6-foot cord. Extreme diameter, 9 1/2 inches. Diameter of waffle, seven inches.

Shipping weight, seven pounds.

Price, No. 1615.....each \$15.00

No. 1616 M-B Waffle Irons



This device makes a thick waffle, seven inches in size, which may be divided into four portions.

The waffle is evenly browned on both sides at once.

Equipped with cast aluminum grids and can be used right at the table without grease or smoke; makes waffles in two minutes.

Furnished complete with cord and switch plug.

An exclusive feature is the trough around the edge of the iron. This catches any over-run of batter and prevents it dripping down on the base.

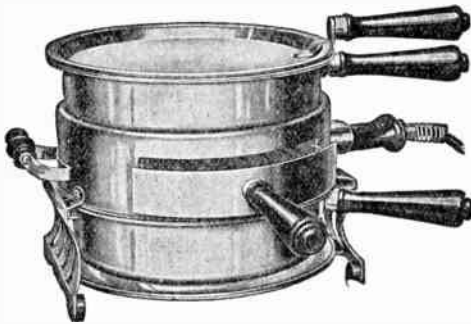
Consumes 600 watts and operates on 104-115 volts. Can be furnished for 220 or 250 volts at 50 cents additional.

Extreme diameter, 9½ inches. Diameter of waffle, 7 inches.

Shipping weight, 7 pounds.

Price, No. 1616, Nickel-plated.....each \$15.00

M-B Table Stoves



This table stove is a genuine table range. Nickel-plated finish. Single heat, consuming 660 watts.

Designed to operate on 110 volts. Can be furnished for 220 or 250 volts at 50 cents additional.

Equipped with detachable plug and six feet of cord.

No. 1410

The standard equipment of the No. 1410 Table Stove consists of the reflector, toaster drawer, deep fry pan, shallow fry pan, grid and egg poaching cups with holder.

Cat. No.	Description	Shipping Wt., Lbs.	Price Each
1410	With Toaster (6 pieces) No. 1411	8	\$12.50

The No. 1411 is equipped the same as the No. 1410, with the addition of the No. 411 waffle iron attachment.

The waffle iron attachment will not stick in the slides and will make thick or thin waffles. With the toaster drawer bread is toasted on both sides at one time—thick or thin slices.

Cat. No.	Description	Shipping Wt., Lbs.	Price Each
1411	With Toaster and Waffle Iron (7 pieces)	10	\$16.50

No. 1395 M-B Glow Stoves

Nickel-plated. Diameter, 7¾ inches. Single heat; consumes 550 watts. Detachable plug and six-foot cord. Operates on 110 volts.

Shipping weight, 4 pounds.

Price, No. 1395, each \$8.50



No. 25 M-B Disc Stoves



Nickel-plated. Does not have the patent clamping device, but is designed for use with any flat bottom utensil.

Diameter, 6 inches. Three heats; consumes 550 watts. Shipping weight, 3¾ pounds.

Equipped with a detachable plug and 6 feet of cord.

Designed to operate on 110 volts.

Price, No. 25.....each \$9.25

M-B Heating Pads



The three-heat is especially recommended, as the desired temperature can always be obtained. A soft, flexible pad covered with eiderdown. Can be used in any position; is so light that it will not hurt the most sensitive flesh.

The heat is continuous and even.

Furnished with 9-foot cord and detachable plug.

Shipping weight, 1¾ pounds.

Cat. No.	Size Inches	No. of Heats	Volts	Max. Watts	Price Each
682	11x14	3	110	60	\$8.00
682	11x14	3	220	60	8.50
682	11x14	3	250	60	8.50

Meteor Heating Pads



This pad has three heats, high, medium and low.

Heating element is of highest grade resistance wire. Pure long fibre asbestos used for insulation. Two thermostats insure safety. Equipped with gray eiderdown cover, and nine feet of cord with detachable plug.

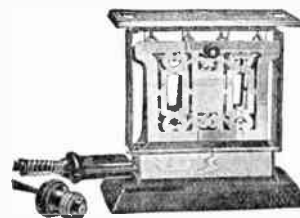
Regularly furnished for 110 volts.

Will be furnished for 220 or 250 volts at 50 cents additional.

Cat. No.	Size Inches	No. of Heats	Shipping Wt., Lbs.	Price Each
582	11x14	3	1¾	\$6.75

No. 1220 Meteor Toaster

Without Toast Rack



Nickel-plated, with black enameled base.

Heating unit is of nichrome wire and consumes 600 watts.

This toaster does not have the reversible door feature.

Width, 7¾ inches; height, 7½ inches.

Equipped with detachable plug and six feet of cord.

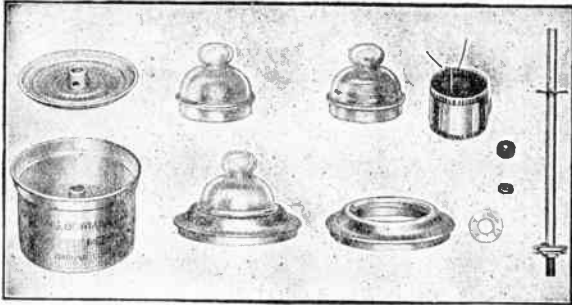
Regularly furnished for 110 volts.

Packed in individual cartons, six toasters to a package. Weight of package, approximately 25 pounds.

Price, No. 1220.....each \$5.00

M-B Repair Parts for Manning-Bowman Electric Coffee Percolators

Parts for Both Urn and Pot Style Percolators



No. 18	Water Spreader	each	\$.25
" 27	Coffee Filter or Container	"	.40
" 29	Plain Glass Cover	"	.15
" *2939	Cover Complete, Aluminum Ring	"	.35
" *2952	" " Nickel-plated Ring	"	.40
" *39	Cover Ring Only, Aluminum	dozen	2.40
" *52	" " Nickel-plated	"	3.00
" 41	Cut Glass Cover	"	4.20
" 40	Valve Tube Complete	"	7.20
" 42	Fibre Foot and Screw	"	.60
" 43	Nut for Valve Tube	"	.60
" 44	Clapper Washer	"	.60
" 45	Mica Wound Unit	"	1.00

For Urn Style Coffee Percolators

Side Handles for No. 33093 Percolator	each	\$.85
" " " " 38293-38294 Percolator	"	.40
" " " " 32093-32793	"	.10
" " " " 33492-33493	"	.40

Prices do not include handle sockets.

Ebonized Faucet Handles and Screws	\$.10
Mahoganyite " " " "	.15
Faucet Handles and Screws for 33093-33293-33393	.40

For Coffee Pot Style Percolators

Ebonized Handles for Nos. 31693-30893	\$.25
" " " " 31093-31793	.30
" " " " 31592-31593	.40
" " " " 31893-31894	.50

*In ordering always specify catalogue No. of device for which parts are wanted.

Electric Chafing Dish and Disc Stove Parts

*Cover Knob and Screw	\$.20
*Wooden Side Handles and Screws	each .15
*Food Pan Handles with Ferrules Attached	.40
Element for Stoves Complete Assembled	" 6.00
Composition Feet with Screws	dozen .60

*In ordering always specify catalogue No. of device for which parts are wanted or send us damaged parts as sample.

Electric Toasters

No. 652B Wire Elements, 1225-1226-1220-1221	\$.60
Coil Springs for Doors, 1225-1226	dozen .60
Spring for Wire Doors for 1225-1226	" .60
Fibre Feet with Rivets	" .60

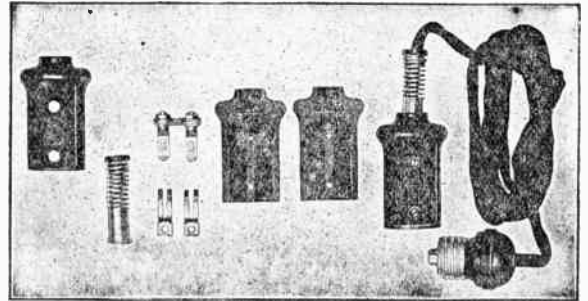
M-B Repair Parts

Nos. 1410 and 1411 Table Stove Parts

Heating Units Complete (with side supports)	each	\$3.25
Toaster Drawer	"	.90
Egg Poaching Cups and Holder Complete	"	.90
" " only	"	.15
Reflector or Cover	"	1.00
Shallow Pan	"	1.30
Deep Pan	"	1.40
Grid (Aluminum)	"	.20
No. 411 Waffle Iron Attachment	"	4.00
Ebonized Handles for Above Utensils	"	.30
" Handle for Stove Frame	"	.10
Fibre Feet and Rivets for Stove Frame	dozen	.60

Cord and Plug Parts

Used on All Manning-Bowman Electrics Except Heating Pads and Electric Irons



No. 46 Plug Casings	per pair	\$.30
" 47 Flat Terminals Assembled	"	.25
" 48 Contact Springs	"	.20
" 49 Coiled Wire Cord Protector and Bushing	each	.25
" 50 Terminal Plug Complete	"	.40
" 51 Cord and Plug	"	1.50

No. 651 Bryant Appliance Switch Plugs

Schedule H
6 Amp., 125 Volts; 3 Amp., 250 Volts

A composition plug, with coil spring cord protector having composition bushing, for use in place of the ordinary composition plug furnished with most heating appliances. Fits nearly all makes and types of standard heating appliances and permits control of the appliance by means of the simple indicating tumbler switch enclosed in the composition body.

Packed ten in a colored counter display carton which assists in making quick and profitable sales.



Cat. No.	Description	Carton Pkg.	Std. Pkg.	Wt., Lbs.	Std. Pkg.	Price Each
651	Appliance Switch Plug	10	50	22		\$1.00
651C	Spare Jack Contacts for No. 651	*5	*50	1		*.20

No. 100 M-B Tobacco Lighters

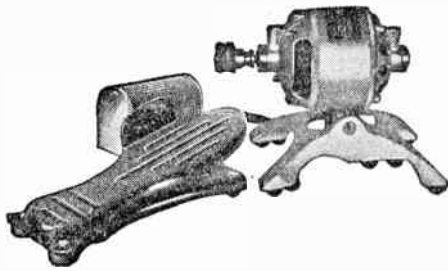


Lights a pipe no matter whether full of tobacco or nearly empty. Lights a cigarette or cigar on the first puff.

Operates on a new principle. When the button is pressed the heating coils instantly become red hot. At the first puff air passes over these coils and becomes so hot that the tobacco is lighted at once. Coils never touch tobacco at all. Take off cover, one screw, to plug in new element.

Price, No. 100 each \$5.00

Hamilton Beach Home Motors



This motor can be attached to any sewing machine, old or new. Set the pulley of the motor underneath the handwheel of the machine and slight pressure of the

foot on the speed control starts the motor.

- Price, Motor with Speed Control, Cord and Plug. ea. **\$18.50**
 " Fan Attachment..... " **3.00**
 " Grinder and Polisher Attachment..... " **1.50**
 " Cake Mixer Attachment..... " **5.00**

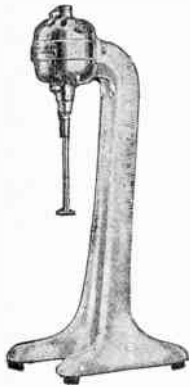
No. 2 Hamilton Beach Jewelers' Lathe Motors



Universal motor. Speed controlled by foot pedal self-starter. To reverse the direction of the motor, change the position of the carbon brushes.

Price, No. 2 Model, $\frac{1}{2}$ H.P. each **\$20.00**

White Flash Hamilton Beach Drink Mixers



The White Flash Mixer is the latest deluxe model of a one hand mixer. Special features are its extreme simplicity and beauty, and ease of operation.

Hang up the container like a receiver on a telephone and the motor starts. Remove drink and it stops. A single malted milk takes 10 seconds, a double, 20 or less.

Specifications: Motor speed, 14,000 r.p.m.; extra insulation prevents shocks; agitator of everlasting Monel metal, shaft silver plated; all nickel parts triple plated.

Equipped with 2-drink container. Price..... each **\$23.50**

No. 2 Hamilton Beach Hair Dryers

115 Volts, A. C. or D. C.

Designed specially for home use. Made of solid aluminum. Gives hot or cold blast. Fan is fully enclosed. Weight packed, five pounds. Price, No. 2.... each **\$22.50**



No. 3 Hamilton Beach Junior Hair Dryers

115 Volts, A. C. or D. C.

The No. 3 Junior is light, simple and powerful. Can be held in the hand or set in the stand at any desired angle, leaving hands free for scalp massage while hair is drying. Adjustment is instantaneous and automatic. Stays where it is put and stand is quickly detachable. Furnished in nickel finish, or boudoir old ivory.

The fan is fully enclosed, eliminating any chance of catching the hair. Dries the heaviest head of hair in a few minutes.

Gives hot or cold blast by simply turning the switch.

Price, No. 3 Junior Stand-Type..... each **\$18.50**



Type A Hamilton Beach Vibrators



Designed especially for home use. Compact and strong. Consists of one vibrator, with cord and attachment plug for connecting to electric light fixture, and six applicators, all packed in a handsome carrying case of black leatherette lined with satin. A speed regulating switch permits motor to be run fast or slow.

The following applicators are furnished with this machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; Number 6 soft rubber for head; and No. 7 soft rubber with 12 prongs.

Price, Type A Complete. each **\$19.50**

Type C Hamilton Beach Vibrators

Professional type of vibrator used by physicians, nurses and masseurs. Of heavier construction and has a more powerful motor than the vibrator for home use. For cases requiring energetic treatment. Packed in a black leatherette case, plush lined.

Following applicators are furnished with machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; Number 6 soft rubber for head; and No. 7 soft rubber with 12 prongs.

Price, Type C Complete..... each **\$28.50**



Type D Hamilton Beach Vibrators



Specially designed to meet the demand for a light, efficient and low-priced vibrator for family use and for the professional hair dresser and masseur who calls on patrons at their homes. Has no speed regulator. Instantly stopped or started by button in handle. A current regulator, which controls the speed of the vibrator by increasing or diminishing the flow of current, can be supplied. Following applicators furnished with machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; Number 6 soft rubber for head; and No. 7 soft rubber with 12 prongs.

Price, Type D Complete..... each **\$16.50**

Type F Hamilton Beach Vibrators

Similar in design to Type D. Provided with a speed controlling device. Like all H-B Vibrators, the Type F gives both the rubbing and percussion strokes and is guaranteed against electrical and mechanical defects. Packed in black leatherette carrying case, lined with satin.

Following applicators furnished with this machine: Nos. 1 and 4 hard rubber for body; No. 2 soft rubber for face; No. 3 velvet sponge for face; Number 6 soft rubber for head; and No. 7 soft rubber with 12 prongs.

Price, Type F Complete..... each **\$18.50**



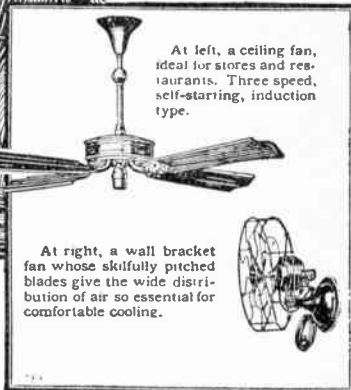
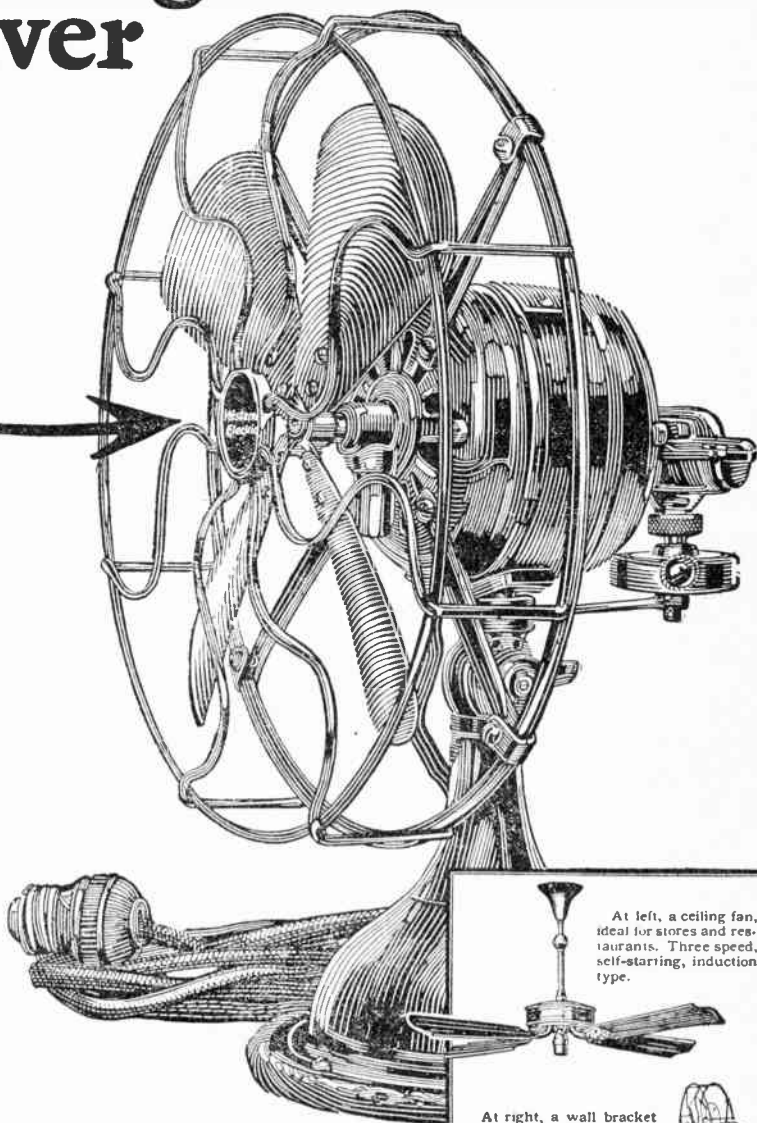
Like Sterling on a silver spoon

The nameplate on a Western Electric fan bears the mark of a pledge to you. It is a pledge as faithful in its promise as that of "Sterling" on silver.

For a Western Electric fan is sterling quality all the way through. It is built strong. It will last long. And it's sure to give satisfaction—56 years of Western Electric experience take care of that.

You'll want more than one of these fine fans. And why not? You have more than one lamp; so why stop at one fan, with all the bother of carrying it from room to room?

Let the Western Electric dealer help you pick the right fans. Tell him the size and nature of a room and he'll tell you what fan to get. If he recommends a smaller size than you thought you needed, don't be surprised. The Western Electric dealer knows he profits most when he gives you most—in fans or anything else electrical.



At left, a ceiling fan, ideal for stores and restaurants. Three speed, self-starting, induction type.

At right, a wall bracket fan whose skilfully pitched blades give the wide distribution of air so essential for comfortable cooling.

Western Electric

QUALITY ELECTRICAL SUPPLIES
WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Western Electric Fans

General Instructions

When ordering fans, use catalogue numbers as given, and only in case the fans required are not listed is it necessary to give specifications in full.

Purchasers are requested to give express or freight routing with their order, in the absence of which we will route shipments with the view of obtaining the best deliveries.

Every part is carefully inspected during the various processes of manufacture; the finished fan is given a long test run with regular blades, and is inspected by a competent specialist, before it is passed to the packing room.

All fans are fully guaranteed to leave the warehouses free from electrical or mechanical defects, and should any such defects develop within one year from date of shipment, we will make good the defect free of charge, either by shipment of a new part to take the place of a part claimed to be defective, or by replacement of the entire fan, at our option; but we cannot be responsible for trouble due to neglect, carelessness, lightning or other cause beyond our control, nor can we assume any responsibility for repairs to our apparatus by outside parties without direct authority.

Fans claimed to be defective, or fans needing repairs, must not be returned until permission to do so has been secured and proper shipping instructions furnished. Application should be made to our nearest branch office for permission.

Claims for shortage or defects must be promptly made, to insure proper attention.

The packing is done by experienced men, who use the utmost care to insure that the fans shall reach their destination in first-class condition, and as we take receipts from the transportation companies for all shipments received in good order, claims for loss or breakage should be made to the transportation company.

The workman installing a fan should read directions, and be sure that he thoroughly understands work before starting.

Every fan should be thoroughly inspected, cleaned and oiled each season by some one who is familiar with the work. Prices for spare parts upon application at our nearest branch.

In corresponding about a fan, give the type and name-plate reading in full, not omitting prefix or suffix letters (if any) to the Catalogue, Style or Serial Number.

All fans except the ceiling and 8-inch are packed each complete in one box.

8-inch fans are packed 10 fans of same catalogue number per case (each fan boxed separately).

The motor, ceiling hook, hanger and canopy of each ceiling fan are packed together in a substantial box. The blades and hanger rod are packed each set in a separate box.

Weights in Pounds of Western Electric Fans

Type	WEIGHT, POUNDS		Size of Packing Case Inches	
	Net	Ship-ping		
8-inch A.C.-D.C.	6	11	11 3/4 x 7	x12 1/2
8 " (crate of 10 Fans)....	60	130	40 1/2 x 25	x13
9 " A. C.-D. C. Non-oscillating.....	7	13	12 3/4 x 8 3/4	x14 1/4
9-inch A. C.-D. C. Oscillating.	9	15	12 3/4 x 8 3/4	x14 1/4
10 " A. C. Oscillating.....	9 1/2	18	12 x 8 1/2	x15
12 " A. C. "	18	36	16 x 12 1/2	x19
16 " A. C. "	21	44	19 3/4 x 12 3/4	x22
12 " D. C. "	16	32	16 x 12 1/2	x19
16 " D. C. "	19	40	19 3/4 x 12 3/4	x22
12 " A. C. Non-oscillating.	17	33	16 x 12 1/2	x19
12 " D. C. "	15	32	16 x 12 1/2	x19
12 " A. C. Ventilating (Exhaust).....	18 1/2	36	19 3/4 x 10	x17 3/4
16-inch A. C. Ventilating (Exhaust).....	22 1/2	45	24 x 10 1/4	x21 1/2
12-inch D. C. Ventilating (Exhaust).....	16	33	19 3/4 x 10	x17 3/4
16-inch D. C. Ventilating (Exhaust).....	19 1/2	39	24 x 10 1/4	x21 1/2
Style "K" A. C. Ceiling.....	60	77	16 1/2 x 14 1/2	x15 1/4
Style "B" D. C. "	57	80	21 1/2 x 11 3/4	x11 1/2
Set of Ceiling Fan Blades with Adjustable Hanger Pipe, Either Style "K" or "B" (Packed in Carton).....	7 1/2	12	29 1/2 x 11 1/2	x 4
Regulator for Ventilating Fan.	5	8	12 1/8 x 7 1/2	x 7 1/2

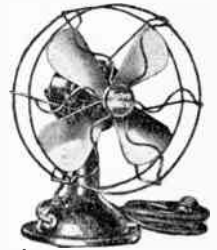
Western Electric 8-inch Universal Fans Alternating or Direct Current

Four-blade, cast iron frame, 110-120-volt universal motor, hinge joint for desk or bracket position, switch in base.

Will operate on any D.C. circuit 100 to 120 volts and any A.C. circuit 100 to 120 volts on 25 to 60 cycles.

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of fan.

Watts: 110 volts on A.C. position, 35; 110 volts on D. C. position, 35; 32 volts D.C., 35.



Cat. No.	Volts	SPEEDS, R. P. M.		Price, Each
		A. C.	D. C.	
7704	110	1850	1950	\$10.00
Direct Current Only				
7707	32	....	1950	\$10.00

No. 8100 Western Electric 8-inch Non-oscillating Induction Fans

110 Volts, 60 Cycles A. C.

Motor is self-starting single speed induction type. Pressed steel frame and pressed steel one-piece blades.

Has wick oiled front and rear bearings.

Motor body and base are finished in black enamel; blades, black satin finished.

All lead holes are rubber brushed.

Has a hinged joint for desk or wall position. Rigid 6-arm guard welded throughout. Base is felt covered and of a large diameter to prevent tipping.



Furnished with 8-foot new code reinforced cord and separable plug.

Price, No. 8100, 110 Volts 60 Cycles..... each \$10.00

Western Electric 9-inch Non-oscillating Fans

Alternating or Direct Current

Four blades, three speeds, drawn steel frame, series type, 100-120-volt universal motor, hinge joint for desk or bracket position, switch in base, felt pad to allow placing on highly polished surfaces without marring.

110-volt fans will operate on any D.C. circuit 100 to 120 volts, and any A.C. circuit 25 to 60 cycles, 100 to 120 volts.

This is an extra high grade small fan of drawn steel construction. The 9-inch size is ideal for the home or small office and this fan or the 9-inch oscillator should be selected for such service.

Prices include separable plug and 8 feet of black new code reinforced cord attached to base of fan.

Add \$1.00 to price of 110 volts for any voltage between 20 and 110 volts (except 32 volts).

Add \$1.00 to price of 220 volts for 235 or 250 volts. Special voltages between 110 and 220 volts, same price as 220 volts.

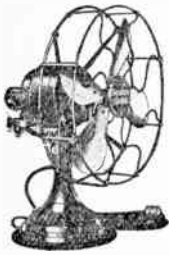
The fan as listed for 110 volts will operate on all circuits mentioned without any appreciable variation in speed.

WATTS A.C.—High speed, 35; second, 30; low, 27
WATTS D.C.—High speed, 45; second, 40; low, 35.

Cat. No.	Volts	SPEEDS, R.P.M.			Price Each
		1	2	3	
6000	110	1850 A.C.	1500 A.C.	1100 A.C.	\$15.00
		2200 D.C.	1750 D.C.	1400 D.C.	
For 25, 30, 40, 50 and 60 Cycles Alternating and Direct Current					
6002	220	1850	1500	1100	\$17.00
		For 60 Cycles, A.C. Only			
6003	32	1850	1500	1100	\$15.00
		For Direct Current Only			
6004	220	1850	1500	1100	17.00

Western Electric 9-inch Oscillating Fans

Alternating or Direct Current



Four blades, 3 speeds, drawn steel frame, series type, 100-120-volt universal motor, standard oscillating mechanism, hinge joint for a desk or bracket mounting, base felt covered.

110-volt fan suitable for any D.C. circuit 100 to 120 volts and any A.C. circuit 25 to 60 cycles, 100 to 120 volts.

This fan is the same as the 9-inch non-oscillating type, except that it has the new standard type oscillating mechanism, readily adjustable for straight breeze or any degree of oscillation without use of tools.

Prices include separable plug and 8 feet black new code reinforced cord attached to base of fan.

Add \$1.00 to price of 110 volts, for any voltage between 20 and 110 volts (except 32 volts).

Add \$1.00 to price of 220 volts, for 235 or 250 volts. Special voltages between 110 and 220 volts, same price as 220 volts.

The fan as listed for 110 volts will operate on all circuits mentioned without any appreciable variation in speed.

WATTS A.C.—High speed, 35; second, 30; low, 27.

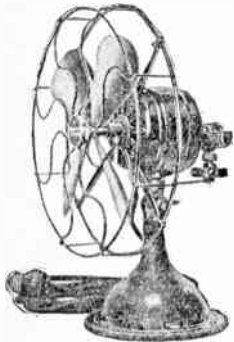
WATTS D.C.—High speed, 45; second, 40; low, 35.

For 25, 30, 40, 50 and 60 Cycles Alternating and Direct Current

Cat. No.	Volts	SPEEDS, R.P.M.			Price Each
		1	2	3	
7600	110	1850 A.C.	1500 A.C.	1100 A.C.	\$21.00
		2200 D.C.	1750 D.C.	1400 D.C.	
7602	220	For 60 Cycles, A.C. Only			\$23.00
		1850	1500	1100	
7603	32	For Direct Current Only			\$21.00
		1850	1500	1100	
7604	220	1850	1500	1100	23.00

Western Electric 10-inch Oscillating Fans

Alternating Current



Four blades, 3 speeds, drawn steel frame, induction type motor, adjustable oscillating mechanism, hinge joint for desk or bracket position, base felt covered. Furnished for 50 and 60 cycles and in the oscillating type only. 110 and 220-volt 50-cycle fans are the same price as the 60-cycle fans.

Prices include separable plug and 8 feet of black new code reinforced cord attached to base.

Cat. No.	Size Inches	Volts	Cycles	SPEEDS R. P. M.			Price Each
				1	2	3	
8204	10	110	60	1530	1300	1100	\$21.00
8205	10	220	60	1530	1300	1100	22.50

Western Electric 12-inch Non-oscillating Fans

Alternating Current

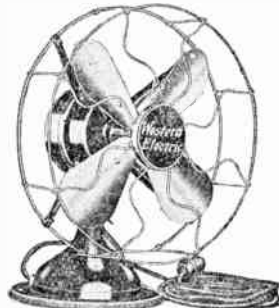
Four blades, 3 speeds, drawn steel frame.

Prices include 8 feet of reinforced cord with plug.

The 115-volt 40-cycle same price as 110-volt 25-30 cycle.

All 110-volt and 220-volt 50-cycle fans are same price as 110-volt and 220-volt 60-cycle fans, respectively.

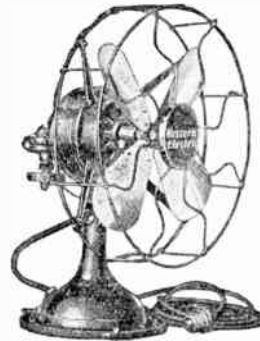
*25-30 cycle are series type.



Cat. No.	Size In.	Volts	Cycles	SPEEDS, R.P.M.			Price Each
				1	2	3	
7400	12	100-120	*25-30	1500	1275	1125	\$24.50
7404	12	110	60	1550	1350	1250	23.50
7405	12	220	60	1550	1350	1250	25.00

Western Electric 12 and 16-inch Oscillating Fans

Alternating Current



Four blades, 3 speeds, drawn steel frame, induction type, standard oscillating mechanism, trunnion joint for desk or bracket mounting, base felt covered and of large diameter to prevent tipping.

Similar design to 12-inch direct current and non-oscillating alternating current fans, and major parts are interchangeable.

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of the fan.

All 115-volt, 40-cycle fans are the same price as 110-volt, 25-30-cycle fans.

All 110-volt and 220-volt, 50-cycle fans are the same price as the 110-volt and 220-volt, 60-cycle fans, respectively.

Cat. No.	Size In.	Volts	Cycles	SPEEDS, R.P.M.			Price Each
				1	2	3	
7800	12	100-120	*25-30	1475	1250	1100	\$31.00
7804	12	110	60	1550	1350	1250	30.00
7805	12	220	60	1550	1350	1250	31.50
7850	16	100-120	*25-30	1450	1225	1100	36.00
7854	16	110	60	1500	1250	1075	35.00
7855	16	220	60	1500	1250	1075	36.50

*The 25-30-cycle fans are series type.

Western Electric 12-inch Non-oscillating Fans

Direct Current

Four blades, three speeds, drawn steel frame, series type, trunnion joint for desk or bracket mounting, swivel to turn blades in any horizontal direction, base felt covered and of large diameter to prevent tipping.

Similar to the 12-inch alternating current fans and bearings, oil cups, switch base, blades, guard and other important parts are interchangeable.

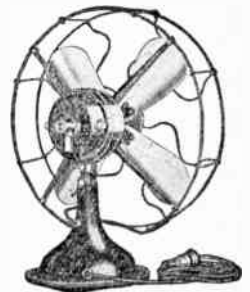
Through the use of drawn steel parts, the fan is very light in weight; 15 pounds for 12-inch size and is easily portable, but rugged.

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of fan.

Add \$1.00 to prices of 110 volts for any voltage between 20 and 110 volts (except 32).

Add \$1.00 to prices of 220 volts for 235 or 250 volts.

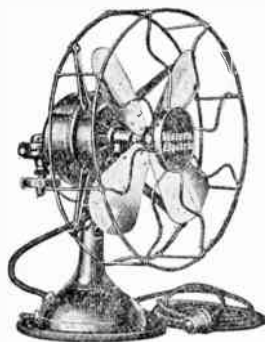
Special voltages between 110 and 220 volts, same price as 220 volts.



Cat. No.	Size In.	Volts	SPEEDS, R. P. M.			Price Each
			1	2	3	
6400	12	32	1550	1300	1100	\$23.50
6401	12	110	1550	1300	1100	23.50
6402	12	220	1550	1300	1100	26.00

Western Electric 12 and 16-inch Oscillating Fans

Direct Current



Four blades, 3 speeds, drawn steel frame, series type, trunnion joint for desk or bracket mounting, standard oscillating mechanism, base felt-covered and of large diameter to prevent tipping.

Similar in design to 12-inch direct current non-oscillating fans and to alternating current oscillating and non-oscillating fans, and many parts are interchangeable.

Prices include 8 feet of black new code reinforced cord with a separable plug attached to base of fan.

Add \$1.00 to prices of 110 volts for any voltage between 20 and 110 volts (except 32).

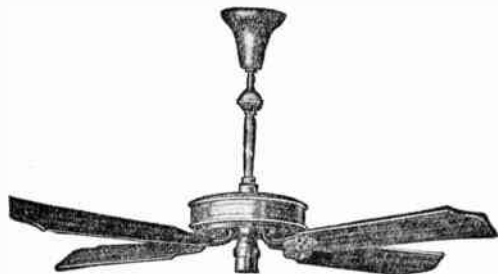
Add \$1.00 to prices of 220 volts for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

Cat. No.	Size In.	Volts	SPEEDS, R.P.M.			Price Each
			1	2	3	
7900	12	32	1550	1300	1100	\$30.00
7901	12	110	1550	1300	1100	30.00
7902	12	220	1550	1300	1100	32.50
7950	16	32	1500	1250	1075	35.00
7951	16	110	1500	1250	1075	35.00
7952	16	220	1500	1250	1075	37.50

Style K Western Electric 56-inch Ceiling Fans

Alternating Current



Four blades, 3 speeds, self starting, induction type motor. Blade shanks attached direct to motor and arranged for reversing to direct breeze upward if desired. Switch at base protected by substantial housing.

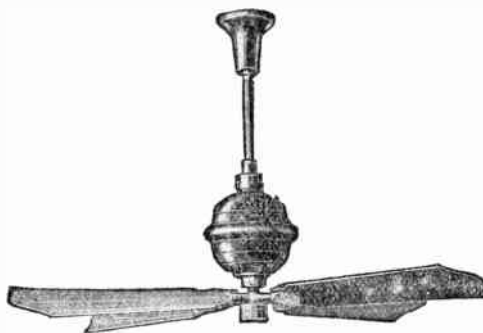
Finish consists of 2 coats baked black enamel, blade shanks black enamel finish, blades selected grade hardwood, polished mahogany finish.

Fan is regularly furnished complete with ceiling canopy, hook, insulating hanger and adjustable hanger pipe as shown, suitable for 10 to 12-foot ceilings. Longer pipes furnished on special order.

Switch casing below blade carrier has four neatly plugged holes tapped for standard 3/8-inch brass fixture connection so customer can wire motor and attach electrolier fittings if desired. Watts on high, second and low speeds respectively, 60 cycles—145, 120, 115.

Cat. No.	Volts	Cycles	SPEEDS, R. P. M.			Price Each
			1	2	3	
6719	110	60	225	175	150	\$54.00
6720	220	60	225	175	150	56.00

Style B Western Electric 56-inch Ceiling Fans Direct Current



Motor and canopy are finished in two coats of baked black enamel with 2 gilt lines around the motor body.

The blades and shanks are attached directly to the spider. Blade shanks have a baked black enamel finish. The blades are made of selected grade of hard wood with polished mahogany finish.

A 4-point, 3-speed switch, fitted in a casing at the upper end of the motor, serves to start and stop the fan as well as to regulate its running speed.

Prices include ceiling canopy, hook and insulated hanger, and adjustable hanger pipe suitable for 10 to 12-foot ceiling.

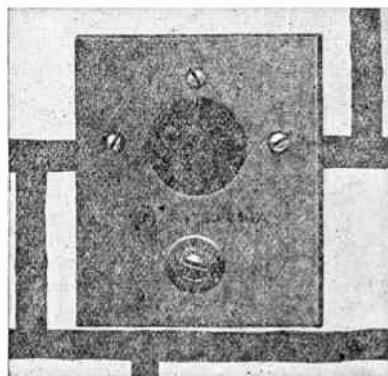
Add \$1.00 to the 110-volt prices for any voltage between 32 and 110 volts.

Add \$1.00 to the 220-volt prices for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

Cat. No.	Volts	SPEEDS, R.P.M.			Price Each
		1	2	3	
6900	32	225	180	135	\$52.00
6901	110	225	180	135	52.00
6902	200	220	180	135	54.50

No. 234 FA Fan Hanger Outlets



Face Plate Installed—Ready for Fan

Primarily designed for fan service, this outlet readily lends itself as a utility outlet for heaters, flood lights for show windows, and various electrical appliances. Adaptable to all classes of modern buildings and approved by the Underwriters' Laboratories for supporting oscillating fans up to and including 16-

inch. Eliminates wall brackets, standards, and all temporary installations.

Made with a pressed steel box, 2 3/4 x 3 1/2 x 2 inches; 4 corners of box fitted with substantial supports tapped for No. 10/32 round head steel screws for supporting the adjustable steel plate inside box, which has 1/2 and 3/4-inch knockouts, and to which the brass cover plate, 3 1/2 x 4 1/4 inches, is fastened. This heavy adjustable steel plate rests on the bottom of the box and is furnished with a flared tapped hole to take the 1/4-inch round head steel bolt for supporting fan; this bolt and the brass screw at top of plate, to take care of variation in thickness of plaster, are long enough for an adjustment outwardly not to exceed 1/2 inch.

Furnished with cover plate finished in brush brass or black and a special outlet box with Hubbell No. 7552 standard universal flush receptacle. Oxidized brass or copper finish furnished at an additional charge of 25 per cent.

Packed in individual carton; standard package of 48 is made up and weighs, 102 pounds.

Price, No. 234, Complete, Brush Brass or Black, each \$4.30

Western Electric 12 and 16-inch Ventilating Fans

Alternating and Direct Current



These ventilating fans are 6-blade and have drawn steel frames. By this construction the weight has been greatly reduced as compared with the cast iron motor and tripod type previously furnished.

They are intended for mounting in walls or partitions and exhausting into open space (free air). They may be mounted in a vertical position, as the bearings are provided with hardened steel end-thrust washers.

The motor and fan blades are mounted in a rigid support. The outfit is complete and ready to fasten to the wall or ceiling wherever the necessary opening can be made.

The motors are fully enclosed, thus making them practically dust and moisture proof, and affording protection against grease, grit, acids, or other substances which might prove injurious to the windings or commutator. The fans remove all the fumes and odors which might be distasteful or injurious to the health, and draw in a constant supply of fresh air.

When working against free air the 12-inch fans will displace approximately 1,000 cubic feet of air per minute; the 16-inch fans from about 1550 cubic feet. When working against back pressure or other obstruction to free air, the displacement will be reduced.

Dimensions: 12-inch size—diameter of fan blades, 12 inches; diameter of ring, inside, 13 3/4 inches; outside, 16 inches. 16-inch size—diameter of fan blades, 16 inches; diameter of ring, inside, 17 3/4 inches; outside, 20 inches.

Finish: the motor and supporting ring are finished in baked black enamel. The fan blades are of brass, polished and lacquered.

Add \$1.00 to prices of 110-volt direct-current fans for any voltage between 20 and 110 volts (except 32).

Add \$1.00 to prices of 220-volt direct-current fans for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

The bearings of these Ventilating (Exhaust) Fans are all provided with hardened steel end-thrust washers, thus making the fans suitable for vertical operation, upward or downward discharge.

WALL REGULATOR.—For wall regulator in black enamel finish add \$5.00 to price of 12-inch or 16-inch alternating current fans; or \$4.50 to prices of direct current fans.

Regulator gives two-speed reductions from full speed.

When ordering separately state size of fan and voltage and cycles alternating current, or voltage direct current, for which the regulator is intended.

Regulator is not required to operate the fans unless speed reductions are desired. Any of the fans can be started directly from the line.

Alternating Current, Induction Motor

Cat. No.	Diam. Fan Blades Inches	Volts	Cycles	Full Speed Free Air	Watts Consumed	Price Each
8050	12	100-120	*25-30	1500	55	\$31.00
8054	12	110	60	1550	54	29.00
8055	12	220	60	1550	54	31.00
8075	16	100-120	*25-30	1500	85	35.00
8079	16	110	60	1440	93	33.00
8080	16	220	60	1440	93	35.00

Direct Current

8000	12	32		1550	55	\$29.00
8001	12	110		1550	55	29.00
8002	12	220		1550	55	31.50
8025	16	32		1500	75	33.00
8026	16	110		1500	75	33.00
8027	16	220		1500	75	35.50

*The 25-30-cycle fans are series type.

Sturtevant Ventilating and Exhaust Fans

Design 5



Propeller fans are usually installed to exhaust directly to out-of-doors, and are effective for ventilating kitchens, bakeries, laundries, garages, lodge rooms, engine rooms, toilets, stores, small theatres, and all kinds of industries where ventilation is needed, and for drying many materials, such as photo plates, blue prints, plaster, etc. Sturtevant Design 5 Exhaust Fans will deliver nearly as much air when operating reversed, so they can readily be used for blowing in.

Kind of Room	Number of Minutes in Which Air Should Be Changed	Kind of Room	Number of Minutes in Which Air Should Be Changed
Engine Rooms	5-10	Smoking Room	3- 5
Office	6-10	Garages	5- 7
Toilets	3- 5	Bakeries	3- 5
Kitchen	3- 5	Laundries and Dry Cleaning Plants	5- 7
Lodge Room	7-10	Plating and Galvanizing Rooms	7-10
Theatres	7-10		

Theatres and Auditoriums are usually figured on the basis of 20 to 30 cubic feet per person per minute.

Do not use for installation with duct systems.

Direct Current—115-230 Volts

Size No.	Volume C.F.M. Free Discharge	Speed R. P. M.	Watts Input	Shipping Wt. Lbs.
3	1500	900	90	80
4	3020	850	175	150
5	4400	675	210	225
6	6080	550	300	325
7	11350	575	600	460
8	13000	430	590	600
9	15450	420	820	700

Single-phase—110-220 Volts, 60 Cycles

3	1500	900	90	80
4	3200	900	175	140
5	4890	750	270	200
6	6640	600	370	300
7	10850	550	640	450

Polyphase—110-220-440-550 Volts, 60 Cycles

*3	1415	850	80	80
*4	3020	850	175	140
5	4400	675	210	225
6	6200	560	310	300
7	11350	575	560	420
8	13000	430	590	550
9	15450	420	820	650

*Furnished in 110 and 220 volts, 60 cycles only.

Direct current motor for 115-230 volts only. Sizes No. 5 and larger can be furnished for 550 volts at 10 per cent extra. Direct current motors are furnished with enclosed type starter and regulator for 50 per cent speed reduction.

Single-phase motors are thrown directly on the line. When required, regulator for speed reduction 30 per cent can be furnished for all sizes of single phase, except size No. 3, at an extra price. Polyphase motors are thrown directly on the line. The speed cannot be regulated. All motors enclosed type.

Prices upon application.

Sturtevant Big Midget Portable Blowers

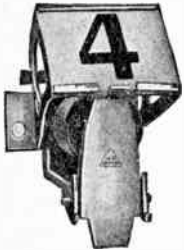


Delivers dry air for removing dust from machinery. Compressed air ordinarily contains moisture; this blower shoots dry air. Does away with air lines and lugging a

hose around, and work is reached from all sides. Has 1/2 horsepower universal motor, 110 or 220 volts; speed, open outlet, 9895 r.p.m., closed outlet, 11100 r.p.m.; volume delivered, 43.2 cubic feet per minute; air velocity, 14820 feet per minute; static pressure, outlet closed, 16.62 ins. water; inside diameter nozzle, 3/4 inch. Furnished with 20 feet cord and plug; switch in handle. Weight, 7 Pounds.

Price each \$44.00

Edwards Annunciators
Special Features and General Information



No. 80

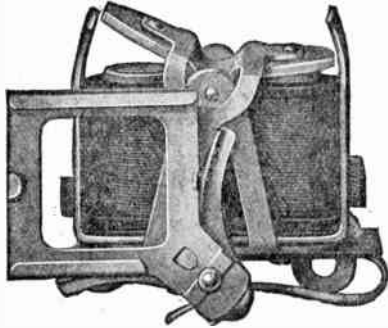
No. 80 Gravity Drops

The drop used in all hand reset annunciators is the No. 80 Gravity Drop. It is made of decarbonized steel and brass. Constructed to withstand severe service. The drop remains locked against all vibrations and falls only when current passes through magnet.

Price, No. 80each \$3.45

No. 400 Semaphore Gravity Drops

The drop used in all electrical reset annunciators is the No. 400 Semaphore Gravity Drop. Two lock drops are combined in one unit thus doing away with the permanent magnet. It is dependable and made to withstand severe service. Self-locking in either position and will stand several times the amount of current necessary for operation. Upon energizing the right



No. 400

hand magnet the shutter is thrown to the left and locked. Upon energizing the left hand magnet it is returned to its original position and locked.

Price, No. 400each \$3.90

No. 11 Closed Circuit Drops



Closed Circuit Drop No. 11 is a satisfactory drop for use where closed circuit operation is wanted. Each drop its own relay.

Price, No. 11each \$14.00

Individual or Group Reset, No. 401 and 407

Price, Button on Case (up to 4).....per button \$3.85
" Over 4 Buttons....." " 3.00

Letters on Glass

Stencil Charge.....\$2.00
Additional.....per annunciator 1.00

Bell Instead of Buzzer

Add to List.....\$3.00

Constant Ringing Attachment

Add to List.....\$9.00

Markings on Tags

Other than the Standard Numbers, per Tag, Add to List.....\$.40

Special Resistance

6 to 30 volts, A. C. or D. C., per Drop, Add to List.. \$.60

*Over 30 Volts, D. C., per Drop, Add to List.....

*Price upon application.

NOTE: Schedule same as annunciator on which used.

Finishes

Description	--ADD TO LIST PRICE--			
	1 to 10 Drops	11 to 20 Drops	21 to 50 Drops	Over 50 Drops
Wood.....	\$4.00	\$5.00	\$8.00	\$11.00
Metal.....add	25%	20%	15%	10%
White Enamel.....	\$6.00	\$8.50	\$11.50	\$14.50

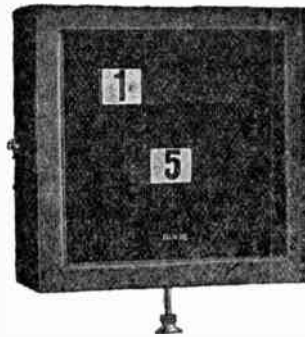
***Arrangement of Drops**

Other than Standard..... 25% 20% 15% 10%

*Nos. 81 or 91 can only be furnished in special arrangement in sizes larger than 12 drops.

No. 81 Edwards Dixie House Type Annunciators

For Operation on Battery or Transformer Gravity Drop Schedule E



Hand reset only. A moderate priced instrument with all the desirable features of a higher priced one. The drops used are the No. 80. They are locked in place and cannot be released by shaking or jarring. When current passes through the magnet they drop immediately. A Size 2 Adjustable Lungen Buzzer is mounted in the backboard. The whole mechanism is mounted on a backboard with plainly marked terminals. This arrangement allows the annunciator as a whole (less case)

to be installed, connected and tested with a minimum amount of labor. The case itself, being one piece, may then be slipped on and securely held by fasteners on either side. The backboard is wood, the grain running in two directions to prevent warping. It is recessed for mounting on irregular walls. Each annunciator packed in a separate carton. Standard finish, golden oak; mahogany can be furnished at additional cost. Furnished only as listed. 6 volts D. C., 12 volts A. C., irrespective of line resistance. Other voltages special.

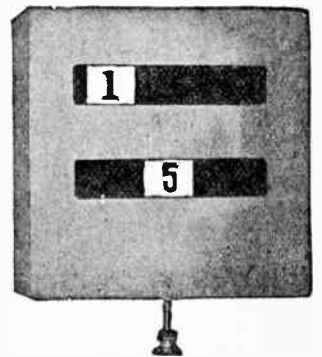
No. of Drops	ARRANGEMENT			DIMENSIONS, INCHES			*Std. Pkg.	Price Each
	Across	Down	Height	Width	Depth			
2	2	1	5 5/8	7 3/4	3 1/8	6	\$9.96	
3	3	1	5 5/8	7 3/4	3 1/8	6	11.58	
4	4	1	5 5/8	7 3/4	3 1/8	10	13.18	
6	3	2	7 7/8	7 3/4	3 1/8	10	16.56	
8	4	2	7 7/8	7 3/4	3 1/8	8	19.58	
10	5	2	7 7/8	9 3/8	3 1/8	5	22.96	
12	6	2	7 7/8	10 3/4	3 1/8	5	26.16	

13 to 55 Drops, Add to List.....per drop \$2.22
56 Drops and over, Add to List....." " 2.84

*Assortment of 10 to make a standard package.

No. 91 Edwards San-Fer-Ann House Type Annunciators

For Operation on Battery or Transformer Gravity Drop Schedule E



Hand reset only. The same mechanism as No. 81 with the exception that the bell is mounted as shown and connected in circuit with flexible cord. The case is iron, the neatness of design and finish making it especially adaptable for offices, kitchens, etc., where cleanliness is an asset. The case is hinged to the backboard. A slotted hole in the case and a countersunk screw form the fastening, it being only necessary to loosen screw to open case.

Each annunciator packed in a separate carton. Finish, white enamel. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

No. of Drops	ARRANGEMENT			DIMENSIONS, IN.			*Std. Pkg.	Price Each
	Across	Down	Height	Width	Depth			
2	2	1	4 3/4	6 7/8	2 7/8	6	\$13.16	
3	3	1	4 3/4	6 7/8	2 7/8	6	14.94	
4	4	1	4 3/4	6 7/8	2 7/8	10	16.56	
6	3	2	7	6 7/8	2 7/8	10	19.58	
8	4	2	7	6 7/8	2 7/8	8	22.96	
10	5	2	7	8 1/2	2 7/8	5	26.26	
12	6	2	7	9 7/8	2 7/8	5	29.44	

13 to 55 Drops, Add to List.....per drop \$3.02
56 Drops and over, Add to List....." " 6.40

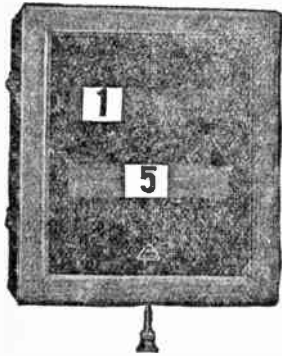
*Assortment of 10 to make a standard package.

Edwards House Type Annunciators

For Operation on Battery or Transformer Gravity Drop

Schedule T

No. 125 Wood—No. 125M_Metal



Arrow, hand reset only. Entire mechanism is mounted on a backboard with plainly marked terminals. The backboard is wood, and is recessed for mounting on irregular walls.

The drop used is No. 80. The bell is an Edwards Re-Al monitor, weather, bug and dustproof. A finer and more substantial case to harmonize with surrounding woodwork or fixtures. Finish wood, golden oak; metal, rubberoid black. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

No. of Drops	ARRANGEMENT		DIMEN., INCHES			PRICE, EACH	
	Across	Down	Height	Width	Depth	No. 125	No. 125M
4	4	1	5 ⁵ / ₈	7 ³ / ₄	3 ³ / ₈	\$23.34	\$33.34
6	3	2	7 ⁷ / ₈	7 ³ / ₄	3 ³ / ₈	27.60	37.60
8	4	2	7 ⁷ / ₈	7 ³ / ₄	3 ³ / ₈	32.50	42.50
10	5	2	7 ⁷ / ₈	9 ³ / ₈	3 ³ / ₈	39.72	49.72
12	6	2	7 ⁷ / ₈	10 ³ / ₄	3 ³ / ₈	46.96	56.96
14	5	3	10 ¹ / ₄	9 ³ / ₈	3 ³ / ₈	53.78	63.78
16	6	3	10 ¹ / ₄	10 ³ / ₄	3 ³ / ₈	60.62	70.62
18	6	3	10 ¹ / ₄	10 ³ / ₄	3 ³ / ₈	67.98	77.98
20	5	4	13	9 ³ / ₈	3 ³ / ₈	75.20	85.20
24	6	4	13	10 ³ / ₄	3 ³ / ₈	90.04	100.04

Additional Drops per Set of Two..... \$8.26 \$9.25

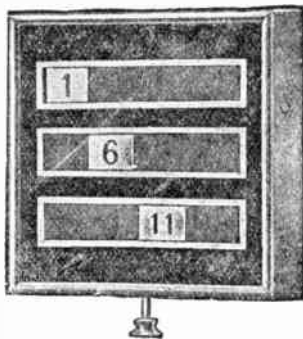
No. 807 Edwards Annunciators

Gravity Drop—110 Volts

Schedule T

Hand reset only. The drops used are the No. 80. Made of decarbonized steel and brass. Constructed to withstand severe service. The drop remains locked against all vibrations and falls only when current passes through the magnet.

Has metal case with a double slate backboard. Great care has been given to the insulation of all current carrying parts, eliminating all materials affected by heat or moisture. Furnished with a 3-inch No. 100 Recti Bell for D. C. For A. C. a 3-inch transformer bell. Bells wound to proper resistance. Finish rubberoid black. Other finishes, special features, etc., listed elsewhere.



No. of Drops	ARRANGEMENT		DIMEN., INCHES			Price Each
	Across	Down	Height	Width	Depth	
4	4	1	5 ⁵ / ₈	7 ³ / ₄	3 ⁷ / ₈	\$61.66
6	3	2	7 ⁷ / ₈	7 ³ / ₄	3 ⁷ / ₈	73.32
8	4	2	7 ⁷ / ₈	7 ³ / ₄	3 ⁷ / ₈	90.84
10	5	2	7 ⁷ / ₈	9 ³ / ₈	3 ⁷ / ₈	101.96
12	4	3	10	7 ³ / ₄	3 ⁷ / ₈	123.84

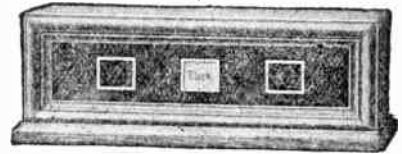
Additional Drops. Add per Drop..... \$16.16

No. 412 Edwards Desk Annunciators

Semaphore Gravity Drop

6 Volts D. C., 12 Volts A. C.

Schedule T



Electrical reset only. The No. 400 drop is used. Size 2 Lungen Adjustable Buzzer inside case. A compact and attractive instrument for desk use. The back is finished. Furnished unless otherwise specified with reset button on case. Finish oak or mahogany. Other finishes, special features, etc., listed elsewhere. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

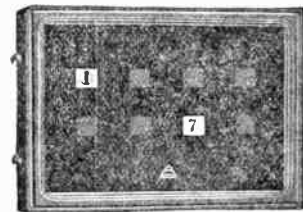
No. of Drops	ARRANGEMENT		DIMEN., INCHES			Price Each
	Across	Down	Height	Width	Depth	
3	3	1	4 ¹ / ₄	10 ¹ / ₄	3 ³ / ₄	\$33.28
4	4	1	4 ¹ / ₄	12 ¹ / ₂	3 ³ / ₄	36.76
5	5	1	4 ¹ / ₄	14 ³ / ₄	3 ³ / ₄	38.96
6	6	1	4 ¹ / ₄	17	3 ³ / ₄	45.88
8	8	1	4 ¹ / ₄	21 ¹ / ₂	3 ³ / ₄	54.40

Additional Drops up to 20 per Set of Two \$11.76
Over 20 Drops per Set of Two..... 13.72

Edwards Gravity Drop Annunciators

6 Volts D. C., 12 Volts A. C.

No. 401 Wood—No. 407 Metal



No. 401

Electrical reset only. A reliable and attractive instrument for use where electrical reset or remote control is desired. The No. 400 drop is used. Drops are mounted on the backboard. Can be furnished with reset for individual or groups of drops (listed elsewhere). Regularly furnished with reset for total number, button on case. Finish wood, golden oak, metal rubberoid black. Other finishes, special features, etc., listed elsewhere. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

No. of Drops	ARRANGEMENT		DIMEN., IN.			PRICE, EACH	
	Across	Down	Height	Width	Depth	No. 401	No. 407
4	2	2	7 ⁵ / ₈	7 ¹ / ₄	2 ¹ / ₂	\$25.98	\$35.98
6	3	2	7 ⁵ / ₈	9 ¹ / ₂	2 ¹ / ₂	30.60	40.60
8	4	2	7 ⁵ / ₈	11 ³ / ₄	2 ¹ / ₂	36.28	46.28
10	4	3	9 ⁷ / ₈	11 ³ / ₄	2 ¹ / ₂	43.82	53.82
12	4	3	9 ⁷ / ₈	11 ³ / ₄	2 ¹ / ₂	52.16	62.16
14	5	3	9 ⁷ / ₈	14	2 ¹ / ₂	59.80	69.80
16	6	3	9 ⁷ / ₈	16 ¹ / ₄	2 ¹ / ₂	67.64	77.64
18	6	3	9 ⁷ / ₈	16 ¹ / ₄	2 ¹ / ₂	75.50	85.50
20	5	4	12 ¹ / ₈	14	2 ¹ / ₂	83.54	93.54
22	6	4	12 ¹ / ₈	16 ¹ / ₄	2 ¹ / ₂	91.66	101.66
24	6	4	12 ¹ / ₈	16 ¹ / ₄	2 ¹ / ₂	100.00	110.00

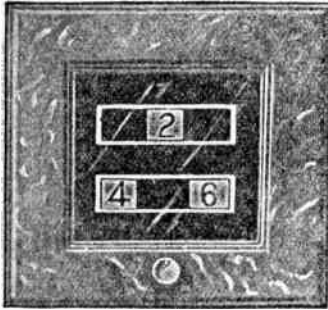
Additional Drops per Set of Two..... \$10.32 \$15.00

Edwards Gravity Drop Annunciators

No. 215 Wood—No. 215M Metal

6 Volts D.C., 12 Volts A.C.

Schedule T



Hand reset only. Flush type. Drop used is the No. 80. Furnished with a No. 2 Lungen Buzzer. If a bell is specified a 1 3/4-inch Lungen Bell. Finish wood, golden oak; metal, rubberoid black. Other finishes, special features, etc., listed elsewhere.

6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

No. of Drops	ARRANGEMENT		DIMEN., INCHES			PRICE, EACH	
	Across	Down	Height	Width	Depth	No. 215	No. 215M
4	4	1	7 1/4	8 7/8	2 3/4	\$54.18	\$64.18
6	3	2	9	8 7/8	2 3/4	60.68	70.68
8	4	2	9	8 7/8	2 3/4	66.86	76.86
10	5	2	9	10 7/8	2 3/4	73.48	83.48
12	4	3	11 3/4	12 1/4	2 3/4	79.36	89.36
14	5	3	11 3/4	10 7/8	2 3/4	83.32	93.32
16	6	3	11 3/4	12 1/4	2 3/4	89.22	99.22
18	6	3	11 3/4	12 1/4	2 3/4	94.94	104.94
20	5	4	14 1/2	10 7/8	2 3/4	101.02	111.02
22	6	4	14 1/2	12 1/4	2 3/4	107.34	117.34
24	6	4	14 1/2	12 1/4	2 3/4	113.50	123.50

Additional Drops per Set of Two..... 12.90 15.00

Add 3 inches to height and width for trim.

Edwards Gravity Drop Annunciators

No. 406 Wood—No. 405 Metal

6 Volts D.C., 12 Volts A.C.

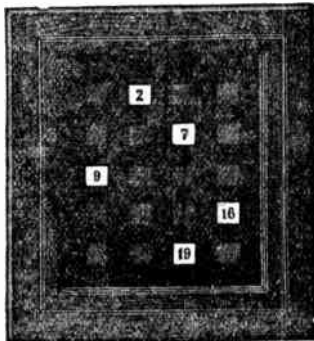
Schedule T

Electrical reset only. Flush type.

Drop used is the No. 400.

Finish wood, golden oak, metal, rubberoid black. Other finishes, special features, etc., listed elsewhere.

6 volts D.C., 12 volts A.C. irrespective of line resistance. Other voltages special.



No. of Drops	ARRANGEMENT		DIMEN., INCHES			PRICE, EACH	
	Across	Down	Height	Width	Depth	No. 406	No. 405
4	2	2	7 3/4	8 1/2	2 3/8	\$54.18	\$64.18
6	3	2	7 3/4	10 3/4	2 3/8	60.68	70.68
8	4	2	7 3/4	13	2 3/8	66.86	76.86
10	4	3	9 3/4	13	2 3/8	73.48	83.48
12	4	3	9 3/4	13	2 3/8	79.36	89.36
14	5	3	9 3/4	15 1/4	2 3/8	83.34	93.34
16	6	3	9 3/4	17 1/2	2 3/8	89.22	99.22
18	6	3	9 3/4	17 1/2	2 3/8	94.94	104.94
20	5	4	11 3/4	15 1/4	2 3/8	101.02	111.02
22	6	4	11 3/4	17 1/2	2 3/8	107.34	117.34
24	6	4	11 3/4	17 1/2	2 3/8	113.50	123.50

Additional Drops per Set of Two..... 12.90 15.00

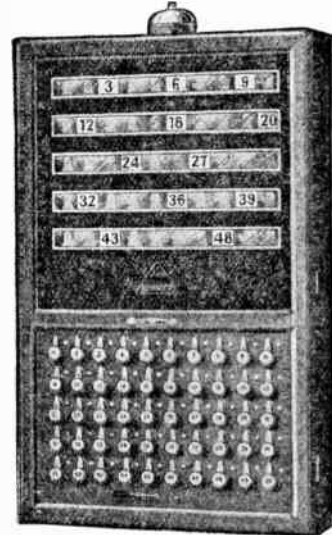
Add 3 inches to height and width for trim.

No. 10 Edwards Return Call Gravity Drop Annunciators

For Operation on Battery or Transformer

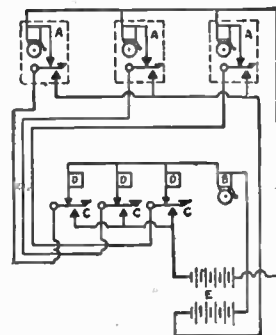
6 Volts D.C., 12 Volts A.C.

Schedule T



No. 10 hand reset only. Wood, as shown. Generally used in hotels for the purpose of calling the room and acknowledging from the room that the call has been heard, or the reverse operation. A common battery wire is used for both the call from the annunciator and to calling point. One wire with common return for call from annunciator, the other wire with same common return for call to annunciator. Each button on the annunciator is marked to correspond to a drop. One drop for every station. The No. 80 drop is used. Finish golden oak. Other finishes, special, etc., listed elsewhere. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special.

Wiring Diagram



- A.—136 Bell and Push
- B.—Annunciator Bell
- C.—Return Call Button on Annunciator.
- D.—Annunciator Drops.
- E.—Batteries.

No. of Drops	ARRANGEMENT		DIMEN., INCHES			Price Each
	Across	Down	Height	Width	Depth	
10	5	2	17 1/2	12 3/4	5	\$44.12
12	6	2	17 1/2	13 3/4	5	54.44
16	6	3	22	13 3/4	5	70.98
20	7	3	22	15 1/8	5	88.24
24	6	4	26 1/2	13 3/4	5	103.30

Additional Drops per Set of Two..... \$13.42

Nos. 12 and 12D Edwards Elevator Gravity Drop Annunciators

For Operation on Battery or Transformer

6 Volts D.C., 12 Volts A.C.]

Schedule T



No. 12 manual reset only. Wood. The drop used is the No. 80. Size 2 Lungen Adjustable Buzzer in case. Bell can be furnished. Finish golden oak. Other finishes, special features, etc. listed elsewhere. 6 volts D.C., 12 volts A.C. irrespective of line resistance. Other voltages special.

No. 12D. Same as No. 12 except a separate reset is furnished for "UP" and "DOWN."



No. 12			No. 12			Price Each
No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES Height	Width	Depth	
3	1	3	12	4	3 1/4	\$13.94
4	1	4	14 3/4	4	3 1/4	15.74
5	1	5	17 1/2	4	3 1/4	17.16
6	1	6	20 1/4	4	3 1/4	18.70
7	1	7	23	4	3 1/4	20.26
8	2	4	14 3/4	5 3/8	3 1/4	21.92
10	2	5	17 1/2	5 3/8	3 1/4	24.90
12	2	6	20 1/4	5 3/8	3 1/4	28.12
No. 12D						Price Each
No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES Height	Width	Depth	
6	1	6	14 3/4	5 3/8	3 1/4	\$28.50
8	2	4	17 1/2	5 3/8	3 1/4	31.72
10	2	5	20 1/4	5 3/8	3 1/4	34.70
12	2	6	23	5 3/8	3 1/4	37.92
Additional Drops, Add per Drop.....						\$4.12

Nos. 130 and 130D Edwards Elevator Gravity Drop Annunciators

For Operation on Battery or Transformer

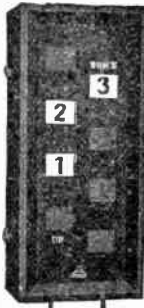
6 Volts D.C., 12 Volts A.C.

Schedule T



No. 130 manual reset only. Metal. The drop used is the No. 80. Size 2 Lungen Adjustable Buzzer inside case. Bell can be furnished. Finish, rubberoid black. Other finishes, special features, etc., listed elsewhere. 6 volts D.C., 12 volts A.C. irrespective of line resistance. Other voltages special.

No. 130D. Same as No. 130 except a separate reset is furnished for "UP" and "DOWN."



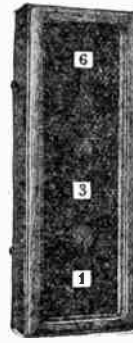
No. 130			No. 130			Price Each
No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES Height	Width	Depth	
3	1	3	11 1/4	4	3 1/4	\$16.72
4	1	4	14	4	3 1/4	18.96
5	1	5	16 3/4	4	3 1/4	20.12
6	1	6	19 1/2	4	3 1/4	22.44
7	1	7	22 1/4	4	3 1/4	24.30
8	2	4	14	5 3/8	3 1/4	26.32
10	2	5	16 3/4	5 3/8	3 1/4	29.92
12	2	6	19 1/2	5 3/8	3 1/4	33.80
No. 130D						Price Each
No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES Height	Width	Depth	
6	1	6	14	5 3/8	3 1/4	\$32.24
8	2	4	16 3/4	5 3/8	3 1/4	36.12
10	2	5	19 1/2	5 3/8	3 1/4	39.72
12	2	6	22 1/4	5 3/8	3 1/4	43.60
Additional Drops, Add per Drop.....						\$5.28

Edwards Elevator Semaphore Gravity Drop Annunciators

Nos. 410, 411, 410D, 411D

6 Volts D.C., 12 Volts A.C.

Schedule T



No. 410



No. 410D

No. 410 electrical reset only. Wood. No. 400 drop used. Size 2 Lungen Adjustable Buzzer inside case. Bell can be furnished. Finish golden oak. Other finishes, special features, etc., listed elsewhere. 6 volts D. C., 12 volts A. C. irrespective of line resistance. Other voltages special. Reset button case.

No. 410D. Separate reset for "UP" and "DOWN." Otherwise same as No. 410.

No. 411. Metal. Otherwise the same as No. 410.

No. 411D. Metal. Otherwise the same as No. 410D.

Nos. 410 and 411

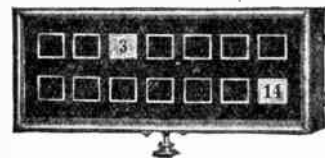
No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES			PRICE, EACH	
			Height	Width	Depth	No. 410	No. 411
3	1	3	9 3/4	5 1/2	2 5/8	\$29.40	\$55.18
4	1	4	11 3/4	5 1/2	2 5/8	32.48	58.26
5	1	5	13 3/4	5 1/2	2 5/8	35.30	61.06
6	1	6	15 3/4	5 1/2	2 5/8	38.24	63.72
7	1	7	18 1/4	5 1/2	2 5/8	41.66	67.44
8	2	4	11 3/4	7 3/4	2 5/8	45.36	71.34
10	2	5	13 3/4	7 3/4	2 5/8	54.78	80.58
12	2	6	15 3/4	7 3/4	2 5/8	65.20	103.92
14	2	7	18 1/4	7 3/4	2 5/8	74.74	113.46
16	2	8	20 3/4	7 3/4	2 5/8	84.58	123.30
18	2	9	23 1/4	7 3/4	2 5/8	94.38	133.10
20	2	10	25 3/4	7 3/4	2 5/8	104.42	143.14
Additional Drops, add per Drop.....						6.45	9.16
			Nos. 410D and 411D			PRICE, EACH	
No. of Drops	ARRANGEMENT Across	Down	Height	Width	Depth	No. 410D	No. 411D
6	1	6	11 3/4	7 3/4	2 5/8	\$43.24	\$68.72
8	2	4	13 3/4	7 3/4	2 5/8	50.36	76.34
10	2	5	15 3/4	7 3/4	2 5/8	59.78	85.58
12	2	6	18 1/4	7 3/4	2 5/8	70.20	108.92
14	2	7	20 3/4	7 3/4	2 5/8	79.74	118.46
16	2	8	23 1/4	7 3/4	2 5/8	89.58	128.03
18	2	9	25 3/4	7 3/4	2 5/8	99.38	138.10
20	2	10	28 1/4	7 3/4	2 5/8	109.42	148.14
Additional Drops, add per Drop.....						6.45	9.16

No. 813 Edwards Railway Annunciators

For Operation on Battery or Transformer

6 Volts D. C., 12 Volts A. C.

Schedule T



Manual reset only. Metal case. Finished to match metal or wood trim. Designed especially for dining, sleeper and parlor car service. Bell furnished with this instrument is a RE-AL monitor 6 volts D. C., 12 volts A. C., irrespective of line resistance. Other voltages special.

No. of Drops	ARRANGEMENT Across	Down	DIMEN., INCHES			Price Each
			Height	Width	Depth	
10	5	2	5 1/2	9 1/4	2 5/8	\$42.98
12	6	2	5 1/2	10 3/4	2 5/8	51.60
14	7	2	5 1/2	12 1/4	2 5/8	60.18
16	8	2	5 1/2	13 3/4	2 5/8	68.82
18	9	2	5 1/2	15 1/4	2 5/8	77.40
20	10	2	5 1/2	16 3/4	2 5/8	85.90
22	11	2	5 1/2	18 1/4	2 5/8	94.50
24	12	2	5 1/2	19 3/4	2 5/8	102.84
Additional Drops, per Drop.....						5.50

Bryant Hospital Signal Systems

125 Volts



Calling Station Operated by Pulling a Cord

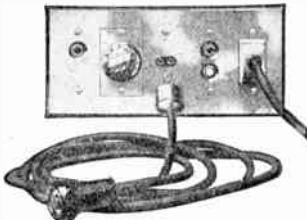
The Bryant system is especially designed for summoning nurses in hospitals and similar institutions. It provides a means for transmitting a signal to one or as many points as desired, and the signals cannot be changed or effaced until the call has been answered at the point of origin.

Supplemental equipment provides for emergency calls and the signalling of doctors.

By use of the elapsed time recorder, positive records may also be obtained as to the time of origin and response to calls made.

Simultaneously with the registration of the call, accomplished by pressure on the button of the bed push, the current is automatically shut off from the extension cord. Cancellation of the call is only accomplished when the nurse presses the control button of the station calling which operation also restores the connection to the extension cord.

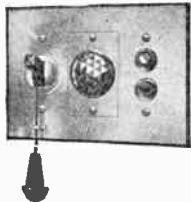
Plug receptacles for current-consuming devices such as fan motors, heating pads, reading lamps, etc., may be made a part of the calling system.



Calling Station Operated by Pressing a Button

The Bryant silent call hospital system operates with colored lights instead of bells and buzzers, which are disturbing to other patients. The system is instantaneous, silent and infallible.

The operation of the system is simple. The patient's touch on push button or pull cord lights signal lamps in various parts of the hospital. The nurse knows the origin of the call without hunting, or visiting an annunciator, and can go directly to the patient who requires her services. As the calling point is the only point at which the signal lamps can be



Calling Station with Provision for Calling a Doctor. It is also Intended for Use in Wards

extinguished, she must visit the patient to cancel the call. In this way it is an infallible calling system. The saving in valuable time and energy of doctors and nurses has a direct value in the scientific and economical operation of any hospital and institution.

The Bryant system is made up of units which are assembled to meet the simplest requirements of the smallest hospital or the most comprehensive needs of the largest institutions. It operates on standard lighting voltage without any of the auxiliaries which are essential to signal apparatus using low voltages and for this reason costs less to install and operate properly.



One Type of Signal Light

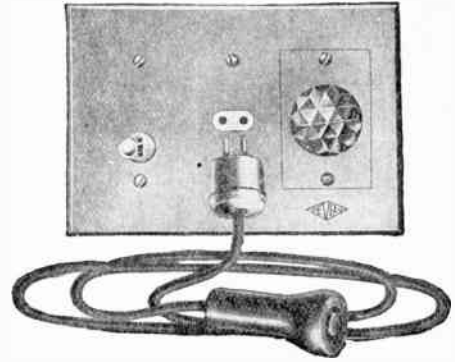
Two complete catalogues have been prepared describing this system. They are full of information about hospital signal systems and from them can be obtained an exact knowledge of how to lay out, specify and install a complete system for any hospital.

Copies of these catalogues will be sent promptly upon application.



Time Recorder which Makes a Record of Every Call and Time Taken to Answer

DeVeau Hospital Signal Systems



Ward Calling Station

DeVeau Hospital Signal Systems provide a dependable silent call system of the locking-type.

These systems are so designed that audible signals can be added when desired.

Furnished for operation on standard lighting circuits of 110-125 volt, A.C. or D.C., and the advantage of such systems needs no argument; where for some special reason lower voltage systems are desired apparatus will be furnished to operate on 18-24 volt A.C. or D.C. circuits and when specially ordered (be sure to get information on 220 volt circuit apparatus) systems will be furnished to operate on 220-250 volt. A.C. or D.C. circuits.

A DeVeau system has the advantage of any other type of 110 volt system on the market in that the control switch, as well as the signalling lamp, is in a separate unit, there is no mechanism whatever in the wall and if at any time it should be necessary to replace a control switch or signalling lamp the control switch unit with signalling lamp can be taken to the stock room and a new one substituted in a moment. In the DeVeau system to summon the nurse, the patient has



Nurses' Annunciator Station

only to press the button at the end of a flexible conductor. The slightest pressure is sufficient to send a signal and a patient in the most weakened condition can operate the system. Resetting the call can only be made at the station where the call goes in. This prevents the cancellation of the call without the nurse going to the patient. The extension cord is heavily insulated and is extremely flexible. It is a type of cord specially designed for use on the DeVeau system. Each conductor is heavily insulated with rubber and then surrounded by an additional heavy rubber insulation, which can be washed and disinfected, making it much more sanitary than cotton or silk covered cord generally used heretofore.

DeVeau Hospital Signal Systems are so designed that additional equipments providing for emergency calls and signalling of doctors may be readily added to the system already installed. By the use of an elapsed time recorder, permanent record may be obtained as to the origin of the call and the time the nurse took to answer the same.

In a 110 volt De Veau Hospital Signal System the wiring may be installed in the same conduit as the house lighting circuit and every part of the system is designed to provide an economical and entirely satisfactory signalling system for the most up-to-date hospital.

Simultaneously with the registration of the call, accomplished by pressing the button of pear push at bedside, the current is automatically cut off from the extension cord.

Cancellation of the call can only be accomplished when the nurse presses the re-set button of the station calling, which operation also restores connection to extension call.

While primarily designed for hospital signalling, this system, with wall or desk type instead of pear push buttons, is ideal for department stores, etc., where a silent call system, with musical audible signal if desired, will locate the executives away from their desks. Send for illustrated catalogue on DeVeau Hospital Signal Systems.

Prices upon application.

Edwards Fire Alarm Systems

Complete information on each type of system, both closed circuit, electrically supervised, and open circuit, is given in chart form below. The arrangement has been made with as great a degree of accuracy as a subject of such diversity will permit. It presents the different systems at a glance and enables one to see the salient points of each system and the apparatus used.

A complete bulletin showing wiring diagram and giving directions for installation and estimating battery will be sent upon application.

On pages following, the systems and apparatus used are illustrated, described, and all prices given.

Information Chart
Open Circuit*

Catalogue Designation	Operated By	Alarm Indication	Super- vising Current	Operating Current	Bells Used	Boxes Used Numbers	Control Panel	Limit of System	Designed For	RELATIVE COST Initial	Operating
V.O.B.	Battery	Vibrating bells continuous or coded	None	Varies with size of system	Vibrating Nos. 17, 100, 1001	224, 224A, 2240, 2241, 1275, 1276, 1275-2, 1276-2	None	Local conditions	See foot-notes 1-2-3	Min.	Low
V.O.D.	110 volts D.C.	Vibrating bells continuous or coded	None	Varies with size of system	Vibrating Nos. 100, 1001	2240, 2241, 1275, 1276, 1275-2, 1276-2	None	6 bells no limit with relays	See foot-notes 1-2-3	Med.	Low
V.O.A.	110 volts A.C.	Vibrating bells continuous or coded	None	Varies with size of system	Vibrating No. 510, 510C	2240, 2241, 1275, 1276, 1275-2, 1276-2	None	6 bells no limit with relays	See foot-notes 1-2-3	Med.	Low

Closed Circuit

E.M. B.D.	Battery direct	Code ringing on single stroke bells	1/10 of an amp.	1/10 of an ampere	Electro-Mechanical No. 1330, No. 1331	1275, 1276, 1275-2, 1276-2	None	Practically none	See foot-notes 4-5-6-10	lowest of Closed Circuit	Highest of Closed Circuit
E.M.B.	Battery through control panel	Code ringing on single stroke bells	1/50 of an amp.	1/4 of an ampere	Electro-Mechanical Nos. 1330, 1331	1275, 1276, 1275-2, 1276-2	E.M.B. panel	Practically none	See foot-notes 4-5-6-10	Med.	Low
S.S.	110 volts D.C. through control panel	Code ringing on single stroke bells	1/12 of an amp.	2 amperes per bell circuit	Vigilant No. 21C	1275, 1276, 1275-2, 1276-2	S.S. panel	Practically none	See foot-notes 4-5-6-10	Med.	Lowest of Closed Circuit
S.S.A.	110 volts A.C. through control panel	Code ringing on single stroke bells	1/10 of an amp.	3 amperes per bell circuit	No. 22C	1275, 1276, 1275-2, 1276-2	S.S.A. panel	Practically none	See foot-notes 4-5-6-10	Med.	Low

Pre-Signal Closed Circuit**

P.E. M.B.	Battery through control panel	Code ringing on single stroke bells	1/25 of an amp. total	1/4 of an ampere	Electro-Mechanical Nos. 1330, 1331	1275DO, 1276DO, 1275-2DO, 1276-2DO	P.E. M.B. panel	Practically none	See foot-notes 7-8-9	Max.	Low
P.S.S.	110 volts D.C. through control panel	Code ringing on single stroke bells	1/10 of an amp. total	2 amperes per bell circuit	Vigilant No. 21C	1275DO, 1276DO, 1275-2DO, 1276-2DO	P.S.S. panel	Practically none	See foot-notes 7-8-9	Max.	Low
P.S.S.A.	110 volts A.C. through control panel	Code ringing on single stroke bells	1/5 of an amp. total	2 amperes per bell circuit	No. 22	1275DO, 1276DO, 1275-2DO, 1276-2DO	P.S.S.A. panel	Practically none	See foot-notes 7-8-9	Max.	Low

- 1—Small office buildings
- 2—Small factories
- 3—Lodging houses
- 4—Large factories
- 5—Groups of buildings

- 6—Yards and docks
- 7—Hospitals
- 8—Hotels
- 9—Institutions
- 10—Small towns

*Usually for general alarm purposes. Can be modified by use of an annunciator to indicate where alarm was turned in. General or individual alarm rung by switches or annunciator.

**These systems are so arranged that the alarm, when turned in from any box, rings predetermined bells only in such places as engine room, superintendent's office, etc. If it is necessary, after investigation, the general alarm is turned in from any box by any authorized person holding a key.

Fire Alarms for Towns and Villages

The same as the E. M. B. D., E. M. B., or S. S. systems according to the current available. It is customary to use a motor driven siren for the general alarm signal for which a slow movement type of fire alarm boxes is needed. See price list.

Edwards Fire Alarm Systems**E. M. B. D. Closed Circuit System—Battery Direct**

The Apparatus Used in This System Is Approved by the
National Board of Fire Underwriters

This system is usually operated on primary battery with all bells and boxes connected in series on a single loop.

Boxes are of the code ringing type and when operated cause code to be sounded by a series of single strokes on electro-mechanical bells. These bells are equipped with a powerful spring operated mechanism that is released electrically.

For proper operation it is necessary to maintain a current flow of $\frac{1}{10}$ ampere (100 milliamperes) on the alarm line.

It is customary to add a relay in the system and provide a small vibrating bell of distinctive sound (usually a cow gong) with local battery for operation. This is known as the "Trouble Bell" and should current supply fail or circuit be opened due to breakage of line or any other reason, trouble bell will immediately ring. In this manner notification is given that the system requires immediate attention.

While not necessary it is often desirable to include pen or punch registers which record on paper tape by dashes or holes the boxes operated or tests made. This provides a permanent record for filing. A paper winder is necessary to take up paper tape as issued from register. In conjunction with the registers a time stamp is often used which prints the year, month, day, hour and minute of alarm or test. This is operated by local battery through a relay in the main line and is entirely automatic.

In this, as in all other systems, many modifications are possible to meet special conditions and it is recommended that exact data and requirements be submitted to the manufacturer's engineering department for suggestions and assistance.

E. M. B. Closed Circuit System—Battery with Control Panel

The Apparatus Used in This System Is Approved by the
National Board of Fire Underwriters

This system is operated by primary battery through a control panel which reduces the supervising current value to not more than 25% of that required by the systems without a control panel. This naturally makes the battery last at least four times as long under the same conditions. In addition to this the initial battery investment is greatly reduced.

The system is limited to 14 bells per circuit. Where the division leaves less than 14 bells on one circuit the difference is made up by a resistance unit on the panel. It is arranged so these units may be eliminated if extensions are made to the system. There is no limitation to the boxes.

The bells are in series on one circuit and the boxes in series on a separate circuit. The control board has marked terminals to which each of these circuits are connected.

The boxes are of the code ringing type and when operated cause code to be sounded by a series of single strokes on electro-mechanical bells.

The control panel provides a central point where all connections are made and on which is mounted the necessary meters, instruments, etc.

A trouble bell is furnished with the panel: this is a vibrating bell of distinctive sound (usually a cow gong) with local battery for operation. Should the current supply fail or the circuit be opened due to breakage of line or other reason, the trouble bell will immediately ring. In this manner notification is given that the system requires immediate attention.

While not necessary, it is often desirable to include pen or punch registers which record on paper tape by dashes or holes the boxes operated or tests made. This provides a permanent record for filing. A paper winder is necessary to take up paper tape as issued from register. In conjunction with the registers a time stamp is often used which prints the year, month, day, hour and minute of alarm or test. This apparatus is operated by local battery through a relay in the main line and is entirely automatic.

Edwards Fire Alarm Systems**S. S. Closed Circuit System—110 to 120 volts D. C. with Control Panel**

The Apparatus Used in This System Is Approved by the
National Board of Fire Underwriters

Where dependable 110-volt D. C. service is available this system is recommended as requiring the least attention and maintenance expense of any closed circuit system. It is dependable and satisfactory in every way. Operated from D. C. lighting circuit through a control panel.

If a two-wire lighting circuit is used, the control panel is equipped with dry battery to operate the trouble bell. If the lighting circuit is 3-wire 110-220 volts, the panel is arranged for trouble bell operation on 110 volts. In this case it is customary to operate the system by connecting to neutral and negative while trouble bell is connected to neutral and positive.

The trouble bell is a small vibrating bell of distinctive sound (usually a cow gong). Should the current supply fail or circuit be opened due to breakage of line or any other reason, trouble bell will immediately ring. In this manner notification is given that the system requires immediate attention.

A supervising current of $\frac{1}{2}$ of an ampere is maintained on the line and the approximate operating current is two amperes per circuit.

The system is limited to 14 bells on each circuit. Where this division leaves less than 14 bells on one circuit the difference is made up by a resistance unit on the panel. It is arranged so these units may be eliminated if extensions are made to the system. There is no limitation to the boxes.

The boxes are of the code ringing type and when operated cause code to be sounded on single stroke bells.

While not necessary, it is often desirable to include pen or punch registers which record on paper tape by dashes or holes the boxes operated or tests made. This provides a permanent record for filing. A paper winder is necessary to take up paper tape as issued from register. In conjunction with the registers a time stamp is often used which prints the year, month, day, hour and minute of alarm or test. This apparatus is operated by a modification of one of the control relays on panel and is entirely automatic.

In this, as in all other systems, many modifications are possible to meet special conditions and it is recommended that exact data and requirements be submitted to the manufacturer's engineering department for suggestions and assistance.

S. S. A. Closed Circuit System—110-120 Volts A.C. with Control Panel

The Apparatus Used in This System Is Approved by the
National Board of Fire Underwriters

The same system as the S. S. Closed Circuit System, but for alternating current. The supervising current in this system is $\frac{1}{10}$ of an ampere and the operating current 3 ampere per bell circuit.

Pre-signal Closed Circuit System

Used in Conjunction with E.M.B. or S.S. Systems

The pre-signal system has been designed for conditions where it is desirable to sound a preliminary alarm at a certain place before a general alarm is sounded to clear the building. It is particularly suited for hospitals, hotels, public institutions, etc., where it is desirable to investigate the seriousness of a fire before sounding the general alarm. It involves the use of special boxes having two circuits, and is so constructed that when an alarm is turned in circuit No. 1 operates only, sounding the preliminary signal in some central place or places. The general alarm may be sounded from any box by authorized persons holding keys. The key is inserted and turned and the lever pulled as usual. This operates circuit No. 2 on which is located the alarm bells.

No. 114 Edwards Fire Alarm Gravity Drop Annunciators

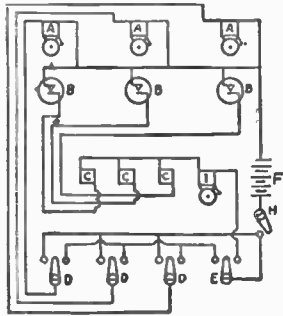
For Operation Battery or Transformer
6 Volts D. C., 12 Volts A. C.
Schedule T



No. 114 Manual reset. Wood as shown. The glass of a fire alarm box being broken, the bell on annunciator rings continuously and drop shows bearing number of station. Alarm bells can then be rung individually or collectively by switches on the annunciators. Simple break glass boxes Nos. 2240, 2241 or 77 and Recti Bells or electro-mechanical bells are used with this system. Finish golden oak. Other finishes, special features, etc., listed elsewhere. 6 volts D.C., 12 volts A.C. irrespective of line resistance.

Other voltages special.
No. 114 plain case as illustrated No. 10.

Wiring Diagram



- A.—Alarm bells.
- B.—Break glass boxes.
- C.—Annunciator drops.
- D.—Individual bell switch.
- E.—All bells switch.
- F.—Battery.
- H.—Cutout switch.
- I.—Annunciator bell.

No. of Drops	ARRANGEMENT		DIMEN. INCHES			Price Each
	Across	Down	Height	Width	Depth	
10	5	2	17 1/2	12 3/8	5	\$45.98
12	6	2	17 1/2	13 3/4	5	55.16
14	5	3	22	12 3/8	5	64.54
16	6	3	22	13 3/4	5	74.02
18	6	3	22	13 3/4	5	83.00
20	7	3	22	15 1/8	5	91.92
22	6	4	26 1/2	13 3/4	5	105.78
24	6	4	26 1/2	13 3/4	5	110.30

Additional Drops, per Set of Two..... \$13.42

No. 114 Edwards Fire Alarm Annunciators



Open Circuit, Non-supervised, Non-code Ringing

Manual reset, all sizes.
For use in small hotels, institutions, factories, etc.

In case of fire the glass of a fire alarm box is broken, causing tag bearing same number as box to indicate, and annunciator bell to ring continuously. Alarm bells are then rung individually, or all at the same time by means of switches on lower part of annunciator.

Prices upon application.

Edwards Code Boxes

Substantial in construction and with a reliable mechanism.

To sound alarm, open door and pull lever. Pulling and releasing lever winds the mechanism and sets it in motion. Code signal is sounded four times.

When lever is pulled it automatically disengages from the mechanism and subsequent pulling has no effect on the proper operation of the signal.

Door has spring hinge and closes itself.

Silent test made with key supplied for purpose.

Conduit fitting separate from box so conduit work may be completed and wires pulled through before installing boxes.

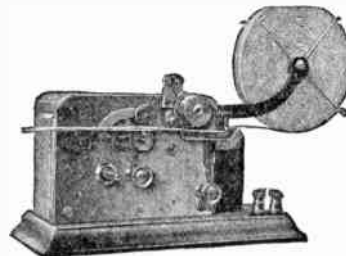
Finish is red enamel with raised aluminum-tipped letters. Specify open or closed circuit in ordering.



No. 1275

Cat. No.	Surface Conduit		Price Each
	Description		
1275	Pull Lever		\$38.00
1275-2	Break Glass, Pull Lever		55.00
1275DO	Pre-signal, Pull Lever		52.00
1275-2DO	Pre-signal, Break Glass, Pull Lever		62.00
1275-2W	Combined Watchman's and F. A. Box, 1 Circuit		72.00
1275-2DW	Combined Watchman's and F. A. Box, 2 Circuit		78.00
Cat. No.	Concealed Conduit		Price Each
	Description		
1276	Pull Lever		\$46.00
1276-2	Break Glass, Pull Lever		63.50
1276DO	Pre-signal, Pull Lever		60.00
1276-2DO	Pre-signal, Break Glass, Pull Lever		70.00
1276-2W	Combined Watchman's and F. A. Box, 1 Circuit		80.00
1276-2DW	Combined Watchman's and F. A. Box, 2 Circuit		86.00

Edwards Registers



Automatic pen register. Indication consists of a number of short dashes. Self starting and stopping.

Resistance 20 ohms, open circuit only.

Can be used with relay for closed circuit.

Price, No. 2197, Single Pen.....each \$168.50
" " 2197, Double " " 180.00

Edwards Fire Alarm Systems

Combined Watchman and Fire Alarm System

Used In Conjunction with E. M. B. or S. S. Systems

In large factories, department stores, building groups, etc., it is often desirable to combine the fire alarm and watchman system. This is possible and practical where there is a central station or office where someone is always in attendance. The best results are obtained by the use of a special adaptation of the dual operation box for the Pre-signal system. The watchman on his rounds uses a key at station which operates circuit No. 1 only, making a record, ringing a bell (or both) at the central station. To turn in an alarm of fire it is necessary to break the glass and pull the lever inside the box. This sounds a general alarm, operating circuit No. 2 on which the alarm bells are located. To accomplish the results described above, special boxes No. 1275-2DW or No. 1276-2DW are used. These are surface and concealed conduit types respectively, the same in outside appearance as Nos. 1275-2 and 1276-2.

Another form of combined watchman and fire alarm system is by the use of a special adaptation of the regular Nos. 1275-2 or 1276-2 boxes. These being one circuit boxes a stop is arranged so that the watchman by use of his key sounds **one round only** of the regular coded signal. To sound an alarm of fire it is necessary to break the glass and pull the lever inside the box; this sounds the regular **four rounds** of coded signals. The boxes mentioned are for surface and concealed conduit respectively.

No. 77 Edwards Break-glass Boxes



This box is surface type, battery only. Break glass to close circuit. Size, 3 3/4-inch diameter.

Finish, brush brass, polished brass or bronze.

Price, No. 77, Open Circuit each \$2.45

Price, No. 77C, Closed Circuit each 3.20

No. 224 Edwards Break-glass Boxes

Nos. 224 and 224A are open circuit, battery only.

Break glass to close circuit.

Size: No. 224, 4 3/8 by 3 7/8 inches; No. 224A, 4 1/8 by 4 3/4 inches.

Fit any standard switchbox.

Finish, dark mat with raised border and lettering of brass, polished, brush or bronze.

Hammer and chain with each box.

Special test key is included with box; signaling without this key or by breaking glass is impossible.

Unless otherwise specified, boxes will be furnished in black ground with lettering, brush brass.

Prices on special finishes upon application.

Price, No. 224, Flush Type each \$8.40
 " " 224A, Surface Type " 9.25

No. 2240 Edwards Break-glass Boxes

For 110 Volts D. C. or A. C.



No. 2240 fits any standard switchbox. Glass in front, window glass replaceable at small cost.

Heavy phosphor-bronze springs with perfect scraping contact mounted on slate.

Separable conduit fitting so that conduit may be installed, wires drawn through and connected, and box then installed by machine screws. Drilled top and bottom for 1/2-inch conduit.

Test key is included with box.

Finish is red enamel.

Hammer and chain included without additional cost.

Price, No. 2240, Concealed Conduit Type each \$15.50

" " 2241, Surface Conduit Type " 15.50

No. 17 Edwards Vibrating Alarm Bells



Open skeleton type of bell for battery operation on battery.

A patented method of breaking the circuit mechanically, gives a very powerful stroke.

Pure hard-drawn silver contacts, new code binding posts, phosphor-bronze springs.

Price, No. 17, 8-inch each \$14.37
 " " 17, 10 " " 21.34
 " " 17, 12 " " 27.50

Nos. 100 and 1001 Edwards Vibrating Alarm Bells

Plunger type movement, patented, and so constructed that armature has no possible way of losing adjustment.

Carbon contacts that cannot stick, rust or corrode. Solid brass hammer, supported at two points, moves in a straight line in and out of case. For this reason, the opening case is only slightly larger than the hammer rod, thus offering the greatest protection from bugs, dust and weather. As a further protection, an oil-treated felt gasket is used under the cover of case, and the magnets are treated with a moisture-repelling compound which is baked dry. The screw secured by lock nut shown at top of the case, is the only adjustment provided or necessary. It controls contact relations. Magnets, keeper and armature support are practically one solid unit, as they are securely riveted together. Phosphor-bronze springs.



No. 100

Size Inches	PRICE, EACH			
	-FOR BATTERY-		-FOR 110 D.C.-	
	No. 100	No. 1001	No. 100	No. 1001
8	\$22.00	\$32.00	\$37.00	\$47.00
10	37.00	47.00	54.90	64.90
12	49.90	59.90	67.85	77.85

No. 510 Edwards Vibrating Alarm Bells

Non-conduit Type

For 110 Volts A.C.

With laminated magnets scientifically designed for alternating current purposes.

Carbon contacts that cannot stick, rust or corrode.



Size Inches	PRICE, EACH	
	No. 510	No. 510C
8	\$38.65	\$41.45
10	60.30	63.10
12	66.50	69.25

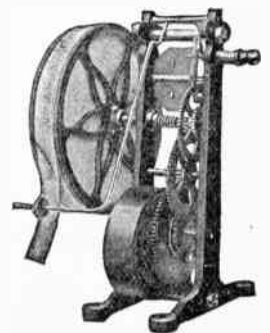
No. 5985 Edwards Register Tape Winders

Automatic action.

Spring mechanism carefully adjusted to take tape from register at proper speed and tension.

Self-starting and stopping.

Price, No. 5985 . . . each \$13.50



No. 240 Edwards Carbon Contact Relays



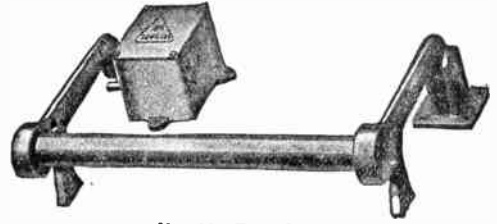
A sturdily constructed relay mounted on a slate base. It is enclosed in a metal box.

Multiple carbon contacts have a capacity of 25 amperes and will handle voltage on the contact side up to 125 volts D. C. or A. C.

Magnets may be wound for operation on 4 dry cells or any voltage up to 250 D. C.

Prices upon application.

Edwards Bank Hold-up Alarm Systems



No. 119 Foot Switch

The standard system for usual installations is as follows:

No. 119 foot switch is placed on the floor at tellers' windows or wherever desired. The two cast-brass arms which support the toe rod are substantially built and strongly pivoted at the back. To one is attached the cast-brass, water and dust-proof box that encloses the contact-making mechanism. The contacts are phosphor-bronze, scraping, self-cleaning type. The box is drilled for 1/2-inch conduit.

A most important feature of the Edwards foot switch is that the foot-rail normally rests on the floor, supported by cast-brass feet. In this position it is habitually used as a foot rest—a natural, human instinct, and particularly desirable as it intuitively fixes its location for the person who might have to use it to give an alarm.

To sound the alarm the rod is raised and not depressed. To do this it is only necessary to slide the foot slightly forward on the floor and the rod will ride up the instep.

False alarms that would result from accidental depression of the foot rail are entirely eliminated.

No. 1190 control station is connected in circuit with all foot switches and consists of a heavy cast box with hinged door equipped with a concealed lock. When the foot switch is operated the mechanism of the control station switches current into alarm bells, which will ring continuously until turned off manually at the control station. To do this the door must be unlocked. As this system is primarily for daylight hold-up protection, it would probably be turned off at night by some person in authority holding the key. When this is done a plunger immediately protrudes through the bottom of the case. In the morning any person may turn the system by merely pushing the plunger.



No. 1190 Control Station

Operating current may be battery, transformer or A.C. or D.C. lighting circuit.

Alarm bells for interior installation are usually 8, 10, or 12-inch size. For exterior alarm they should, of course, be as large as possible.

An annunciator is sometimes used in large installations to indicate which foot has been operated.

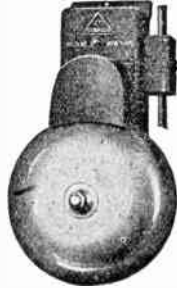
No. 119 teller's foot switch is furnished with 12-inch rail for surface conduit.

No. 119C is the same as No. 119, for concealed conduit, complete with separate floor box, drilled on any four sides, as specified. A rubber gasket is furnished with each for insertion between floor box and contact box.

Edwards Single Stroke Alarm Bells

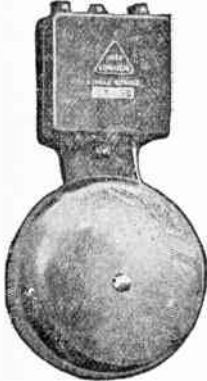
Electro-mechanical. Wound to 20 ohms. Operated by a strong spring mechanism which is released by a small fraction of an ampere. The mechanism is entirely insulated from the case.

The hammer when released, makes a full revolution, passing under the gong and strikes the gong with the great force gathered in this revolution. 400 strokes per winding. Conduit fitting is made for 1/2 or 3/4-inch conduit as specified.



Size Inches	DESCRIPTION		Price Each
	No. 1330	No. 1331	
8	Concealed Conduit	Surface Conduit	\$103.65
10	"	"	114.10
12	"	"	124.55

Edwards Single Stroke Alarm Bells



For concealed or surface conduit.

The armature is strongly attracted from a considerable distance giving the hammer a long swing and a powerful blow. The hammer is attached to a hammer rod by a strong, flat spring, causing a quick recoil resulting in clear distinct signals.

The conduit attachment is separable and can be installed with the conduit and wires pulled through, drilled for 1/2 or 3/4-inch. Attachment has 4 inside bosses.

Size Inches	DESCRIPTION		Price Each
	No. 21	No. 22	
8	D. C.	A. C.	\$48.15
10	"	"	72.50
12	"	"	88.45

Edwards Control Panels

All instruments, meters and relays are mounted on slate panel which is enclosed in a heavy steel cabinet of sufficient size to allow easy wiring.

The cabinet has a hinged, locked door with a small glass panel for observation of meters.



SS Panel

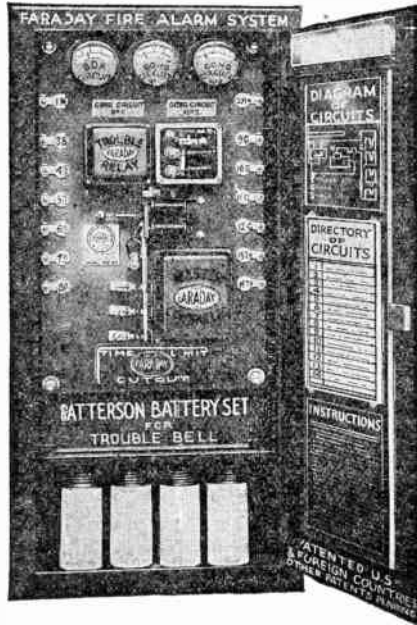
Price, E. M. B., Control Panel.....	each	\$250.00
" P. E. M. B., Pre-signal, Control Panel..	"	350.00
" S. S., Control Panel.....	"	250.00
" P. S. S., Pre-signal, Control Panel.....	"	350.00
" S. S. A., Control Panel.....	"	250.00
" P. S. S. A., Pre-signal, Control Panel...	"	350.00

Price, No. 119.....	each	\$34.00
" " 119C.....	"	40.90
" Extra Length Rail.....	per foot or fraction	.70
" " Center Support, Necessary when Rail is Over 36 Inches Long.....	each	4.80
Price, No. 1190 Control Station.....	"	46.00

Faraday Industrial Fire Alarm Systems

System A

For Dependable 110-125 Volt D.C. Circuits
Electrically-supervised, Code-ringing
Closed-circuit, Using Straight-
Electric Gongs



Recommended for factories, warehouses, lofts, schools, etc., where there are several floors under one roof rather than several isolated buildings. May also be used for hotels, apartment houses, department stores, hospitals and similar institutions; but for these are recommended the Pre-Signal Faraday Systems C, D and H.

In A Systems either of 2 types of code-ringing fire alarm boxes may be used: plain type or positive non-interfering type.

Where the plain type is used, should more than one box be pulled at the same time, a jumbled signal is likely to result; where the positive non-interfering type is used, such jumbling of the signal is impossible as the boxes are equipped with devices which absolutely prevent interference.

All circuits, instruments and apparatus are constantly under electrical test.

Pull-lever Code-ringing Boxes

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2022-A	Surface	\$38.00	2023-A	Semi-flush	\$46.00

Faraday positive non-interfering boxes or break-glass pull-lever fire alarm boxes may also be used with this system. Details upon application.

Single Stroke Half-grid Guarded Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
2120-A	6	\$36.90	2120-A	10	\$67.25
2120-A	8	45.55	2120-A	12	86.20

Control Cabinets

Cat. No.	No. of Gongs	Price Each	Cat. No.	No. of Gongs	Price Each
14-A	1-14	\$250.00	42-A	29-42	\$340.00
28-A	15-28	295.00	56-A	43-56	385.00

Trouble-bells

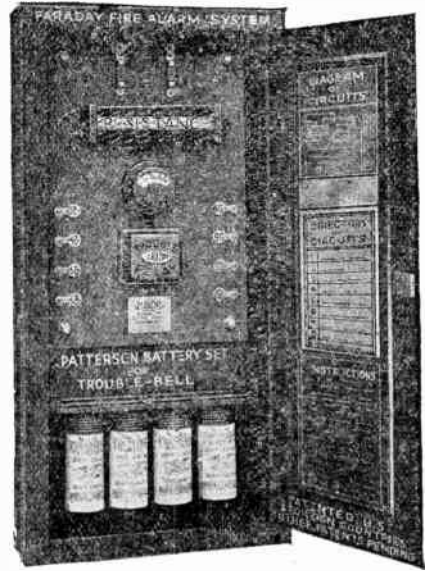
Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2502-A	For Bat.	\$20.00	2502-A	For 110V. D.C.	\$27.00

Always specify whether trouble-bell is to be operated from battery in control cabinet or from 110 volt D.C. circuit.

Faraday Industrial Fire Alarm Systems

System B

For Storage Battery Operation
Electrically-supervised, Code-ringing
Closed-circuit, Using Electro-
mechanical Gongs



Recommended for factories, lofts, schools, railroad yards, docks and all similar installations where large areas are to be covered. May also be used for hotels, apartment houses, department stores, hospitals and similar institutions, but for these Pre-signal Faraday Systems C, D and H. are recommended

In B systems, either of 2 types of code-ringing fire alarm boxes may be used: plain type or positive non-interfering type.

Where the plain type is used, should more than one box be pulled at the same time, a jumbled signal is likely to result: where the positive non-interfering type is used, jumbling of signal is impossible as construction prevents interference.

All circuits, instruments and apparatus are constantly under electrical test.

Pull-lever Code-ringing Boxes

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2022-B	Surface	\$38.00	2023-B	Semi-flush	\$46.00

Faraday positive non-interfering boxes or break-glass pull-lever fire alarm boxes may also be used with this system. Details upon application.

Electro-mechanical Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
2620-B	8	\$103.60	2620-B	12	\$124.55
2620-B	10	114.10	2620-B	14	138.00

Control and Charging Cabinets

Cat. No.	Number Gongs	Price Each	Cat. No.	Number Gongs	Price Each
12-B	1-12	\$350.00	36-B	25-36	\$440.00
24-B	13-24	395.00	48-B	37-48	495.00

Above cabinets complete with all necessary apparatus for the control of fire alarm circuits and charging of storage batteries.

Trouble Bells

Cat. No.	Description	Price Each
2502-B	For Battery Operation	\$20.00

Storage Battery

Cat. No.	Description	Price per Cell
24-B	Storage Battery	On Application

Motor Generator

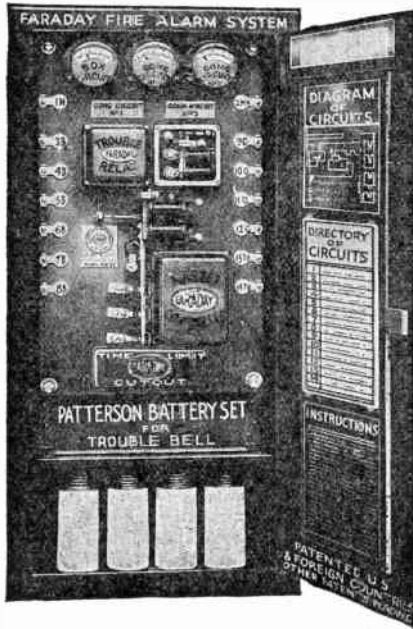
Cat. No.	Description	Price Each
108-B	Motor Generator	On Application

Faraday Industrial Fire Alarm Systems

System C

Pre-signal or Dual Operated Type

For Dependable 110-125 Volt D.C. Circuits Electrically-supervised, Code-ringing Closed-circuit, Using Straight-Electric Gongs



Recommended for hotels, apartment houses, department stores, hospitals and similar institutions, particularly where there are several floors under one roof rather than isolated buildings.

These systems are especially recommended for installations where it is not desirable to alarm all the occupants of the building immediately upon a fire being discovered, but where it is desired to first notify the members of a trained fire brigade. The operation of the box sounds the code on certain gongs called pilots located where they may be heard by the fire brigade. Should it be necessary to sound a general alarm, this may be done by any member of the fire brigade from any box, by means of a special key, the signal then sounding on the general gongs as well as the pilots.

All circuits, instruments and apparatus are constantly under electrical test.

Pre-signal Pull-lever Fire Alarm Boxes

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2222-C	Surface	\$52.00	2223-C	Semi-flush	\$60.00

Faraday Break-glass Pull-lever Fire Alarm Boxes may also be used on this system.

Single Stroke Half-grid Guarded Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
2120-C	6	\$36.90	2120-C	10	\$67.25
2120-C	8	45.55	2120-C	12	86.20

Control Cabinets

Cat. No.	NUMBER GONGS		Price Each
	Pilot	General	
11-C	1 to 14	1 to 14	\$350.00
12-C	1 " 14	1 " 28	395.00
13-C	1 " 14	1 " 42	440.00
14-C	1 " 14	1 " 56	485.00

Trouble-bells

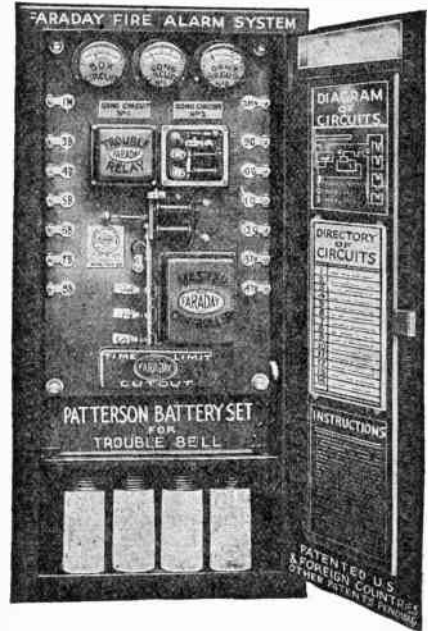
Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2502-C	For Bat.	\$20.00	2502-C	For 110V. D.C.	\$27.00

Always specify whether trouble-bell is to be operated from battery in Control Cabinet or from 110 volt D.C. Circuit.

Faraday Industrial Fire Alarm Systems

System F

For Dependable 100-110 Volt 50-60 Cycle A.C. Circuits (25, 30 and 40 Cycles to Order) Electrically-supervised Code-ringing, Closed-circuit, Using Straight-Electric Gongs



Recommended for factories, warehouses, lofts, schools, etc., where there are several floors under one roof rather than several isolated buildings. May also be used for hotels, apartment houses, hospitals and similar institutions, but for these the Pre-Signal Faraday Systems D and H. are recommended.

Designed for use where an absolutely dependable supply of alternating current is available at all times, but no systems operating direct from the A.C. circuits are considered as good as those employing storage batteries, as gongs operating on A.C. give comparatively weak signals and often cause dissatisfaction. System B which employs Storage Batteries is therefore strongly recommended, batteries being charged from the A.C. circuits by suitable devices.

Main-circuits, box-circuits, and gong-circuits are constantly under electrical test. Trouble is automatically indicated by ringing of trouble-bell.

Pull-lever Code-ringing Boxes

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2022-F	Surface	\$38.00	2023-F	Semi-flush	\$46.00

Single Stroke Fire Alarm Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
5120-F	6	\$36.55	5120-F	10	\$67.25
5120-F	8	45.55	5120-F	12	86.20

Control Cabinets

Cat. No.	No. of Gongs	No. Gong Circuits	Price Each
10-F	1 to 10	1	\$250.00
20-F	1 " 20	2	295.00
30-F	1 " 30	3	340.00

Trouble-bells

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2502-F	For Bat.	\$20.00	2502-F	For 100-110 V. A.C.	\$27.00

Faraday Industrial Fire Alarm Systems

System H

Pre-signal or Dual Operated Type

For Dependable 100-110 Volt 50-60 Cycle A. C. Circuits (25, 30 and 40 Cycles to Order) Electrically-supervised, Code-ringing, Closed-circuit, Using Straight-electric Gongs



Recommended for hotels, apartment houses, department stores, hospitals and similar institutions where there are several floors under one roof rather than many isolated buildings.

Designed for use where an absolutely dependable supply of alternating current is available at all times, but A. C. circuits are not considered as good as storage batteries.

Especially recommended for installations where it is not desirable to alarm all the occupants of the building immediately upon a fire being discovered, but where it is desired to first notify the members of a trained fire brigade. The operation of the box sounds the code on certain gongs called pilots located where they may be heard by the fire brigade. Any member of the fire brigade may sound a general alarm, from any box by means of a special key, the signal then sounding on the general gongs as well as the pilots.

Main-circuits, box-circuits and gong-circuits are constantly under electrical test—trouble is automatically indicated by ringing of trouble-bell.

Pull-lever Code-ringing Boxes

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2022-H	Surface	\$52.00	2023-H	Semi-Flush	\$60.00

Break-glass pull-lever fire alarm boxes may also be used with this system. Details upon application.

Single Stroke Fire Alarm Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
5120-H	6	\$36.55	5120-H	10	\$67.25
5120-H	8	45.55	5120-H	12	86.20

Control Cabinets

Cat. No.	No. Gongs		No. Circuits		Price Each
	Pilot	General	Pilot	General	
11-H	1 to 10	1 to 10	1	1	\$350.00
12-H	1 " 10	1 " 20	1	2	395.00
13-H	1 " 10	1 " 30	1	3	440.00

Trouble-bells

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2502-H	For Bat.	\$20.00	2502-H	For 100-110 V.A.C.	\$27.00

Faraday Industrial Fire Alarm Systems

System J

For Storage Battery Operation Electrically-supervised, Code-ringing, Closed-circuit, Using Electro-mechanical Gongs



Recommended for schools, colleges and similar institutions where one standard code, 4-4 or similar, indicating fire is desired—the exact location of the box being unnecessary.

When the glass on any Non-code-ringing break-glass box is broken, it trips a pre-set master-code box, which transmits its signal on the gongs, and when finished, rings a trouble-bell which calls attention to the necessity of resetting master-code box.

All circuits, instruments and apparatus are constantly under electrical test.

Break-glass Fire Alarm Boxes

Cat. No.	Description	Price Each
2040-J	Surface with Back Box	\$15.50
2042-J	Semi-flush with Back Box	15.50
2024-J	" for Mounting on Standard Gem Switch Box	8.40

Electro Mechanical Fire Alarm Gongs

Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
2625-J	8	\$113.65	2625-J	12	\$134.55
2625-J	10	124.10	2625-J	14	148.00

Control Cabinets

Cat. No.	No. Gongs	No. Gongs Circuits	Price Each
12-J	1 to 12	1	\$480.00

Charging Cabinets

Cat. No.	To Charge From	Price Each
34-J	110-125 Volts D. C. Direct	\$290.00
35-J	Motor Generator	300.00
36-J	Tungar Rectifier	250.00

Trouble-bells

Cat. No.	Description	Price Each
2502-J	For Battery	\$20.00

Storage Batteries

Cat. No.	Description	Price Each
24-J	Storage Battery	On Application

Motor Generators

Cat. No.	Description	Price Each
108-J	Motor Generator	On Application

Tungar Rectifiers

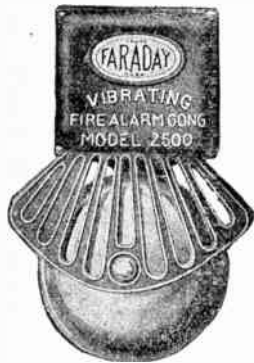
Cat. No.	Description	Price Each
110-J	Tungar Rectifier	On Application

Faraday Industrial Fire Alarm Systems

Faraday Fire Alarm Gongs

System L

For Patterson Battery Set or Transformer Operation
Non-supervised, Non-code-ringing
Open-circuit, Using Vibrating Gongs



Model 2500
Vibrating Gong



Model 2040
Break-glass
Fire Alarm Box

Recommended for small hotels, small public institutions, lodging houses, small schools and other places where open-circuit, non-supervised fire alarm systems must be installed because of limited funds. The closed-circuit, constantly-electrically-supervised systems are recommended as being safer and more reliable.

This system employs 2 types of gongs, depending on the source of current; if primary battery is to be used, the half-grid-guarded Faraday Battery Gongs must be ordered; if transformer is used, the half-grid-guarded Faraday Transformer Gongs must be ordered.

Break-glass Fire Alarm Boxes

Cat. No.	Description	Price Each
2040-L	Surface with Back Box	\$15.50
2042-L	Semi-flush with Back Box	15.50
2024-L	“ for Mounting on Standard Gem Switch Box	8.40

Vibrating Fire Alarm Gongs

FOR BATTERY CIRCUITS			FOR TRANSFORMER CIRCUITS		
Cat. No.	Size Gong In.	Price Each	Cat. No.	Size Gong In.	Price Each
2500-L	6	\$27.90	2500-TL	6	\$37.40
2500-L	8	34.35	2500-TL	8	45.50
2500-L	10	49.30	2500-TL	10	65.00
2500-L	12	65.25	2500-TL	12	75.25

Patterson Battery Sets

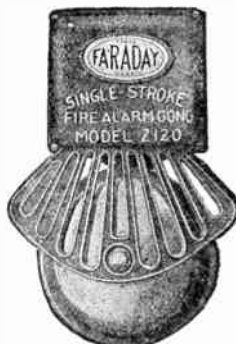
Cat. No.	No. Rows	Cells per Row	Max. No. Gongs on System	Price Each
62-L	2	6	5	\$85.65
102-L	2	10	10	129.00
122-L	2	12	15	153.75

Heavy Duty Transformers

Cat. No.	Watts Capacity	No. Gongs to be Rung	Price Each
602-L	100	6	\$16.50
605-L	200	12	31.90

The above transformers are designed for 110 volts 60 cycles A. C. primary with taps for 12-18-24 volts on secondary terminals. Transformers to operate on 220 volts, or 25, 30 or 40 cycles, furnished to order at slight additional cost.

Single-stroke Gongs for Code-ringing Systems



Model 2120
Single-stroke
Half-guarded Gong

Single-stroke Faraday Fire Alarm Gongs are of 2 general types; viz.: straight-electric, i.e., those in which the blow is delivered direct by the magnetic pull on the armature; and electro-mechanical, that is, those in which the blow is delivered by a heavy ball on the end of a lever, released by the magnet, but operated by a powerful clock spring.

In the straight-electric type, the semi-flexible recoil-type hammer-rod guarantees a clear unmuffled blow on gong with never a double-stroke possible. They are particularly adapted for fire alarm systems because of the simplicity of mechanisms and lack of necessity of winding as is required in the electro-mechanical clock-work type. They are of 2 types, one for operation 14 or less in series on 100-125 volts D.C.; the other for operation 10 or less in series on 110 volts 50-60 cycles A.C. (25, 30 and 40 cycles to order).



Model 2620
Electro-mechanical Gong

Vibrating Gongs for Non-code-ringing Systems



Model 2500
Vibrating Gong

The electro-mechanical type is designed to give a very loud powerful signal with a minimum of current, this being normally about 100 milliamperes, although Faraday Electro-Mechanical Gongs can be specially adjusted to operate on as low as 50 milliamperes. They give over 700 blows with one winding of the mechanism. When so specified, electro-mechanical gongs will, at an additional charge, be supplied with special device indicating when gong needs re-winding.

Vibrating Faraday Fire Alarm Gongs are designed for use on non-supervised, open-circuit systems where it is not desired that a code be sounded. The breaking of the glass in the box causes the gongs to ring until the glass is replaced.

These gongs are of 2 types, one for battery operation and the other for transformer operation. In ordering gongs always specify the type desired, and if battery operated, the resistance.

All Faraday Fire Alarm Gongs are finished in glossy English vermilion, and are supplied with conduit-box-backs for 1/2 or 3/4-inch conduit as specified.

When ordering gongs for operation on 100-110 volts A.C., or A.C. bell-ringing transformers, specify frequency (number of cycles) of circuit. Orders cannot be filled without this information.

Faraday Industrial and Municipal Fire Alarm Systems



Faraday Industrial and Municipal Fire Alarm Systems are designed for every purpose where life and property are to be protected from fire hazard, with full regard to the necessity that a fire alarm system must be absolutely dependable.

Particular attention is called to the cabinet-unit mounting feature of all control apparatus. Instruments and control mechanisms are mounted on slate

and windows are provided in doors of cabinets through which instruments may be read.

Faraday Industrial Fire Alarm Systems may be classified in 2 general types:

- (a) Electrically-supervised closed-circuit code-ringing for local drill alarm purposes.
- (b) Local non-supervised open-circuit non-code-ringing.

Electrically-supervised Systems are guarded by a continuous flow of electric current and employ pull-lever or break-glass pull-lever code-ringing boxes indicating by code signals on gongs or other sounding devices, location of box from which the signal originates; or by simple break-glass boxes and a master code-ringing box sounding one code indicating Fire. All circuits are constantly under electrical test, trouble being instantly indicated by ringing of trouble-bell.

Certain electrically-supervised systems may be of two types or divisions according to the code-ringing Box used:

- (a) Positive non-interfering code-ringing.
- (b) Plain type code-ringing.

Positive non-interfering code-ringing boxes are employed in the best type of electrically-supervised systems and where installed no jumbling of the signal can occur if 2 or more boxes are pulled at about the same time.

Plain type code-ringing boxes may also be employed in closed-circuit systems and where the lever of any box has been pulled down as far as it will go, the box will transmit its code 4 times; no manipulation of the lever can cause confusion of signal. However, should more than one box be pulled at about the same time, there is likely to be confusion or jumbling of signals.

Non-supervised open-circuit systems employ a simple break-glass type of box, and vibrating gongs or other sounding devices. These systems have the disadvantage that should some disarrangement of the circuit occur, any attempt to sound the signal would fail.

Faraday Industrial Fire Alarm Systems are designed to operate from D. C. or A. C. light and power circuits, also from storage batteries and primary batteries. Operation from storage batteries is favored by engineers.

Faraday Municipal Fire Alarm Systems are designed for small cities and towns, industrial centers, etc., and possess all the desirable features of the closed-circuit electrically supervised industrial systems mentioned above. They employ either positive non-interfering or plain type Faraday Boxes as may be desired, also electro-mechanical gongs, single-stroke tappers, punch registers and Faraday Compressed Air Horns and Steam Whistles. They are operated either from primary batteries or storage batteries.

Faraday Municipal Fire Alarm Systems

System M

Recommended for small cities and towns, large industrial plants, etc., where as many as 50 boxes and 10 sounding devices are to be installed and where for convenience in wiring the circuits may be divided into 4 if necessary. They provide the highest type of fire alarm protection. They employ positive non-interfering Faraday Fire Alarm Boxes in weatherproof cases, electro-mechanical gongs and single-stroke tappers, punch registers and Faraday Compressed-Air Horns or Steam Whistles for the automatic sounding or broadcasting of the alarms. Manual transmitters may also be used with these systems—these devices being designed for installation in police headquarters, telephone exchanges, etc., for the purpose of sounding coded signals on the fire alarm circuits without the necessity of transmitting from the fire alarm boxes;—i. e., they permit the sounding of a fire alarm which may have been telephoned to police headquarters or telephone exchange.

System T

Recommended for small towns, small industrial plants, etc., where not more than 25 boxes and 7 sounding devices would be used.

Designed for use in places where the protection afforded by a closed-circuit code-ringing fire alarm system is desired, but where because of limited funds a medium-cost system must be installed. The first cost is slightly more than that of the V System, but the greater reliability of storage batteries, and their lower cost of charging as against the cost of renewals of primary batteries makes this system cheaper in the long run. They also have the advantage over V systems in that, because of the use of storage batteries and their extreme reliability, additional devices for the sounding of alarms may be added from time to time. These systems employ plain type code-ringing fire alarm boxes in weatherproof cases, electro-mechanical gongs and single-stroke tappers for sounding the signal from the boxes, and Faraday Compressed-Air Horns, Steam Whistles or Electric Sirens for the sounding of general alarm. Faraday Compressed-Air Horns and Steam Whistles have the advantage in that they may be coded, and thus the same signal transmitted by a box may be sounded manually, whereas electric sirens because of peculiar construction, are limited to a few blasts and cannot be coded.

System V

Recommended for villages, small industrial plants, etc., where not more than 20 boxes and 5 sounding devices would be used.

They employ plain type pull-lever code-ringing fire alarm boxes in weatherproof cases, electro-mechanical gongs and single-stroke tappers for sounding the signal from the boxes, and Faraday Compressed-Air Horns, Steam Whistles or Electric Sirens for the sounding of the general alarm. Faraday Compressed-Air Horns and Steam Whistles have the advantage in that they may be coded, and thus the same signal transmitted by a box may be sounded manually, whereas electric sirens, on account of their peculiar construction, are limited to a few blasts and cannot be coded.

All circuits, instruments and apparatus are constantly under electrical test.

Faraday Fire Alarm Boxes

Closed Circuit

Plain Pull-lever Code-ringing Type



**Model 2022
Surface Type**

Plain type boxes are designed to give any signal required for standard fire alarm work and automatically transmit the signal 4 times. After lever has once been pulled down and released, the signal cannot be disarranged by again operating the lever.

Plain Type Boxes should only be used where the chances of more than one box being pulled at the same time are comparatively remote. Where many boxes are installed and there is likely to be more than one pulled, the Positive Non-Interfering Type is recommended.

Cat. No.	Description	Price Each
2022	For Surface Mounting with Outlet-Box-Back for Conduit.....	\$38.00
2023	For Semi-Flush Mounting with Outlet-Box-Back for Conduit.....	46.00

In ordering the above boxes, be sure to specify size of opening required for conduit, also, the code desired to be transmitted by box.

Made also in break-glass and weatherproof types.

**Positive Non-interfering Pull-lever
Code-ringing Type**

Faraday Non-interfering Fire Alarm Boxes, while retaining all the superior features of plain pull-lever code-ringing type boxes, have in addition self-restoring and non-interfering mechanisms, and are so designed that should more than one box be pulled at about the same time, no interfering or jumbling of the alarm will result as one box only will transmit its signal and all the others will be automatically locked out.

Particular attention is called to the self-restoring device of these boxes. This device automatically resets the non-interfering mechanism and pull-lever, and places the boxes in condition to send subsequent alarms. In other boxes of this class, it is necessary to manually restore this mechanism, and this has often resulted in a failure to operate where a box has been overlooked.

These boxes are self-winding and therefore do not require the attention necessary in trip-type boxes which must be wound up at certain periods. They will operate perfectly on circuits containing boxes of other manufacture.



**Model 3123
Semi-flush Type**

Cat. No.	Description	Price Each
3122	For Surface Mounting with Outlet-Box-Back for Conduit.....	\$150.00
3123	For Semi-Flush Mounting with Outlet-Box-Back for Conduit.....	175.00

Made also in break-glass and weatherproof types.

Faraday Fire Alarm Boxes

Open Circuit Non-code-ringing Types

Faraday Fire Alarm Boxes, listed below, are open-circuit non-code-ringing type boxes. They are designed for fire alarm systems where it is not desired that the location of the box from which the signal originates be indicated by automatic code ringing of the gong and where failure of operative current or derangement of circuits or apparatus is not required to be automatically indicated.

Non-selective open-circuit Faraday Fire Alarm Boxes are the simplest and least expensive that can be installed with any satisfactory results. They are admittedly, however, not as safe or as desirable as the electrically supervised selective code ringing boxes.

Breaking glass of any box automatically rings all gongs. Gongs usually used are vibrating type and after glass is once broken will continue ringing until glass is replaced in box. These types of boxes, together with the gongs used with them, should be connected in multiple.

**No. 2077 Faraday Fire Alarm Boxes
Surface Type Boxes**



Break-glass fire alarm box, finished in English vermilion, round pattern, for surface work, non-conduit installations. Diameter, 3 3/4 inches.

Furnished with hammer and chain.
Price, No. 2077.....each \$2.45

Nos. 2040-2042 Faraday Fire Alarm Boxes

No. 2040 Surface Type Boxes

Break-glass fire alarm box, finished in English vermilion, for surface work, made for 1/2-inch conduit, projects from wall 3 1/8 inches. Size, 5 1/4 inches high x 3 1/4 inches wide. N. Y. Fire Prevention Bureau Standard.

Furnished with hammer and chain.
Price, No. 2040.....each \$15.50

No. 2042 Flush Type Boxes

Break-glass fire alarm box, finished in English vermilion, for concealed work, made for 1/2-inch conduit projects from wall 1 inch. Size, 5 1/4 inches high x 3 1/4 inches wide. N. Y. Fire Prevention Bureau Standard.

Furnished with hammer and chain.
Price, No. 2042.....each \$15.50

No. 2024 Faraday Fire Alarm Boxes

Flush Type Boxes

Break-glass fire alarm box, finished in English vermilion, with black background, will fit standard outlet box for conduit.

Furnished with special test key and contact device. Tests may be made with key without breaking glass, but without key it is impossible to send test signal.

Size, 4 3/8 inches high x 3 3/8 inches wide.

Furnished with hammer and chain.
Price, No. 2024.....each \$8.40

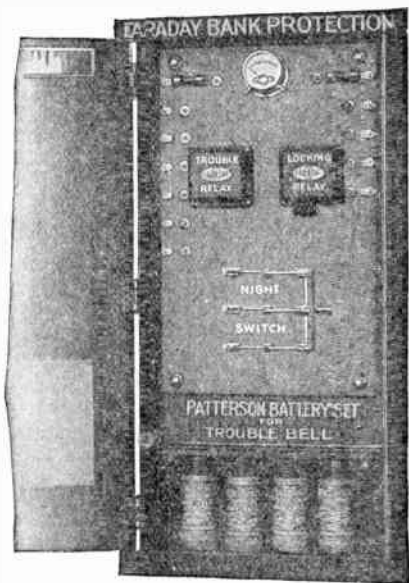


Extra Glasses, Hammers and Chain

Price, Extra Glasses for Any Type of Box.....each \$.38
" " Chain and Hammer..... " .60

Faraday Hold-Up Protection Systems

Faraday Hold-Up Protection Systems



Closed Circuit Hold-Up Protection Control Cabinet

Faraday Hold-Up Protection Systems are designed to reduce to a minimum, not only the liability of monetary losses through day hold-ups or night robberies of banks, jewellers, pay-roll departments, cashier's departments, etc., but also prevent, to a large extent, danger of loss of life to officials and employees of such institutions and departments.

Electrically-Supervised, Closed-Circuit, Faraday Hold-Up Protection Systems shown on this page, while slightly higher in cost than some types of Open-Circuit Non-Supervised Systems, are dependable at all times as all parts are under constant electrical test; we strongly urge their use and deprecate the use of Open-Circuit Non-Supervised Systems.

Electrically-Supervised Closed-Circuit types are made in six systems as follows:

DHU for 110 volt D. C. lighting circuits for Day Hold-Up only.

DHUN for 110 volt D. C. lighting circuits for Day Hold-Up and Night Burglary Protection.

AHU for 110 volt A. C. lighting circuits for Day Hold-Up only.

AHUN for 110-volt A. C. lighting circuits for Day Hold-Up and Night Burglary Protection.

WBHU for Primary Battery for Day Hold-Up only.

WBHUN for Primary Battery for Day Hold-Up and Night Burglary Protection.

The Control-cabinets are supplied complete with Master-Switch, Night-Cut-Off-Switch, Relays, Milliammeters, Trouble-Bell, Trouble-Bell Batteries and all necessary fuses, terminals, etc., all being mounted on slate and enclosed in steel cabinet with tamperproof Yale locked doors. These doors are so arranged that any attempt to open them by any means but the proper keys (two being required) will cause the alarm to be sounded.

The Trouble-Bell Batteries are also mounted in the cabinet, which prevents their being tampered with and insures their being in perfect order to ring the Trouble-Bell in case of trouble on the system.

Control-Cabinets can be made for different voltages to suit various conditions as required.

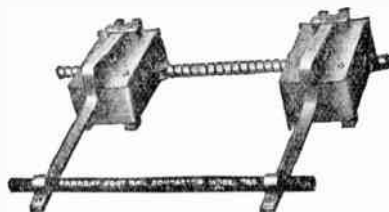
For D. C. and Battery Systems Faraday Full-Grid-Guarded Bank Alarm Vibrating Gongs are employed and these are equipped with triplex platenoid contacts—a three-fold insurance against failure of operation.

For A. C. Systems Faraday Transformer Underdome Bank Alarm Vibrating Gongs are employed. These gongs have no contacts and are fully protected.

Both of the above types require no attention after having once been installed.

Prices on Control-Cabinets and other apparatus for Faraday Hold-Up Protection Systems are shown on other pages.

General To All Systems



Bank Tellers' Foot-rail Contactor

FARADAY HOLD-UP FOOT-RAIL CONTACTORS.—These contacting units for giving instant alarm without knowledge of the robbers have been universally approved; they are sectional in construction and readily provide a semi-continuous foot-rail under all tellers' desks or counters. A slight upward pressure of the foot on any section of the foot-rail to give the alarm. Alarm when once started cannot be stopped except by means of the "Master-Switch" within the Control Cabinet under Yale lock protection.

They are designed for heavy duty service; the contact members are heavy phosphor bronze springs, mounted on slate between which a heavy brass plunger bears, thus insuring perfect connection.

Faraday Foot-rail Contactors

Cat. No.	Description	Price per Set of Two
760-A	Foot-rail Contactors Lift-Up Types for Use with Faraday Closed-Circuit Electrically-Supervised Hold-Up Systems	\$45.00
760-B	Same as Above, But for Use on Closed-Circuit Systems Other than Faraday	45.00
760-C	Same as 760-A Except for Use on Faraday and All Other Open-Circuit Systems	45.00

Faraday Tell-Tale Signal Lamps

In addition to the trouble signal, "Tell-Tale" lamps may be provided for installation in the offices of the President, Cashier or the Telephone Switchboard Operator, the function of which is to notify that the system is disconnected.

Cat. No.	Description	Price Each
772	Faraday Tell-Tale Signal Lamps—Surface Wall Type	\$4.00

Faraday Trouble-bells

Cat. No.	Description	Price Each
777	Faraday Enclosed-Type Trouble-Bell with Outlet Box Back, (One for Each System)	\$16.15

Faraday Push Button Contactors

Faraday Push Button Contactors are for use where it is desired to operate the circuit-closing device by hand.

Contactors are mounted on plate to fit Paiste Taplet Fittings— $\frac{1}{2}$ or $\frac{3}{4}$ inch, as specified.

Where it is desired to operate the circuit closing devices by hand, we supply Faraday Push Button Contactors. Furnished with conduit connections and may be mounted anywhere desired, the simple act of pressing the button causing the alarm to be sounded continuously.

Cat. No.	Description	Price Each
768	Faraday Hold-Up Push Button Contactors	\$3.50

Faraday Hold-up Protection Systems

Faraday Toggle Switch Contactors

Can be used either as hand or foot-actuated devices. Fits standard switchbox, and can be used for both flush or exposed conduit installations. Mounted on standard switchplate.

Cat. No.	Description	Price Each
765	Faraday Hold-Up Toggle Switch Contactors (No Switchbox)	\$3.00

Apparatus Required

DHU System

110 Volts D. C.

Cat. No.	Description	Price Each
DHIU-1	Control Cabinet for Systems using 1 Alarm Gong for 110-volt D. C. Circuit	\$250.00
DHIU-2	Control Cabinet for Systems using 2 Alarm Gongs for 110-volt D. C. Circuit	325.00
766	6-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs (for 110 Volts D. C.)	57.90
766	8-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs (for 110 Volts D. C.)	70.60
766	10-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs (for 110 Volts D. C.)	91.25
766	12-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs (for 110 Volts D. C.)	113.10

The above gongs are furnished with outlet box backs with knockouts to slip either 1/2 or 3/4-inch conduit, as specified.

AHU System

110 Volts A. C. 50-60 Cycle

Cat. No.	Description	Price Each
AHIU-1	Control Cabinet for Systems not Exceeding 1 Alarm Gongs (110 Volt A. C., 50-60 Cyc.)	\$275.00
AHIU-6	Control Cabinet for Systems not Exceeding 6 Alarm Gongs (110 Volt A. C., 50-60 Cyc.)	312.50
770	8-inch Faraday Transformer Underdome Alarm Gongs (110 Volts, 50-60 Cyc. A. C.)	83.65
770	10-inch Faraday Transformer Underdome Alarm Gongs (110 Volts, 50-60 Cyc. A. C.)	116.75
788	6-inch Faraday Transformer Enclosed Type Alarm Gongs (for 110 Volts, 50 60 Cyc. A. C.)	59.40
788	8-inch Faraday Transformer Enclosed Type Alarm Gongs (for 110 Volts, 50-60 Cyc. A. C.)	72.35
788	10-inch Faraday Transformer Enclosed Type Alarm Gongs (for 110 Volts, 50-60 Cyc. A. C.)	96.80
788	12-inch Faraday Transformer Enclosed Type Alarm Gongs (for 110 Volts, 50-60 Cyc. A. C.)	111.80

Furnished with outlet backs to slip either 1/2 or 3/4-inch conduit, as specified.

NOTE.—50-60 cycles standard, 25-30 and 40 cycles to order.

Faraday Hold-up Protection Systems

Apparatus Required
Continued

WBHU Systems

For use with Columbia 72 HV Primary or Edison BSCO Primary Battery.

Cat. No.	Description	Price Each
WBHIU-1	Control Cabinet for System using 1 Alarm Gong	\$250.00
767	6-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs	47.35
767	8-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs	58.10
767	10-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs	76.25
767	12-inch Faraday Enclosed Type Full-Grid-Guarded Bank Alarm Gongs	98.10

The above gongs are furnished with outlet box backs with knockouts to slip either 1/2 or 3/4-inch conduit, as specified.

302 Edison BSCO Primary Batteries, per cell . . . \$8.00

72HV Columbia High Voltage Primary Batteries, per cell . . . 8.00

Faraday Hold-up Protection Control Cabinets For Open Circuit Systems

These cabinets are supplied complete with locking relay, main switch, fuses, terminals, etc., all mounted on slate, enclosed in steel cabinet with locked door.

They are not as dependable as closed-circuit cabinets and do not afford the protection that the closed-circuit cabinet affords.

Cat. No.	System	Voltage	Max. No. of Alarm Gongs	Price Each
DU-1	DU	110 D. C.	Any No.	\$100.00
AU-1	AU	110 A. C.	" "	125.00
BU-1	BU	Battery	" "	100.00

Gongs for Open-circuit Systems

DU-1 standard 6 to 12-inch PR Marlo 110 V. D. C. gongs.

AU-1 standard 6 to 12-inch PR Marlo 110 V. A. C. gongs.

BU-1 standard 6 to 12-inch PR Marlo Battery gongs.

Faraday Fire Alarm Annunciators



Model 3010

Cat. No.	No. of Drops	Price Each	Cat. No.	No. of Drops	Price Each
3008	8	\$45.95	3014	14	\$64.55
3010	10	45.95	3016	16	74.00
3012	12	55.15	.....	..	.....

Faraday Fire Alarm Annunciator, gravity type, golden oak finish, complete with necessary DeVeau Gravity Drops, strong lever-switches, double-gonged pivoted armature bell—mechanism mounted in hardwood case with extended backboard. Drops indicate location of the alarm. One or more bells can be connected to circuit by switching the levers on the lower section of extended backboard.

No. 372 DeVeau Gravity Annunciators

Surface Type

6-10 Volts D. C. 18-24 Volts A. C.

Schedule E

The frame is constructed of wood. Finish is golden oak.



No. of Drops	Std. Pkg.	Price Each
2	6	\$9.95
3	6	11.60
4	10	13.20
6	10	16.55
8	8	19.60
10	5	22.95
12	5	26.15

For (13) to (55) Drops Add to (12) Drop, per Drop \$2.20

For (56) Drops and Over Add to (12) Drop, per Drop 2.85

Standard package for sizes above 12-drop is 1.

Edwards Watchman's Time Detectors

Magneto or Battery Type—With or Without Clock



The Edwards Watchman's Time Detector records accurately and indelibly (by puncture on a paper dial) every visit of the watchman to every station, and the time of the visit.

The magneto type is approved by the National Board of Fire Underwriters and by the Associated Factory Mutual Fire Insurance Companies. No battery type is approved, irrespective of make.

Insurance rates are materially reduced by the installation of a Watchman's Time Detector.

The advantages of the system are:

1.—A record cannot be made unless the

watchman has visited the station.

2.—The record cannot be changed. It is a puncture on paper.

3.—A special device registers the opening and closing of door. The record cannot be tampered with.

4.—The dial cannot be torn as there is a cut-out system preventing prolonged contact of point and paper.

5.—Installation is facilitated by plainly marked connections. Wiring is simplest possible, one common wire from instrument to all stations, and an individual wire from each station to the instrument.

6.—All factory made connections are soldered.

The apparatus consists of heavy brass plate on which are mounted:

1.—An arm indicator (Magnets and armature) at the end of which is a pin for making record. One for each station in plant.

2.—An eight-day clock.

3.—Metal disc with guides for holding paper.

4.—A guide arm with opening for each pin.

5.—Special device which records opening and closing of door.

6.—Binding posts.

Case is simple in design and constructed of heavy oak.

No. 75 Magneto Type—With Clock

No. of Stations	DIMENSIONS, INCHES			Price Each
	Height	Width	Depth	
4	31 3/4	17 1/2	5 1/2	\$280.00
6	31 3/4	17 1/2	5 1/2	290.00
8	31 3/4	17 1/2	5 1/2	305.00
10	31 3/4	17 1/2	5 1/2	315.00
12	31 3/4	17 1/2	5 1/2	345.00
15	31 3/4	17 1/2	5 1/2	360.00
20	35 1/2	21 1/4	5 1/2	390.00
25	35 1/2	21 1/4	5 1/2	425.00

No. 76 Magneto Type—Without Clock

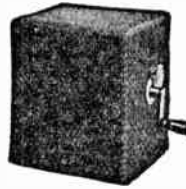
No. of Stations	DIMENSIONS, INCHES			Price Each
	Height	Width	Depth	
4	18	17 1/2	5 1/2	\$129.00
6	18	17 1/2	5 1/2	139.00
8	18	17 1/2	5 1/2	158.50
10	18	17 1/2	5 1/2	168.50
12	18	17 1/2	5 1/2	202.00
15	18	17 1/2	5 1/2	217.00
20	18	17 1/2	5 1/2	251.00
25	18	17 1/2	5 1/2	281.00

No. 97 battery type, same prices and dimensions as No. 75.

No. 98 battery type, same prices and dimensions as No. 76.

Prices include a year's supply of dials, but do not include magneto or battery stations.

Edwards Magneto Stations



No. 161

Wood case with removable handle.

Cat. No.	Description	Price Each
161	Magneto Station	\$18.85

Handles, one for every three stations, additional, \$1.25 each.

No. 161P

Wood case portable type with carrying strap. No. 72 plug and three feet of cord.

Cat. No.	Description	Price Each
161P	Magneto Station	\$28.25

Handles, one for every three stations, additional, \$1.25 each.

No. 162

Metal case, weatherproof for outdoor use, with removable handle.

Cat. No.	Description	Price Each
162	Magneto Station	\$21.95

Handles, one for every three stations, additional, \$1.25 each.



No. 163

Flush metal case, with removable handle.

Cat. No.	Description	Price Each
163	Magneto Station	\$22.50

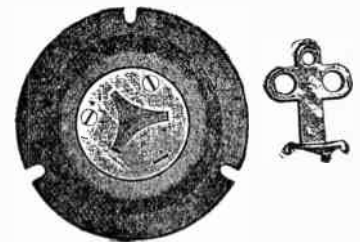
Handles, one for every three stations, additional, \$1.25 each.



Edwards Battery Stations

Standard finish is nickel. Old or polished brass can be furnished, if specified.

Keys, one with every three stations, furnished at \$.50 each, additional.



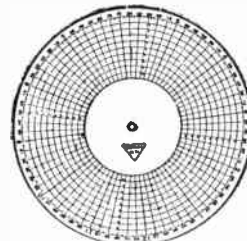
No. 211

Flush type, fits standard push button switch box. Price, No. 211each \$7.00

No. 211A

Surface type, 2 3/4 inches in diameter. Price, No. 211Aeach \$4.00

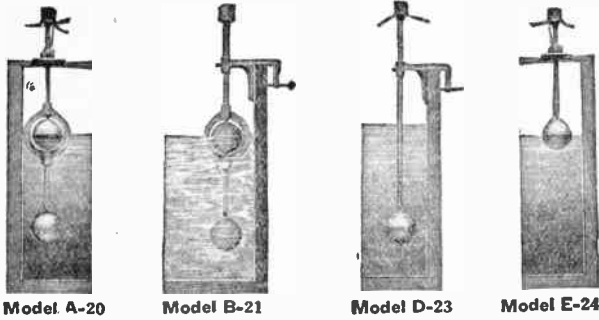
Edwards Paper Dials



A year's supply is furnished with every instrument. Additional dials will be supplied as follows:

Price, 1-10 Stations	per 1000	\$20.83
" 11-15 "	"	22.00
" 16-20 "	"	27.50
" 21-25 "	"	28.88

Patterson Electric Tank Indicators



These electric tank indicators, operated either from battery or low-voltage transformer, fill an important want in the industrial field. In connection with a reliable signal gong or annunciator (or both) they give an infallible warning signal when contents of a tank have reached a maximum or minimum level or both. They supplement the use of tank float switches and doubly safeguard the plant against possible failure of tank switches and pumps to function.

Models A-20 and B-21 are furnished regularly, allowing 12 inches between upper and lower balls. Models C-22 and D-23 are furnished regularly with 24-inch iron pipe stem. Models E-24 and F-25 are furnished regularly with 20-inch iron pipe stem. If greater distance between base of flange and ball is required, same will be furnished up to 12 feet for \$1.00 per foot.

Cat. No.	Description	Price Each
A-20	High and Low Water for Closed Tank	\$25.00
B-21	" " " " Open	25.00
C-22	Low Water for Closed Tank	15.00
D-23	" " " Open	15.00
E-24	High " " Closed	15.00
F-25	" " " Open	15.00
Extra Length Stem for Any of the Above Indicators		1.00

Pyrene Fire Extinguishers

Approved and Labeled by the Underwriters' Laboratories



With Bracket

Pyrene Fire Extinguishers are the safest and most efficient for electrical and all fires starting in oil, gasoline, shellac, paint or other highly inflammable substances. Water only spreads oil fires and is dangerous on electrical fires.

Employees need no instruction to use Pyrene.

Pyrene will not injure, stain or destroy anything, but will kill fire from any cause, instantly.

Will not freeze at 50° below zero.



In Metal Box



Liquid

Price, 1-quart with Bracket, Brass	each	\$12.00
Price, 1-quart with Bracket, Nickel-plated	each	13.00
Price, Extra Bracket for 1-quart Extinguisher	each	1.00
Price, 1½-quart with Black Bracket, Brass	each	15.00
Price, 1½-quart with Black Bracket, N. P.	each	16.00
Price, Extra Bracket for 1½-qt. Extinguisher	ea.	1.50
Price, Metal Box, Heavy Type	"	4.00
" " " Light	"	3.00
" " Liquid, 1-quart Can	"	1.80
" " 1½-qt. Can	ea.	\$2.70
1-gal. Can	ea.	7.20

Model H Federal Electric Lanterns



Opened

Will not blow out or blow up and can not go out suddenly. Safe for the handling of gases, oils and all inflammable and explosive materials.

Designed to stand the hardest usage. Has met the severest tests for dependability and unusual conditions. Has fallen from the top of freight cars without damage to any part and without extinguishing the light.

Shines downward and to the sides with bright white flood light as well as a strong beam light from reflector. Equipped with 6-volt, 4-cell battery and 5-volt, 0.15 ampere white or red ruby Mazda bulb.

Lighted and extinguished by means of a switch so placed as to be out of the way of accidental operation or injury. Doubly insulated against shorting and protected from freezing. No exposed metal parts which come in contact with the ground are in contact with either pole of the battery at any time.

The Federal Battery is recognized for steady strength and long-life illumination. When used with Mazda 5-volt bulb it will give 28 to 35 hours of intermittent service.

Will fit the coat pocket when the three folding legs are clustered. Compact for the autoist's tool box.

Built with high polish aluminum body. Net weight, 2¼ pounds; shipping weight, 3 pounds. Height over all, handle up, 14¾ inches; folded, 9½x7x4 inches.

Price, Model H, Complete	each	\$6.00
" Bulbs, Clear, 5-volt	"	.20
" Ruby Bulbs, 5-volt	"	.40
" No. 409C, Dry Batteries	"	.80



Folded

Excellight Hand Lanterns

The Excellight is constructed of aluminum.

Wire re-enforced glass door.

Two spare bulbs for emergency carried in a special compartment. Focusing device to spread or concentrate beam.

No tools required to open up lantern to get at batteries.

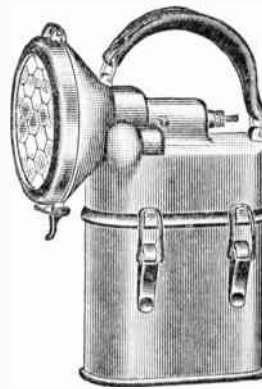
Parabolic silver plate reflector. Flexible all leather handle with steel reinforcements. Enamel finish in Brown, Red, and Blue. Has two No. 6 dry cells.

Price, Lantern...each \$13.00

" Shoulder Strap

each .75

Price, Bulb... " .30



Eveready Unit Cell Flashlight Batteries



No. 935

The Eveready Tungsten Battery produces an unusually large amount of electrical energy in view of its size.

The hours of service are definitely guaranteed.

No.	No. of Cells	Size of Cells Inches	No. in Unit Pkg.	Price Each
935	1	1 7/8x1	24	\$.15
950	1	2 3/8x1 1/4	36	.17

Two unit cells No. 950, equivalent of one No. 790 battery.

Three unit cells No. 950, equivalent of one No. 705 battery.

Two unit cells No. 935, equivalent of one No. 791 battery.

Eveready Tubular Flashlights



Bulls eye lens; octagonal lens ring with safety lock switch. Price includes lamp but not batteries.

Black Metal Case

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2602	2-No. 935	1 1/4 x 5 1/2	1197 11	3	60	\$1.25
2604	2 " 950	1 1/2 x 6 1/2	1198 16	3	60	1.50
2612	2 " 950	1 1/2 x 8 1/2	1193 17	2	40	1.75

Nickel-plated Case

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2630	2-No. 935	1 1/4 x 5 1/2	1197 11	3	60	\$1.25
2631	2 " 950	1 1/2 x 6 1/2	1198 16	3	60	1.50
2632	3 " 950	1 1/2 x 8 1/2	1193 17	2	40	1.75

Eveready Miners' Flashlights



Beveled lens; octagonal lens ring with safety lock switch. Price includes lamp but no batteries.

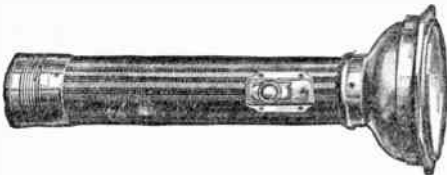
Black Metal Case

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2660	2-No. 935	1 1/4 x 5 3/4	1197 11	3	60	\$1.45
2616	2 " 950	1 1/2 x 6 1/2	1198 16	2	40	2.00
2619	3 " 950	1 1/2 x 8 1/2	1193 17	2	40	2.25

Nickel-plated Case

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2661	2-No. 935	1 1/4 x 5 3/4	1197 11	3	60	\$1.45
2634	2 " 950	1 1/2 x 6 1/2	1198 16	2	40	2.00
2633	3 " 950	1 1/2 x 8 1/2	1193 17	2	40	2.25

**No. 2642 Eveready Focusing Flashlights
Black Metal Case**

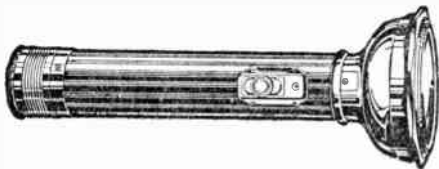


Has 500-foot range. Three-cell, size, 10x1 1/2 inches. Heavy nickel-plated fittings. Equipped with focusing device and parabolic silvered reflector, non-rolling lens ring. Mazda lamp has permanent and flash contact—bottom cap has one extra concentrated filament.

Price includes lamp but no batteries.

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2642	3-No. 950	1 1/2 x 10	1162 13	1	20	\$4.00

**No. 2644 Eveready Focusing Flashlights
Nickel-plated Case**



Has 500-foot range. Three-cell, size, 10x1 1/2 inches. Heavy nickel-plated case and trimmings. Equipped with focusing device and parabolic silvered reflector, non-rolling lens ring, bottom cap with compartment containing one extra concentrated filament. Mazda lamp has permanent and flash contact.

Price includes lamp but no batteries.

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2644	3 No. 950	1 1/2 x 10	1162 13	1	20	\$4.00

**Eveready Focusing Flashlights
Black Metal Case**



Beveled lens; octagonal lens ring with safety lock switch. Equipped with a focusing device. The light can be focused to as sharp a point as desired merely by turning the end cap, with a range of 200 feet for No. 2671 and 300 feet for No. 2672.

Price includes lamp but no batteries.

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2671	2 No. 950	1 1/2 x 6 3/4	1161 14	1	20	\$2.65
2672	3 " 950	1 1/2 x 9 1/4	1162 13	1	20	3.25

**No. 2674 Eveready Focusing Flashlights
Nickel-plated Case**



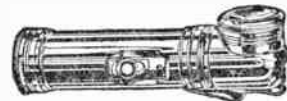
A reserve compartment is provided with two extra lamp bulbs. This is an improvement that every flashlight user will appreciate. The stock numbers of battery and lamp are stamped on the end cap so this information is always available.

A shock absorber underneath the lamp prevents accidental breakage if the flashlight is dropped.

Made of brass, heavily nickeled, with silvered reflector. Price includes lamp but no batteries.

No.	No. of Unit Cells	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2674	3 No. 950	1 1/2 x 9 1/4	1162 13	1	20	\$3.25

**No. 2694 Eveready Industrial Flashlights
Nickel-plated Case**



Price includes lamp but no batteries.

Battery or unit cells must always be ordered separately.

Cat. No.	No. of Unit Cells	Size In.	BULB No. Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
2694	2-No. 950	1 1/2 x 7	1198 16	1	20	\$4.00

No. 6993 Eveready Vest Pocket Flashlights



Nickel-plated, side opening. Price includes lamp but no batteries.

No.	No. of Unit Cells*	Size In.	No. of BULB Eveready Mazda	Unit Pkg.	Std. Pkg.	Price Each
6993	2-No. 935	3x2 1/4 x 1	1180 1	3	60	\$1.70

Western Electric Blue Bell Batteries



This dry cell is specially made for telephone work, and for this purpose is the most satisfactory cell on the market.

It is a reliable, highly efficient and long lived cell.

Size over all, 2 5/8 inches by 6 3/4 inches.

Weight per cell, 2 pounds.

Fahnestock clip top.

STANDARD PKG.		Wt., Lbs.	Std. Pkg.	Price Each
Boxes of	Barrels of			
50	125	110	300	\$.40

No. 6 Columbia Ignitor Batteries

With Screw Top Connections



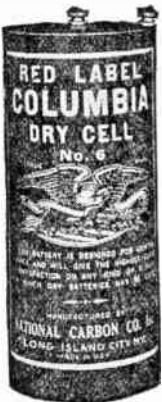
A special high grade cell designed for all heavy service. It is particularly adapted for motor ignition. A set of ignitors will keep the engine running smoothly until every bit of current is exhausted.

Equally satisfactory for motor boats, gas engines, and in fact, any service where a reliable, long life battery is needed.

These batteries are carefully packed and from fresh stock, guaranteed to reach their destination in perfect condition.

Size..... inches 2 1/2 x 6
Price, No. 6..... each \$.40

No. 6 Columbia Red Label Batteries



Where steady service is demanded over a considerable period of time, Columbia Red Label Batteries prove reliable, efficient and economical. This is particularly true where the current drain is small, such as in telephone, bell, burglar alarm and toy service.

Columbia batteries will, however, stand up under hard service. They are satisfactory ignition batteries.

Equipped with either screw or Fahnestock connections, as desired.

These cells come from fresh stock, are carefully packed and guaranteed to reach their destination in perfect condition.

Size..... inches 2 1/2 x 6
Price, No. 6..... each \$.40

No. 6 Columbia Gray Label Batteries



The No. 6 is designed especially for telephone and light drain service.

Furnished with round jackets or square cartons.

Initial shipping amperage, 19 to 22 amperes.

No extra charge for convenient Fahnestock spring clip binding posts.

This battery is carefully packed from fresh stock.

Guaranteed to reach its destination in perfect condition.

Packed in wire-bound boxes of 50 cells to the box.

Cat. No.	Size In.	Wt. per Cell, Lbs.	STD. PKG.		Wt., Lbs.		Price Each
			Box	Bbl.	Box	Bbl.	
6	2 1/2 x 6	2	50	125	110	300	\$.40

No. 7111 Dry Cell Radio A Batteries



No. 7111 is a single 6-inch dry cell battery having two screw knurls and put up in an attractive round fibre or square paper jacket.

Connected in various combinations to meet the requirements of WD-11, UV-199 and all other dry cell tubes.

No. 7111 will always be furnished in round jackets unless square cartons are specified and with screw knurls unless Fahnestock connectors are specified.

Battery No.	DIMEN., IN.			STANDARD PACKAGE		
	Not Including Voltage	Width	TERMINALS Height	Quan.	Wt. Lbs.	Price Each
7111	1 1/2	2 1/2	6	50	120	\$.40

Columbia Hot Shot Batteries



Cells are connected by soldered copper strips and encased in a single metal container.

The advantages of this new type covering are the ability to withstand rough usage, water-proof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying.

Cat. No.	Voltage	Lgth. In.	Width In.	Hght. In.	APPROX. WT.		QUANTITY		Price Each
					Box	Bbl.	Box	Bbl.	
1461M	6	10 5/8	2 3/4	7 1/2	128	255	12	24	\$2.20
1561	7 1/2	13 3/4	2 3/4	7 1/2	167	225	12	15	2.60
1562M	7 1/2	8	5	7 1/2	115	260	8	18	2.60
1662M	9	8	5 3/8	7 1/2	136	230	8	13	3.10

No. 766 Eveready B Batteries

Contains 15 cells of larger size and has a long service life. It is equipped with five positive Fahnestock Spring Clip Binding Posts ranging from 16 1/2 to 22 1/2 volts, making it the most desirable type for use with vacuum detector tubes, such as Radiotron, Model UV-200.



Cat. No.	DIMEN., INCHES			Weight	Price Each
	Length	Width	Height		
766	6 3/4	4 1/2	3 3/8	5 lbs.	\$2.00

No. 772 Eveready B Batteries

Vertical



Three Fahnestock spring clip connectors provide voltages of 22 1/2 and 45 volts, making it especially suitable for receiving sets which do not require a tapped B battery.

Contains 30 large cells, 45 volts.

Cat. No.	DIMENSIONS, INCHES			Wt. Lbs.	Price Each
	Length	Width	Height		
772	8 3/8	3 1/4	7 1/8	9	\$3.75

No. 770 Eveready Vertical B Batteries

45-Volt Extra Large
For use on multi-tube sets having 4 tubes operating at 90 or more volts without a C battery, and on practically all sets with 5 or more tubes using 90 volts or over, with or without a C battery. With 3 Fahnestock spring clip connectors giving voltages of 22½ and 45.



Cat. No. 770	DIMENSIONS, INCHES			Wt. Lbs. 13¾	Price Each \$4.75
	Length 8¾	Width 4¾	Height 7¾		

No. 486 Eveready Layerbilt Radio B Batteries

Vertical Type, 45 Volts

The Eveready Layerbilt B Battery is made of flat layers of current-producing elements compressed one against another, so that every cubic inch inside the battery case is completely filled with electricity-producing material. Equipped with 3 Fahnestock clips giving voltages of 22½ and 45.



Cat. No. 486	DIMENSIONS, INCHES			Wt. Lbs. Each 14¼	Price Each \$5.50
	Length 8¾	Width 4¾	Height 7¾		

No. 767 Eveready B Batteries



Contains 30 cells, 45 volts. Cells are large size, 2¼x1¼ inches. Equipped with 7 Fahnestock Spring Clip Connectors, giving voltages at 16½, 18, 19½, 21, 22½ and 45 volts.

Cat. No. 767	DIMENS., INCHES			Weight 8 lbs. 11 oz.	Price Each \$3.75
	Length 8	Width 6⅝	Height 3		

No. 764 Eveready Radio B Batteries



The new Eveready vertical type B battery 22½ volts. Occupies practically the same small table space as the small battery designed for portable sets, as No. 763, but as its cells are much larger, it has more than twice the service capacity. It is more economical than the smaller battery and is especially suited for use where table or cabinet space is limited. Contains 15 cells. Equipped with two Fahnestock spring clip connectors. Length, 3¼ inches; width, 2¾ inches; height, 5⅝ inches. Weight, 2½ pounds.

Price, No. 764.....each \$1.75

No. 768 Eveready Radio B Batteries for Radiola Grand and IV

Designed in size and connections for use in the battery cabinet of the Radiola Grand and Radiola IV receivers.

Contains 15 cells giving 22½ volts, equipped with screw binding post.

Length, 4⅛ inches; width, 2⅝ inches; height, 2¾ inches. Weight, 1 pound, 9 ounces.



Price, No. 768.....each \$1.75

No. 763 Eveready B Batteries



Especially suitable for use where light weight or small space is essential, such as in small portable sets.

Contains 15 cells, enclosed in waterproof cardboard box, equipped with two coil wire leads.

Initial voltage of 22½ volts.

Cat. No. 763	DIMENS., INCHES			Weight Ounces 13	Price Each \$1.50
	Length 3⅝	Width 2⅜	Height 2⅝		

No. 771 Eveready Three Radio Batteries



This battery is a 4½-volt unit, containing three cells, provided with three Fahnestock Spring Clip Terminals.

It may be used in either the filament or A circuit, the plate or B circuit or the grid or C circuit.

A 4½-volt C battery is sufficient with most tubes when B battery voltages of not over 80 or 90 volts are used, and the signal is ordinarily loud. For B battery voltages up to 120 volts from 6 to 9 volts of C battery gives better results.

One Eveready Three Battery can thus be used with entire success in the majority of cases and if more voltage is needed, additional batteries may be connected in series.

Price, No. 771.....each \$.60

Storage Radio A Batteries

This battery has thicker plates; more space above the plates, which prevents the acid from bubbling out of vent caps when battery is on charge. Standard battery solution is used same as in automobile batteries. Has exposed cell straps, making it possible to tap batteries at 2 or 4 volts. Handsome mahogany finish, nickel-plated bail handles and soft rubber feet.

Packed individually.



No.	Capacity at 1-amp. Rate	Ship. Wt., Lbs.	Price Each	No.	Capacity at 1-amp. Rate	Ship. Wt., Lbs.	Price Each
6950	127	75	\$23.00	6900	65	52	\$16.75

Patterson Battery Sets

Patterson Battery Sets will always prove dependable and their life (if proper capacity outfit is selected) average two or three years. Patterson Battery Sets have the unique advantage, never possible before with old style battery sets, that once the circuit wires to talking and ringing circuits are connected, no necessity of ever disconnecting them can come up, and the renewal of the battery set is made just as easy as the renewal of a few incandescent lamps.

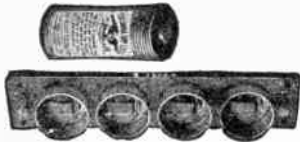
A Patterson Battery Set will not only maintain a set of batteries at much higher amperage than the old style method of installation, but will in a few years save its entire cost from the greatly increased life each set of cells will give, because of its comprehensive design for cell-protection and economic maintenance; too much stress cannot be laid on the increased life of an installation made in a Patterson Battery Set, due to several facts, chief amongst which are the following:

The absolute full-carrying capacity of the contacts which completely does away with the loss of battery power always present in the old style wired-up battery set.

Housing of the wax-sealed end of cell in practically an airtight cup—away from the effect of temperature change, etc.

Model B, Strip Type

Model B Strip Type is a series outfit of 25-ampere capacity and is designed for ceiling or side wall mounting. It has no enclosing case.



Model B, Strip Type

Model No.	No. Cells Capacity	Price Each without Batteries
B-2	2 in Row	\$5.25
B-3	3 " "	7.85
B-4	4 " "	10.50
B-5	5 " "	13.15
B-6	6 " "	15.75
B-8	8 " "	21.00

Model No.	Description	Price Each
BM	Middle Section Battery Holder Unit.....	\$2.65
BZ	Zinc Terminal End Section.....	2.65
BC	Carbon Terminal End Section.....	2.65

Model BB, Steel Box Type



Model BB Steel Box Type is a series outfit of 25-ampere capacity for side wall mounting only. It has bronze padlock and 2 keys.

Model No.	Operative Voltage	Price, Each without Batteries	Model No.	Operative Voltage	Price, Each without Batteries
BB-2	2	\$10.50	BB-6	6	\$24.15
BB-3	3	13.65	BB-8	8	31.85
BB-4	4	16.80	BB-10	10	38.15
BB-5	5	20.45	BB-12	12	45.15

No battery cells are included in the above prices. For Patterson-Columbia screw top cells add 2 cents each to prices of ordinary binding post cells. Patterson-Columbia screw top cells are obtainable from all first-class jobbers of electrical supplies.

Patterson Battery Sets

Telephone installations frequently require a split-circuit battery set, usually with 4 or 5 cells for talking, and 5, 6, and 8 or more cells for ringing. While this is a reasonably simple arrangement of circuits, still, in the old way of setting up batteries, a mistake was easily made. In a Patterson Battery Set, the renewal of the entire battery can be done by anybody yet can only be done in one way, and that the right way, all without the slightest technical knowledge, and without tools.

Patterson Battery Sets are also manufactured with 50 watt 6-18 volt heavy duty bell ringing transformer mounted in cabinet to take care of the ringing circuit, and batteries to take care of the talking circuit.

Complete elimination of all leakage due to dampness on bottom of cell or on cartons.

Positive prevention of accidental getting together of zinc terminals, as has always been most troublesome in the old style wire-up battery set.

Multiple Service, Steel Cabinet Type



Model BMC

50-ampere outfits will operate signalling systems four times longer than old-style dry battery installations. 75-ampere outfits will operate eight times longer.

Voltage of sets should be same as old-style battery installations. For example, if 6 cells old-style dry battery gave loud enough signals use P.B.S. with 6 cells in a row. If 8 cells were required on old-style installations use P.B.S. with 8 cells in a row, etc.

Number of rows determines ampere-hour capacity and operative life of battery set as above explained.

Larger size outfits at proportionate prices.

Model BMC

50-ampere Capacity

Model No.	No. Cell Each Row	Operative Voltage	Price, Each without Batteries
BMC-24	4	4	\$41.95
BMC-26	6	6	56.15
BMC-28	8	8	71.80
BMC-210	10	10	86.30
BMC-212	12	12	103.65

Model BMC

75-ampere Capacity

Model No.	No. Cell Each Row	Operative Voltage	Price, Each without Batteries
BMC-34	4	4	\$56.15
BMC-35	5	5	77.20
BMC-36	6	6	99.35
BMC-38	8	8	121.50
BMC-310	10	10	144.15
BMC-312	12	12	.....

No batteries are included in the above prices. For Patterson-Columbia screw top cells add 2 cents each to prices of ordinary binding post cells. Patterson-Columbia screw top cells are obtainable from all first-class jobbers of electrical supplies.

Patterson Battery Sets



Model BB-5+6

Model Nos. BB and BMC listed below, are furnished with battery units for the "talking" and "ringing" circuits.

Model Nos. BBTW and BMCTW, listed below, are with battery units for the "talking" circuit and a 50-watt Heavy-Duty bell-ringing transformer for the "ringing" circuit.

When using transformer be careful to use 3-ampere fuse-plugs in cut-out on primary side of transformer.

Where Western Electric telephone systems require one set of batteries for both "ringing" and "talking" circuits, use Model Nos. BB and BMC as listed on another page.

Model BB and BBT—Series Steel Box Type

Model BSC—Series Steel Cabinet Type

For Light Service Installations

BB, BSC and BBT outfits are suitable for all Western Electric installations where the current requirements are not so heavy as to make desirable the use of the multiple-service outfits listed below. Stationary terminals for circuit wires are mounted on back-board.

Models BB and BSC—25-ampere Split-circuit Outfits

Using Batteries for Both "Talking" and "Ringing"

Model No.	No. Cells Each Row	OPERATIVE VOLTAGE Talking	OPERATIVE VOLTAGE Ringing	For Western Electric System No.	Price Each
BB-5+3	8	5 V.	3 V.	7, 8, 9 and 10	....
*BB-5+4	9	5 V.	4 V.	1, 7, 8, 9 and 10	....
*BB-5+5	10	5 V.	5 V.	1, 7, 8, 9 and 10	....
BB-5+6	11	5 V.	6 V.	7, 8, 9 and 10	....
*BB-5+7	12	5 V.	7 V.	1	....
BSC-5+20	10	6 V. Batteries	20 V. Batteries	A, B, C and D C and D when Trunkline Service is Provided	....
BSC-8+20	10	8 V. Batteries	20 V. Batteries	Trunkline Service is Provided	....

*When ordering Model BB sets for use on Western Electric system No. 1 add letter W to Model No. selected, for example, BBW-5+4, BBW-5+5 or BBW-5+7; as on these sets carbon terminal of "talking" battery is strapped permanently to carbon-terminal of "ringing" battery.

Models BBT 25-ampere Split-circuit Using Batteries For "Talking" and Transformer for "Ringing"

Model No.	No. Cells Each Row	OPERATIVE VOLTAGE Talking	OPERATIVE VOLTAGE Ringing	For Western Electric System No.	Price Each without Batteries
BBTW-5	5	5 V. Batteries	6-18 V. Transformer	1	....

Models BMC and MBCT—Multiple-service Cabinet Type Surface Steel Grade B For Heavy Service Installations

Both "talking" and "ringing" circuits are fused, so that in event of accidental short circuit, the circuit in trouble will be automatically cut out, without disturbing the other circuit or injuring the battery set.

Model BMC 50-ampere Split-circuit Outfits Using Batteries for Both "Talking" and "Ringing"

Model No.	No. Cells Each Row	OPERATIVE VOLTAGE Talking	OPERATIVE VOLTAGE Ringing	For Western Electric System No.	Price Each without Batteries
BMC-25+23	8	5 V.	3 V.	7, 8, 9 and 10	....
*BMC-25+24	9	5 V.	4 V.	1, 7, 8, 9 and 10	....
*BMC-25+25	10	5 V.	5 V.	1, 7, 8, 9 and 10	....
BMC-25+26	11	5 V.	6 V.	7, 8, 9 and 10	....
*BMC-25+27	12	5 V.	7 V.	1	....
BMC-26+220	10	6 V. Batteries	20 V. Batteries	A, B, C and D C and D when Trunkline Service is Provided	....
BMC-28+220	10	8 V. Batteries	20 V. Batteries	Trunkline Service is Provided	....

*When ordering Model BMC for operation on System No. 1 add letter W to Model No. selected, for example, BMCW-5+4, BMCW-5+5 or BMCW-5+7; as on these sets carbon terminal of "talking" battery is permanently strapped to terminal of "ringing."

Edison Primary Cells

Edison Primary Cells are furnished in capacities ranging from 200 to 1000-ampere hours. The sizes best adapted for telephone work are the 250, 400 and 500-ampere hour types, for average conditions, and the 1000-ampere hour cells for heavy duty service or when it is desirable to bring the renewal periods far apart.

The characteristics of this battery, which make it particularly well suited for telephone service, are: Uniform voltage under continuous discharge; extremely low and constant internal resistance; freedom from depreciation when the circuit is open; long life, with no attention between renewals; indicator panels in plates, which accurately show the approach of exhaustion in ample time to arrange for renewal and suitability for either open circuit (intermittent discharge) or closed circuit (continuous discharge) work.

The initial open circuit voltage of all Edison Primary Cells is 0.95. The closed circuit voltage averages 0.60 to 0.65 depending on the rate at which the cells are discharged.

Use of Cells

Edison Primary Cells are used extensively for the following purposes: Local battery telephone exchange switchboards; telephone train dispatching (talking circuits); intercommunicating telephone systems; small common battery telephone systems; private branch exchange switchboards; pole changers, supervisory lamps and relays; telegraph work (local sounder and main line circuits); railway signals and crossing bells; railway interlocking plants; gas and gasoline engine ignition; low voltage motors; battery dental engines; fire, police and burglar alarms; auxiliary fire alarm systems (closed circuit); mine signals, bell systems and annunciators; program and self-winding clocks; electroplating; highway beacon lighting; chemical analysis and other school work.

Type S-202 Edison Primary Cells

Capacity, 200-ampere Hours

With rectangular heat-resisting glass jar. Size over all, 3 3/8 x 6 x 1 1/2 inches. Inside dimensions, 2 7/8 x 5 1/4 x 9 inches.

Adapted for intercommunicating telephone systems, railway train dispatching systems, stationary gas or gasoline motors, electric clock systems, small motors, etc.

Use 5 cells for stationary gas or gasoline motors having make and break ignition and 8 cells for jump spark.



Type	Description	Price, Each
S-202	Complete Cell	\$3.75
S-200	Renewal	1.50
Separate Parts		
202	Jar	\$1.75
202	Cover	.45
.....	Wing Nuts and Washers	per set .20
S-200	Element, Assembled	1.35
200	Caustic Soda	per can .24
200	Battery Oil	per bottle .09

Type S-206 Edison Primary Cells

Capacity, 200-ampere Hours

With heat-resisting glass jar. Size over all, 5 3/4 x 9 inches. Inside dimensions, 5 x 7 1/2 inches.

Adapted for motor boats running on salt water. Use 5 cells for single cylinder, and 6 cells for multiple cylinder, high speed make and break engines; 8 cells for jump spark.

Cover is fitted with rubber gasket to prevent splashing. Type S-206 supersedes old Type VP cell.

Type	Description	Price, Each
S-206	Complete Cell	\$4.00
S-200	Renewal	1.50
Separate Parts		
206	Jar	\$1.75
206	Cover	.45
206	Rubber Gasket	.25
.....	Wing Nuts and Washers	per set .20
S-200	Element, Assembled	1.35
200	Caustic Soda	per can .24
200	Battery Oil	per bottle .09



Type S-208 Edison Primary Cells

Capacity, 200-ampere Hours

With heat-resisting glass jar. Size over all, 5 3/4 x 9 inches. Inside dimensions of jar only, 5 x 7 1/2 inches.

Adapted for stationary gas or gasoline engines, electric motors, burglar alarms, bell systems, program and self-winding clocks, annunciators, electric time stamps, mine signals, intercommunicating telephone systems, etc. Use 5 cells for stationary engines having jump spark ignition.

Type S-208 supersedes old Type Q cell.



Type	Description	Price, Each
S-208	Complete Cell.....	\$3.75
S-200	" Renewal.....	1.50
Separate Parts		
208	Jar.....	\$1.75
208	Cover.....	.40
...	Wing Nuts and Washers...per set	.20
S-200	Element, Assembled.....	1.35
200	Caustic Soda..... per can	.24
200	Battery Oil.....per bottle	.09

Type S-252 Edison Primary Cells

Capacity, 250 Ampere Hours



With rectangular heat resisting glass jar. Size over all, 3 1/2 x 6 x 12 1/2 inches. Inside dimensions of jar only, 2 7/8 x 5 1/4 x 10 inches.

The Type S-252 Cell is the most perfectly balanced of any of the cells of less than 500 ampere hours capacity. The other low capacity cells were designed to meet certain requirements, with definite specifications as to size, etc. In developing this cell, no restrictions were placed on the laboratory and the result is a cell with the zinc, copper-oxide and electrolyte nicely

proportioned and the element suspended high in the solution where its action is not interfered with by the dense solution at the bottom of the cell.

This cell is recommended for railway telephone dispatching transmitters; intercommunicating telephones; self winding and program clocks; fire and burglar alarm systems; radio "A" batteries, etc.

Initial open circuit voltage, 0.95. Average closed circuit voltage, 0.6 to 0.65 per cell. Maximum recommended continuous current 1 ampere. Maximum recommended intermittent current, 1.5 amperes.

Type	Description	Price Each
S-252	Cell Complete.....	\$4.00
S-250	Renewal Complete.....	1.70
Separate Parts		
252	Jar.....	\$2.00
252	Cover.....	.45
...	Wing Nuts and Washers...per set	.20
S-250	Element.....	1.55
250	Caustic Soda..... per can	.27
250	Oil.....per bottle	.09

Type S-305 Edison Primary Cells

Capacity, 300-ampere Hours

With round heat-resisting glass jar. Size over all, 6 3/4 x 10 1/4 inches. Inside dimensions of jar only, 6 x 8 inches.

Adapted for stationary gas or gasoline engines, burglar alarms, bell systems, program and self-winding clocks, auxiliary and industrial fire alarm systems, etc. Also for telephones, private branch exchanges, switchboards and railway telephone train dispatching at busy way stations.

Type	Description	Price, Each
S-305	Complete Cell.....	\$4.25
S-300	" Renewal.....	1.90
Separate Parts		
305	Jar.....	\$1.90
305	Cover.....	.55
...	Wing Nuts and Washers...per set	.20
S-300	Element, Assembled.....	1.75
300	Caustic Soda..... per can	.30
300	Battery Oil.....per bottle	.09



Type S-401 Edison Primary Cells

Capacity, 400-ampere Hours

With round heat-resisting glass jar. Size over all, 6 3/4 x 12 1/2 inches. Inside dimensions of jar only, 6 x 10 1/2 inches.

Adapted for railway signals, battery motors, intercommunicating telephone circuits, telephone pole changers, telegraph sounder and main line circuits, fire alarms, burglar alarms, program and self-winding clocks, etc.



Type	Description	Price, Each
S-401	Complete Cell.....	\$4.60
S-400	" Renewal.....	2.05
Separate Parts		
401	Jar.....	\$2.10
401	Cover.....	.55
...	Wing Nuts and Washers.....per set	.20
S-400	Element, Assembled.....	1.80
400	Caustic Soda..... per can	.36
400	Battery Oil.....per bottle	.09

Types S-402 and S-404 Edison Primary Cells

Capacity, 400-ampere Hours

These are the popular types in the 400-ampere hour cells. In capacity and operating characteristics they are the same. Therefore, it is only a question of which shape of jar is preferred and while the barrel shaped jar has the greater mechanical strength, the rectangular is particularly well suited for locations where space is limited.

The cells are adapted for telephone transmitter, interrupter and pole-changer operation, private branch exchanges, intercommunicating systems, fire and burglar alarm systems, self-winding and program clock systems, railway signaling, etc.

The maximum recommended continuous current is 2 amperes and the maximum intermittent current is 3 amperes. The initial open circuit voltage is 0.95 and the average closed circuit voltage 0.6 to 0.65 per cell.

Type S-402

With rectangular heat-resisting glass jar. Size over all, 5 1/2 x 6 1/2 x 12 1/4 inches. Inside dimensions of jar only, 5 x 6 x 10 inches.



Type	Description	Price, Each
S-402	Complete Cell.....	\$4.60
S-400	" Renewal.....	2.05
Separate Parts		
402	Jar.....	\$2.20
402	Cover.....	.45
...	Wing Nuts and Washers.....per set	.20
S-400	Element.....	1.80
400	Caustic Soda..... per can	.36
400	Oil.....per bottle	.09

Type S-404

With barrel-shaped heat-resisting glass jar. Size over all, 7 1/8 x 12 1/4 inches. Inside dimensions of jar only, diameter at top, 6 inches; depth, 10 inches.

Type	Description	Price, Each
S-404	Complete Cell.....	\$4.60
S-400	" Renewal.....	2.05
Separate Parts		
404	Jar.....	\$2.10
404	Cover.....	.55
...	Wing Nuts and Washers.....per set	.20
S-400	Element.....	1.80
400	Caustic Soda..... per can	.36
400	Oil.....per bottle	.09



Type S-403 Edison Primary Cells
Capacity, 400-ampere Hours



With cylindrical heat resisting glass jar. Size over all, 7¼x11 inches. Inside dimensions of jar only, 6⅞x8¾ inches.

The Type S-403 is the successor of the old Edison Lalande Type RR Cell which was used extensively for telephone work, gas engine ignition, etc. The older type was converted into the Type S-403 several years ago, by the use of Type 403 covers, which were furnished with the improved style renewals. The S-403 is still furnished for the benefit of custom-

ers who wish to keep their cells uniform, when making additions to or changes in their battery. However, the S-402 and S-404 are the more efficient cells and should be used when an entire new battery is purchased.

The 400-ampere hour cells are suitable for telephone transmitter, interrupter and pole-changer operation, private branch exchanges, intercommunicating systems, fire and burglar alarm systems, self winding and program clock systems, railway signaling, etc.

The maximum recommended continuous current is 2 amperes and the maximum intermittent current is 3 amperes. The initial open circuit voltage is 0.95 and the average closed circuit voltage 0.6 to 0.65 per cell.

Type	Description	Price Each
S-403	Cell Complete.....	\$4.60
S-400	Complete Renewal.....	2.05
Separate Parts		
403	Jar.....	\$2.00
403	Cover.....	.60
...	Wing Nuts and Washers.....per set	.20
S-400	Element.....	1.80
400	Can Caustic Soda.....	.36
400	Bottle Battery Oil.....	.09

Types S-504 and M-504 Edison Primary Cells
Capacity, 500 Ampere Hours

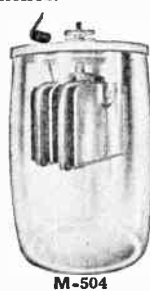
The 500 ampere hour cells are furnished with either multiple or single plate elements. The letter M before the reference number indicates multiple plates, 2 copper-oxide and 3 zinc plates. The letter S indicates single plate, 1 copper-oxide and 2 zinc plates.

The cells are used for telephone and telegraph service; railway signal, fire and burglar alarm systems, highway beacons and in many other fields where a high capacity cell is desirable. For service in which the load frequently goes to 3 amperes, or where the cells are exposed to low temperature, the multiple plate cells are recommended. For service in which the load does not go over 2½ amperes and the cells are protected from the cold the single plate type will fully meet the requirements.

Initial open circuit voltage, 0.95. Average closed circuit voltage, 0.6 to 0.65 per cell. Maximum recommended continuous current for single plate types, 2 amperes; for multiple plate types, 2.5 amperes. Maximum recommended intermittent current for either types, 3 amperes.

Type S-504
Single Plate Element

With barrel-shaped heat-resisting glass jar. Size over all, 7⅞x12¼ inches. Inside dimensions of jar only, 6x10 inches.



Type	Description	Price, Each
S-504	Complete Cell.....	\$4.80
S-500	" Renewal.....	2.15
Separate Parts		
504	Jar.....	\$2.10
504	Cover.....	.55
...	Wing Nuts and Washers.....per set	.20
S-500	Element.....	1.90
500	Caustic Soda.....per can	.42
500	Oil.....per bottle	.09

Type M-504

Renewal and element, add 20 cents. Prices of the other parts, are the same.

Types S-502 and M-502 Edison Primary Cells
Capacity, 500-ampere Hours

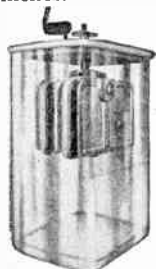
The 500-ampere hour cells are furnished with either multiple or single plate elements. The letter M before the reference number indicates multiple plate, 2 copper-oxide and 3 zinc plates. The letter S indicates single plate, 1 copper-oxide and 2 zinc plates.

The cells are used for telephone and telegraph service; railway signal, fire and burglar alarm systems, highway beacons, and in many other fields where a high capacity cell is desirable.

For service in which the load frequently goes to 3 amperes, or where the cells are exposed to low temperature, the multiple plate cells are recommended. For service in which the load does not go over 2½ amperes and the cells are protected from the cold, the single plate type will fully meet the requirements. Initial open circuit voltage, 0.95. Average closed circuit voltage 0.6 to 0.65 per cell. Maximum recommended continuous current for single plate types, 2 amperes; for multiple plate types, 2.5 amperes. Maximum recommended intermittent current for either types, 3 amperes.

Type S-502
Single Plate Element

With rectangular heat-resisting glass jar. Size over all, 5½x6½x12¼ inches. Inside dimensions of jar only, 5x6x12 inches.



Type	Description	Price, Each
S-502	Complete Cell.....	\$4.80
S-500	" Renewal.....	2.15
Separate Parts		
502	Jar.....	\$2.20
502	Cover.....	.45
...	Wing Nuts and Washers.....per set	.20
S-500	Element.....	1.90
500	Caustic Soda.....per can	.42
500	Oil.....per bottle	.09

For Type M-502 cell, renewal and element, add 20 cents. Prices of the other parts are the same.

Type M-1002 Edison Primary Cells
Capacity, 1000 Ampere Hours

The 1000 ampere hour cells are furnished with either rectangular or cylindrical jars. Type M-1001 is the specification for the cell with the cylindrical jar and M-1002 for the rectangular. The prices are the same.

This size was developed to meet demand for a battery that would operate efficiently in classes of service where heavy discharges are required for long periods. In railway signaling these cells are used for operating remote controlled switch movements, color light signals and track circuits. In the general trade for any heavy duty work or where it is desirable to bring the renewal periods as far apart as possible.

Initial open circuit voltage, 0.95 per cell; the average closed voltage, 0.6 to 0.65. The cells can be discharged continuously up to 4 amperes and intermittently up to 6 amperes.

Type M-1002

With rectangular heat-resisting glass jar. Size over all, 6½x8½x14 inches. Inside dimensions of jar only, 5x6x12¼ inches.

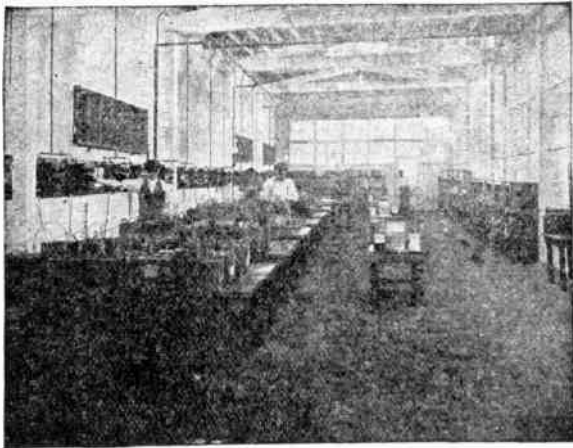


Type	Description	Price, Each
M-1002	Cell Complete.....	\$8.50
M-1000	" Renewal.....	4.25
Separate Parts		
1002	Jar.....	\$4.80
1002	Cover.....	.55
...	Wing Nuts and Washers.....per set	.20
M-1000	Element.....	3.50
1000	Caustic Soda.....per can	.85
1000	Oil.....per bottle	.09

Type M-1001

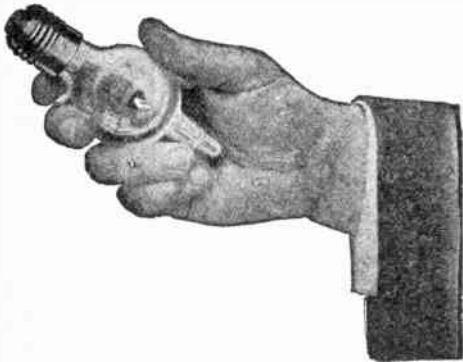
With cylindrical heat-resisting jar. Prices same as for Type M-1002.

Tungar Battery Chargers



A Typical Tungar Service Station

The Tungar Battery Charger is a rectifier for changing alternating to direct current. A complete line of Tungars is manufactured for charging starting and lighting batteries in the private garage, public garage, and battery service station. The 2 and 5-ampere sizes are now being used extensively for charging radio batteries in the home. With the addition of an inexpensive compact device, the B battery attachment, it is possible to use these sizes for charging both the A and B storage batteries. Tungars are also being used for charging batteries for electric clocks, bells, telephones, telegraph instruments, railway signals, fire alarms, fire trucks, inspection lamps, small motors and also for direct operation of motors, magnets and in fact for almost any service where a small amount of direct current is needed.



The Heart of the Tungar

The Tungar has been approved by the National Board of Fire Underwriters.

The essential parts of the Tungar are bulb, transformer, reactance, and the enclosing case with equipment. The Tungar bulb is really what makes the apparatus work.

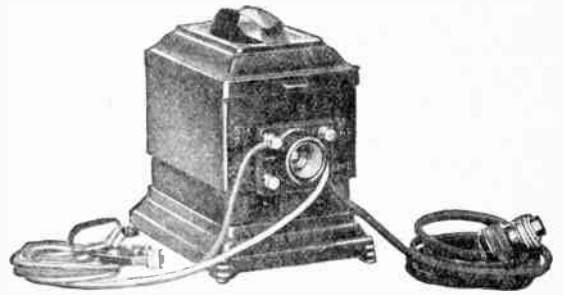
It is a sort of electrical check valve that permits current to flow in but one direction. In appearance it resembles an incandescent lamp and contains a low voltage filament, a graphite anode, and an inert gas-argon. It is a combination of the heated filament and the gas that makes the valve action and allows current to flow only from the anode to the cathode. Thus current can flow through the battery in but one direction and the battery current cannot flow back through the rectifier.

The transformer and reactance are used for adjusting the current and voltage to the values required.

There are many sizes or capacities of Tungars and each size is made for almost any alternating current voltage or frequency that is possible to find in the country.

Tungar Battery Chargers

New Model 2-ampere Tungars



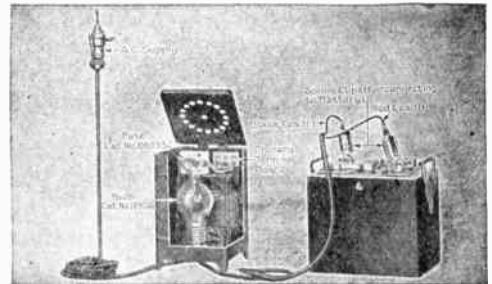
Rear View Showing Terminal Board

The New Model Tungar, recently introduced, will charge a 3-cell radio or auto storage battery at 2 amperes and also 2 or 4-volt A and 24 to 96-volt B radio batteries without an attachment.

Connections for charging the various sizes of batteries are made by changing the position of one wire on the terminal board shown. The charging rate for B batteries is regulated by an ordinary Mazda lamp of the proper size inserted in the socket on the terminal board.

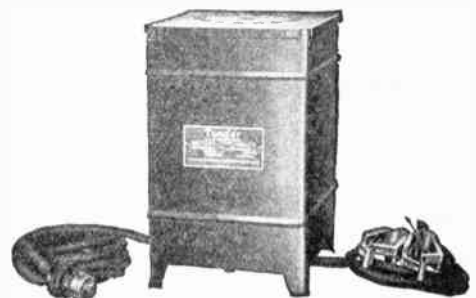
Although 2 amperes is a rather slow rate for a large battery it will charge it just as well as the higher rate. At this charging rate it would be practically impossible to damage a battery by overcharging.

Regular 5-ampere Tungars



Casing Cut Away, Showing Connections

The 5-ampere Tungar has a capacity for charging one 3-cell battery at a 5-ampere rate or a 6-cell at 3 amperes. These are more suitable rates than 6 amperes only, for either a 3 or 6-cell battery for the average car owner.



Exterior View

A 12-volt Dodge or a Maxwell car battery for example should not be charged continuously at much over 3 amperes. This Tungar, therefore, is the one recommended for almost any car owner. It is the ideal battery charger for a private garage, as it can be connected to the battery in a car, connected to a convenient lamp socket, the current turned on and then left practically to take care of itself.

Tungar Battery Chargers



New Model 2-ampere Tungar

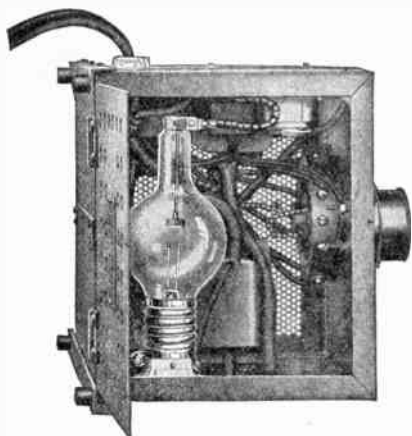
The 2 and the 5-ampere, one-battery Tungars are satisfactory for charging radio batteries. Thousands are being sold for this purpose. By means of a simple attachment, the 5-ampere Tungar can be adapted to charge a 48-volt B battery at 0.1 ampere.



4-battery Size, Exterior View

The 4-battery Tungar will charge from one to four 3-cell batteries at 5 amperes or less. It can be used by car dealers forming new batteries, or by the small public garage which does charging as an incidental part of its business.

The 4-battery Tungar has a large field of usefulness and is a neat, compact and inexpensive little battery charger of 150 watts capacity.

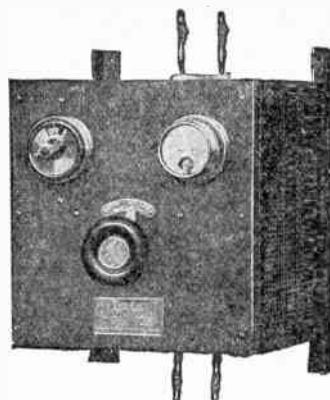


4-battery Size, Top View

The 6-ampere, 75-volt Tungar will charge from one to ten 3-cell batteries at 6 amperes or less. It is most useful for the battery service station, the public garage, or for any place where a number of batteries are to be charged at once. There are hundreds of installations of more than one; in many cases as high as ten; and in some cases 35 of these large Tungars are in one place.

This arrangement affords many advantages over the old way.

Tungar Battery Chargers



10-battery Size

The 12-ampere Tungar will charge from one to ten 3-cell batteries at 12 amperes; or one to twenty 3-cell batteries at 6 amperes.

By wiring part of the batteries in series and part in multiple, 10 can be charged at a 6-ampere rate and 5 at a 12-ampere rate at the same time.

It is useful in large battery stations where it is desirable to charge batteries of large capacity at a higher rate than 6 amperes. When operating at 6 amperes

it will do the work of two 10-battery Tungars.

Any of the sizes can be furnished for operation on either 115 or 230 volts alternating current and on 60, 40-50, 25-30, or 125-133 cycles. A part of the list of standard Tungars is given below.

For small auto and radio batteries the 1-battery, 2-ampere Tungar; for the larger auto and radio batteries the 1-battery, 5-ampere Tungar; for the car dealers and garages giving occasional battery service, the 4-battery Tungar; for the service station, the 6-ampere, 75-volt, or double, 12-ampere, 75-volt Tungar.



12-ampere Size

A-C Voltage; Normal, 115 Volts, Limits 105-125 Complete Home Type Tungars—Part 2

Cat. No.	Amperes	Cycles	Volts	Ship. Wt., Lbs.	Price Each
277153	2/0.1	60	7.5/120	14	\$18.00
279171	2/0.1	40-50	7.5/120	..	22.00
279172	2/0.1	25-30	7.5/120	..	28.00
Not Issued	2/0.1	125-133	7.5/120	..	20.00
219865	5/3	60	7.5/15	24	28.00
221167	5/3	40-50	7.5/15	30	34.00
221168	5/3	25-30	7.5/15	35	38.00
221169	5/3	125-133	7.5/15	30	34.00

Renewal Bulbs for Above

277465	2	Any	7.5/120	1/2	\$4.00
189048	5		7.5/60	3	8.00

Renewal Bulbs for Old Design 2-ampere Tungars

195528	2	Any	7.5/60	1/2	\$4.00
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Radio B Battery Attachments

†248237	{ 48-volt, 0.1-amp. } { 24 " 0.2 "		Any 2	\$3.00
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**Complete Stationary Tungars—Part 1

193191	5	60	7.5/30	58	\$80.00
222847	5	40-50	7.5/30	72	100.00
222849	5	25-30	7.5/30	84	110.00
222850	5	125-133	7.5/30	58	90.00
179492	6	60	7.5/75	81	130.00
198648	6	40-50	7.5/75	91	140.00
199545	6	25-30	7.5/75	105	155.00
206794	6	125-133	7.5/75	81	140.00
*206795	6	60	7.5/75	105	155.00
*206796	6	40-50	7.5/75	125	175.00
*221514	6-12	60	7.5/75	120	220.00
*235190	6-12	40-50	7.5/75	140	240.00
*235191	6-12	25-30	7.5/75	160	265.00

Renewal Bulbs for Stationary Type Tungars

189049	6	Any	7.5/75	3	\$8.00
189048	5	"	7.5/30	3	8.00

*For use on 230 volts A. C. **One extra bulb included with stationary type Tungar. †For use with the 5-ampere and old design 2-ampere Tungars.

Fansteel Balkite Battery Chargers

For Charging Radio A Batteries



Fansteel Balkite Battery Charger is a noiseless, fool-proof, efficient and practically indestructible battery charger.

Especially designed for charging Radio A batteries in the home.

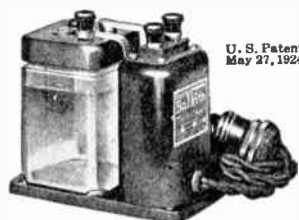
This charger cannot deteriorate through use or disuse. It is entirely noiseless in operation. Has no moving or fragile parts to wear out or break. There are no delicate vibrators or bulbs to replace. There is nothing to adjust. Requires no attention except an occasional filling with distilled water.

It can be used while the radio set is in operation without danger of burning out tubes. This charger cannot discharge the battery. It cannot short circuit. Delivers a taper charge which decreases as the battery becomes charged, so that damage by overcharging is impossible. It is unaffected by fluctuations in line voltage or by extreme temperatures. It will charge a completely dead battery.

The Fansteel Balkite Battery Charger will charge the ordinary 6-volt battery from the ordinary 110-120 A. C., 60-cycle current. Special model for 50 cycles. It is economical, consuming about the equivalent of a 60-watt lamp. Furnished complete with all necessary leads, etc., ready for use. This charger may also be used to charge automobile batteries, and, without any added attachments, radio B batteries, of the lead type, in multiples of 6 cells.

Price, Charger Complete.....each **\$19.50**
 " Special Adapter for Charging 2 and 4-volt Batteries.....each **1.50**

**Balkite Trickle Chargers
 For the A Circuit**



This low-rate charger is especially adapted to use with sets of relatively low A current requirements—any dry cell set and storage battery sets having a small number of tubes. Owners of dry cell sets can now make a compact and economical installation with a Balkite Trickle Charger and a low capacity storage battery of the type being offered by leading battery manufacturers.

Charges both 4 and 6-volt radio A batteries at about 0.5 amperes. Usable in 3 ways: (1) As a regular charger with a low capacity storage battery for sets now using dry cells. (2) With storage battery sets of few tubes. Furnishes more current than used by 6 dry cell or 2 storage battery tubes, so that if used during operation it need be used at no other time. (3) As a trickle or continuous charger for storage battery sets of as many as 8 tubes.

Size 5½ inches long, 2¾ inches wide, 5 inches high. Operates from 110-120 A.C. 60-cycle current.

Low capacity batteries especially adapted for use with this charger with sets now using dry cells are being offered by practically all leading battery manufacturers.

Reputable manufacturers are also offering for use with this charger special switches which turn on Balkite B and turn off the charger when set is turned on. This makes the current supply for both A and B circuits automatic in operation.

Priceeach **\$10.00**

Titan Storage Batteries

For Radio Use



The Titan Storage Battery for wireless requirements insures reliable and constant direct current. Necessary for radio apparatus such as vacuum tube detectors, amplifiers, CW transmitting sets, etc.

Modern developments in radio telegraphy and telephony require a dependable source of low voltage, direct current energy at moderate expense, and with a certainty of continuous operation. To supply this need the Titan TWL in 40-ampere hour capacity and Titan TWL-N in sizes over 40-ampere hour capacity, fulfill all requirements.

A Titan Battery is good for from four to six years of service. A single charge of the battery will give service for a long period of time, depending on the current used.

Titan TWL and TWL-N Batteries are made with extra heavy plates, heavy Titan treated separators, sealed in high grade hard rubber jars and contained in a stout case made of hard wood. Will stand up under the most severe conditions on both land and water. Has aluminum nameplate.

Type TWL—40-ampere Hour

Hours continuous discharge: at 1 ampere, 40 hours; at 3 amperes, 8 hours; at 7½ amperes, 2½ hours.

Volts	Length Inches	Width Inches	Height Inches	Price Each
4	3¾	7¾	9¼	\$11.60
6	5¾	7¾	9¼	16.30
8	6¾	7¾	9¼	23.20

Type TWL-N—60-ampere Hour

Hours continuous discharge: at 1 ampere, 60 hours; at 3 amperes, 14.5 hours; at 7½ amperes, 4.9 hours.

Volts	Length Inches	Width Inches	Height Inches	Price Each
4	4¾	7¼	9⅞	\$14.80
6	6¾	7¼	9⅞	21.20
8	8¾	7¼	9⅞	30.20

Type TWL-N—90-ampere Hour

Hours continuous discharge: at 1 ampere, 95 hours; at 3 amperes, 28 hours; at 7½ amperes, 8 hours.

Volts	Length Inches	Width Inches	Height Inches	Price Each
4	6¼	7¼	9⅞	\$19.40
6	8¾	7¼	9⅞	26.80
8	11¾	7¼	9⅞	38.50

Type TWL-N—120-ampere Hour

Hours continuous discharge: at 1 ampere, 130 hours; at 3 amperes, 38 hours; at 7½ amperes, 11.5 hours.

Volts	Length Inches	Width Inches	Height Inches	Price Each
4	8	7¼	9⅞	\$24.20
6	11¾	7¼	9⅞	33.20
8	14¾	7¼	9⅞	46.55

Type TWL-N—150-ampere Hour

Hours continuous discharge: at 1 ampere, 165 hours; at 3 amperes, 48 hours; at 7½ amperes, 13¾ hours.

Volts	Length Inches	Width Inches	Height Inches	Price Each
4	8¾	7¼	9⅞	\$29.70
6	12¾	7¼	9⅞	39.60
8	16¾	7¼	9⅞	58.00

Samson Batteries



The Samson Battery is a Sal Ammoniac primary wet cell, normal voltage, when fresh, approximately 1½ volts. The positive element is a carbon stick with a bag assembly, containing the depolarizing element. The negative element is a cylindrical zinc.

No. 2 Batteries

For open circuit systems with infrequent or light intermittent operating discharge.

Description	Std. Pkg.	Price Each
No. 2 Battery Complete	50	\$3.20
Carbon with Star Fender	50	1.70
Zinc	100	.80
Sal Ammoniac, 5 Ounces	100	.30
Cover	100	.50
Jar, 6½x4¾x4¾ Inches	50	.60
Star Fenders	100	.16

No. 3 Batteries

For open circuit systems with frequent or heavy intermittent operating discharge.

Description	Std. Pkg.	Price Each
No. 3 Battery Complete	25	\$4.50
Carbon	50	2.10
Zinc	50	1.00
Sal Ammoniac, 9 Ounces	50	.50
Cover	25	.80
Jar, 7x5¼x5¼ Inches	25	1.00

No. 4 Batteries

For closed circuit systems. Where supervisory not over 20 mil-amperes and operating discharge infrequent.

Description	Std. Pkg.	Price Each
No. 4 Battery Complete	25	\$4.70
Carbon	50	2.40
Zinc	50	1.00
Sal Ammoniac, 9 Ounces	50	.50
Cover	25	.80
Jar, 7x5¼x5¼ Inches	25	1.00

Gravity Batteries



Description	Price Each
Cell Complete, Less Blue Vitriol, 6x8 In.	\$2.80
Glass Jar	1.20
Zinc	1.30
Copper	.30

Blue Vitriol

Prices quoted upon application.

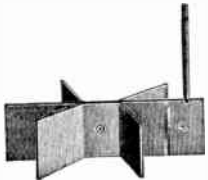
Crowfoot Battery Zincs

Cat. No.	Size Jar Inches	Weight Pounds	Price Each
1	6x8	3	\$1.30
2	6x8	2¾	1.20
3	6x8	3½	1.60
4	5x7	1¾	1.00



Battery Coppers

Made of brush copper, No. 32 B. & S. gauge, 13 inches of No. 14 rubber covered wire for connections.



Cat. No.	Size Inches	Size Jar Inches	Price Each
16	2x6	6x8	\$.30
16½	2x5	5x7	.20

No. 155 Fahnestock Battery Connectors



Slip this connector over any type of screw binding post. Broken and loose connections are thus eliminated. Flexible wire is soldered to spring clip.

Will not corrode. Price, No. 155.....each \$0.5

Bethlehem Spark Plugs

1-piece

Mica Insulation 2-piece



No. 07

No. 08

No. 61

No. 07, 7/8-inch-18

Standard for Marmon, Haynes, Durant and many cars taking 7/8-inch hex. SAE equipment on International Trucks and Tractors. Price, No. 07.....each .75

No. 08, 1/2-inch Long

With 7/8-inch hex. For Reo and other cars using plugs this size. Price, No. 08.....each .75

No. 61, 1/2-inch Std.
With 5/8-inch hex. For Henderson Motocycles, 1912 and others using this size, and marine motors. Price, No. 61.....each 1.00

No. 62, 7/8-inch-18

With 7/8-inch hex. Special for Harley-Davidson and Indian Motocycles. Price, No. 62.....each 1.00

No. 63, Metric

With 5/8-inch hex. Special for Excelsior, Reading, Standard and Henderson Motorcycles. Price, No. 63.....each 1.00

No. 101, 7/8-inch-18

Long, with extension below threads, 7/8-inch hex. Special for Holmes and air cooled engines. Price, No. 101.....each 1.00



No. 019

No. 027

No. 019, 7/8-inch Long
With 7/8-inch hex. For Nash, Oldsmobile, Winton and other cars using 7/8-inch long plugs. Price, No. 019.....each .75

No. 027, 7/8-inch-18 With 1 1/8-inch Hex.

Exclusive equipment on Packard. Used on Cadillac, Pierce Arrow, Paige, Peerless, Chalmers and prior models of Hudson. Price, No. 027.....each .75

Tractor Plugs



No. 88

No. 92

No. 88, 1/2-inch Extra Long

For Hart-Parr, Waterloo Boy Tractors, old model Metz and oil field engines. Price, No. 88.....each 1.50

No. 92, 3/4-inch Long

Special DeLuxe type. Exclusive on International Harvester Tractors and some model trucks. Very high grade special built spark plug, different than regular mica construction.

Used also on Hart-Parr, Case and others. Also made in 3/4-inch regular (No. 91), 7/8-inch-18 standard (No. 94), 7/8-inch 18 long (No. 95). Price, No. 92.....each 2.25



No. 029

No. 029, 7/8-inch Special Length

With 1 1/8-inch hex. For Dodge, also latest model Continental motor. Price, No. 029.....each .75

Extra Mica Cores

Specify number and type of plug when ordering extra cores for spark plugs. Prices upon application.

Bethlehem Spark Plugs

Two-piece



No. 8



Extra Core

No. 8, 1/2-inch Extension

New type adopted as standard equipment for all Ford engines in tractor, truck and car. Same as Genuine Ford Part No. 5200.

Price, No. 8.....each .60

Extra Cores For No. 8

Same as Genuine Ford Part No. 5202.

Price.....each .35

Two-piece



No. 27



No. 29

No. 27, 7/8-inch-18

With long body, 1 1/8-inch hex. For Chandler, Hoyt, Moreland, old model White, Titan Trucks, Robinson Fire Trucks.

Price, No. 27.....each .75

No. 29, 7/8-inch-18

With 1 1/8-inch hex. Special for Buick. Fits all models Buick cars and Chevrolet.

Price, No. 29.....each .75



No. 6



No. 10

No. 6, 1/2-inch Std.

With 5/16-inch hex., conical core, for prior model of Studebaker and other cars requiring this size plug.

Price, No. 6.....each .75

No. 10, Metric 1-inch Hex.

Equipment on Packard, White trucks, Indian motorcycles. Used on Hudson, Essex, Pierce Arrow 1915, Peerless 1915. Special for motorcycles and foreign cars.

Price, No. 10.....each .75



No. 2

No. 2, 7/8-inch-18

With 5/16-inch hex. New type adopted by Studebaker. Exclusive equipment on Studebaker Light Six. An exceptionally fine spark plug and on account of the small hex. and particular design will give excellent service on many other standard makes of cars.

Price, No. 2.....each .75

Porcelain Cores



Extra porcelain cores for all type two-piece plugs. Specify when ordering exact type and size of spark plug

Price, for Nos. 1 and 8, ea .35

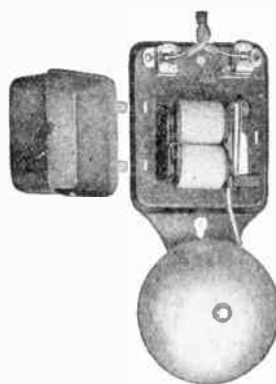
" All Other Cores " .40

No. 1, 1/2-inch

5/16-inch Hex., petticoat insulator and bent ground wire. Old Ford Special replaced by No. 8.

Edwards Iron Box Bells and Buzzers

Schedule 2



Class C Bell

Fahnestock clips are used on Edwards Bells and insure quick and secure connection of line wires. Striker in underneath gong and protected from injury. Gong is riveted to base to prevent loosening. The base and supports for gong, magnets and armature are formed from one piece of sheet steel, zinc-plated and finished in black enamel. The armature is pivoted at center of balance. Cover is fastened at three points making movement bug and dust-proof. Connections are solderless. Gongs are nickel-plated, base and cover black enameled.

Cadet, Class B—2 Ohms

Cat. No.	Size In.	Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Price Each
710	2 1/2	100	\$1.04	715	Buzzer	100	\$1.02
712	3	100	1.18	Fancy Gongs	50		1.83
714	4	50	1.53				

Dixie, Class C—2 Ohms

Same as the Cadet except the Dixie is not adjustable.

Cat. No.	Size In.	Std. Pkg.	Price Each
720	2 1/2	100	\$.92
725	Buzzer	100	.89



Iron Box Buzzer

No. 730 Edwards Buz-a-bels

Schedule E

A combination bell and buzzer on one frame, under one cover.



One binding post is for the common battery supply, the other two being, one for the buzzer and one for the bell.

The cost is half as much as a single bell or buzzer of quality.

Operates equally well on battery or transformer.

Tested to 40000 operations on 15 volts A. C. which is more than 15 years of actual experience.

Standard package, 100.

Price, No. 730.....each \$1.20

No. 222 Edwards D. C. Buzzers

6 to 110 Volts D. C.

Schedule E



Constructed on the vibrating reed principle to meet the demand for a heavy duty, adjustable D. C. buzzer. Carbon contacts are used which will outwear any metal, are easily renewable and cannot oxidize, stick or corrode.

The springs are best grade phosphor-bronze and there is a double locking adjustment.

Finish is black enamel. Size three inches square.

Cat. No.	Description	Volts	Std. Pkg.	Price Each
222	D. C. Buzzer	6	6	\$7.15
222	" " "	110	6	15.40

Assortment of 6 to make one standard package.

No. 13 Lungen Bells

3 Ohms

Schedule E

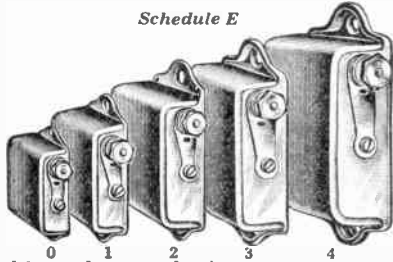


Made of brass heavily nickeled; ribbed edges, spring cover. Cast base, screw and locknut adjustment. Price for special finish upon request.

Size In.	Std. Pkg.	Price Each	Size In.	Std. Pkg.	Price Each
1	6	\$2.00	4	6	\$2.05
1 3/4	6	1.80	5	1	8.40
2 1/2	12	1.40	6	1	9.45
3	12	1.55			

No. 15 Lungen Buzzers

Schedule E



Cover and base sheet steel; pivoted armature; ribbed edge spring cover.

Size No.	Dimens. Inches	Std. Pkg.	Price Each	Size No.	Dimens. Inches	Std. Pkg.	Price Each
0	1 5/8 x 1 1/2 x 1 1/2	25	\$1.85	3	3 x 2 x 7/8	25	\$1.95
1	2 1/8 x 1 5/8 x 5/8	25	1.45	4	3 1/2 x 2 1/4 x 1 1/8	25	2.20
2	2 9/16 x 1 3/4 x 3/4	25	1.70				

No. 16 Edwards Flush Concealed Buzzers

Schedule T



Consists of the Size 1 Lungen buzzer mounted on back of a switch plate which fits a standard switch box.

When installed, the only part shown to view is the plain plate.

Price does not include switch box.

Standard finish, brush brass or nickel plate.

Price, No. 16 each \$4.00

No. 160 Edwards Loud Signal Buzzers

Schedule T

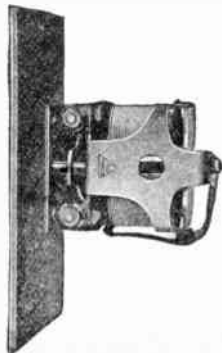
Consists of the movement of the No. 156 monitor bell mounted on a bracket so that hammer strikes against the solid brass plate. This produces a loud sound distinctly different from a bell or buzzer and is particularly adaptable for alarm systems where a distinctive sound is desired.

It is made to fit a standard switch box.

Price does not include switch box.

Standard finish, brush brass or nickel plate.

Price, No. 160 each \$5.50



No. 136 Edwards Surface Return-call Push and Bell

Schedule T



Return-call push and bell for use with the No. 10 return-call annunciator.

This consists of a return-call push arrangement and a bell mounted in a neat compact iron casing.

Standard finish rubberoid black, no extra charge for oxidized copper.

Price, No. 136 each \$4.50

No. 137 Edwards Flush Return-call Push and Buzzer

Schedule T

This consists of the Size 1 Lungen buzzer and the No. 260RC (return-call) push button mounted on the back of a standard switch plate for use with the No. 10 return-call annunciator.

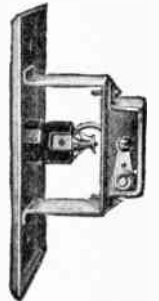
The whole device fits the standard switch box.

Both push and buzzer are thoroughly insulated from the plate.

Price does not include switch box.

Standard finish, brush brass or nickel plate.

Price, No. 137 each \$4.50



No. 156 Edwards Monitor Bells

3 Ohms

Schedule E



This bell is entirely self-contained. The hammer and rod act in a straight line striking the inside of the gong. There are, therefore, no breaks in the symmetry of the case or gong. This makes a very attractive looking bell in addition to being weather, bug and dustproof.

Springs are the best possible grade phosphor bronze. Contacts are pure, hard-drawn silver. Finish, black base nickel gong.

Cat. No.	Description	Size In.	Std. Pkg.	Price Each
156	Monitor Bell	3	20	\$1.80

No. 750 Bronx Watchcase Buzzers

Schedule Q

A brass case, heavily nickel plated; phosphor-bronze springs, silver-contacts.

Cat. No.	Height Inches	Diam. In.-hes	Std. Pkg.	Price Each
750	3/8	1 3/4	20	\$1.25



No. 26 Constant Ringing Drops

Schedule E

Used on main line. When circuits close, lever drops and bell rings. Nickel finish.

Cat. No.	Description	Std. Pkg.	Price Each
26B	For Battery	12	\$2.70
26M	" Magneto	6	3.92
26X	Indicating Buzzer	6	3.92



No. 182 Edwards Street Car Buzzers

3 Ohms

Schedule T

A distinct departure from the usual form of buzzer. Instead of depending on the vibrations of an armature for sound the complete mechanism of the No. 181 bell is used, the hammer rod striking the inside of the protecting case. It produces a character of sound distinctly audible above all usual street car noises. Mounted on a gasket, it is safe from unauthorized adjustment and is waterproof. Finish, black enamel.



Price, No. 182, Size 3 Inches.....each \$3.00

No. 181 Edwards Street Car Bells

3 Ohms

Schedule T

Similar in appearance to No. 156 but designed specially for street car use. The same efficient mechanism is used.

The magnets are impregnated with a special insulating, moisture-repelling compound.

The outside of the base is spotted to indicate where the hammer strikes the gong. By installing with this spot downward, using the rubber gasket supplied, the bell is absolutely waterproof. Maximum operation is also obtained by this method of installation.

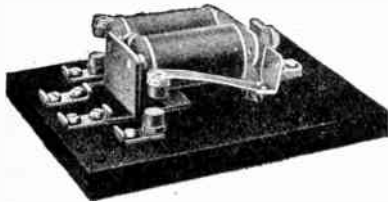
Finish, black base, nickel gong.

Price, No. 181, Size 3 Inches.....each \$3.00

No. 241 Edwards Relays

For Direct Current Only

Schedule T



Open or closed circuit.

Multiple carbon contacts with a capacity of up to 15 amperes.

Magnets may be wound for operation on 6 to 250 volts D. C.

Each relay on

slate base mounted in iron box with hinged cover and knock-outs.

Price, No. 241.....each \$35.00

No. 242 Edwards Relays

For Alternating Current Only

Schedule T

Open or closed circuit.

Multiple carbon contacts with a capacity up to 15 amperes.

Magnets have laminated core and may be wound for operation on 6 to 250 volts A. C.

Each relay on slate base mounted in iron box with hinged cover and knockouts.

Price, No. 242.....each \$40.00



No. 17 Edwards Economy Skeleton Bells

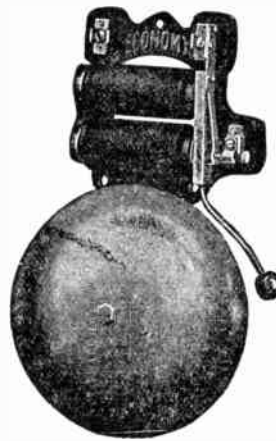
Schedule E

Fully insulated, loud ringing bell for all ordinary purposes. The outstanding feature of the Economy is the intensified stroke armature.

Size In.	Std. Pkg.	Price Each	Size In.	Std. Pkg.	Price Each
3	8	\$5.55	8	6	\$14.37
4	8	6.58	10	4	21.34
5	8	7.80	12	4	27.50
6	12	8.82			

With Cow Gongs

Size In.	Std. Pkg.	Price Each
2 x3	1	\$8.82
3 1/8 x5	1	14.14
4 1/4 x6	1	32.92



No. 21 Edwards Vigilant D. C. Single Stroke Bells

Schedule T

Battery or lighting voltage. A sturdy and reliable bell for fire alarm systems, warehouses, offices, and general signal work. Standard resistance 6 ohms. Made in three types as follows:

No. 21.—As shown and described above. Non-conduit.

No. 21C.—For concealed or surface conduit. A separable conduit attachment which can be installed with the conduit and the bell attachment thereon when the wires are pulled through. The attachment has inside bosses so it is possible to come in from any direction. This makes an ideal through box. Drilled for 1/2 or 3/4 inch conduit as specified. Finish black enamel.

No. 21 F. P.—Similar to No. 21C. For closed circuit fire alarm systems. Prices on application.



No. 21

Size In.	PRICE, EACH			Add for Conduit Fitting
	Up to 30 V.	110 Volts	220 Volts	
*4	\$18.30	\$26.55	\$34.75	\$10.00
*5	24.75	36.85	48.95	10.00
6	26.75	39.50	52.20	10.00
8	33.25	48.15	63.10	10.00
10	54.90	72.50	90.80	10.00
12	70.85	88.45	106.75	10.00

*4-inch and 5-inch bells are made for direct current only and are an adaptation of the Recti Bell.

No. 22 Edwards A. C. Single Stroke Bells

Schedule T

A new construction using a small fraction of the current required for solenoid and other types of A. C. single stroke bells. Laminated magnets.

Size In.	6 to 48 Volts		Price Each
	Price Each	Size In.	
6	\$26.75	10	\$54.90
8	33.25	12	70.85
110 Volts			
6	\$39.50	10	\$72.50
8	48.15	12	88.45
220 Volts			
6	\$52.20	10	\$90.80
8	63.10	12	106.75



In ordering state if for concealed or surface conduit.

Add \$10.00 each to list for conduit fitting.

No. 510 Edwards Transformer Bells and Buzzers

Schedule E

Standard Winding, 6 to 24 Volts A. C., 60 Cycles
Can be Furnished to Operate at 25 to 40 Cycles



Bell



Buzzer

Carbon contacts are used, cut from standard 10M. headlight rod.

Two-wire Entrances are provided: one at the top for surface wiring and one at the back for concealed wiring. Both of these are sealed with insulating cement which may be knocked out of those to be used.

These bells, if desired will operate equally well on 6 to 24 volts battery.

The transformer is an inexpensive device and should be of ample capacity to care for the bells and the loss in secondary wiring. A safe rule is to allow 6 to 8 watts per bell for sizes 5 to 12 inches and 3 watts for 3 and 4-inch bells.

Conduit Type bell is so made that the bell attachment may be installed with the conduit and the bell placed thereon after wires are pulled through. The conduit attachment is drilled top and bottom for 1/2 or 3/4-inch conduit as specified. A pipe plug is furnished for use when bell is used on end of line.

Non-conduit Type

For Use on Transformer, 6-24 Volts

Size Inches	*Std. Pkg.	PRICE, EACH			
		Non-weather-proof	Without Grid	WEATHERPROOF With Part Grid	With Full Grid
3	6	\$7.55	\$10.30	\$17.05	\$10.30
4	6	8.05	10.85	17.60	18.10
5	6	17.20	19.95	26.95	27.45
6	6	19.10	21.85	29.35	29.85
8	6	23.70	26.50	34.50	35.25
10	3	42.35	45.10	54.10	55.10
12	3	48.55	51.30	61.80	63.30
Buzzer	6	7.15	9.95	.....	.....

For Use Direct on 110 Volts A. C.

3	6	\$15.80	\$18.55	\$25.30	\$18.55
4	6	16.30	18.80	25.55	26.05
5	6	29.35	32.10	39.10	39.60
6	6	31.80	34.60	42.10	42.60
8	6	38.65	41.45	49.45	50.20
10	3	60.30	63.10	72.10	73.10
12	3	66.50	69.25	79.75	81.25
Buzzer	6	15.40	18.20	.....	.....

Conduit Type

For Use on Transformer, 6-24 Volts

Size Inches	*Std. Pkg.	PRICE, EACH			
		Non-weather-proof	Without Grid	WEATHERPROOF With Part Grid	With Full Grid
3	6	\$16.00	\$18.80	\$25.55	\$18.80
4	6	16.55	19.30	26.05	26.55
5	6	27.30	30.10	37.10	37.60
6	6	29.17	31.95	39.45	39.95
8	6	36.05	38.80	46.80	47.55
10	3	54.70	57.45	66.45	67.45
12	3	63.90	66.65	77.15	78.65
Buzzer	6	15.65	18.40	.....	.....

For Use Direct on 110 Volts A. C.

3	6	\$24.25	\$27.00	\$33.75	\$27.00
4	6	24.75	27.50	34.25	34.75
5	6	39.40	42.20	49.20	49.70
6	6	41.90	44.65	52.15	52.65
8	6	51.05	53.80	61.80	62.55
10	3	72.65	75.40	84.40	85.40
12	3	81.85	84.60	95.10	96.60
Buzzer	6	23.85	26.60	.....	.....

*NOTE.—Standard Package may be made up of all types of the same size, or an assortment of 10 of all types, all sizes.

Edwards Recti Vibrating Bells

Constructed for use where exceptionally rugged, clear ringing, weather-proof (or protected bells) are desired.

They are furnished in sizes from three to eighteen inches in various styles of all voltages.

CASE.—Is of iron, heavily japanned, cover is lined with an oil soaked gasket, allowing no moisture to penetrate to mechanism.

MAGNETS.—The scientific proportions of the magnets obtain the maximum strength with the greatest battery economy. Magnets are impregnated with a moisture repelling, insulating compound.

SPRINGS.—Are of the highest grade of phosphor bronze.

CONTACTS.—Carbon contacts made of standard 10M carbon rod are furnished on sizes 5 inches and larger. They will not rust, corrode, fuse or stick together and have a large clean surface insuring a positive contact.

SILVER CONTACTS.—Are furnished on 3 and 4 inch bells. For carbon contacts in these sizes, add to list 50 cents.

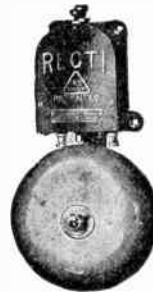
HAMMER ROD.—Is of solid brass and direct acting.

OPERATION.—The hammer rod is of the plunger type, works in a direct line—hence the opening in the case, through which the rod passes, is but a trifle larger than the rod, making it positively weather, dust and insect proof.

This design also makes it possible to support the hammer rod at two points so there is no strain on the pivots, which is a deviation from the usual method of having the pivots bear the strain of the hammer, hammer rod and ball.

Nos. 100 and 219 Edwards Recti Vibrating Bells

Schedule 8



No. 100



No. 219



No. 100U

Nos. 100 and 100 A.C. specially adapted for fire alarms, factories, signal systems, mine or marine use. Mechanism entirely insulated from case. This bell can be furnished for automobile use the gong being reversed so as not to hold mud, dirt, etc., and when so constructed is known as 100 A. Price the same as No. 100 and made for automobile voltages.

Nos. 100U and 100U A.C. Approved by the National Board of Fire Underwriters for sprinkler systems and 250 volts or less. Flexible wire leads instead of binding posts.

Nos. 219, 219 A.C., 219U and 219U A.C. underdome type same as No. 100 only gong is mounted over case and hammer strikes inside. 6 to 12 inch sizes.

Size	*Std. Ln. Pkg.	No. Dry Cells	Ohms Resistance	Amp. Per Bell	PRICE, EACH				
					Nos. 100, 100U, 100A, 219, 219U		Nos. 100A.C.		
					For Battery	110V. D. C.	220V. D. C.	100V. A.C.	
3	6	3	2	.35	\$8.85	\$17.90	\$25.80	.....	.....
4	6	3	2	.35	10.85	19.10	27.30	\$17.45	\$25.65
5	6	4	4	.30	15.80	27.90	40.00	28.95	41.05
6	6	4	4	.30	17.80	30.50	43.25	31.80	44.55
8	4	4	4	.30	22.00	37.00	51.90	37.35	52.30
10	2	6	6	.20	37.00	54.90	72.90	60.00	77.95
12	2	6	6	.20	49.90	67.85	85.80	80.25	98.25
14	2	8	10	.12	61.60	82.50	103.50	.....	.....
16	1	8	10	.12	129.30	159.20	189.10	.....	.....
18	1	8	10	.12	146.95	176.90	206.80	.....	.....

*Standard package may be made of all types Recti in the same sizes or an assortment of ten Recti all types, all sizes.

No. 1001 Edwards Conduit Type Recti Bells



Schedule E

Nos 1001 and 1001 A.C. conduit type. A detachable conduit fitting enclosing binding post is secured to case. Bells may be attached at any time by machine screws furnished. Pipe plug furnished with each bell so one opening may be closed when bell is used on end of line. Drilled for 1/2-inch conduit, or 3/4-inch if specified. Approved by the National Board of Fire Underwriters.

Size In.	*Std. Pkg.	No. Dry Cells	Ohms Resistance per Bell	Amp. per Bell	PRICE, EACH				
					For Battery	No. 1001 110 V. D. C. 500 Ohms	220 V. D. C. 2000 Ohms	No. 1001 A. C. 110 V. A. C. 220 V. A. C.	
4	6	3	2	.35	\$20.85	\$29.10	\$37.30	\$27.45	\$35.65
5	6	4	4	.30	25.80	37.90	50.00	38.95	51.05
6	6	4	4	.30	27.80	40.50	53.25	41.80	54.55
8	4	4	4	.30	32.00	47.00	61.90	47.35	62.30
10	2	6	6	.20	47.00	64.90	82.90	70.00	87.95
12	2	6	6	.20	59.90	77.85	95.80	90.25	108.25

*Standard Package may be made up of all types Recti in the same sizes or an assortment of ten Recti all types, all sizes.

No. 217 Edwards High Voltage Type Recti Bells

Schedule E

No. 217 for direct current up to 600 volts. Slate base, long quick break. Operates with gong up only.



Size In.	*Std. Pkg.	PRICE, EACH		
		Up to 299 Volts D. C.	300 to 499 Volts D. C.	500 to 600 Volts D. C.
6	6	\$49.80	\$62.50	\$68.30
8	6	59.70	69.15	73.25
10	2	80.15	84.75	91.35
12	2	92.20	102.05	107.00
14	2	115.20	125.90	130.85
16	1	177.75	188.60	193.40
18	1	212.30	222.95	227.50

*Standard Package may be made up of all types Recti in the same size or an assortment of ten Recti all types, all sizes.

No. 220 Edwards Recti Buzzers

Schedule E

For D.C. only. No. 220A same movement as 3-inch bell; No. 220B, as 6-inch bell.



Cat. No.	Std. Pkg.	Dry Cells	Amp. Ohms Each	PRICE, EACH		
				Battery	110 V. D. C. 500 Ohms	220 V. D. C. 2000 Ohms
220A	6	3	2 35	\$7.90	\$10.45	\$16.75
220B	6	4	4 30	11.90	17.95	24.10

Edwards Protective Grids

Schedule E

Add to price of bell used.



Part Grid

Size In.	PRICE, EACH	
	Part Grid	Full Grid
4	\$5.50	\$6.00
6	6.50	7.00
8	7.75	8.50
10	9.00	10.00
12	10.50	12.00
14	24.70	34.50
16	35.00	45.00
18	45.00	56.00



Full Grid

Edwards Riot Bells

For Operation on Battery and 110 Volts D. C. or A. C.

Schedule T

The motor driven bell is an entirely new principle which has found quick recognition for fire departments, ambulances, burglar alarms and extension systems on street corners to warn of the approach of fire apparatus. A quick responding bell—that is, a loud, continuous volume of sound is available immediately upon pushing the button. The mechanism does not have to gather speed before it rings and there is no detraction from driving the vehicle as is the case with hand operated gongs.

It is absolutely weatherproof and especially constructed for outdoor service.

No. 300



Cat. No.	Size In.	PRICE, EACH	
		6 Volts Battery	110 Volts D.C. or A.C.
300	10	\$123.50	\$153.40
300	12	127.20	157.10
300	14	134.70	164.60
300	15	149.70	179.60
300	16	157.10	187.10
300	18	172.10	202.00

No. 310



Cat. No.	Size In.	PRICE, EACH	
		6 Volts Battery	110 Volts D.C. or A.C.
310	12	\$134.70	\$164.60
310	14	149.70	179.60
310	15	157.10	187.10
310	16	164.60	194.60
310	18	187.10	208.00

No. 320 Liberty Type 6 Volts Battery

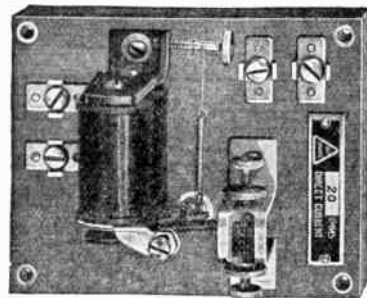
No. 320 has the same mechanism as Nos. 300 and 310 but is designed for use on fire engines, etc., and has a gong of the regular church bell type.

Price does not include hanging support but this can be furnished if exact details are given.

Cat. No.	Description	Size In.	Price Each
320	Riot Bell	10	\$134.70
320	Attachment Only	..	104.80

No. 1238 Dixie Relays

Schedule T

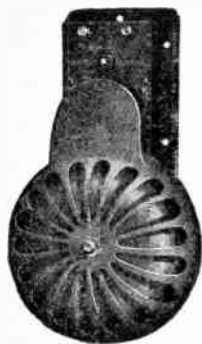


A new relay combining the necessary features of the pony type. The adjustment and length of break is plainly visible.

Price, No. 1238each \$6.00

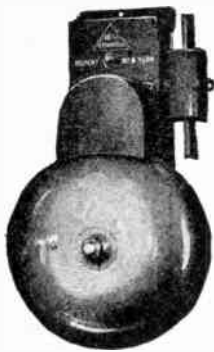
Edwards Electro-mechanical Gongs

Schedule T



No. 1330

Battery or 110 Volts D.C., Open or Closed Circuit
110 Volts A.C. Open Circuit Only



No. 1331

Edwards Single Stroke Solenoid Bells

No. 23 for D.C., No. 24 for A.C.

Schedule E



This bell is particularly efficient for all types of signalling and fire alarm systems. The only moving part is the plunger which is drawn up through the solenoid coil and strikes a sharp, heavy blow. This plunger is equipped with a specially treated hard metal tip which will resist wear for an extraordinary length of time.

Each bell is equipped with an outlet box for either surface or flush mounting. The bell when installed shows nothing but the gong.

It is adaptable for either multiple or series operation, but this information should be given when ordering.

Furnished in the following types:

TYPE S.—Single stroke. Open or closed circuit D.C. Open circuit only A.C.

TYPE A.—Constant ringing as long as circuit is kept closed.

TYPE B.—Constant ringing as long as circuit is kept open.

TYPE C.—Constant ringing when circuit is closed, even though it be opened again.

TYPE D.—Constant ringing when circuit is opened, even though it be closed again.

The above types are furnished in three styles of bell, as follows:

No. 133.—Non-conduit.

No. 1330.—Surface conduit. Has separable fitting for 1/2 inch conduit (or 3/4 inch if specified.)

No. 1331.—Concealed conduit—otherwise the same as No. 1330.

Operated by a strong spring mechanism which is released by an exceptionally small flow of current. Mechanism is entirely insulated from the case. Binding posts are on the side where they are most accessible.

The hammer, when released, makes a full revolution, passing under the gong to an inclined plane where it is raised and strikes the gong with great force gathered in the revolution. Recoil causes it to drop and become locked in its original position. As the full force of the blow is spent on the gong there is no strain on the mechanism. Operation through an eccentric produces positive action. Weather, bug and dust-proof.

RESISTANCE.—Five ohms; up to 20 ohms will be furnished no additional charge.

VOLTAGE.—Battery to 110 volts D.C. and A.C.

STROKES.—Four hundred guaranteed per winding.

KEYS.—One for each six bells or less. Additional Mfrs. List \$3.00 each.

WEATHERPROOF HOOD.—With wire mesh front. See listing elsewhere.

FINISH.—Red frame, black gong.

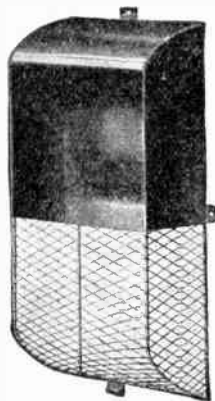
Size Inches	PRICE, EACH		Add to List for Grid	ADD TO LIST FOR 110 VOLTS	
	No. 133	No. 1331 and 1330		D.C.	A.C.
6	\$86.80	\$99.10	\$7.00	\$18.00	\$18.00
8	91.30	103.65	8.50	18.00	18.00
10	101.75	114.10	10.00	18.00	18.00
12	112.25	124.55	12.00	18.00	18.00
14	125.70	138.05	.....	18.00	18.00
16	155.60	167.95	.....	18.00	18.00
18	170.60	182.90	.....	18.00	18.00

Size Inches	PRICE, EACH		
	6-48 Volts	110 Volts	220-250 Volts
4	\$16.50	\$21.00	\$22.50
6	22.50	27.00	28.50
8	27.00	31.50	33.00
10	34.50	42.00	45.00
12	39.00	46.50	49.50

No. 105 Edwards Protective Hoods

For All Types of Bells

Schedule T



A protective hood with wire mesh front can be furnished for all 6 to 18-inch bells listed.

Furnished with or without wood back.

Price, for 6 to 12-inch Bells	.....each	\$25.00
Price, for 14 to 18-inch Bells	.....each	35.00

Edwards Cast Metal Cow Gongs

Schedule T



Size of Cow Gong, In.	Size of Regular Gong for Which Substituted, In.	Price Each
2 x3	3	\$3.50
3 1/2 x5	6	6.00
4 1/4 x6	8	15.00

No. 165 Edwards Pole Changing Switches

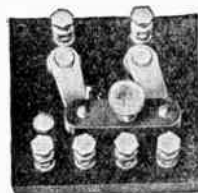
Can be furnished with more than two arms. Price on application. Standard package, 25.

Back Connection

Price, No. 165Beach \$3.40

Front Connection

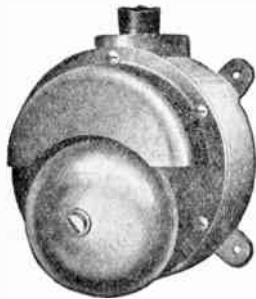
Price, No. 165Feach \$4.70



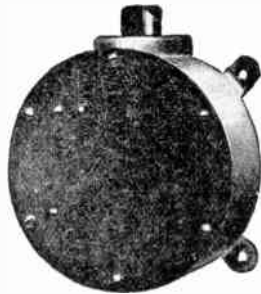
No. 1740 Edwards Watertight Bells and Buzzers

6 to 30 Volts D. C.

Schedule T



Bell



Buzzer

Case is made of cast iron, drilled to receive 1/2 or 3/4 inch conduit as specified. The movement embodies the intensified stroke principle so successfully used on other EDWARDS bells. The design is such as to permit the most powerful stroke with greatest current economy. The case and mechanism has been designed and assembled to withstand heavy shocks and vibrations. A gasket located between the case and cover and the operation of the hammer through a stuffing box makes the bell absolutely watertight.

The above-mentioned bell can be made to conform to the specifications of the BUREAU OF STEAM ENGINEERING, NAVY DEPARTMENT. Prices on application.

Price, 3-inch Bell.....	each	\$19.50
" 4 " ".....	"	22.20
" 6 " ".....	"	32.10
" 8 " ".....	"	39.50
" Buzzer.....	"	18.00

Edwards Watertight Push Buttons

Schedule T

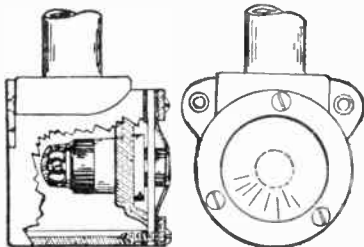
No. 1786



Watertight Push for surface mounting. Of the slow break type and suitable for low voltage. Rubber gaskets make case watertight. Pigskin diaphragm covers center. Silver Contacts. Standard package contains 1.

Price, No. 1786.....each \$3.50

No. 1785



Watertight Push for 125 volts or less, conduit type. Has heavy wiping contacts. Rubber gaskets between box and case and between case and top ring. Pigskin diaphragm covers the center. Furnished complete with conduit box, which can be drilled and tapped for 1/2 or 3/4 inch conduit. Holes will not be drilled unless specified. Box has cast feet for mounting. Standard package contains 1.

Price, No. 1785.....each \$7.50

Edwards Bells and Buzzers

Charges for Special Resistance

Schedule E

Cat. No.	Description	OHMS RESISTANCE PER SET OF TWO MAGNETS					
		1 to 10	11 to 20	21 to 50	51 to 100	101 to 200	
13	Lungen Bells, 1 to 6 Inches.....	\$1.55	\$1.75	\$1.95	\$2.15	\$2.35	
15	Lungen Buzzer, Nos. 0 to 4.....	1.55	1.75	1.95	2.15	2.35	
17	Economy Bell, 3 and 4 Inches.....	2.90	3.20	4.10	5.00	6.00	
17	Economy Bell, 5 to 8 Inches.....	4.40	4.70	5.90	7.10	8.30	
17	Economy Bell, 10 and 12 Inches.....	8.50	8.80	10.30	11.80	13.30	
21	Vigilant Bell { 5 to 8 In.	4.40	4.70	5.90	7.10	8.30	
21C		{ 10 " 12 "	8.50	8.80	10.30	11.80	13.30
26B	Drop.....	1.55	1.75	1.95	2.15	2.35	
100	Recti-Bell { 3 and 4 In.	2.90	3.20	4.10	5.00	6.00	
100A		{ 5 to 8 "	4.40	4.70	5.90	7.10	8.30
100U		{ 10 " 12 "	8.50	8.80	10.30	11.80	13.30
219		{ 14 " 18 "	11.40	11.70	13.50	14.90	16.50
1001							
133	E. M. Bell, All Sizes.....			10.30	11.80	13.30	
1330	E. M. " " ".....			10.30	11.80	13.30	
1331	E. M. " " ".....			10.30	11.80	13.30	
156	Re-al Monitor Bell.....	1.55	1.75	1.95	2.15	2.35	
181	Street Car Bell.....	1.55	1.75	1.95	2.15	2.35	
182	" " Buzzer.....	1.55	1.75	1.95	2.15	2.35	
220A	Recti Buzzer.....	2.90	3.20	4.10	5.00	6.00	
220B	" " ".....	4.40	4.70	5.90	7.10	8.30	
222	D. C. Buzzer.....	2.90	3.20	4.10	5.00	6.00	
750	Bronx Watch Case Buzzer.....	1.55	1.75	1.95	2.15	2.35	
1238	Dixie Relay.....			4.10	5.00	6.00	

Cat. No.	Description	OHMS RESISTANCE PER SET OF TWO MAGNETS				
		210 to 300	301 to 500	501 to 1000	1001 to 1500	
17	Economy Bell, 3 and 4 In.	\$7.00	\$9.00	\$12.00	\$15.00	
17	" " 5 " 6 "	9.50	11.90	15.20	18.80	
17	" " 10 " 12 "	14.80	17.60	21.60	25.40	
21	Vigilant Bell { 5 to 8 In.	9.50	11.90	15.20	18.80	
21C		{ 10 " 12 "	14.80	17.60	21.60	25.40
100	Recti-bell { 3 and 4 "	7.00	9.00	12.00	15.00	
100A		{ 5 to 8 "	9.50	11.90	15.20	18.80
100U		{ 10 " 12 "	14.80	17.60	21.60	25.40
219		{ 14 " 18 "	18.10	21.30	25.40	29.50
1001						
133	E. M. Bell, All Sizes.....	14.80	17.60	21.60	25.40	
1330	E. M. " " ".....	14.80	17.60	21.60	25.40	
1331	E. M. " " ".....	14.80	17.60	21.60	25.40	
220A	Recti Buzzer.....	7.00	9.00	12.00	15.00	
220B	" " ".....	9.50	11.90	15.20	18.80	
222	D. C. Buzzer.....	7.00	9.00	12.00	15.00	
1238	Relay.....	7.00	9.00	12.00	15.00	

Assortment of regular and special wound bells permitted to make standard package.

To determine the cost of special resistance for a given voltage, battery or lighting circuit figure that the ohmage will be three times the operating voltage.

In ordering special resistance bells state on order the operating voltage.

Faraday Signal Gongs

Schedule E

Enclosed Type, Vibrating, Weatherproof

For Battery and D. C. Light and Power Circuits

Designed for use on battery circuits, 110-225 volt and 220-250-volt D. C. light and power circuits. Equipped with high-power armature. Breakage of tension spring does not disable gong. Contacts regularly platinoid. Pure platinum can be furnished when so ordered. Bauer-Barff finished gong. Gongs to be wired in multiple.

Specify model number and voltage when ordering.



**Model A
Non-guarded Gongs**

Cat. No.	Std. Pkg.	Battery Circuit	PRICE, EACH	
			100 to 125-v. D. C.	220 to 250-v. D. C.
A-1 3/4	6	\$6.60	Not Made	Not Made
A-2	6	7.25	"	"
A-2 1/2	6	7.80	"	"
A-3	6	8.85	"	"
A-4	6	10.85	\$19.05	\$27.30
A-5	6	15.80	27.90	40.00
A-6	6	17.80	30.50	43.25
A-8	4	22.00	36.95	51.90
A-10	2	36.95	54.90	72.85
A-12	2	49.90	67.80	85.80
A-14	2	76.50	97.45	118.40
A-16	1	129.25	159.15	189.10
A-18	1	146.90	176.85	206.75

**Model B
Half-grid-guarded Gongs**

Cat. No.	Std. Pkg.	Battery Circuit	PRICE, EACH	
			100 to 125-v. D. C.	220 to 250-v. D. C.
B-4	6	\$17.60	\$25.80	\$34.05
B-5	6	22.95	35.10	47.20
B-6	6	25.00	37.70	50.40
B-8	4	31.70	46.70	61.60
B-10	2	49.65	67.60	85.55
B-12	2	67.10	85.05	103.00
B-14	2	101.20	122.15	143.10



**Model C
Full-grid-guarded Gongs**

Cat. No.	Std. Pkg.	Battery Circuit	PRICE, EACH	
			110 to 125-v. D. C.	220 to 250-v. D. C.
C-4	6	\$28.80	\$37.00	\$45.20
C-5	6	36.75	48.85	60.95
C-6	6	38.75	51.45	64.20
C-8	4	48.15	63.15	78.10
C-10	2	69.85	87.80	105.75
C-12	2	91.80	109.75	127.70
C-14	2	128.85	149.80	170.75



**Model CW
Full-screen-guarded Gongs**

Cat. No.	Std. Pkg.	Battery Circuit	PRICE, EACH	
			110-125 Volts D. C.	220-250 Volts D. C.
CW-5	6	\$36.75	\$48.85	\$60.95
CW-6	6	38.75	51.45	64.20
CW-8	4	48.15	63.15	78.10
CW-10	2	69.85	87.80	105.75
CW-12	2	91.85	109.75	127.70
CW-14	1	128.85	149.80	170.75



Conduit Pattern

Add P to above Model Nos. and following additions to above prices.

Size Gong In.	Price Each	Size Gong In.	Price Each	Size Gong In.	Price Each	Size Gong In.	Price Each		
4	\$8.45	5, 6	\$10.10	8, 10	\$12.35	12	\$15.35	14	\$18.70

Inspectors' Pattern

Add I to above Model Nos. and following additions to prices shown above.

Size Gong In.	Price Each	Size Gong In.	Price Each	Size Gong In.	Price Each	Size Gong In.	Price Each		
4	\$13.90	5, 6	\$18.50	8, 10	\$28.85	12	\$32.10	14	\$38.75

Faraday Transformer Signal Gongs

Schedule E

Enclosed Type, Vibrating, Weatherproof

For Transformer, A. C. Light and Power Circuits

For use on 12-18-volt A. C. bell ringing transformer or battery, and 100-110-volt and 220-250-volt A. C. light and power circuits, 50-60 cycles standard—25, 30 and 40 cycles to order.

The design and operation of mechanism is different from ordinary signal gongs. The vibration is so rapid that it is as satisfactory for code signaling as a single-stroke gong. Furnished to operate in multiple only—without external resistance. Specify model number, voltage and cycles when ordering.



**Model AT
Non-guarded Gongs**

Cat. No.	Size In.	Std. Pkg.	TO OPERATE ON		
			A. C. 18 Volt Transformer Circuits or Battery	100-110 Volt A. C. Circuits	220-250 Volt A. C. Circuits
AT-4	4	6	\$16.30	\$24.55	\$32.75
AT-5	5	6	25.00	37.10	49.20
AT-6	6	6	27.30	40.00	52.75
AT-8	8	4	33.15	48.10	63.05
AT-10	10	2	52.65	70.60	88.55
AT-12	12	2	59.90	77.80	95.75

**Model BT
Half-grid-guarded Gongs**

Cat. No.	Size In.	Std. Pkg.	TO OPERATE ON		
			A. C. 18 Volt Transformer Circuits or Battery	100-110 Volt A. C. Circuits	220-250 Volt A. C. Circuits
BT-4	4	6	\$23.05	\$31.25	\$39.50
BT-5	5	6	32.15	44.30	56.40
BT-6	6	6	34.50	47.20	59.90
BT-8	8	4	42.85	57.80	72.80
BT-10	10	2	65.40	83.35	101.30
BT-12	12	2	77.05	95.00	112.95



**Model CT
Full-grid-guarded Gongs**

Cat. No.	Size In.	Std. Pkg.	TO OPERATE ON		
			A. C. 18 Volt Transformer Circuits or Battery	100-110 Volt A. C. Circuits	220-250 Volt A. C. Circuits
CT-4	4	6	\$34.25	\$42.50	\$50.70
CT-5	5	6	45.95	58.05	70.15
CT-6	6	6	48.25	60.95	73.70
CT-8	8	4	59.30	74.30	89.25
CT-10	10	2	85.60	103.50	121.50
CT-12	12	2	101.75	119.70	137.65

**Model CWT
Full-screen-guarded Gongs**

Cat. No.	Size In.	Std. Pkg.	TO OPERATE ON		
			12-18 V. Trans. Circuits or Battery	100-110 Volts A. C.	220-250 Volts A. C.
CWT-5	5	6	\$45.95	\$58.05	\$70.15
CWT-6	6	6	48.25	60.95	73.70
CWT-8	8	4	59.30	74.30	89.25
CWT-10	10	2	85.60	103.50	121.50
CWT-12	12	2	101.75	119.70	137.65



For conduit pattern add P to above model Nos. and following additions to prices shown above.

Size, Gong inches	4	5 and 6	8 and 10	12
Price.....each	\$8.45	10.10	12.35	15.35

For inspector's pattern add I to above model Nos. and following additions to prices shown above.

Size, Gong inches	4	5 and 6	8 and 10	12
Price.....each	\$13.90	18.50	28.85	32.10

Faraday Single-stroke Signal Gongs

Schedule T

Enclosed Type

For Battery and D. C. Light and Power Circuits

Have powerful, long-movement mechanisms. No possibility of a double stroke as semi-flexible, recoil-type hammer-rod is operated by multiple gear between the armature and hammer-rod, guaranteeing a clear, un-muffled single blow on gong. This type of gong is best connected in series, although multiple connection can be made if necessary. Cannot be used on A. C. circuits. All terminals are mounted on Bakelite pads. Have heavy black enameled cast iron bases and rubber-gasketed covers—Bauer-Barff finished gongs, etc.

Specify model No. and voltage, when ordering.



Model AS Non-guarded Gongs

Cat. No.	Std. Pkg.	Battery Circuit	To OPERATE ON	
			110-125 Volts D. C.	220-250 Volts D. C.
AS-4	1	\$18.35	\$26.55	\$34.75
AS-5	1	24.75	36.85	48.95
AS-6	1	26.80	39.50	52.20
AS-8	1	33.20	48.15	63.10
AS-10	1	54.90	72.85	90.80
AS-12	1	70.85	88.80	106.75
AS-14	1	97.45	118.40	139.35
AS-16	1	159.15	189.05	218.95
AS-18	1	176.85	206.75	236.65

Model BS Half-grid-guarded Gongs

Cat. No.	Std. Pkg.	Battery Circuit	To OPERATE ON	
			110-125 Volts D. C.	220-250 Volts D. C.
BS-4	1	\$25.05	\$33.25	\$41.45
BS-5	1	31.95	44.05	56.15
BS-6	1	33.95	46.65	59.35
BS-8	1	42.95	57.90	72.85
BS-10	1	67.60	85.55	103.50
BS-12	1	88.05	106.00	123.95
BS-14	1	122.15	143.10	164.05



Model CS Full-grid-guarded Gongs

Cat. No.	Std. Pkg.	Battery Circuit	To OPERATE ON	
			110-125 Volts D. C.	220-250 Volts D. C.
CS-4	1	\$36.25	\$44.45	\$52.65
CS-5	1	45.70	57.80	69.90
CS-6	1	47.70	60.40	73.10
CS-8	1	59.40	74.35	89.30
CS-10	1	88.10	106.05	124.00
CS-12	1	112.70	130.65	148.60
CS-14	1	149.80	170.75	191.70

Model CWS Full-screen-guarded Gongs

Cat. No.	Std. Pkg.	Battery Circuit	To OPERATE ON	
			110-125 Volts D. C.	220-250 Volts D. C.
CWS-5	1	\$45.70	\$57.80	\$69.90
CWS-6	1	47.70	60.40	73.10
CWS-8	1	59.40	74.35	89.30
CWS-10	1	88.10	106.05	124.00
CWS-12	1	112.70	130.65	148.60
CWS-14	1	149.80	170.75	191.70



For conduit pattern add P to above model Nos. and following additions to prices shown above.

Size, Gong
 . . . inches 4 5 and 6 8 and 10 12 14 16 and 18
 Price . . . each \$8.45 10.10 12.35 15.35 18.70 24.70

For inspector's pattern add I to above model Nos. and following additions to price shown above.

Size, Gong
 . . . inches 4 5 and 6 8 and 10 12 14 16 and 18
 Price . . . each \$13.90 18.50 28.85 32.10 38.75 70.40

Faraday Single-stroke Transformer Signal Gongs

Schedule T

Enclosed Type

For 12-18 Volt Transformer and 100-125 Volt and 220-250 Volt, 50-60 Cycle A. C. Circuits 25-30 and 40 Cycles to Order

Design of mechanism is in accordance with latest engineering standard—with laminated cores to minimize magnetic losses and light moving parts to insure best results. Gongs listed below are wired for operation in multiple on voltages specified, but special resistance gongs will be furnished, when specified, to operate in series on 100-125 volt and 220-250 volt A. C. circuits. Have heavy black-enameled cast-iron bases, with closely fitted rubber-gasketed covers, guarding against dampness and dust. All terminals are mounted on Bakelite pads—obviating necessity of bushing current-carrying studs where they pass through castings.

Specify model No., voltage and cycles when ordering.



Model ATS Non-guarded Gongs

Cat. No.	Std. Pkg.	12-18-v. Trans. Circuit	To OPERATE ON	
			100-125 Volts A. C.	220-250 Volts A. C.
ATS-6	1	\$26.80	\$39.50	\$52.20
ATS-8	1	33.20	48.15	63.10
ATS-10	1	54.90	72.85	90.80
ATS-12	1	70.85	88.80	106.75

Model BTS Half-grid-guarded Gongs

Cat. No.	Std. Pkg.	12-18-v. Trans. Circuit	To OPERATE ON	
			100-125 Volts A. C.	220-250 Volts A. C.
BTS-6	1	\$33.95	\$46.65	\$59.35
BTS-8	1	42.95	57.90	72.85
BTS-10	1	67.50	85.55	103.50
BTS-12	1	88.05	106.00	123.95



Model CTS Full-grid-guarded Gongs

Cat. No.	Std. Pkg.	12-18-v. Trans. Circuit	To OPERATE ON	
			100-125 Volts A. C.	220-250 Volts A. C.
CTS-6	1	\$47.70	\$60.40	\$73.10
CTS-8	1	59.40	74.35	89.30
CTS-10	1	88.10	106.05	124.00
CTS-12	1	112.70	130.65	148.60

Model CWTs Full-screen-guarded Gongs

Cat. No.	Std. Pkg.	12-18-v. Trans. Circuit	To OPERATE ON	
			100-125 Volts A. C.	220-250 Volts A. C.
CWTs-6	1	\$47.70	\$60.40	\$73.10
CWTs-8	1	59.40	74.35	89.30
CWTs-10	1	88.10	106.05	124.00
CWTs-12	1	112.70	130.65	148.60



For conduit pattern add P to above model Nos. and following additions to prices shown above.

Size, Gong, inches 4 5 and 6 8 and 10 12 14 15 and 18
 Price . . . each \$8.45 10.10 12.35 15.35 18.70 24.70

For inspectors pattern add I to above model Nos. and following additions to prices shown above.

Size, Gong, inches 4 5 and 6 8 and 10 12 14 16 and 18
 Price . . . each \$13.90 18.50 28.85 32.10 38.75 70.40

Faraday Enclosed Type Buzzers

Schedule E



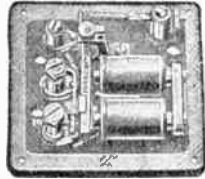
Nos. 93, 99 and 101

Extra heavy frame with close fitting gasketed cover; all terminals mounted on Bakelite pads completely insulating same from frame. Breakage of tension spring will not disable mechanism. Side contact adjustment is of patented micrometer lock type; working parts are heavily copper plated for protection against dampness. Magnet coils thoroughly waterproofed; soft rubber gasket between frame and cover guards against outside moisture and dust. Contacts regularly platinum—pure platinum when specially ordered.

Models 93, 99 and 101 are enclosed type with covers.

Absolutely dependable signaling units, frequently more desirable than bells. High-power armatures, rubber-gasketed covers. All terminals mounted on Bakelite pads completely insulating same from frame.

Models 89 and 91 have same mechanism as above buzzers, but are not furnished with covers.



Nos. 89 and 91

Without Cover

Cat. No.	Size Inches	Std. Pkg.	Battery Circuit	PRICE, EACH		
				110-125 Volts D. C.	12-18 Volt, A. C. Trans. Circuit	100-110 Volts A. C.
89	1 1/8 x 1 1/8 x 1 1/8	6	\$6.60	.....	\$12.00	.....
With Cover						
93	2 3/8 x 2 3/8 x 1 1/4	6	\$7.05	.....	\$12.50	.....
Without Cover						
91	2 3/8 x 2 3/8 x 1 1/8	6	\$6.60	.....	\$12.00	.....
With Cover						
99	3 1/8 x 3 1/2 x 1 1/8	6	\$7.95	.....	\$13.40	.....
101	4 1/8 x 4 3/8 x 2 3/8	6	9.35	\$17.55	14.80	\$23.00
94	4 3/4 x 4 3/8 x 2 3/8	6	11.20	19.40	16.65	24.85

Faraday Bells with Fancy Gongs

Schedule E

For 110 and 220 Volts, D. C.



Cow Gong



Dome Gong



Sleigh Gong

Furnished with polished, nickel-plated fancy gongs in place of standard round gongs; desirable where a different sounding or a particularly penetrating sound bell is needed; have high-power armature. Breakage of spring cannot disable gong. All terminals are mounted on Bakelite pads, completely insulating same from frame and enabling gong to be mounted on metal lathing or damp walls without fear of grounding.

Can be furnished, on special orders, at slight additional cost, to operate on 110 and 220-volt D. C. circuits and on transformer and 110 and 220-volt A. C. circuits.

Specify model No. and voltage when ordering.

Skeleton Bells

Cat. No.	Description	Size Gong Inches	Frame No.	Resistance Ohms	Std. Pkg.	Price, Each for Battery Circuits
O-112	Cow	1 3/4 x 2 1/2	1	3.2	1	\$9.05
O-23	"	2 x 3	1	3.2	1	9.20
O-35	"	3 1/8 x 5	2	4	1	15.85
O-46	"	4 1/4 x 6	3	5	1	34.55
O-111	Sleigh	1 1/2 x 1 3/4	1	3.2	1	9.05
O-21	Dome	2 1/2 x 1 1/4	1	3.2	1	9.05

Enclosed Type Bells

A-111	Sleigh	1 1/2 x 1 3/4	0	2	1	\$11.80
A-21	Dome	2 1/2 x 1 1/4	0	2	1	11.80

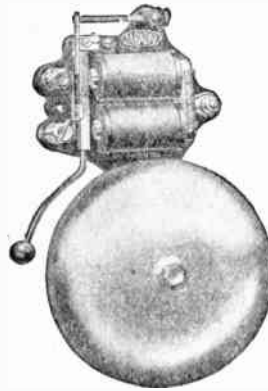
Enclosed Type, with Cow Gongs

Cat. No.	Size Gong Inches	Battery	PRICE, EACH		
			110-125 Volts, D. C.	220-250 Volts, D. C.	
A-112	1 3/4 x 2 1/2	\$11.80	.....	.....
A-23	2 x 3	12.00	\$20.20	\$28.45	
A-35	3 1/8 x 5	23.10	35.80	48.55	
A-46	4 1/4 x 6	40.40	55.35	70.30	

Faraday Skeleton Bells

Schedule E

Model O Vibrating Type For Battery Circuits Only



Skeleton bells meet the requirement of a good signal gong with exposed mechanism. Faraday Skeleton Bells have high-power patented pivoted-armatures giving twice the volume of sound that ordinary construction affords; full-insulated mechanisms, back-tension adjustments, non-turning contact and binding posts, adjustable locking side-contacts and cylindrical trunnion bearings. Breakage of tension springs cannot disable gong. Contacts regularly platinum, but will be furnished pure platinum, if specially ordered, at additional price. Wound to any special resistance at standard list additions shown elsewhere in this

catalogue; also furnished converted-single-stroke when specially ordered at \$2.50 net additional, but for important single-stroke work multiple-gear single-stroke bells are recommended.

Cat. No.	Size Gong Inches	Frame No.	Resistance Ohms	Std. Pkg.	Price Each
O-2 1/2	2 1/2	1	3	8	\$5.70
O-3	3	1	3	8	6.05
O-4	4	1	3	8	7.10
O-5	5	2	4	8	9.35
O-6	6	2	4	12	10.55
O-8	8	3	5	6	16.00
O-10	10	4	5	4	24.85
O-12	12	X-5	5	4	31.00
O-14	14	X-5	5	2	62.00
O-16	16	6	8	1	123.70
O-18	18	6	8	1	143.25

Ekla Skeleton Bells

Schedule E

Model Z Vibrating Type

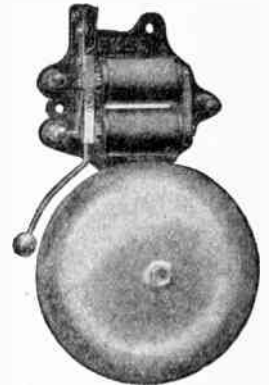
For Battery Circuits Only

Ekla Skeleton Bells are slightly lower in price than Faraday and admitted not as desirable for important signal work.

They have reed-type armatures with substantial back-tension adjustments, side-contacts and non-turning binding posts.

Frames finished in dull black enamel, gongs polished nickel.

Pure silver contacts, wound to any special resistance at standard list additions shown else where in the catalogue; will be furnished converted-single-stroke, when specially ordered at \$2.50 net additional; but for important single-stroke work, multiple-gear single-stroke gongs are recommended.



Cat. No.	Size Gong Inches	Resistance Ohms	Std. Pkg.	Price Each
Z-2 1/2	2 1/2	3	8	\$5.25
Z-3	3	3	8	5.55
Z-4	4	3	8	6.60
Z-5	5	4	8	7.80
Z-6	6	4	12	8.85
Z-8	8	5	6	14.35
Z-10	10	5	4	21.30
Z-12	12	5	4	27.50

Faraday Hammer-blow Signal Gongs

Schedule E

For Battery and D. C. Circuits



Model AH

Model BH

Model CH

Models AH, BH and CH have mechanisms that give a long slow, hammer-blow movement, very similar to a powerful electro-mechanical gong. Should be operated on battery sets of not less than 50 ampere capacity.

Can be furnished to operate on 110 to 220-volt D. C. circuits at standard list additions. Specify voltage when ordering.

Enclosed Type

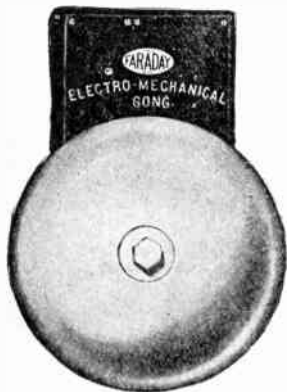
Size Gong Std. In. Pkg.	Model AH Non-guarded		Model BH Half-guarded		*Model CH Full-guarded	
	Cat. No.	Price, Each	Cat. No.	Price, Each	Cat. No.	Price, Each
4 6	AH-4	\$32.25	BH-4	\$40.70	CH-4	\$54.70
5 6	AH-5	42.20	BH-5	51.15	CH-5	63.35
6 6	AH-6	44.75	BH-6	53.70	CH-6	70.90
8 4	AH-8	55.60	BH-8	67.70	CH-8	88.25
10 2	AH-10	87.35	BH-10	103.20	CH-10	128.50
12 2	AH-12	107.25	BH-12	128.75	CH-12	159.60
14 2	AH-14	140.55	BH-14	171.35	CH-14	206.00
16 1	AH-16	227.00				
18 1	AH-18	249.10				

*Full-screen-guarded gongs can be furnished 5 inches and up at same prices as model CH. Change Cat. No. to CWH instead. For conduit patterns, add letter P to Cat. No. and regular additions to list. Prices upon application.

Faraday Electro-mechanical Signal Gongs

Schedule T

Enclosed Type, Vibrating or Single Stroke
Open and Closed Circuit Types for Battery,
D.C. and A.C. Circuits



Electro-mechanical gongs are designed to give a very loud, powerful signal, with a minimum of current. The blow itself on the gong is struck by a heavy ball on the end of a lever, released by the electric current, but operated by a powerful clock spring.

Faraday Electro-mechanical gongs give approximately 700 blows with one winding, and at \$5.00 net additional per gong they will be furnished, when specially ordered, with reliable rewind signal contactor to which may be connected a tell-tale bell to give notification whenever a gong needs re-

winding. It will also give warning if, from any cause, the main spring of the mechanism should break.

Regularly furnished with knockouts for 1/2 or 3/4-inch conduit, as specified, in four sides of the box.

STANDARD FINISH.—Dull black enamel with gunmetal gongs. Cases, when specially ordered, will be furnished without additional charge, in English vermilion finish.

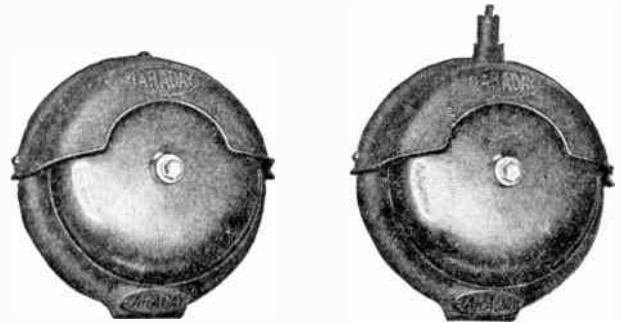
Size Gong Inches	Regular Resistance Ohms	Model E, for Regular Installations without Conduit		Model EP, with Conduit Box Back for Exposed Conduit	
		Cat. No.	Price Each	Cat. No.	Price Each
8	20	E-8	\$91.25	EP-8	\$103.60
10	20	E-10	101.75	EP-10	114.05
12	20	E-12	112.20	EP-12	124.55
14	20	E-14	125.65	EP-14	138.00
16	20	E-16	155.60	EP-16	167.95
18	20	E-18	170.55	EP-18	182.90

Faraday Underdome Signal Gongs

Schedule T

Enclosed Type, Vibrating, Weatherproof

For Battery and D. C. Circuits and Transformer
and A. C. Circuits



Regular Pattern

Conduit Pattern

Underdome Faraday Gongs are ideal in design because they do not follow the old-pattern projecting neck type lines. The mechanisms are self-contained—protected by the gong and base-casting and their design harmonizes with high-class building standards to a most satisfactory degree.

Battery and D. C. types have long, powerful, multiple-gear pattern armature, giving a slow, dignified signal of great power and penetration.

Transformer and A. C. circuit types are notable in that they have no contacts of any sort whatever. They vibrate in unison with the line frequencies, and are so rapid in their vibrations as to be practically as satisfactory as single-stroke gongs for code-signaling, while giving many times louder signals.

For Battery and D. C. Circuits

Model U—Non-conduit Pattern

Cat. No.	Size Gong In.	Std. Pkg.	PRICE, EACH		
			Battery	110-125 Volts D.C.	220-250 Volts D.C.
U-8	8	1	\$83.35	\$102.05	\$120.75
U-10	10	1	123.50	145.95	168.35

Model UP—Surface Conduit Pattern

UP-8	8	1	\$106.45	\$125.15	\$143.85
UP-10	10	1	152.20	174.65	197.10

Model UFP—Flush Conduit Pattern

UFP-8	8	1	\$98.75	\$117.45	\$136.15
UFP-10	10	1	139.00	161.40	183.85

For Transformer and A. C. Circuits

50-60 Cycles
(25-30 and 40 Cycles to Order)

Model UT—Regular Pattern

Cat. No.	Size Gong In.	Std. Pkg.	PRICE, EACH		
			12-18 Volts A.C. Trans.	100-110 Volts A.C.	220-250 Volts A.C.
UT-8	8	1	\$83.35	\$102.05	\$120.75
UT-10	10	1	123.50	145.95	168.35

Model UTP—Surface Conduit Pattern

UTP-8	8	1	\$106.45	\$125.15	\$143.85
UTP-10	10	1	152.20	174.65	197.10

Model UTFP—Flush Conduit Pattern

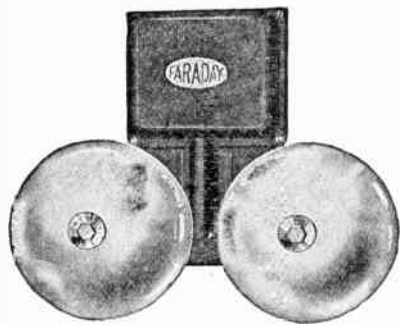
UTFP-8	8	1	\$98.75	\$117.45	\$136.15
UTFP-10	10	1	139.00	161.40	183.85

Specify model No., voltage and cycles when ordering.

Faraday Double-gong Bells

Schedule T

Enclosed Type, Vibrating, Weather-proof



Double-gong Faraday bells are desirable where an extremely penetrating signal is required; they are made for both battery and D.C., as well as transformer and A.C. circuits. Regularly furnished for operations in multiple, but will be furnished to operate in series on lighting

and power circuits when specially ordered.

For Battery and D. C. Circuits
Model D

Cat. No.	Size Each Gong In.	Std. Pkg.	PRICE, EACH		
			Battery	110-125 Volts D.C.	220-250 Volts D.C.
D-4	4	1	\$20.40	\$30.60	\$41.00
D-5	5	1	29.60	44.80	59.90
D-6	6	1	33.35	49.30	65.15
D-8	8	1	41.20	59.90	78.60
D-10	10	1	69.25	91.70	114.15
D-12	12	1	93.55	116.00	138.45
D-14	14	1	143.55	169.70	195.90
D-16	16	1	242.35	279.70	317.15
D-18	18	1	275.50	312.90	350.30

Specify model No. and voltage when ordering.

For Transformer and A. C. Circuits
50-60 Cycles
(25-30 and 40 Cycles to Order)
Model DT

Cat. No.	Size Each Gong In.	Std. Pkg.	PRICE, EACH		
			12-18 V. A. C. Transformer	100-125 Volts A. C.	220-250 Volts A. C.
DT-4	4	1	\$30.60	\$40.85	\$51.15
DT-5	5	1	46.80	62.00	77.10
DT-6	6	1	51.25	67.15	83.05
DT-8	8	1	62.15	80.85	99.55
DT-10	10	1	98.75	121.20	143.60
DT-12	12	1	112.20	134.65	157.10

Specify model No., voltage and cycles when ordering.

For conduit pattern, add P to model No. and following additions to list.

Size Gong Inches	Price Each	Size Gong Inches	Price Each	Size Gong Inches	Price Each
4	\$10.55	8	\$15.40	14	\$23.40
5	12.65	10	15.40	16	30.90
6	12.65	12	19.15	18	30.90

Loud Ringing Magneto-extension

For All A.C. Magneto Generator Circuits of 16 2/3 Cycles
Model M

Model M Loud-ringing Magneto-extension Faraday Bells have polarized type mechanisms with permanent magnets—entirely different from the regular double-gong bell.

Under certain line conditions, the operation of Model M bells is greatly improved by use of condensers which are listed in two capacities. Prices do not include condensers.

Cat. No.	Size Gong In.	Resistance		Cat. No.	Size Gong In.	Resistance	
		Gong per Pair	Price Each			Gong per Pair	Price Each
M-680	6	80	\$50.85	M-81600	8	1600	\$76.65
M-61000	6	1000	50.85	M-82500	8	2500	82.50
M-61600	6	1600	53.10	M-1080	10	80	83.80
M-62500	6	2500	58.95	M-101000	10	1000	83.80
M-880	8	80	74.45	M-101600	10	1600	86.00
M-81000	8	1000	74.45	M-102500	10	2500	91.85

For conduit pattern add "P" to Cat. No. and following additions to prices.

Size Gong.....inches	6	8-10
Price.....each	\$12.65	15.40

Condensers

Cat. No.	Capacity	Price Each
CMF-2	2MF	\$9.35
CMF-4	4MF	15.70

Faraday Special Resistance Signal Gongs

Schedule R

The following data is applicable to vibrating and single-stroke gongs for operation on battery and D. C. only, light and power circuits.

Regular resistance vibrating bells will operate satisfactorily on battery and D. C. circuits at the voltage shown in tables listing various types of bells, but when gongs are to be operated on higher voltage circuits, or when a number of gongs are to be operated simultaneously in multiple on a circuit, gongs wound to higher resistance must be used.

The following table shows ohms resistance per pair coils required for vibrating gongs for various special battery, motor-generator and D. C. voltages. In actual practice, these resistances may be slightly varied without bad results, but as maximum resistances shown for specified voltages, insure continuous and satisfactory operation of gongs, minimum sparking at contacts, and minimum maintenance expense, maximum resistance gongs are strongly recommended.

Single-stroke gongs may sometimes be used in series. When this is desired, state sizes, number of gongs to be used and voltage of circuit.

Where a vibrating gong is to be operated at the end of a long line, or where over 5 gongs are required to operate simultaneously in multiple on a circuit, special information should be given when order is placed.

Ohms Resistance for Operation of Faraday Vibrating Gongs and Buzzers on Direct Current Voltages without Excessive Sparking at Contacts

D. C. Volts	OHMS RESISTANCE, BUZZERS		
	Nos. 89 and 93	No. 99	Nos. 94 and 101
12	45	45	40
18	100	100	90
24	180	180	150
30	...	300	250
110-120	...	...	550
220-250	...	...	2000

D. C. Volts	OHMS RESISTANCE, GONGS							
	SIZE OF GONGS, INCHES							
	1 3/4-2	2 1/2-3	4	5-6	8	10	12-14	16-18
12	45	45	40	35	30	30	30	18
18	100	100	90	80	65	65	65	40
24	180	180	150	135	100	100	100	70
30	...	300	250	200	180	180	180	100
110-120	...	...	550	550	550	550	550	550
220-250	...	...	2000	2000	2000	2000	2000	2000
500-600	...	...	...	*150	*150	*150	*150	*150
500-600	...	...	...	†1000	†1000	†1000	†1000	†1000

*With bank of five 60-watt lamps; blue print furnished.
†To operate with No. 22181 Faraday resistance panel, bell requires reverse contacts; blue print furnished.

Special Resistance Winding List, Additional per Gong
Ohms Resistance per Pair Magnets

Resistance Ohms	Size, Inch Up to 4 Inches Incl. and Buzzers	SIZE, INCHES			
		5 and 6	8	10, 12, 14	16 & 18
0- 10	\$3.05	\$4.65	\$6.25	\$8.15	\$15.15
11- 20	3.75	5.45	7.15	9.00	22.90
21- 50	4.55	6.15	8.00	9.95	31.50
51- 100	5.80	7.45	9.30	11.15	32.50
101- 150	7.00	9.90	10.55	12.45	33.50
151- 200	8.30	11.20	11.90	13.75	34.50
201- 300	9.50	12.45	13.25	16.20	35.40
301- 500	10.80	13.65	14.70	19.40	36.50
501-1000	13.25	16.20	18.45	21.90	37.40
1001-1500	15.80	18.50	21.50	28.15	38.65
1501-2000	18.25	21.25	25.00	35.00	57.95

Special Features

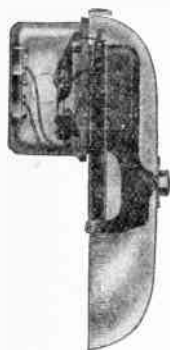
Faraday skeleton and enclosed type signal gongs and buzzers.

Faraday vibrating gongs converted to single-stroke will be furnished when specially ordered at \$2.50 net per gong extra.

Size Gong and Buzzers	FOR CONTACTS		
	Platinum	Triplex Platinum	Triplex Pure Platinum
Up to 6	\$1.90	\$3.75	\$5.60
8 " 10	2.50	4.40	7.50
12 " 14	2.50	5.00	9.40
16 and longer	2.50	6.25	11.25

Signal Vibrating Bells

A.C. and D.C.



A long time element is secured between strokes which permits the gong to vibrate freely and give a true ring of great penetrating or signaling power.

The contact is not broken or the contact pressure reduced until the plunger has practically reached the end of its stroke when it engages the interrupter and opens the circuit with a quick break.

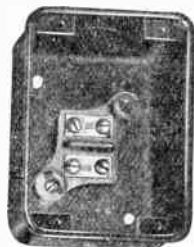
All gongs regardless of size, mount onto a universal outlet box complete with terminal block and knockouts on all 4 sides.

Can be mounted flush or non-flush. Standard finish, black enamel; fire red if specified.

TYPE		Size Inches	PRICE, EACH			
A. C.	D. C.		6 to 48 V.	110 V.	220-250 V. A. C.	D. C.
AV 4-1	DV 4-1	4	\$12.20	\$16.80	\$18.00	\$21.60
AV 6-1	DV 6-1	6	16.40	21.60	22.80	22.80
AV 8-1	DV 8-1	8	19.60	25.20	26.40	26.40
AV10-1	DV10-1	10	24.60	33.60	36.00	36.00
AV12-1	DV12-1	12	28.40	37.20	39.60	39.60

Universal Outlet Boxes

Universal Outlet Box used for mounting (flush or non-flush) all bells regardless of size or type—with the exception of waterproof types. Half inch knockouts on all 4 sides. Installation convenient and simple. Terminal block eliminates splicing and soldering.



Signal Weatherproof Bells

A.C. and D.C.

Cast bell metal gong (polished). Thoroughly protected from rain, snow and ice with cast metal hood.

Cast metal universal housing suitable for wall mounting.

Moulded terminal block with brass inserts.

Drilled top and bottom for 1/2 and 3/4-inch conduit as specified.

Hood, black enamel (baked) finish.

In ordering specify type, size, voltage, and if A. C., the number of cycles.

Furnished in 4, 6, 8, 10 and 12-inch sizes.



Alternating Current

25 or 60 Cycles

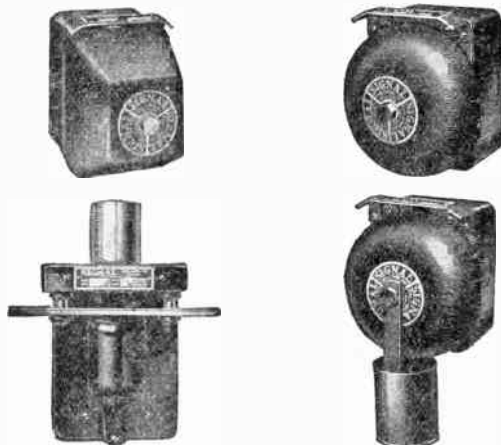
Type	Size In.	PRICE, EACH		
		6 to 48 V.	110 V.	220 V.
AVW 8-1	8	\$32.60	\$38.20	\$39.40
AVW10-1	10	42.60	51.60	54.00
AVW12-1	12	54.40	63.20	65.60
AVG		Bells Equipped with Guards, Add... 5.00		

Direct Current

DVW 8-1	8	\$32.60	\$38.20	\$39.40
DVW 10-1	10	42.60	51.60	54.00
DVW 12-1	12	54.40	63.20	65.60
DVG		Bells Equipped with Guards, Add... 5.00		

Signal Single Stroke Bells

A.C. and D.C.
For Multiple or Series Circuits



All bells are of the under-dome type, equipped with special hot pressed alloy steel gongs having a black rust-resisting finish.

Also furnished with cast bell-metal bell shells.

All bells, regardless of type or size, mount onto a universal outlet box equipped with terminal block and knockouts on all 4 sides. Can be mounted for flush or non-flush.

The electrical action (phantom view) and chime signals have the same solenoid principle of design and a sturdy rust-proofed plunger which travels in a condense tube.

The distance of travel is fixed, assuring the same volume of sound for all time without adjustment.

All coils are form wound and moisture proof.

Single stroke bells and chimes have neither springs, contact points nor moving parts other than the plunger.

Reliability, freedom from maintenance expense and unusual tone qualities particularly recommend these bells for use on fire alarm, code calling and time signal systems.

Standard finish for all bells, black enamel; fire red when requested, at the same price.

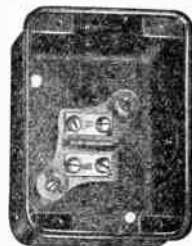
In ordering, state type, size, voltage, and if A. C., the number of cycles.

Chime Signal

Size In.	PRICE, EACH		220 VOLTS		With Bell Metal Gong, Add:	WATERPROOF, ADD:	
	A. C. AND D. C. 24 V.	110 V.	A. C.	D. C.		Without Guard	With Guard
...	\$20.00	\$20.00	\$21.00	\$24.00	.....	.....	.....
Soft Toned							
4	\$12.50	\$15.50	\$16.50	\$19.50	.....	.....	.....
Musical Toned							
4	\$14.00	\$17.00	\$18.00	\$21.00	.....	.....	.....
Special Toned (Cow Bell)							
4	\$14.00	\$16.00	\$17.00	\$20.00	.....	.....	.....
Full Toned							
4	\$11.00	\$14.00	\$15.00	\$18.00	\$1.00	\$8.00	.....
6	15.00	18.00	19.00	19.00	2.50	10.00	.....
8	18.00	21.00	22.00	22.00	3.00	13.00	\$5.00
10	23.00	28.00	30.00	30.00	6.00	18.00	5.00
12	26.00	31.00	33.00	33.00	12.00	26.00	5.00

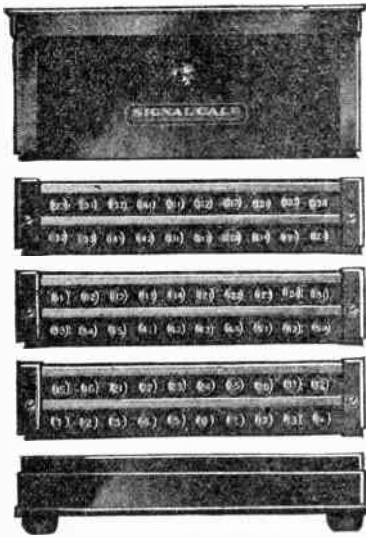
Universal Outlet Boxes

Universal Outlet Box used for mounting (flush or non-flush) all bells regardless of size or type—with the exception of waterproof types. Half inch knockouts on all 4 sides. Installation convenient and simple. Terminal block eliminates splicing and soldering.

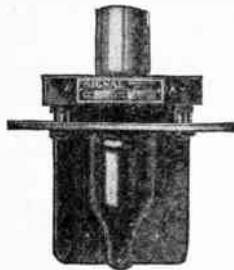


Signal Call Systems

24, 110 or 220 A.C. or D.C.



Signal call service is primarily an addition to telephone service, providing an efficient means of completing telephone calls by promptly locating all important members of an organization regardless of their whereabouts—calling them to the nearest branch telephone.



Chime Signal

At the same time is provided a code signal system for broadcasting special messages.

The Signal Call is usually placed on the switchboard. Pressing one of the keys starts the mechanism, operating the code number corresponding on signal devices distributed so as to be heard anywhere on the premises.

The operating unit is a magnetic movement (no motor) with jeweled bearings and centralized make and break.

The Signal Call sending station may be furnished with sectional key units giving either 10, 20, 40 or 60 code numbers.

The unit system of design makes possible the changing from 10 to 20 code numbers and additions of units of 20 numbers with the same ease as in adding units to a sectional bookcase. All connections are made automatically.

The designated "call" sounds three times and automatically stops, allowing the maximum number of "calls" in a given time. The red jeweled lamp remains lighted while a call is being sounded.

The case is of solid brass, finished in black enamel.

Special finish upon request.



Soft Tone Bell

Voltages, 24, 110 or 220 A.C. or D.C.

The 10 and 20 call is 7 3/4 inches long, 7 1/8 inches wide and 6 3/8 inches deep; 40 call, 7 1/8 inches high; 60 call, 9 3/8 inches high.

In ordering, state number of code numbers; voltage; and, if A.C., number of cycles.

Write the nearest Western Electric Branch for Bulletin A-50 covering this service in detail.



Musical Tone Bell

Power Signal Relays



Relays are furnished to operate from standard voltages 12 to 250 A. C. and 6 to 250 D. C.

Carrying capacity: maximum rating of power relays, 660 watts, 10 amperes, 250 volts. Maximum rating of heavy duty relays, 1000 watts, 15 amperes, 250 volts.

Relays can be furnished either single circuit or double circuit. A front contact relay closes one or two circuits when energized. A back contact relay closes one or two circuits when de-energized. A front and back contact relay is a combination of the two preceding relays.

"Signal" Relays mean the best in design and construction. Laminated silicon steel magnetic structure. Phosphor bronze contact arms. Self-supporting, form wound, impregnated, moisture-proof coil. Wiping self-cleaning contacts. Moulded insulating base of approved material. All parts secured to base with brass inserts.

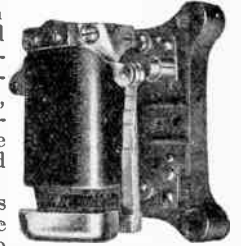
The A. C. relays make a contact as dependable as the D. C. relays, free from "humming" or "chattering." No springs or electro-mechanical complications are employed. No adjustments are required.

STANDARD HOUSING.—Stamped steel outlet box. 1/2-inch knockouts on all four sides. Dimensions, 4 3/4 inches square, 3 1/4 inches high.

WEATHERPROOF HOUSING.—(When specified). Cast iron, enamel finished. State whether for open wiring or 1/2-inch conduit, connections top or bottom or both. Dimensions, 8 1/2 x 6 x 4 inches high.

Net weight, 3 1/2 lbs. Shipping weight, 5 lbs.

Heavy duty is Standard Front Contact Relay equipped with main copper to copper contacts and auxiliary copper to carbon contacts. The auxiliary contacts make before and break after the main contact which eliminates arcing or burning of the latter.



Prices

Alternating Current

Description	Type	PRICE, EACH		
		Volts		
		5 to 48	110	220
Front Contact Relay.....	AF-1	\$19.00	\$20.00	\$22.00
Back " ".....	AB-1	24.00	25.00	27.00
Front and Back Con. Relay	AFB-1	26.00	27.00	29.00
Heavy Duty Front Con. Relay.....	AFH-1	21.00	22.00	24.00

Direct Current

Front Contact Relay.....	DF-1	15.00	18.00	20.00
Back " ".....	DB-1	20.00	23.00	25.00
Front and Back Con. Relay	DFB-1	22.00	25.00	27.00
Heavy Duty Front Con. Relay.....	DFH-1	17.00	20.00	24.00
Above Relays with Two Circuits.....			add	4.00
" " " Weatherproof Housing.....			"	4.00

Coil Ratings

Volts	60 Cycles A. C.				25 Cycles A. C.			
	STARTING Amps.	Watts	OPERATED Amps.	Watts	STARTING Amp.	Watts	OPERATED Amp.	Watts
6								
12	2.7	7	1.6	5	2.2	7	1.3	5
24	1.5	7	.85	5	1.12	7	.80	5
110	.29	7	.16	5	.24	7	.15	5
220	.150	7	.086	5	.072	7	.042	5

Direct Current

Volts	Res.	Amps.	Watts	Volts	Res.	Amps.	Watts
6	23.3	.26	2.4	110	4100	.027	2.9
12	70	.17	2.4	220	8200	.027	5.8
24	240	.10	2.4	...	...	...	...

Signal Light Duty Sensitive Relays



Stamped Steel Housing



Weatherproof Housing

This relay is of similar design to the power relay but lighter in construction. It is designed to operate on considerably less current and wattage and to control lighter loads.

See chart for coil rating.
Carrying capacity of contact: maximum rating; 125 watts, 8 amperes, 250 volts.

Coil Ratings

Volts	60 CYCLES A.C.				25 CYCLES A.C.			
	STARTING		OPERATED		STARTING		OPERATED	
	Amp.	Watts	Amp.	Watts	Amp.	Watts	Amp.	Watts
6	0.8	1.2	0.62	1.0	0.8	0.68	0.620	0.66
12	0.43	1.3	0.35	1.1	0.28	0.89	0.210	0.70
18	0.75	.8	0.50	.75	0.116	0.54	0.075	0.50
24	0.18	1.1	0.15	1.0	0.158	0.9	0.125	0.86
30	0.21	1.3	0.17	1.1				
110	0.045	.9	0.039	.85	0.025	0.65	0.018	0.55
220	0.015	1.	0.010	1.	0.012	0.7	0.008	0.6

Direct Current

Volts	Res.	Amp.	Watts	Volts	Res.	Amp.	Watts
1	6.5	.153	.24	16	1000	.016	.26
4.5	60.	.075	.34	32	3500	.0092	.3
6	135.	.045	.28	110	8000	.013	1.46
10	240.	.042	.42				

Prices

Type	Description	PRICE, EACH		
		6-48 V.	110 V.	220 V.
AFL-1	Front Contact Light Duty A.C.	\$19.00	\$20.00	\$22.00
DFL-1	Front Contact Light Duty D.C.	15.00	18.00	20.00

Above relays with 2 circuits, add \$4.00.
Above relays with weatherproof housing, add \$4.00.

Signal Telephone Extension Relays

This relay is identical with the Light Duty with the exception that the coil is especially designed to operate in telephone ringing circuits.

Type	Description	Price Each
AT-1	Telephone Extension Relay	\$20.00
DT-1	"	15.00

Above relays with 2 circuits, add \$4.00.
Above relays with weatherproof housing, add \$4.00.
Above relays with 2 MF condensers, add \$3.00.

For dimensions, shipping weights, etc., see general data under Signal Relays.

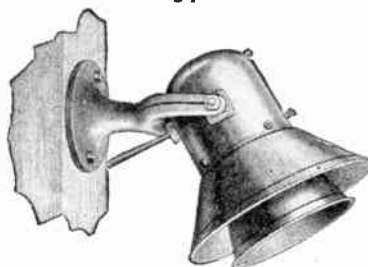
Signal A. C. Duplex Horns



The A. C. Duplex Horn operates from 60 cycle current. Furnished for standard voltage—24 to 250. Has one moving element. Two projectors make it equal to two powerful horns with only one operating unit. Its penetrating note will cut through medium noise.

A. C.-1	Duplex Horn, 6 to 48 Volts	\$18.00
A. C.-1	" " 110 " 220 "	20.00

Type A Federal Sirens



This outdoor Type A Siren takes the place of bells, gongs, whistles, etc., wherever electricity is available. There are no gears or vibrating parts. This siren with double horn gives increased efficiency, greater volume, and pleasing tone.

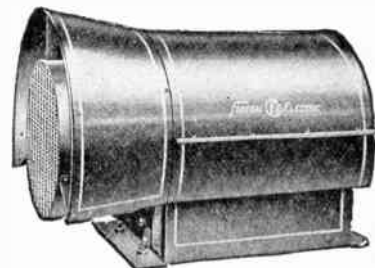
Length over all, 17 inches; diameter of horn, 10 inches; diameter of body, 5 3/4 inches.

Weight, packed in carton, 18 pounds.
Price, Type A, with Universal Motor, 1/3 H.P. A.C. or D.C., 6 to 250 Volts each \$37.50
Price, with Porcelain Enamel Finish " 45.00
" " Brass or Copper " 50.00

Type B Federal Sirens

Single Head

An electrically operated sound signaling device for very small villages and communities. The ideal starting and quitting signal for electrically operated mines, quarries, ranches, plants, factories, etc. The distance penetration is about 3/4 to one mile, depending on wind and surroundings.



Price, 3-H.P. Single-phase, 60-cycle, A.C. 110 or 220 Volts each \$330.00
Price, 3-H.P. 2 or 3-phase, 60-cycle A.C. 110, 220, 440 or 550 Volts each 300.00
Price, 3-H.P. D.C., 110 to 600 Volts " 300.00

Type B Federal Sirens

Double Head



This type siren is designed for use as a general alarm in small towns and cities having volunteer fire department. Has a sound penetration radius of approximately a mile and one-half to two miles under ordinary weather conditions.

Has two 15-inch diameter revolving fans, or cylinders, in the sounding mechanism. Size, 38 inches long, 21 inches high, 19 inches wide. Weight, boxed, 500 to 700 pounds.

Price, 5-H.P. Single-phase, 60-cycle, A.C. 110 or 220 Volts each \$455.00
Price, 5-H.P. 2 or 3-phase, 60-cycle, A.C. 110, 220, 440 or 550 Volts each 400.00
Price, 5-H.P. D.C. 110 to 600 Volts " 400.00

Remote Control Switches

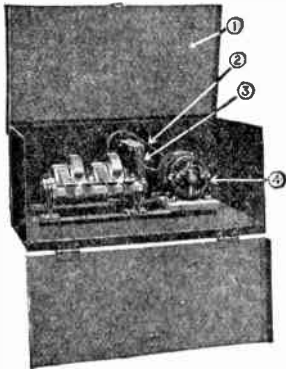
Permits operation of sirens from distant localities. Two push buttons included.

Price, D.C. or A.C., Any Frequency up to 250 Volts, with Steel Case each \$55.00
Price, Extra Buttons " 5.00
" Boxes with Glass Fronts for Buttons each 10.00



Federal Automatic General Alarm Controls

For Operating Electric Sirens



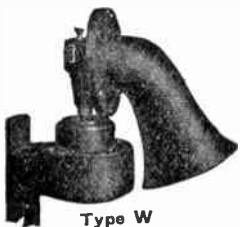
This device automatically performs the on and off function of a knife switch. It is invaluable in places where there is no one to operate the knife switch after an alarm has been received. Can be used in conjunction with remote control device.

Consists of a motor driven rotary switch mounted in a heavy steel, weather-proof case. Complete as shown in illustration.

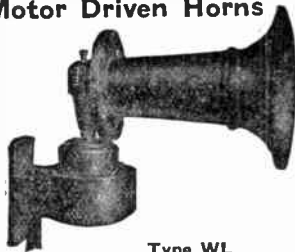
The use of this device insures the proper tone effect from the siren.

- 1—Weatherproof steel case.
 - 2—Belt drive from motor or direct connected if desired.
 - 3—Worm gear reduction.
 - 4—1-20 H.P. motor, in any class current up to 440 volts.
- Prices upon application.

Klaxon Industrial Motor Driven Horns



Type W



Type WL



Type WS

The Klaxon Industrial Horn is unfailingly effective in sounding time signals, code calls, telephone calls, etc., and can be used with safety as a fire, special hazard alarm or as a warning on cranes.

Can be furnished to operate on electrical current of 6 to 230 volts, direct current; and 12 to 440 volts, alternating current. Weather-proof housings are fitted with brackets for wall mounting and are tapped for conduit. Finished in red enamel. The horns are alike except for their projectors.

Type WS has a short projector, producing a shrill note of great penetrating power. It is especially fitted for indoor use, under severe noise conditions.

Type W is furnished with a ram's horn shaped projector, which directs its deep note downward. It is suitable for overhead or outdoor use.

Type WL has a long projector. Its deep, penetrating note is of great carrying power and is recommended where long distances are to be covered.

Approved by the National Board of Fire Underwriters.

Type	Length Inches	Weight Pounds	Price Each
WS	7 1/8	13	\$30.00
W	12	18	30.00
WL	14 1/4	18	30.00

Wizard Jefferson Bell Ringing Transformers



For 110 V. alternating current only. Designed for the residence or small apartment. Will operate signals and door openers. Secondary, 10 volts.

Capacity, 25 watts; dimensions, 2x2x2 1/4 inches. Weight, 1 pound.

Price, No. 1601, for 60 Cycles...each \$1.50

Jefferson Junior Bell Ringing Transformers



For 110 V. alternating current only. Designed for the average residence or apartment building. Will operate all standard door openers. Generates 12 volts. Capacity, 25 watts; dimensions, 1 3/4 x 2 1/2 x 3 3/4 in. Weight, 1 1/2 lbs.

Price, No. 1602, for 60 Cycles...each \$2.00
 " " 1202, " 25 " " " " 2.50

Jefferson Tri-Volt Bell Ringing Transformers

For 110 V. alternating current only. Generates three secondary voltages: 6, 12, 18 and will take care of longer lines.

Capacity, 25 watts; dimensions, 1 3/4 x 2 1/2 x 3 3/4 inches. Weight, 1 1/2 pounds.

Price, No. 1603, for 60 Cycles...each \$2.50



Jefferson Heavy Duty Bell Ringing Transformers

Standard winding will operate on 100 to 120 volts A. C., 50 to 133 cycles.

Type A

Type A is designed for heavier signal work and installations that require more power than is generated by the Junior or Tri-volt Type. Three secondary voltages: 6, 14 and 20. Dimensions, 3x3 3/4 x 4 inches.

Capacity Watts	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
50	4	1610	\$5.00	1210	\$6.00



Type B

Type B Heavy Duty is designed primarily to take care of large installations and operate a greater number of bells and other signal devices than the smaller type transformers. Three secondary voltages: 6, 14 and 20.

Capacity Watts	Dimensions Inches	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
75	3 3/4 x 4 1/8 x 6	7 1/2	1611	\$7.00	1211	\$9.00

Type C

Type C will operate large alternating current bells, 6 to 16 inches in diameter. Suitable for schools, factories, mines, etc. Delivers four voltages: 6, 12, 18 and 24.

Capacity Watts	Dimensions Inches	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
125	3 3/4 x 4 1/8 x 6	9	1612	\$9.00	1212	\$11.00

Type D

Type D delivers 15, 25 and 40 volts and is designed to take care of large bells, where extra long lines are used, and to operate the old-style direct current bells which require a higher voltage than the transformer bell.

Capacity Watts	Dimensions Inches	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
125	3 3/4 x 4 1/8 x 6	9	1613	\$10.00	1213	\$12.50

Type E

Type E is designed for unusually large installations. Secondary voltages, 6, 12, 18 and 24. Can be supplied with any desired secondary voltages at slight additional cost.

Capacity Watts	Dimensions Inches	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
250	5 1/2 x 5 1/4 x 4 1/2	15	1614	\$18.00	1214	\$22.00

Type F

Type F has an output of 500 watts, secondary voltages, 6, 12, 18 and 24. This transformer can also be furnished with any desired secondary voltages at slight additional cost.

Capacity Watts	Dimensions Inches	Weight Pounds	Cat. No.	Price, Each 60 Cycles	Cat. No.	Price, Each 25 Cycles
500	7 1/4 x 6 1/4 x 5	23	1615	\$28.00	1215	\$35.00

No. 1604 Jefferson Porcelain Klad Bell Ringers

This transformer has the combined advantages of all-steel and all-porcelain construction. It is especially adapted to basements and other rooms which are finished and decorated and where a black metal case transformer might be out of harmony.

May be installed using either nails or screws without danger of chipping the case. No projecting lugs to break off.

For 100 or 120 volts. Cycles, 50 or 133. Capacity, 25 watts. Secondary, 10 volts.



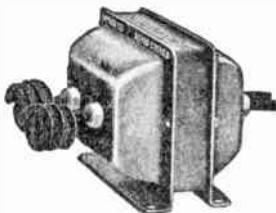
Price, No. 1604 each \$2.00

Jefferson Transformers

Jefferson Low Voltage Transformers are designed for service wherever low voltage alternating current is necessary, such as the operation of electrically controlled valves, thermostatic circuits, thermostats, magnetic relays, etc., and equipment for oil burning apparatus.

Capacities range from 35 to 150 watts and are furnished with any secondary voltage desired. For operation on voltages ranging from 100 to 120, 50 to 133-cycle. For 220 volts, 25-cycle transformers, there is additional cost.

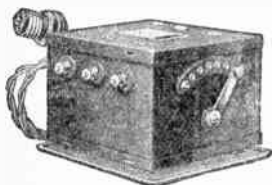
Price, No. 95, 35 Watts Capacity each \$4.50
 " " 96, 50 " " " 5.50
 " " 97, 75 " " " 6.50
 " " 98, 100 " " " 7.50



Jefferson Flexible Toy Transformers

For Use on Alternating Current Only

The flexible feature of these transformers consists of a regulating switch and master connection post, by means of which a range of voltages from zero to the maximum limit of the transformer is available, in small steps. Equipped with attachment plug and cord.



The little Jeff Transformer is designed for operating the small types of electric motors, signals, lamps, etc.

The Midget will operate all the smaller types of electric trains and all types of small motors.

The No. 2 will operate anything in the shape of an electric train or electrical toy.

The No. 3 has additional capacity over the No. 2 and will take care of any kind of a large toy outfit or equipment.

The No. 6 has the same secondary voltage as No. 3, but double the capacity.

Standard winding will operate on 100 to 115 volts A. C. 50 to 133 cycles.

Cat. No.	Type	Cap. Watts	No. of Voltages	Range Volts	Dimensions Inches	Wt. Lbs.	Price Each
1620	Little Jeff	50	5	5 1/2 to 10 1/2	2 1/2 x 2 3/4 x 3 1/2	2 1/2	\$3.00
1621	Midget	75	16	5 1/2 " 22 1/2	3 1/2 x 3 1/2 x 2 3/4	4	4.50
1622	2	100	16	5 1/2 " 23	5 x 4 x 3 1/4	6	6.00
1623	3	150	20	1.2 " 30	5 3/8 x 5 x 4	9 1/2	8.00
1626	6	250	20	1.2 " 30	5 3/8 x 5 x 5 1/2	12 1/2	15.00

25-cycle, prices on application.

Jefferson Radio Tube Rejuvenators

For Large and Small Radio Tubes

A tube Rejuvenator for home use to keep radio tubes at full efficiency and greatly increase their length of life. The burning life of a tube is several times greater than the period over which it will give efficient service without rejuvenation.



No.	Volts	Cycles	Price, Each
175	100 to 120	50 to 133	\$7.50
180	100 " 120	25 " 40	8.50

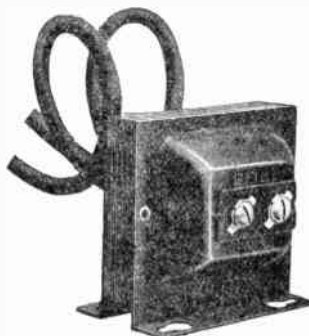
No. 86 Edwards Steel Clad Bell Ringing Transformers

Primary 110 Volts, 60 Cycles

Schedule E

Secondary 8 Volts

For average door bell and door opener installations.



Cat. No.	Size Watts	Std. Pkg.	Price Each
86	18	50	\$1.25

For 25 cycles add 10 per cent to price.

No. 87 Edwards Porcelain Bell Ringing Transformers

Primary 110 Volts, 60 Cycles

Schedule E

Secondary 8 Volts

For average door bell and door opener installations.

Cat. No.	Size Watts	Std. Pkg.	Price Each
87	18	50	\$1.50

For 25 cycles add 10 per cent to price.



Edwards Heavy Duty Bell Ringing Transformers

Primary 110 Volts, 60 Cycles

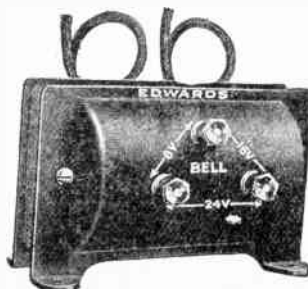
Schedule E

Four types to take care of installation of large size bells or a large number of bells or where the wire runs unusually long.

Secondary 8-16-24 Volts

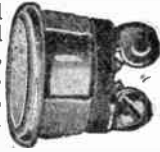
Cat. No.	Size Watts	Std. Pkg.	Price Each
88	50	1	\$6.25
89	75	1	9.35
90	125	1	10.90

For 25 cycles add 10 per cent to price.



No. 620 Dixie Jr. Edwards Push Buttons

Fully insulated, frame not grounded and at no time carries current. Phosphor bronzed scraping contacts. Self-forming binding posts, take any size wire and facilitate connecting. Non-turnable pearl center. Standard finish, nickel. For 5/8-inch hole. Standard package, 50.



Price, No. 620each \$.39

No. 1062 New Midget Jr. Edwards Push Buttons

Scraping contacts, non-turnable center, flush binding posts, pearl center. Standard finish, nickel. For 5/8-inch hole. Standard package, 50.

Price, No. 1062each \$.34

No. 59 Midget Edwards Push Buttons



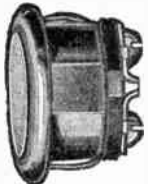
Frame is not insulated. Non-turnable pearl center. Self-forming binding posts take any size wire.

Standard finish, nickel. For 3/4 inch hole.

Standard package, 50.

Price, No. 59each \$.77

No. 1059 Midget Edwards Push Buttons

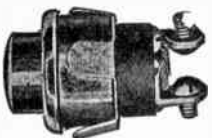


A rugged and substantial push. Frame is not insulated. Pearl center. With flush binding posts.

Standard finish, nickel. For 3/4-inch hole. Standard package, 50.

Price, No. 1059each \$.72

No. 621 Dixie Jr. Edwards Push Buttons



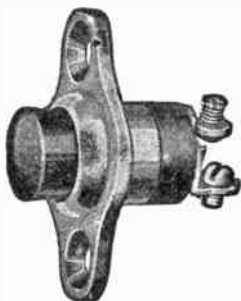
Turned from brass rod, a high grade push of heavy construction. The center is condensite and protrudes 3/16 inch.

For 5/8-inch hole. Standard finish, nickel. Standard package, 1.

Price, No. 621each \$ 1.40

No. 622 Dixie Escutcheon Edwards Push Buttons

Turned from brass rod, of heavy construction. The center is condensite and protrudes 3/16 inch. Equipped with a retaining escutcheon. Side springs are unnecessary.



Fully insulated, frame not grounded and at no time carries current. Phosphor bronze scraping contacts. Self forming binding posts, take any size wire and facilitate connecting. For 1/2-inch hole. Standard finish, nickel. Standard package, 1.

Price, No. 622each \$ 1.45

No. 63 New Mite Edwards Push Buttons

Turned from brass rod being only 5/8x5/8-inch over all. Pearl center, non-turnable. A dependable push where small dimensions are needed. Standard finish, nickel. For 1/2-inch hole. Standard package, 50.



Price, No. 63each \$.67

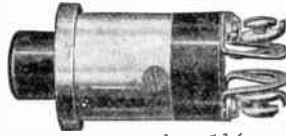
No. 1162 Midget No-contact Edwards Push Buttons



Fully insulated, frame not grounded. Non-turnable pearl center. Has no springs or contacts. Used to operate simple brass straps, etc. For 5/8-inch hole. Standard finish, nickel. Standard package, 50.

Price, No. 1162each \$.34

No. 85 High Voltage Edwards Push Buttons



No. 85 high voltage for installations where 110 volt D. C. or A.C. is used. Used extensively for hotel work, etc., where instruments are operated on storage battery. Will

not pass more than 1 1/2 amperes.

Shell turned from brass rod. Phosphor bronze contacts and springs. Long, quick break. Condensite center.

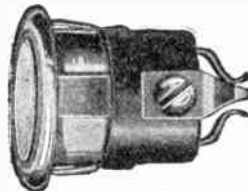
Standard finish, nickel.

Cat. No.	Volts	Style	Fits Hole Inches	Std. Pkg.	Price Each
85	110	Open Circuit	3/4	10	\$ 2.40
85C	110	Closed	1 1/8	1	7.85
85A	220	Open	1 1/8	1	6.20

Price, Hard Rubber Insulating Bushing for No. 85 Pusheach \$ 1.40

Price, Hard Rubber Insulating Bushing for No. 85A Pusheach 1.65

No. 260 Van Tassel Edwards Push Buttons



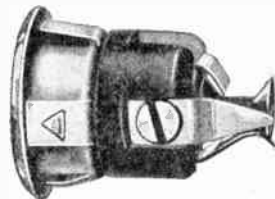
Four contact, turned from brass rod. Closes three circuits at once. Frame not grounded. Black center.

Standard finish, nickel. For 3/4-inch hole.

Standard package, 1.

Price, No. 260each \$ 1.40

No. 265 Return Call Edwards Push Buttons



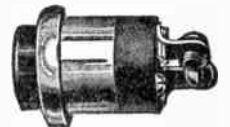
The frame is not grounded.

A return signal to signify that call has been heard may be installed, using three wires instead of the usual four. For 3/4-inch hole. Std. pkg., 1.

Price, No. 265each \$ 1.90

No. 116 Slow Break Edwards Push Buttons

Used in automobile controller handles, etc. Turned from brass rod. Wiping phosphor bronze contacts. Phosphor bronze springs. Condensite center. Contact member molded into condensite. For 1/2-inch hole. Standard finish, nickel. Standard package, 1.



Price, No. 116each \$ 1.30

No. 60 Edwards Flush Push Escutcheons

For use on plaster or where larger than the midget push is required.

The iron plate is first secured to the wall. There being a number of screw holes it is always possible to engage a lath. The brass plate is then placed over the iron plate and the push button pressed into place.

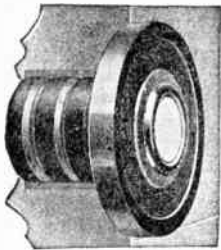
The spring clips on side of button grip the iron plate securely holding the button and brass plate in place. Standard finish, nickel. Standard package, 25.



Price, No. 60, for 5/8-inch Pusheach \$.30
" " " 61, " 3/4 " " " " " " " " " " " .30

No. 261 Edwards Flush Push Stone

Escutcheons



No. 261 Stone Escutcheon is a plain flanged casting for cementing into stone or tile work.

Drilled for 3/4-inch push. The No. 260 is recommended.

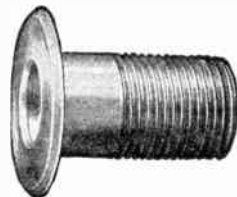
On this escutcheon the standard finish is Bauer Barff.

Standard package, 1.

Price, No. 261each \$3.50

No. 262 Edwards Conduit Push Buttons

Furnished complete with attachment as illustrated, to fit 1/2-inch conduit. The attachment is so made as to allow the installation to be vapor proof and is used by hotels and apartment houses for bathrooms, etc. Inside the threaded brass pipe is a vertical rod which enables the attachment to be screwed on to conduit with a pair of pliers, piece of slotted pipe, etc., eliminating the use of a Stilson wrench. A special adaption of the No. 621 push, with a wider flange and other features arranged for this attachment, is used. This is numbered 621C.



Standard finish, nickel. Standard package, 1.

Price, No. 262, Completeeach \$3.70
 " " 621C, Push Button Only " 2.00

Edwards Push Button Plates



No. 157D



No. 158

No. 157 Plates, Diamond or Square

Bevel edge, drilled for one button. No. 157D size between points is 2 1/8 inch x 3 1/8 inches. State when ordering the size push to be used. No. 157S (square) size 1 3/8 inches. State size of push to be used. Assortment permitted to make standard package. Unless otherwise specified, 5/8-inch hole furnished.

Standard finish, nickel. Standard package, 25.

Price, No. 157Deach \$.50
 " " 157S " .50

No. 158 Switch Box Plates

For standard switch box. Drilled for 1, 2 or 3 buttons 5/8 inch and 1 or 2 buttons 3/4 inch. Screw hole centers 3 3/8 inches. Machine screws are furnished. Plate does not include buttons. In ordering state size of buttons to be used. If not specified, 5/8-inch hole will be drilled.

Standard finish, nickel. Standard package, 25.

Price, No. 158, One Buttoneach \$.85
 " " 158, Two Buttons " 1.00
 " " 158, Three Buttons " 1.10

No. 235 Edwards Floor Push Buttons



The No. 235 Floor Push Button is of an entirely new construction, more substantial, smaller and neater than previous designs.

Equipped with removable plug and extension attachment for connecting flexible cord with lamp, etc.

Nickel finish.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
235	25		\$.78

Edwards Flush Push Buttons



No. 204



No. 158-72

No. 204 Edwards Wall Plate and Push

A metal plate 2x3 inches with a No. 620 push and a No. 72 detachable extension plug. Six feet of flexible cord furnished with pearl push, attached, if specified, for which add to list \$1.75. Fits standard switch box.

Cat. No.	Finish	Std. Pkg.	Price Each
204	Nickel	1	\$4.50

No. 158-72 Wall Plate and Plug

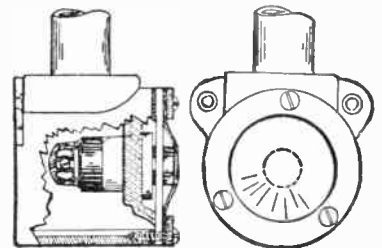
Fits any standard switch box.

Cat. No.	Finish	Std. Pkg.	Price Each
158-72	Nickel	1	\$4.00

No. 1785 Edwards Watertight Push Buttons

For 125 Volts or Less

Conduit type. Has heavy wiping contacts. Rubber gaskets between box and case and between case and top ring. Pigskin diaphragm covers the center. Furnished complete with conduit box, which can be drilled and tapped for 1/2 or 3/4-inch conduit.



Holes will not be drilled unless specified. Box has cast feet for mounting. Standard finish, nickel.

Price, No. 1785each \$7.50

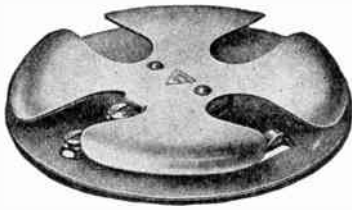
No. 1786 Edwards Watertight Push Buttons

For surface mounting. Of the slow break type suitable for low voltage. Rubber gaskets make case watertight. Pigskin diaphragm covers center. Silver contacts. Standard finish, nickel.

Price, No. 1786each \$3.50

No. 290 Dixie Floor Treads

Schedule E



Double heavy brass contact plates, felt covered bottom
Standard package, 25.

Price, No. 290.....each \$1.50

No. 206 Edwards Table Clamps



May be used in connection with floor push or wall plug. Button and contact built in to spring clamp base. Wire connections easily made. Nickel finish.

Cat. No.	Std. Pkg.	Price Each
206	25	\$1.05

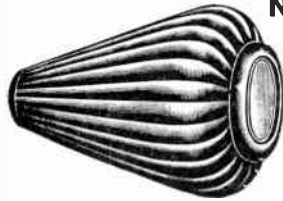
No. 268 Edwards Pendant Push Buttons

Equipped with No. 620 Dixie Jr. button. Finished in black or white Celluloid.



Cat. No.	Std. Pkg.	Price Each
268	10	\$1.85

No. 68 Edwards Pendant Push Buttons



Equipped with 620 Dixie Jr. button. Metal with pearl finish.

Cat. No.	Std. Pkg.	Price Each
68	10	\$.70

No. 173 Edwards Multiple Push Buttons



Equipped with No. 63 button. Oak furnished unless otherwise specified.

No. of Buttons	Std. Pkg.	Price Each	Price, Each with Silk Cord Attachment*
2	12	\$4.45	\$1.72
3	6	5.80	2.30
4	3	7.20	2.88
5	1	9.25	3.45
6	1	11.55	4.02
7	1	14.00	4.60
8	1	16.35	5.20

*Six feet of silk covered cable.

No. 172 Edwards Battery Switches

Keystone switch, rubber base. Hollow back. Metal parts nickered. Engraving on knob, 25 cents per letter. Standard package, 25.

Price, 1 Point.....each	\$.88
" 2 Points....."	.92
" 3 "....."	1.24



Edwards Directory Push Buttons



No. 190 has phosphor bronze scraping contacts. Insulated. Weighted, and felt covered base. Finish oak and nickel or mahogany and brass, black buttons. No. 191 is the same as No. 190 without wood mat, for mounting flush in desk or wall. No. 192 is the same as No. 190 except

buttons are on an inclined plane.

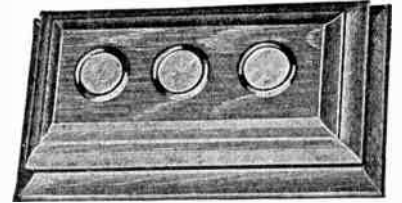
Standard number of markings furnished unless otherwise specified. Pearl buttons add to list per button, \$.40.

Assortment of all sizes and styles, totaling 50 buttons, to make one standard package. For larger sizes, add per button, \$2.00.

No. of Buttons	Std. Pkg.	Nos. 190 and 191 Price Each	No. 192 Price Each	6-foot Silk Cord Attached
1	5	\$3.90	\$4.90	\$1.16
2	5	5.30	7.00	1.72
3	5	6.60	8.50	2.30
4	5	8.10	10.60	2.88
5	5	9.40	12.40	3.45
6	5	10.80	13.80	4.02
8	5	13.70	17.50	5.20
10	5	16.40	21.30	6.32
12	5	20.25	25.00	7.50

No. 147 Edwards Compound Push Buttons

Two-piece separable wood block, front hollowed out to provide space for connections. Back is solid and felt protected. Prices do not include push buttons. The No. 620 will be supplied when ordered with buttons for 5/8-inch hole (size A) and the No. 59 for 3/4-inch hole (size B). When not specified the size A hole will be drilled. Engraving on button 25 cents per letter or figure. Finish oak, ash, cherry or mahogany. No. 148 is the same as No. 147 only block is one piece hollow back.



Standard package consists of an assortment of all sizes, types and finishes, totaling 100 buttons.

No. of Buttons	Price, Each No. 147	Price, Each No. 148	No. of Buttons No. 147	Price, Each No. 147	Price, Each No. 148
1	\$1.25	\$.85	4	\$2.40	\$1.70
2	1.70	1.25	5	3.45	1.95
3	2.05	1.50	6	4.15	2.20
8	\$4.85	\$2.40	10	6.10	2.65
12	7.40	3.00			

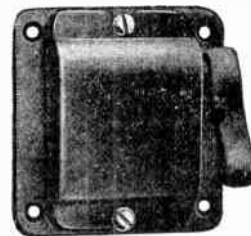
Larger sizes, add per button list \$.62.

No. 147 weighted, add per button list \$.46.

Price, Engraving on Centers and Plates; 1 to 2 Letters or Figures.....per button \$.50

Price, Engraving on Centers and Plates; Additional Letters or Figures.....per button .25

No. 117 Foot Pushes



No. 117 Foot Push is made of cast brass. Contacts and springs of phosphor bronze. Capacity 100 volts or less at 1/2 ampere.

Price, No. 117.....each \$6.00

No. 603 Edwards Bronx Push Buttons



The No. 603 is 1 3/4 inches in diameter with a black composition center. The mechanism is insulated and is recessed to allow the use of No. 14 wire. Standard finish, satin brass. Standard package, 100.

Price, No. 603, Bronx each \$.18

No. 600 Edwards Bronx Push Buttons

The No. 600 is 2 1/4 inches in diameter with a black composition center. The mechanism is insulated and is recessed to allow the use of No. 14 wire. Standard finish, satin brass. Standard package, 100.



Price, No. 600 Bronx each \$.18

No. 25651 Push Buttons

Cast Bronze Screw Cap



Round pattern push button, black center only. Finished in brass or bronze.

Diameter is 2 3/8 inches.

Price, No. 25651 each \$1.50

Edwards Bronx Card Holder Push Buttons

The card racks are arranged so that a slot for inserting the card is at each end of the rack, and in this way there is no slot visible when the card is in place. It also allows the push to be mounted any way desired without the card falling out.

The mechanism is entirely insulated and is recessed sufficiently to allow the use of No. 14 wire and still leave plenty of room between the screws and the wall, there being no chance of grounding. The wire is fastened directly to the same screw that holds one side of the contact spring; pushing the button makes a contact on one screw only, thereby assuring a positive contact. The fiber is recessed so the wire cannot slip out of place.



No. 601—Single Card Holder

Cat. No.	Length Inches	Width Inches	Std. Pkg.	Price Each
601	2 3/8	2	50	\$.35

No. 602—Double Card Holder

602	4 1/2	2	20	\$1.00
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No. 604 Edwards Bronx Plate Type Push Buttons



The dimensions of the No. 604 push are small enough to allow its use in many places where the common plate type of push is too large to be adaptable. It is 3 3/8 inches long and 1 1/8 inches wide.

The mechanism is entirely insulated and is recessed to allow the use of No. 14 wire and still leave plenty of room between the screws and the wall, there being no chance of grounding. The wire is fastened directly to the same screw that holds one side of the contact spring; pushing the button makes a contact on one screw only, thereby assuring a positive contact. Standard finish, satin brass. Standard package, 50.

Price, No. 604, Bronx each \$.40

Edwards Push Buttons



No. 159 Elevator Call Push Buttons

Designed for use with Edwards annunciators or any standard make.

Case is iron finished in black, for surface mounting.

Standard package, 1.

No. 159U

Cat. No.	Description	Price Each
159	Up and Down	\$5.20
159U	" Only	4.70
159D	Down Only	4.70
159X	No Marking	4.70

No. 136 Combination Bells and Push Buttons

Designed for use with return call annunciators, etc.

Finish is oxidized copper. Standard package, 1.

Price, No. 136 each \$4.50

No. 9 Edwards Door Openers

Economy, Mortise Type, Solid Nose



Made of heavy pressed steel, heavily brass plated. Used extensively for apartments.

Fits same size mortise as same shape openers of other manufacturers. Width, 3 5/8 inches; depth, 1 3/4 inches; thickness, 1 inch; nosing opening, 1 3/8 inches; face plate, 5 7/8 x 1 1/4 inches.

Price includes No. 89 pushout spring. May be used on either right or left hand doors. Regular resistance is two ohms.

Special resistance up to 20 ohms, add to price \$1.00; 21 to 50 ohms, \$1.25; 51 to 75 ohms, \$1.50.

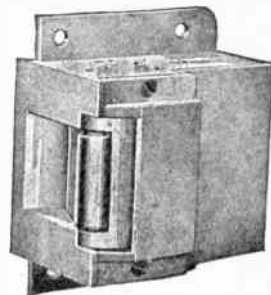
Standard package, 50.

Price, No. 9 each \$2.70

Nos. 52 and 50 Edwards Door Openers



No. 52



No. 50

No. 52 Mortise Type—For Sliding Door
Solid nose. Width 3 1/4 inches. Depth 3 1/4 inches. Thickness 7/8 inch. Nosing opening 1/2 x 3/4 inches. Face plate 1 x 4 3/4 inches. Price includes No. 79 Pushout Spring.

Price, No. 52, Bronze Finish each \$38.00
" " 239, Latch for No. 52 " 3.50

No. 50 Rim Type

For surface or rim locks, thin door, etc. Price includes No. 89 Pushout Spring. Width 2 1/4 inches. Depth 2 5/8 inches. Thickness 1 inch. Nosing opening 1 1/8 inches.

Price, No. 50, Cast Bronze each \$31.00

No. 50A Rim Type

Same as No. 50 but with nosing opening 1 1/2 inches.
Price, No. 50A each \$34.00

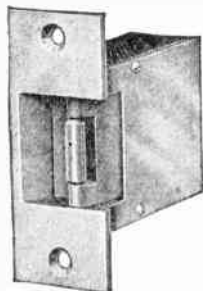
**No. 154 Edwards Door Openers
Mortise Type, Roller Nose**

This type is suitable for heavy doors. It requires a smaller mortise than the Economy.

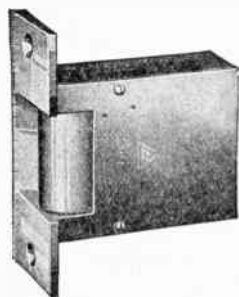
Width, 2 inches; depth, 2 7/8 inches; thickness, 1 1/8 inches. Nosing opening, 1 1/4 inches. Face plate, 1 1/4 x 3 3/8 inches. Brass finish.

Price includes No. 79 pushout spring. Can be supplied with a release check permitting the use of door opener where air checks are employed; add to price, \$2.00.

May be used on either right or left hand doors. Regular resistance is two ohms. Special resistance up to 20 ohms, add to price, \$1.00; 21 to 50 ohms, \$1.25; 51 to 75 ohms, \$1.50. Standard package, 10.
Price, No. 154.....each \$5.65



**No. 155 Edwards Door Openers
Nojar, Mortise Type, Solid Nose**



For use with heavy doors. Width, 2 inches; depth, 2 7/8 inches; thickness, 1 1/8 inches. Nosing opening, 1 1/4 inches. Face plate, 1 1/4 x 3 3/8 inches. Brass finish. Price includes No. 79 pushout spring.

Can be supplied with release check, permitting its use where air checks are employed, at additional price of \$2.00.

No. 155 opener may be used on either right or left hand doors.

Regular resistance, two ohms. Special resistance up to 20 ohms, add to price \$1.00; 21 to 50 ohms, \$1.25; 51 to 75 ohms, \$1.50. Standard package, 10.

Price, No. 155.....each \$4.95

**No. 48 Edwards Door Openers
Mortise Type, Roller Nose**

Extra heavy, of solid bronze. For places where unusually reliable and durable openers are needed.

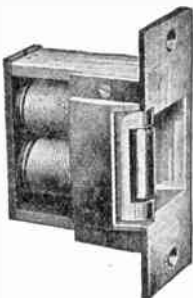
Width 2 1/4 inches. Depth 2 5/8 inches. Thickness 1 1/8 inches. Nosing opening 1 1/2 inches. Face plate 1 1/2 inches x 3 7/8 inches.

Price includes No. 89 Pushout Spring. Standard package, 1.

Price, No. 48.....each \$31.00

No. 48A, same as above only dimensions are: Width 2 5/8 inches. Depth 2 5/8 inches. Thickness 1 1/8 inches. Nosing opening 1 1/2 inches. Face plate 1 1/2 x 4 inches.

Standard package, 1.
Price, No. 48A.....each \$34.00



No. 153 Edwards Door Openers

Plate Type, Roller Nose

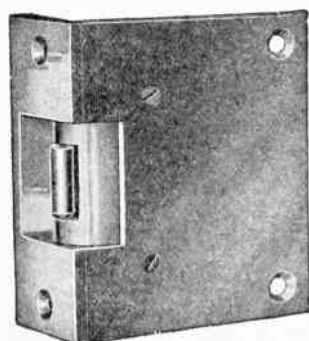
Designed for doors too thin to take a mortise. Brass finish.

Width 2 inches. Depth 3 7/8 inches. Thickness 1 1/4 inches. Nosing opening 1 1/4 inches. Face plate 1 1/4 x 3 3/8 inches. Side plate 3 3/8 x 2 3/4 inches.

Price includes No. 79 Pushout Spring.

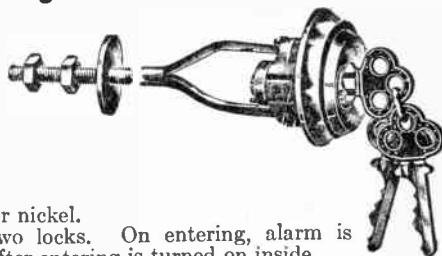
Standard package, 1.

Price, No. 153.....each \$7.00



Edwards Burglar Alarm Lock Switches

No. 95.—Lock switches to be placed on the outside of the door so persons having key may enter without giving alarm. Polished brass or nickel.

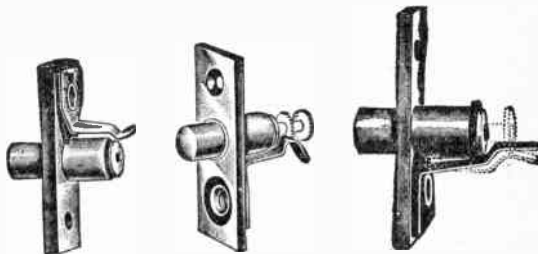


No. 95A.—Two locks. On entering, alarm is turned off and after entering is turned on inside.

No. 95B.—Same as No. 95, with rod to go through door, fastened by nuts inside.

Price, No. 95, Standard Package, 1.....	each	\$6.50
" " 95A " " 1.....	"	13.00
" " 95B " " 10.....	"	7.95
" Extra Keys, " " 1.....	"	.80

Edwards Burglar Alarm Door Springs



Price, No. 34, Open Circuit.....	each	\$.38
" " 38, Make and Break.....	"	.46
" " 39, Closed Circuit.....	"	.46

No. 236 Edwards Burglar Alarm Door Trips



This device is for use over store doors to announce entrance of customers.

Signal rings when door passes the trip, but is silent when open and in closing door.

Price, No. 236, Open Circuit.....each \$1.03

Edwards Burglar Alarm Window Springs

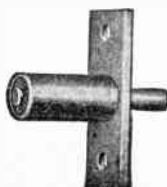


No. 32 No. 28 No. 30

Window springs should be placed in the frame several inches above the lower end of the upper sash—and the same distance below the upper end of the lower sash. Each sash should be mortised so the nosing of the spring will set in the recess when the window is closed.

Price, No. 32, Transom Spring.....	each	\$1.55
" " 28, Open Circuit.....	"	.54
" " 28C, Closed ".....	"	.80
" " 30, Extra Heavy, Open.....	"	.85

No. 42 Edwards Burglar Alarm Safe Springs

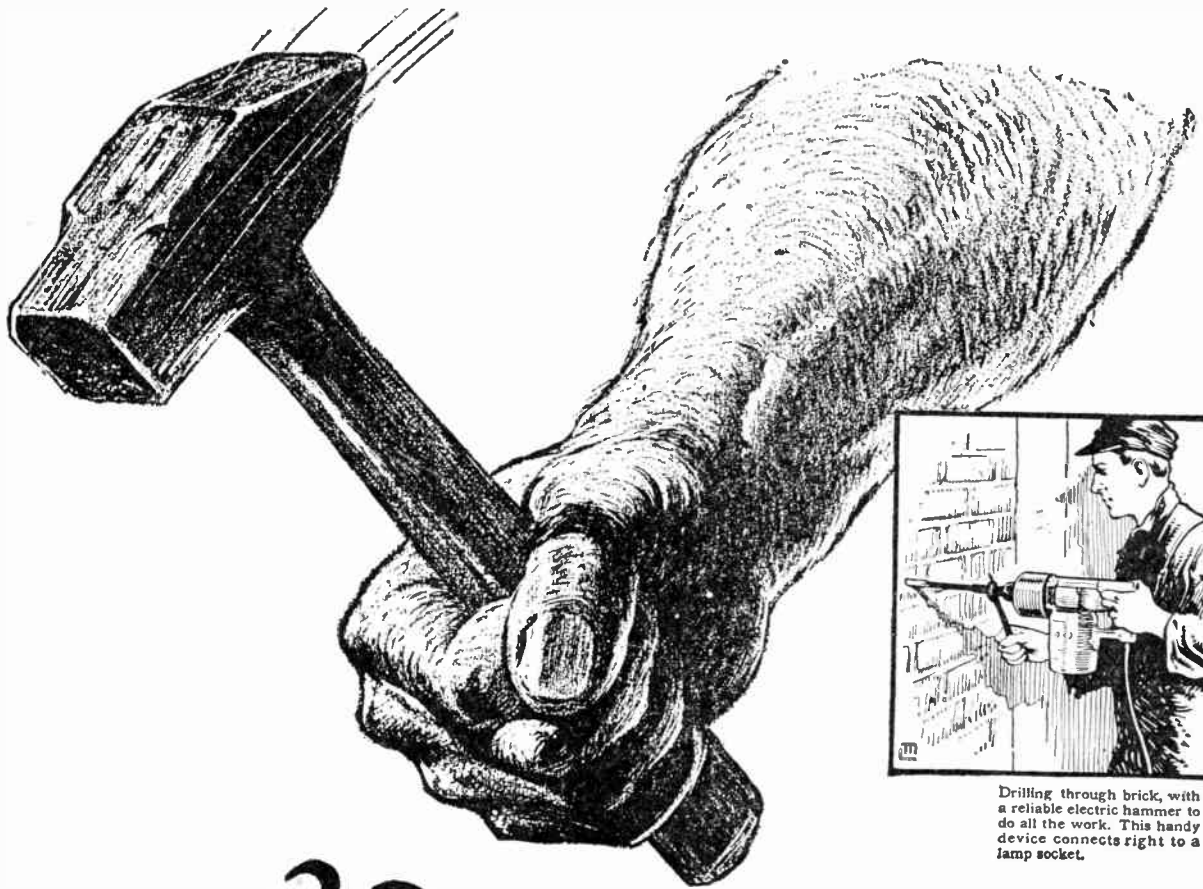


No. 42 is furnished without plate. Size of No. 42A plate, 1 3/4 x 3/4 inches.

Standard package quantity is 50.

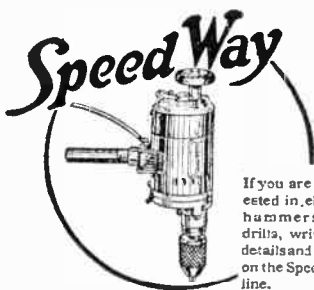
Price No. 42, No Plate.....each \$.48

" " 42A, Plate for No. 42 "..... .20



Drilling through brick, with a reliable electric hammer to do all the work. This handy device connects right to a lamp socket.

30 village blacksmiths in your lamp socket



If you are interested in electric hammers and drills, write for details and prices on the Speedway line.

THE celebrated village blacksmith was right there with the punch, but do you realize that you can go his sinewy arm twenty-nine times better with a sturdy little electric hammer?

Thirty times as fast as a man can work a hand hammer, the electric variety gives a surer blow too—and it never tires. No wonder that industry is turning to these dependable electrical devices and the

many others that Western Electric distributes.

Quality electrical products for wholesale buyers

Whatever your electrical needs, Western Electric can serve you. From the power apparatus that speeds up production to the lighting installation that often means more and better work, Western Electric stocks are widely varied, they are priced right and are quickly available.

Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Type ULA Speedway Portable Drills

110 Volts

Because of its light weight the ULA is adapted for use in the home, on the farm, in the small repair shops, garages, auto sales room, office buildings, small stores, tinner shops, electrical shops, etc.

The motor is series wound universal and operates from any lighting socket. Equipped with a standard quick make and break switch, and show window impregnated cord. Has a 3-jaw self-tightening chuck.

The switch is automatic type, operating when the handle of the tool is grasped for drilling.

Type	Capacity Steel Inches	Speed R.P.M.	Wt. Lbs.	Price Each
ULA	1/4	1500	5	\$18.75

Add \$1.25 for 220 or 32 volts.

Type ULB Speedway Portable Drills
5/16-inch Capacity—110 Volts



This drill is sturdy, light in weight, and well constructed. Will take care of all drilling in steel and softer materials to rated capacity.

Furnished with 8-foot lead cord, screw plug, side handle, knob handle, self-tightening hand-operated three jawed chuck for straight shank drill bits 0 to 5/8 inch.

Type	Current	Chuck Capacity Inches	Load Speed R. P. M.	Wt. Lbs.	Price Each
ULB	Universal	0-5/16	750-1500	6	\$30.00

Add \$3.00 for 220 or 32 volts.

Type ULD Speedway Portable Drills
1/2-inch Capacity—110 Volts

Strongly constructed and well designed.

In the ULD expensive machined aluminum castings have given way to steel. Bronze in place of balls is used in bearings. Comfortable side handles and breast plate for hand and chest.

Equipped with 8-foot rubber lead cord, screw plug, side and knob handles.



Type	Current	Chuck Capacity Inches	Load Speed R. P. M.	Wt. Lbs.	Price Each
ULD	Universal	0-1/2	400	12	\$48.00

Add \$3.00 for 220 or 32 volts.

Speedway Stands

For Types ULB and ULD Drills

A stand used in conjunction with a drill adds greatly to its value. It allows the drill to be used as a portable tool, or in a moment's time by inserting the drill in the stand, it is converted into a drill press. Either take the work to the tool or the tool to the work.

Type LB Stands

Designed for use with Type ULB drill. Price, Type LB Stand Only. each \$15.00

Type LD Stands

Designed for use with Type ULD drill. Price, Type LD Stand Only

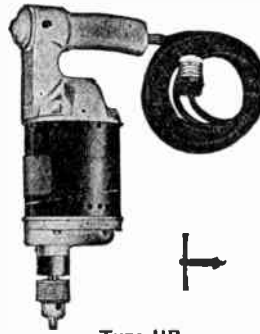
.....each \$20.00



Type ULD In Stand

Speedway Heavy Duty Portable Drills

Operate from Any Lamp Socket



Type UB

80 per cent of rated capacity. The gearing operates in grease on the approved principle of an automobile transmission.

Speedway Drills are built to stand heavy duty and constant service.

Their heavy torque practically eliminates stalling when breaking through a hole. Designed with a nicety of detail, making them rugged, efficient, convenient and light in weight. Liberality of design enables them to safely drill in steel 20 per cent over rated capacity and to ream holes

Motor is universal operating from direct and alternating current. Norma adjustable ball bearings are used on all sizes. Windings are thoroughly insulated and carefully distributed to give perfect electrical and mechanical balance. Large brushes give freedom from commutator trouble. Liberal fan insures cool operation.

Casing of tool is aluminum with properly positioned handles.

Particular attention is called to the manner of placing Brush Holders on brush holder spider in such a way that brushes may be shifted and with the exception of Type UAA, end bell may be removed and the running motor exposed to view and inspection.

Gearing is made of special heat treated alloy steel and runs in grease. Each gear is journaled on both ends thus eliminating trouble experienced with gears running on studs.

Ball thrust bearing and long bronze spindle bearing insure minimum friction and maximum life.

Switch for controlling motor is conveniently located near the handle.

Chuck ordinarily furnished as standard equipment is a high grade three jaw type, but for requirements two jaw or keyless type chucks may be specified; and, on the Type UG, and when so specified on the Type UD, taper sockets are furnished instead of chucks, to hold taper shank drill bits.

Equipment includes 8-foot cord, plug, breast plate or D handle, extra side handle, three jaw chuck and wrench.

Pressure screw or "Old Man" can be furnished at additional price of \$2.50.

Types UAA and UB are furnished with pistol grip.

Cat. No.	Current	Chuck Capacity Inches	Net Wt. Lbs.	Load Speed R. P. M.	Drilling Medium Wood In.	Reaming Mild Steel In.	Price Each
*†UAA	Universal	0 to 3/16	4	8000	3/16	..	\$37.50
UB	"	0 " 1/4	8	750	3/8-1/2	3/16	60.00
UC	"	0 " 3/8	14	600	3/4	5/8	70.00
UD	"	0 " 1/2	13	400	7/8	3/8	85.00
UE	"	1/8 " 5/8	21	350	1	1/2	90.00
UG	"	1/8 " 7/8	40	175	2	3/8	130.00

*Center spindle—direct from motor—no gears.

*†Particularly adapted to wood drilling.

Standard voltage is 115; 32 or 230 volts furnished at \$3.00 extra.

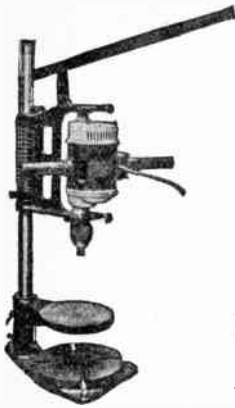
In ordering voltage must be specified.



Types UC, UD, UE

Speedway Stands

For Types UAA, UB, UC, UD, UE Drills



The drill is quickly inserted and securely held in the stand, by means of two clamping collars, held with thumb screws, placed around the stud in end bell and thrust bearing housing. Upper adjustable drilling table is removable.

For Use With Drills Type	Adjustable Drilling Stand Type	Length Inches	Wt. Lbs.	Price Each
UAA, UB	BA	8	18	\$30.00
UC, UD, UE	ED	13	65	35.00

If Type ED stand is used with Type UC drill extra stud will be furnished.

Speedway Slate and Marble Drills
110 Volts



Portable Electric Twist Drills manufactured and adapted to ordinary drilling of metal and wood, are not suited to the drilling of such materials as slate, marble, etc., being geared to such a high

drilling speed that the drill bit will not stand up.

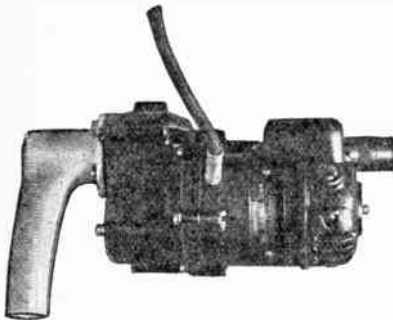
Type USD drill has the correct drilling speed for this type of work. It is of very light weight.

Type	Current	Wt. Lbs.	No Load Speed R.P.M.	Price Each
USD	A. C.-D. C.	8	240	\$85.00

Add \$3.00 for 220 volts.

Prices on diamond point slate and marble bits on application.

Speedway Screw Drivers and Nut Fasteners
110 Volts



Slow speed, ample power, light weight and great torque or pulling power, the prime requisites for such work as driving screws, nuts, bolts, lag screws, etc., are found in this Driver.

The lightness of weight, with pistol grip handle, makes for extreme portability and ease of handling. Aluminum casings throughout. Motor is universal, operating on both A.C. and D.C. of like voltage.

An extremely high gear reduction gives very slow speed together with very great torque. Gears are of chrome nickel steel, especially heat treated. Spindle is equipped with adjustable multiple disc clutch, which acts as a protector to the motor, allowing the spindle to be installed under a predetermined load and the motor continue to run. This eliminates the danger of stalling the motor and a consequent burn out.

Recommended for driving home up to No. 16 wood screws and 5/8-inch cap screws or nuts. A finder or sleeve can be furnished in various sizes to be used for the purpose of placing the tool over the screw, the driving tang automatically finding the slot in the screw head. Socket wrenches may be furnished for standard and special size nuts and bolts.

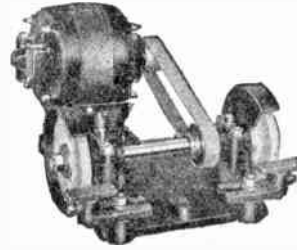
Driver regularly equipped with one finder, bare driving tang or socket wrench.

Type	Current	Wt. Lbs.	Load Speed R.P.M.	Price Each
U.S.	A. C. & D. C.	8 1/2	105	\$90.00
UBS	A. C. & D. C.	7	750	60.00

Add \$3.00 for 220 volts.

Speedway Bench Grinders

110 Volts



Sharp tools mean speed. This grinder is equipped with a 1/4-horse power motor to operate from any lighting socket. Plenty of power and correct grinding speed.

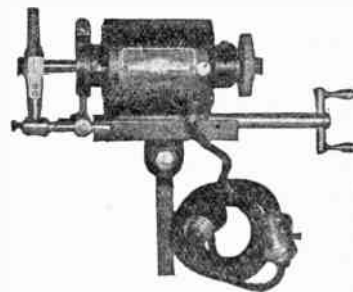
The machine is furnished complete with two 4 1/2-inch wheels, adjustable grinding rests, solid base, 8-foot lead cord and plug.

Type	Current	H. P.	Speed R.P.M.	Weight Pounds	Price Each
WAG	Alternating	1/4	3600	40	\$42.50
WDG	Direct	1/4	3600	40	47.50

Add \$3.00 for 220 volts.

Specify voltage and current when ordering.

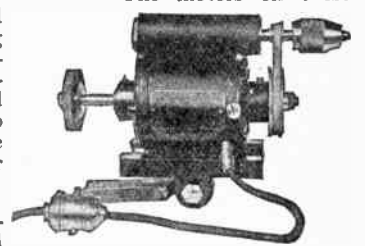
Type IU Speedway Tool Post Grinders



Type IU Grinders give accuracy and efficiency—efficiency through accuracy. Every armature is balanced on a specially designed dynamic balancing machine, thereby eliminating the possibility of chatter marked work. Self-aligning ball bearings are used throughout.

Type IU Grinder

The motors on these grinders are 1/8-h. p. and are Universal, operating on either direct or alternating current. The equipments A, B, C, D and E are interchangeable so that each of them may be set on the same center grinder.



Grinder With C Arm

Grinder with Equipment A is for general tool room use, and may be set up in a moment on any lathe, shaper or milling machine. It is the ideal tool for grinding dies, reamers, gauges, etc. The main motor spindle makes 10000 r. p. m. and the internal attachment 30000 r.p.m. The internal attachment has a reach of three inches.

The price includes five wheels for internal work 3/8, 1/2, 5/8, 3/4 and 7/8 in. and two wheels for external work, 2 1/2 and 4-inch. Also one cutter rest, cross feed lever, cord and plug.

Grinder with equipment C is for button die grinding and will grind at the rate of twenty per hour. The high speed spindle operates at 30000 r. p. m. When external work is to be done, the high speed spindle may be removed and either the 2 1/2 or 4-inch elastic wheel used.

The price includes a specially balanced chuck holding a 3/8-inch round emery pencil, 2 1/2 and 4-inch elastic wheels, one cutter rest, cross feed lever, cord and plug.

Equipments B, D and E for the 1U Grinders are for 5, 10 and 15-inch internal work.

Description	Price Each
Type 1U, Plain Machine, Universal 1/8-H. P.	\$50.00
A—Arm High Speed, 40000 R.P.M.	20.00
B— " 10-inch, Internal	30.00
C— " Chuck for Dies	15.00
For Dies:	
D—Arm 5-inch, Internal	20.00
E— " 15 " "	35.00

Standard voltages are 110 and 220 volts. Always specify voltage when ordering. Add \$3.00 for 220 volts.

Type 2UA Speedway Angle Plate Grinders



This 1/4-h. p. Universal Grinder is a strictly high grade tool for requirements of the tool room. All grinding is done from a special spindle, driven by belt. A great variety of speeds may be obtained by the use of various sized pulleys.

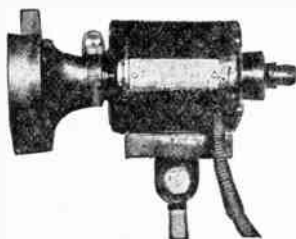
Internal quills for special requirements are also furnished. Full information, specifications on request.

Type	Motor	H. P.	Wt. Lbs.	Speed R. P. M.	Price Each
2UA	Universal	1/4	35	{ Internal 20000 External 5200 }	\$125.00
Price, B Arm, 10 In. Internal					each \$30.00
"	"	"	"	"	" 20.00
"	"	"	"	"	" 35.00
"	"	"	"	"	" 15.00
"	"	"	"	"	" 3.00

Type L-IU Speedway Grinders

110 Volts

This illustration shows the light 12-pound handy type L-IU Grinder which is adapted to external precision jobs, center grinding, etc. This grinder has stood the test of continuous industrial use and has demonstrated the economy that results from high speed, fine accuracy and wide adaptability of function of use.

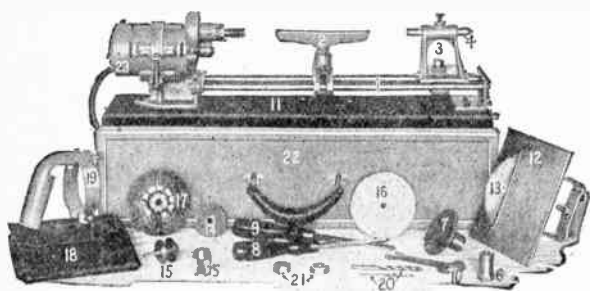


Dimensions, 9x6x4 inches. Speed, 10000 revolutions per minute. Horsepower, 1/8, motor series wound universal.

Price, Type L-IU	each \$27.50
" Extra for 220 or 32 volts	" 3.00

Specify voltage when ordering.

SpeedWay Shops



The SpeedWay Shop is a compact yet powerful group of tools and equipment—a whole metal and woodworking outfit which operates wherever there is a light socket.

A single power unit (a self-contained, back geared motor with forced ventilation and unit control switch) which when applied gives a complete shop, as listed below.

Power Lathe		Power Circular Saw	
1—Bed, 12-inch, 6-inch Swing	12—Rigid Table	12—5-inch Circular Saw	
2—Tool Rest			
3—Tail Stock			
4—Metal and Wood Centers	14—2-inch Wheel		
5—Chuck	15—Arbor and Flanges		
6—Spur Center			
7—Face Plate	16—4-inch Rag Wheel		
8—Parting Tool			
9—Gouge Chisel	17—4-inch Wire Brush		
10—Universal Wrench	18—Tool Case		
Base		Portable Electric Drill	
11—Finished Wood Base, 25x6 Inches	19—Handle	5—Chuck	
		20—21—Drill Bits	

22—Pressed Steel Case
23—SpeedWay Power Unit

Price, Complete	each \$75.00
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Speedway Portable Hammers

110 Volts



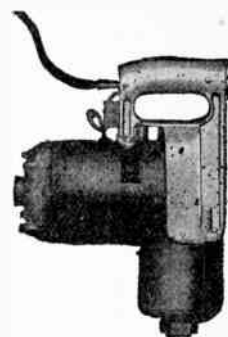
Types D-3 and U-2

Speedway Hammers are primarily built for drilling into concrete, stone, brick, etc. Light chipping, channeling, scaling and one hundred and one other uses where a great number of blows is required.

These hammers operate at about 15 per cent of the power cost of operating air tools and without the expenses and inconvenience of compressor, air piping hose, etc. Over handwork, the economy is from 80 to 90 per cent, and it is by no means

uncommon for a tool to save its cost in a week. Every tool is controlled by a switch mounted in the handle and equipped with flexible cord and plug. They may be attached to any lamp socket.

A man drilling by hand strikes from forty to sixty-five blows per minute. These hammers from 1000 to 3000. Power cost is negligible, about \$.15 a day for ordinary work. The hammer, when it strikes the blow, is absolutely free from the motor and the strength of the blow is constant. Cannot overload the machine, no burning out of armatures.



Types D-4 and U-6

Types U-2 and D-3 Light Series

Type	Current	Diagn. Drill In. In.	Speed per Min.	Power Consum. Wats	Blows per Min.	Net Wt. Lbs.	Price Each
U-2	A. C. - D. C.	1/2	2	150	3000	16	\$150.00
D-3	D. C.	1/2	2	150	3000	15	125.00

Types U-6 and D-4 Medium Series

U-6	A. C. - D. C.	1	2	240	1800	26	\$185.00
D-4	D. C.	1	2	240	1800	25	150.00

Type D-9 Heavy Series

D-9	D. C.	1 1/2	2	660	1200	75	\$240.00
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Add \$3.00 for 220 volts.

For drilling speed in brick multiply by 2. For drilling speed in granite divide by 2 and use diamond drills.

Electric Hammer Stands

Useful for Ceiling Drilling, Taking the Strain Off the Operators

For Use with Hammer Type	Stand No.	Length In.	Minimum Height	Maximum Height	Price Each
U-2 and D-3	23	6	4 ft. 6 in.	6 ft. 6 in.	\$10.00
U-6 " D-4	46-s	8	5 "	7 " 8 1/2 "	20.00
U-6 " D-4	46	8	7 " 6 in.	12 "	35.00
D-9	79	20	Post Type as Required		60.00

Steels for Hammers

The Star drill is especially adapted for working in concrete, brick and soft stone and is regarded as the standard tool for practically all purposes.

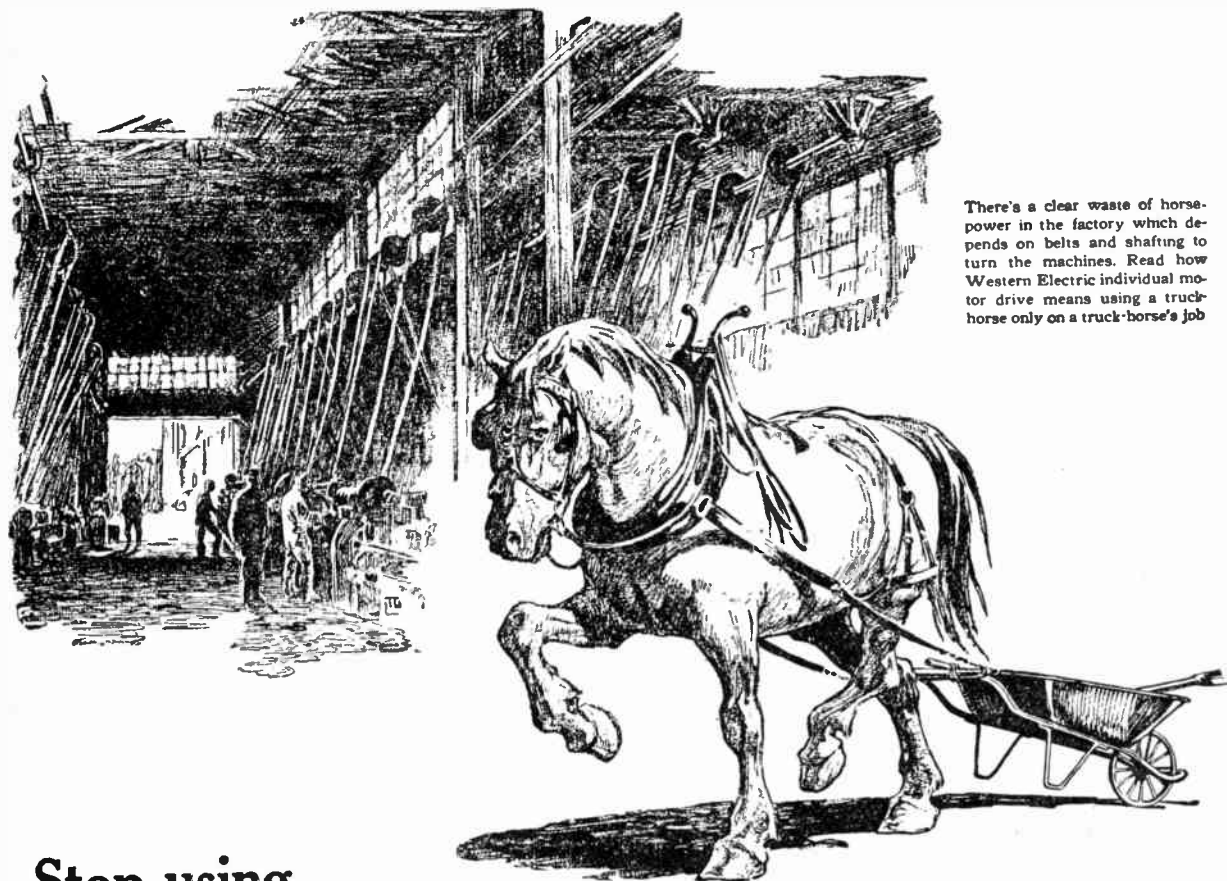
Star Drills

For Types D-3, D-4, U-2 and U-6 Hammers
These sizes are standard.

Diam. inches 3/8 or	PRICE, PER DOZEN						
	DRILLING LENGTH						
	5 In.	8 In.	12 In.	18 In.	24 In.	36 In.	48 In.
Under	\$16.00	*\$21.00	*\$24.00				
7/16	17.00	*21.00	*24.00				
1/2	19.00	*22.00	*25.00				
9/16	20.00	*22.00	*25.00				
5/8	20.00	22.00	*25.00				
3/4		\$22.00	23.00	*26.00	*\$30.00		
7/8		22.00	24.00	27.00	31.00		
1		23.00	25.00	28.00	32.00	*\$39.00	
1 1/8		24.00	26.00	29.00	34.00	*40.00	*\$46.00
1 1/4		25.00	27.00	30.00	35.00	*41.00	*47.00

*Special—Not in stock.

Prices on water-flushed hollow drills, bull points, bush hammers, mill picks, etc., on application.



There's a clear waste of horsepower in the factory which depends on belts and shafting to turn the machines. Read how Western Electric individual motor drive means using a truck-horse only on a truck-horse's job

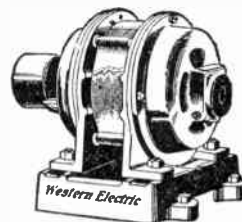
Stop using a truck-horse to pull a wheelbarrow

A BIG HORSE doing a little horse's work, or even a man's work—that's exactly what happens when you use your horsepower to drive shafting.

Ask any Western Electric motor dealer to figure how much power and money you can save when you install Western Electric individual motor drive.

Power when and where you want it—

Western Electric motors and control can cut your operating costs and give you more satisfactory results in the bargain. Western Electric service too is an economy. Our prompt delivery from complete stocks saves time on an installation. Full particulars—both the service and a motor layout—whenever you say.



**—and everything
that goes with it**

The Western Electric line goes all the way from the conduit to the motor—complete supplies for a quality job. Put it up to a Western Electric motor dealer and you can be sure everything will be right, down to the last detail.

Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Foreword Western Electric Motor Information

The best electrical talent of the times is responsible for the selection and test of the materials which go into Western Electric Motors. Designed to give lasting service and to stand up under the demands of day in and day out service, these motors naturally live up to their reputation for quality and dependability.

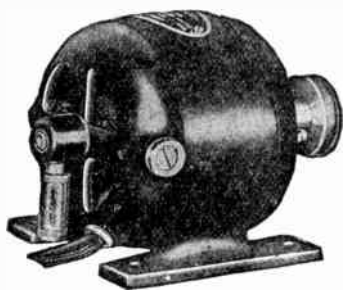
Sturdy and time-tested construction results in motors that bring real economy to the user by their freedom from trouble and the continuity of the service they render. Economical, too, is the distribution service back of these motors, for with its offices in more than half a hundred cities, Western Electric can supply motor and control equipment promptly to any of the manufacturing centers of the country.

Many Industrial plants and Electrical contracting firms are using Western Electric service to advantage on motor and control equipment. By dealing with nearest Western Electric distributing house, these customers avoid tying up capital in large stocks of motors and control equipment. The plan of ordering as needed saves storage space, too.

Buyers of electric motor equipment are invited to visit their nearest Western Electric distributing house at the first opportunity and inspect the stock and shipping facilities maintained there. Detailed information on any specific type of motor or control is available, either through personal call or by mail. In addition to motors and control equipment a full line of conduit, fittings and wire is maintained, ready for prompt shipment.

Western Electric Motors and Control Equipment are handled by representative dealers in cities and towns throughout the country. You will find them willing and capable to advise and help you on all your electrical power apparatus problems.

Western Electric Type SDA A.C. and D.C. Motors



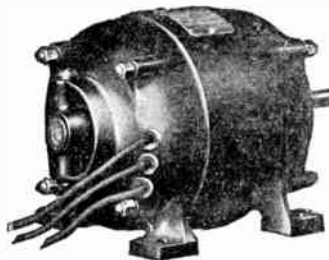
MODEL No.		Horse-power	Speed R.P.M.	Frame No.	Shipping Weight Pounds
*110 Volts A.C. 60 Cycles Series Wound	*110 Volts D.C. Series Wound				
27307	27308	1/200	2200	300	6
27309	27311	1/100	2200	305	8
27312	27314	1/50	1800	315	13
20065	20073	1/25	1800	325	20
24651	24653	1/15	1800	335	25

*Can be furnished for 220 volts.
Prices upon application.

Western Electric Type RKT Motor

Waste-packed Bearings

110 Volts, 2 and 3-phase, A.C.



Cat. No. does not include pulley, or cord and plug.

Motors can be furnished wound for 220 volts.

Motors can also be furnished for use on two-phase circuits and are known as Type RKQ.

Model No.	Cycles	Horse-power	Speed R.P.M.	Frame No.	Shipping Wt., Lbs.
27428	60	1/2	1725	1435	20 1/2
27755	60	1/2	1725	1445	31 1/2
27757	60	3/4	1725	1455	52 1/4
27761	60	1/2	1140	1445	31 1/2
27763	60	1/2	1140	1455	52 1/4
27765	60	3/4	1140	1465	70
27767	50	1/2	1425	1435	20 1/2
27769	50	1/2	1425	1445	31 1/2
27771	50	3/4	1425	1455	52 1/4
27773	40	1/2	1140	1445	31 1/2
27774	40	1/2	1140	1445	31 1/2
27775	40	1/2	1140	1455	52 1/4
27776	40	1/2	1140	1455	52 1/4
27777	40	3/4	1140	1465	80
27778	40	3/4	1140	1465	80
27779	25	1/2	1425	1439	28 3/4
27781	25	1/2	1425	1449	39
27783	25	3/4	1425	1459	69

Prices upon application.

Western Electric Type SD Direct Current Motors

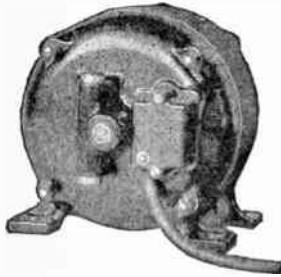


Model No.	H.P.	Volts	Speed R.P.M.	Shunt Wound		Speed R.P.M.	Frame No.
				Frame No.	Model No.		
20033	1/20	220	1725	325	20034	1725	325
Compound Wound							
27627	1/12	32	1140	1236	27582	1140	1256
27207	1/12	115	1140	1236	27482	1140	1256
27508	1/12	230	1140	1236	27510	1140	1256
26208	1/8	32	1725	1236	26211	1725	1256
26201	1/8	115	1725	1236	26203	1725	1256
27244	1/8	230	1725	1236	27252	1725	1256
27709	1/8	32	1725	1238	27583	1725	1264
27481	1/8	115	1725	1238	26222	1725	1264
27626	1/8	230	1725	1238	27532	1725	1264
27581	1/8	32	1140	1246	26216	1140	1264
26346	1/8	115	1140	1246	26204	1140	1264
27509	1/8	230	1140	1246	27496	1140	1264
26210	1/4	32	1725	1246	27584	1725	1266
26202	1/4	115	1725	1246	27578	1725	1266
27248	1/4	230	1725	1246	27579	1725	1266

Frame 325 motor has wick oiled bearings; others waste packed. Frame 325 has feet cast integral with frame; others cast integral with end shields. All 1725 r.p.m. motors rated for continuous duty, 40 deg. C. temperature rise; all 1140 r.p.m. motors for continuous duty, 50 deg. C. temperature rise. Cat. Nos. do not include pulleys.

Western Electric Type SA A.C. Small Power Motors

**Protected Type—Constant Speed
60, 50, 40 and 25 Cycles, Single-phase**



Revolving primary Type SA motors should be selected as closely as possible for the frequency and voltage on which they are intended to operate, but successful operation may be expected on circuits where the variation of either the frequency or voltage from normal does not exceed 5 per cent. Where both the frequency and voltage vary, the sum of the variations must

not exceed 10 per cent. The starting torque and maximum torque will vary as the square of the voltage, the speed varying directly as the frequency.

Standard direction of rotation is counter-clockwise. Specify direction of rotation when ordering.

50 Per Cent Overload Start

H. P.	*Frame	Full Load Speed R.P.M.	Volts	Cycles	MOTOR ONLY		Pulley Cat. No.
					†Model No.	Wt. Lbs.	
1/20	135	1725	110	60	27417	20	191213
			220	60	27935	20	191213
1/20	135	1425	110	50	28059	20	191213
			220	50	28060	20	191213
1/20	135	1140	110	40	26421	20	191213
			220	40	28061	20	191213
1/20	135	1425	110	25	26079	20	191213
			220	25	28062	20	191213
1/10	1135	1725	110	60	26137	20	191213
			220	60	29014	20	191213
1/10	1135	1425	110	50	29015	20	191213
			220	50	29016	20	191213
1/10	1145	1140	110	40	26808	34	191213
			220	40	26812	34	191213
1/10	1145	1425	110	25	26813	34	191213
			220	25	26814	34	191213
1/8	1137	1725	110	60	26138	28	191215
			220	60	29017	28	191215
1/8	1137	1425	110	50	29018	28	191215
			220	50	29019	28	191215
1/8	1145	1140	110	40	23967	34	191215
			220	40	24774	34	191215
1/8	1145	1425	110	25	20188	34	191215
			220	25	24055	34	191215
1/6	145	1725	110	60	26135	34	204389
			220	60	28018	34	204389
1/6	145	1425	110	50	28208	34	204389
			220	50	28209	34	204389
1/6	1147	1140	110	40	24069	36	204389
			220	40	24809	36	204389
1/6	1147	1425	110	25	24003	36	204389
			220	25	24074	36	204389
1/4	147	1725	110	60	26136	36	204389
			220	60	28019	36	204389
1/4	147	1425	110	50	27598	36	204389
			220	50	28205	36	204389
1/4	1149	1140	110	40	24009	40	204389
			220	40	24775	40	204389
1/4	1149	1425	110	25	28814	40	204389
			220	25	28964	40	204389
1/2	1137	1140	110	60	24815	28	191215
			220	60	24816	28	191215
1/6	147	1140	110	60	24015	36	204389
			220	60	24016	36	204389
1/4	1147	1140	118	40	25737	36	204389
			118	40	25738	40	204389

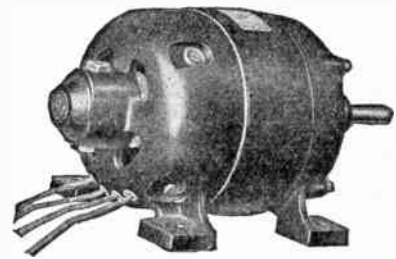
*All frames have waste-packed bearings. Feet are cast integral with end shields. †Model No. does not include pulley or connecting cord with plug. ‡Ratings are for intermittent duty and are not satisfactory for continuous duty. If continuous duty motors are required refer to the company.

The waste-packed bearing protected type motors are mechanically interchangeable with the wick-oiled bearing open type motors of the corresponding frames for either A. C. or D. C. types. Footless motors in all frames listed can be furnished in the same ratings at same prices as with feet.

Prices upon application.

Western Electric Type RSA Fractional Horsepower Motors

Constant Speed, Single Phase, Repulsion Start



Standard direction of rotation is counter-clockwise facing the end opposite pulley. Has waste-packing bearings.

Type RSA is a constant speed high starting torque motor. Motor starts as a repulsion motor and at a predetermined speed, a centrifugal device short circuits the commutator and motor then runs as and with induction motor characteristics. Brushes are fixed, that is, they are not lifted from commutator but carry current only when the motor is starting.

Enclosed motors furnished when desired. Refer to nearest distributing house.

Starting torque, 300 to 400 per cent of full load torque with full line voltage.

Maximum running torque, 200 per cent of full load torque.

The starting current is approximately three times the full load normal running current.

These motors will operate successfully when the combined variation of the voltage and frequency does not exceed 10 per cent above or below that given by the name plate stamping. Standard motors may be operated on circuits corresponding to either of their two listed voltages by suitably grouping the external connections of the four leads brought out from the motor frame.

Listed 40-cycle, 118/236-volt motors will operate successfully on circuits varying from 110/220 to 127/254 volts inclusive, but not necessarily in accordance with the standards established for operation on 118/236 volts.

Standard 60-cycle Type RSA motors should not be operated upon 50-cycle circuits.

60 Cycles

H. P.	Frame	Full Load Speed R.P.M.	Volts	MOTOR ONLY †Model No.	Ship. Wt. Lbs.	Cat. No. Pulley Only
1/6	1437	1725	110/220	27303	22	191215
			110/220	26154	36	204389
1/4	1445	1725	110/220	26156	57	.....
			110/220	26157	76	.....
1/12	*1437	1140	110/220	27664	25	191215
			110/220	27665	40	204389
1/3	*1447	1140	110/220	27666	59	.....
			110/220	27667	78	.....
1/2	*1465	1140	110/220	27668	100	.....
			110/220	27668	100	.....

50 Cycles

1/8	1437	1425	110/220	27652	23	191215
1/6	1439	1425	110/220	27653	27	204389
			110/220	27654	40	204389
1/4	1447	1425	110/220	27461	57	.....
			110/220	27462	76	.....

40 Cycles

1/8	1439	1140	118/236	27657	29	191215
1/6	1445	1140	118/236	28511	36	204389
			118/236	27659	57	.....
1/2	1465	1140	118/236	27660	76	.....
			118/236	27661	100	.....

25 Cycles

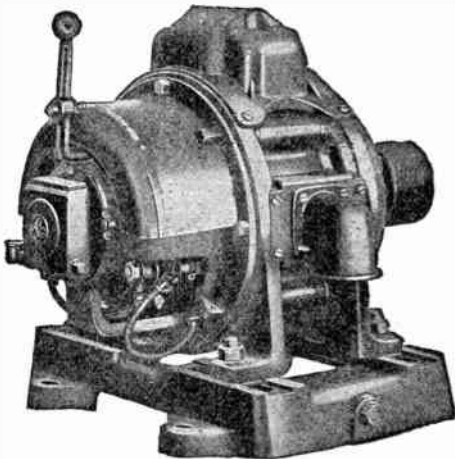
1/8	1439	1425	110/220	26176	29	191215
1/4	1449	1425	110/220	26177	44	204389
			110/220	26178	67	.....
3/4	1469	1425	110/220	26179	100	.....

*These motors are rated for continuous duty, 50 deg. C. temperature rise. All other motors listed are rated for continuous duty, 40 deg. C. temperature rise.

†Model numbers listed do not include pulleys.

Prices upon application.

Western Electric Type BSR Single-phase Varying Speed Motors
60 Cycles, 110 or 220 Volts



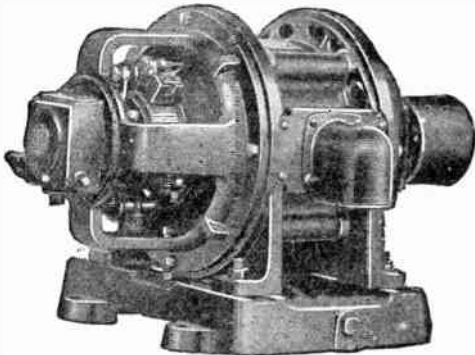
Foot controllers are available for all sizes of brush shifting varying speed Type BSR motors. With these controllers a speed range, when the motor is operated against full load torque, of 2.5:1 is obtained through a large number of intermediary steps. Speed range 2000/800 r.p.m. on motors having synchronous speed of 1800 r.p.m. and 1350/550 r.p.m. on motors having synchronous speed of 1200 r.p.m.

Frame No.	H.P.	Syn. Speed R.P.M.	Range	Frame No.	H.P.	Syn. Speed R.P.M.	Range
*803	1/4	1800	2000/800	822	3/4	1200	1350/550
812	1/4	1200	1350/550	822	1	1800	2000/800
812	1/2	1800	2000/800	827	1	1200	1350/550
822	1/2	1200	1350/550	827	1 1/2	1800	2000/800
816	3/4	1800	2000/800	832	2	1800	2000/800

*Adjustable sliding bases are available for all except frame No. 803. Prices upon application.

Western Electric Type SCR Single-phase Repulsion Induction Motors

Constant Speed
60 Cycles, 110 or 220 Volts

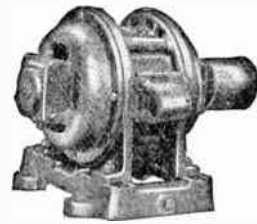


Designed for constant speed, with moderate or heavy starting torque. In starting direct from the line Type SCR motors take current approximately in proportion to torque. If desired to reduce current values during acceleration, Type CR1026 rheostats may be ordered at an extra charge.

H.P.	Volts	Speed R.P.M.	H.P.	Volts	Speed R.P.M.
1/2	110/220	1800	2	110/220	1800
1/2	110/220	1200	2	110/220	1200
3/4	110/220	1800	3	110/220	3600
3/4	110/220	1200	3	110/220	1800
1	110/220	3600	3	110/220	1200
1	110/220	1800	5	110/220	1800
1	110/220	1200	5	110/220	1200
1 1/2	110/220	3600	7 1/2	220/440	1800
1 1/2	110/220	1800	7 1/2	220/440	1200
1 1/2	110/220	1200	10	220/440	1800
2	110/220	3600	....	.....	....

Prices upon application.

Type KT and KQ Western Electric Standard Polyphase Induction Motors



Types KT or KQ
Riveted Frame Induction Motor

The following is a partial list of Western Electric Constant Speed, Belt Drive, Standard and Semi-standard Induction Motors for use on two and three-phase circuits of the voltages and frequencies given. Further data and prices may be obtained upon application; other ratings and speeds are also available.

Types KT and KQ have squirrel cage rotors and are designed for constant speed service.

60 Cycles

H.P.	Speed R.P.M.	Volts	H.P.	Speed R.P.M.	Volts
1/2	1200	110-220-440-550	10	1200	220-440-550
3/4	1200	110-220-440-550	10	1800	220-440-550
3/4	1800	110-220-440-550	15	900	220-440-550
1	1200	110-220-440-550	15	1200	220-440-550
1	1800	110-220-440-550	15	1800	220-440-550
1 1/2	1200	110-220-440-550	20	900	220-440-550-2200
1 1/2	1800	110-220-440-550	20	1200	220-440-550-2200
2	1200	110-220-440-550	20	1800	220-440-550
2	1800	110-220-440-550	25	900	220-440-550-2200
3	1200	220-440-550	25	1200	220-440-550-2200
3	1800	220-440-550	30	900	220-440-550-2200
5	1200	220-440-550	30	1200	220-440-550
5	1800	220-440-550	40	900	220-440-550-2200
7.5	1200	220-440-550	40	1200	220-440-550-2200
7.5	1800	220-440-550	50	900	220-440-550-2200
10	900	220-440-550	50	1200	220-440-550-2200

25 Cycles

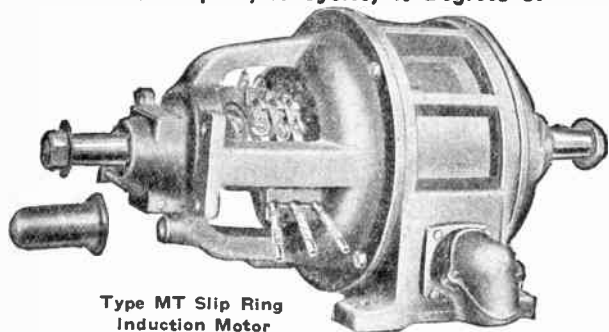
H.P.	Speed R.P.M.	Volts	H.P.	Speed R.P.M.	Volts
1/4	750	110-220-440-550	7.5	1500	220-440-550
1/4	1500	110-220-440-550	10	500	220-440-550
1/2	750	110-220-440-550	10	750	220-440-550
1/2	1500	110-220-440-550	15	500	220-440-550
1	750	110-220-440-550	15	750	220-440-550
1	1500	110-220-440-550	20	500	220-440-550
1 1/2	750	110-220-440-550	20	750	220-440-550
2	750	110-220-440-550	25	500	220-440-550
2	1500	110-220-440-550	25	750	220-440-550
3	750	220-440-550	30	500	220-440-550-2200
3	1500	220-440-550	40	750	220-440-550-2200
5	750	220-440-550	50	500	220-440-550-2200
5	1500	220-440-550	50	750	220-440-550-2200
7.5	500	220-440-550	..	..	.....
7.5	750	220-440-550	..	..	.....

40 and 50 Cycles

A complete line of 40 and 50-cycle motors can be furnished. Information furnished upon request.

Information on other types and sizes furnished upon application. Prices upon application.

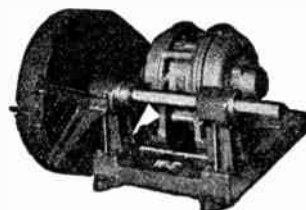
Western Electric Type MT 3-phase Slip Ring Induction Motors
Constant Speed, 60 Cycles, 40 Degrees C.



Type MT Slip Ring Induction Motor

H. P.	Frame No.	Speed R.P.M. Approx.	Full Load	Volts	Ship. Wt. Lbs. Motor with Pulley Base and Starter	H. P. No.	Frame No.	Full Load	Volts	Ship. Wt. Lbs. Motor with Pulley Base and Starter
1	926	825		110	205	30	523	1725	220	1480
	926	1100								
1	932	845		220	245	30	526	1730	220	1500
	932	845								
1 1/2	932	845		440	245	30	532	1155	220	1955
2	926	1700		550	205	30	532	850	220	1935
	934	1115								
2	936	850		220	265	30	536	860	220	2210
	932	1690								
3	938	1140		440	245	30	542	690	220	2500
	944	855								
5	936	1700		220	270	30	546	570	220	2840
	946	1140								
5	952	855		440	485	40	527	1740	220	1625
7 1/2	944	1700		550	415	40	532	1140	220	1445
	952	1145								
7 1/2	958	870		220	510	40	532	1140	220	1985
	948	1725								
10	956	1145		220	600	40	536	850	220	2220
	510	840								
10	522	665		440	905	40	536	850	220	2145
	501	1700								
15	502	1125		550	745	40	546	690	220	2870
	512	845								
15	532	675		220	995	40	552	575	220	3140
	532	555								
20	503	1720		440	800	50	527	1725	220	1505
	512	1145								
20	522	855		220	1015	50	533	1740	220	1845
	536	680								
20	536	680		220	995	50	536	1165	220	2230
	536	560								
25	512	1720		440	1210	50	542	860	220	2540
	522	1130								
25	526	1140		220	1190	50	542	860	220	2540
	526	840								
25	532	855		220	1945	50	546	865	220	2900
	536	675								
25	542	570		220	1925	50	552	695	220	3150
25	526	840		220	1945	50	552	570	220	3150
25	532	855		220	2085	50	552	570	220	3170
	536	675								
25	542	570		220	2415	50	552	570	220	3170
				2200	2395					
				2200	2510					

Western Electric Back Geared Motors



Type KT, 3-phase Motor on Reduction Gear Base

Direct or alternating current motors for use with back geared features, employing steel or fabroil pinions, should be selected so that the horse power rating at any speed does not exceed the limits indicated below.

H.P.	Speed R.P.M.	H.P.	Speed R.P.M.	H.P.	Speed R.P.M.
10	1800	30	1000	60	750
15	1500	40	900	50	720
30	1200	60	800	40	600

If side wall or ceiling installation is desired, platform suspension with standard horizontal equipment is recommended.

Reduction Gear Bases For A.C. and D.C. Motors

SINGLE-PHASE TYPE SCR		2 AND 3-PHASE TYPES KT, KQ, MT AND MQ	
Motor Frame No.	Gear Base No. WF	Motor Frame No.	Gear Base No. WF
803	15	914	20
		806	
812	20	924	30
		816	
821	30	932	40
		822	
827	40	934	45
		832	
836	45	936	50
		832	
843	50	938	60
		845	
853	50	944	90
		856	
858	50	946	90
		858	
		948	
		952	
		954	
		956	
		958	

Direct Current

TYPE RC		TYPE RA		TYPE RF	
Motor Frame No.	Gear Base No. WF	Motor Frame No.	Gear Base No. WF	Motor Frame No.	Gear Base No. WF
21A	15	4	25	7	50
		21B	4-B	30	8	60
22	20	5	35	9	65
23B	25	6	45	10A	75
24	30				
25	45			10	90
26A				11	
27A	50				
27B					
49A	65				
49					
50	75				
51	90				
51B					

Complete specifications and prices upon application.

Prices upon application.

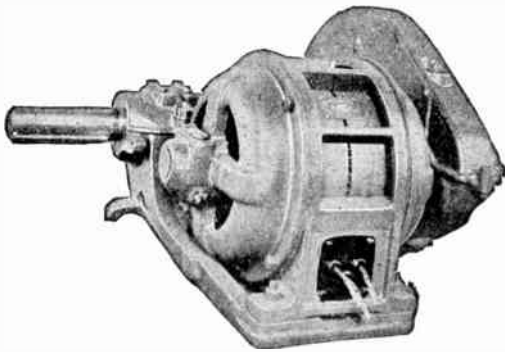
Western Electric Back Geared Motors

Gear Base No. WF	GEAR RATIOS		*APPROX. WT., LBS. COMPLETE BASE Net	Additional Net or Ship. Wt., Lbs. for Slide Rails
	With Steel Pinion	With Fabroil Pinion		
19			35	50
15			45	70
20	6.94 to 1	4 to 1	60	90
25			75	110
30	6.875 to 1	4.04 to 1	100	140
35			110	155
40	6.875 to 1	4.04 to 1	140	185
45	7.07 " 1	4.04 " 1	170	225
50	7.06 " 1	3.96 " 1	230	300
60	6.75 " 1	3.96 " 1	350	460
65			410	530
75			550	750
80			660	875
90			1050	1300

*The weights listed are in addition to the regular weight of the motor.

Cradle Type

Including Pinion, Gear and Gear Case for Types KT and KQ Motors



The cradle type back-gear attachment is a device which is designed for use with standard motors, with or without standard base. When standard base is used, the back-gear attachment is fitted between the motor and base and dowelled to the motor to ensure alignment being maintained. Ring oiling bearings are used. Gear cases are oil tight, except at the joints and around the shaft.

Frame No.	GEAR RATIO		Approx. Ship. Wt. Lbs. Back-gear Mot. Compl. Less Pulley and Base
	With Steel Pinion	With Fabroil Pinion	
302			1040
303			1100
312	6.42 to 1	3.73 to 1	1190
313			1250
322			1800
323			1810
326	6.53 to 1	4.05 to 1	1950
327			1960
332			2500
333			2560
336	6.2 to 1	3.73 to 1	2800
337			2900
342			3900
343			3960
346	6.05 to 1	3.76 to 1	4200
347			4250

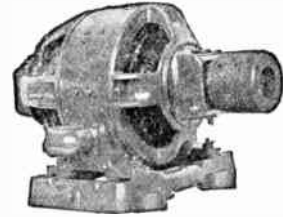
For addition to the net retail price of standard motor. Sliding base not included, but if wanted, use standard sliding base and price.

Gear case not furnished unless called for on the requisition.

Prices upon application.

Western Electric Types BD (2-pole) and CD (4-pole) Direct Current Motors

Constant Speed, Commutating Poles



Iron sliding bases and starting rheostats are included with standard belted motors. Semi-enclosing covers will be furnished on special order. The use of solid enclosing covers increases the temperature rise of motors to which they are applied and therefore modifies the open ratings. Belt tightener attachments, consisting of cast iron ring adjustable idler on pulley end, may be furnished on order.

Motors will operate successfully at normal rated load at any voltage not more than 10 per cent above or below normal, but not necessarily in accordance with the standards of performance established for operation at normal rated voltage.

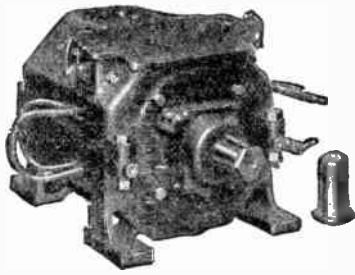
All standard Types BD and CD shunt wound motors may have speeds increased by field adjustments 25 per cent above normal, maintained rated output.

Frame No.	H. P.	Volts	Rated Full Load Speed R. P. M.	Frame No.	H. P.	Volts	Rated Full Load Speed R. P. M.
ED-23	1/2	115/230	1750	CD-75	15	550	2100
BD-25	3/4	115/230	1750	CD-83	15	115/230	1150
BD-25	3/4	550	2100	CD-83	15	550	1375
BD-27	1	115/230	1750	CD-85	15	115/230	850
BD-27	1	550	2100	CD-85	15	550	1050
BD-33	1	115/230	1150	CD-85	20	115/230	1150
BD-33	1	550	1375	CD-85	20	550	1375
BD-33	1 1/2	115/230	1750	CD-95	20	115/230	850
BD-33	1 1/2	550	2100	CD-95	20	550	1050
BD-43	1 1/2	115/230	1150	CD-93	25	115/230	1150
BD-43	1 1/2	550	1375	CD-93	25	550	1375
BD-35	2	115/230	1750	CD-95	30	115/230	1150
BD-35	2	550	2100	CD-95	30	550	1375
BD-45	2	115/230	1150	CD-103	25	115/230	850
BD-45	2	550	1375	CD-103	30	550	1000
BD-45	3	115/230	1750	CD-105	30	115/230	850
BD-45	3	550	2100	CD-103	40	115/230	1150
CD-55	3	115/230	1150	CD-105	40	550	1000
CD-55	3	550	1375	CD-113	40	115/230	850
CD-55	5	115/230	1750	CD-103	50	550	1375
CD-55	5	550	2100	CD-105	50	115/230	1150
CD-65	5	115/230	1150	CD-113	50	550	1000
CD-65	5	550	1375	CD-115	50	115/230	850
CD-73	5	115/230	850	CD-105	60	550	1375
CD-73	5	550	1050	CD-113	60	115/230	1150
CD-65	7 1/2	115/230	1750	CD-115	60	550	1000
CD-65	7 1/2	550	2100	CD-123	60	115/230	850
CD-73	7 1/2	115/230	1150	*CD-113	75	550	1375
CD-73	7 1/2	550	1375	CD-115	75	230	1150
CD-75	7 1/2	115/230	850	CD-123	75	550	1000
CD-75	7 1/2	550	1050	CD-125	75	115/230	850
CD-73	10	115/230	1750	*CD-115	100	550	1375
CD-73	10	550	2100	*CD-123	100	230	1150
CD-75	10	115/230	1150	*CD-125	100	550	1000
CD-75	10	550	1375	*CD-123	125	550	1375
CD-83	10	115/230	850	*CD-125	125	230	1150
CD-83	10	550	1050	*CD-125	150	550	1375
CD-75	15	115/230	1750	.....	.....	.....	.....

*For direct connection only.

Prices upon application.

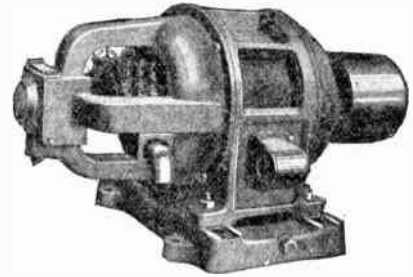
Western Electric Form A D.C. Crane and Hoist Type Motors
Series Wound
115 Volts



115 Volts

Frame No.	30 Min. 55 Deg. C.		15 Min. 55 Deg. C.	
	H.P.	Speed	H.P.	Speed
1822	3	875	3 3/4	700
1823	5	875	6 1/4	750
1824	7 1/2	750	10	600
1825	10	725	13 1/2	600
1826	15	650	19	575
1827	20	600	26	525
1828	25	550	33	475
1829	35	550	45	500
1830	50	525	65	450
..
230 Volts				
1822	3	875	3 3/4	700
..	5	1450	6 1/4	1275
1823	5	875	6 1/4	750
..	7 1/2	1350	10	1175
1824	7 1/2	750	10	600
..	10	1000	13 1/2	875
1825	10	725	13 1/2	600
..	15	1000	20	875
1826	15	650	19	575
..	20	875	26	775
1827	20	600	26	525
..	25	775	33	700
1828	25	550	33	475
..	35	750	50	650
1829	35	550	45	500
..	50	750	65	675
1830	50	525	65	450
..	65	700	85	650
1831	75	500	100	450
..	100	675	130	600
1832	100	475	130	425
..	125	625	165	575
..
550 Volts				
1822	3	1000	3 3/4	850
1823	5	1000	6 1/4	900
1824	7 1/2	825	10	700
1825	10	775	13 1/2	650
1826	15	675	19	600
1827	20	675	26	600
1828	25	600	33	525
1829	35	600	45	550
1830	50	550	65	475
1831	75	525	100	475
1832	100	500	130	450
..

Types MTC and MQC Western Electric Hoist Type Motors
60 Cycles
Polyphase



Types MTC and MQC Hoist Motor
30 Min. 50 Deg. C.

Frame No.	H.P.	With 2 Bearings		Volts
		SPEED		
		Sync.	Full Load	
5932	2	1200	1130	
5932	2	900	840	
5936	3	900	840	
5934	4	1200	1120	
5938	5	1200	1130	
5944	5	900	845	
5946	7 1/2	1200	1155	
5952	7 1/2	900	855	
5952	10	1200	1150	
5958	10	900	865	220
5956	15	1200	1145	440
5302	15	900	810	550
5302	20	1200	1110	
5312	20	900	835	
5326	25	720	670	
5332	25	600	560	
5312	30	1200	1140	
5322	30	900	845	
5336	35	600	565	
5322	40	1200	1125	
5326	40	900	840	
60 Min. 50 Deg. C. With 2 Bearings				
Frame No.	H.P.	SPEED		Volts
		Sync.	Full Load	
5326	50	1200	1140	220
5342	50	600	565	440
5336	60	900	855	550
5346	60	600	570	
5342	80	900	860	220
..	..	..	..	440-550
5352	80	600	570	220
..	..	..	..	440-550
5346	100	900	865	220
5352	100	720	685	440
..	..	..	..	550
With 3 Bearings				
5356	100	600	575	
5356	125	720	690	
5015	150	720	695	220
5016	165	450	435	440
5016	225	600	575	550
5017	225	450	435	
5017	300	600	580	

Motors will be furnished with keys, nuts and lock washers for shaft extension on each end, except three bearing motors which will have key for pinion and key, nut and lock washer for solenoid brake, and in addition, a thimble will be furnished for the solenoid brake end of the motor. The thimble will be omitted when a solenoid brake is ordered on the requisition with the motor, or when the requisition specifies that a solenoid brake will be used with the motor.

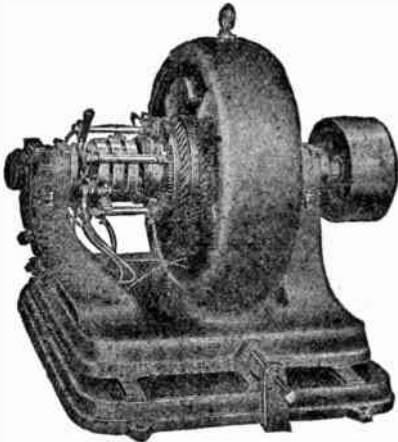
High-voltage (2200 volts) hoist propositions should be referred to the manufacturer giving complete information including duty cycle, as drum type controllers are not recommended except in special cases.

Prices upon application.

**Western Electric Types TAB or QAB
A.C. Belt Driven Generators**

Form ML

120, 240, 480, or 600 Volts



**Type TAB or QAB Form ML Belt Driven Alternators,
Self-exciting Revolving Armature Type**

The self-excited revolving armature Form ML alternator is especially adapted for installation in isolated plants and small power plants.

The alternators are built in three sizes, 7½, 15 and 25 kw., 120, 240, 480 and 600 volts, 60-cycle two-phase or three-phase. They may be operated as single-phase alternators. Their single-phase rating is 70 per cent of their three-phase rating.

1.0 P-F.	0.8 P-F.	Speed R.P.M.	Approx. Ship. Wt. Lbs.	Poles	NET WT., LBS.			
					Rotor	Stator	Sub-base	Total
9	7.2	1800	860	4	120	500	95	715
18	14.4	1800	1300	4	165	810	95	1070
30	24.0	1800	2050	4	235	1160	140	1535

The generators are equipped with an auxiliary direct current armature winding and commutator from which the field excitation is obtained. The alternating current winding can be two or three-phase at the same price.

Single-phase capacity is 70 per cent of the above capacity.

Prices upon application.

Heating Specifications

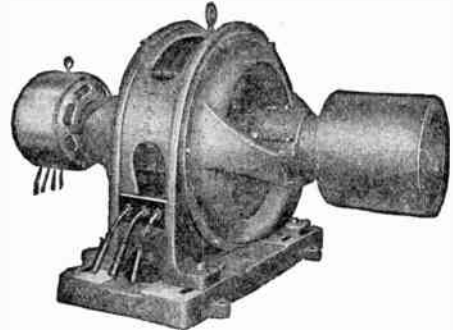
Full load continuously at rated voltage and power-factor 50 deg. C. rise. No overload.

If it is desired to obtain a rating on which 25 per cent overload for two hours may be guaranteed, this rating will be 83½ per cent of the corresponding one given above. For this rating, heating guarantees will be full load continuously 40 deg. C. rise. 125 per cent load two hours, 55 deg. C. rise.

**Western Electric Types ATB or AGB
Continuous Rated A.C. Belt-driven
Generators**

60 Cycles, Polyphase

240, 480, 600, 1150 or 2300 Volts



**Type ATB Form PB Belt Driven Alternators
with Direct Connected Exciters**

The Form PB belt driven alternator is especially adapted for installation in small plants.

These alternators are so designed that they operate at high efficiencies at all loads on power factors of from 80 to 100 per cent. They range in capacity of from 30 kw. to 200 kw., 60 cycles, two or three-phase, and voltages of 240, 480, 600, 1150 or 2300 volts.

They may be operated as single phase alternators by using two of the phases, and may then be rated at 65 per cent of the polyphase rating. They may be furnished with or without direct connected exciter.

The Form PB alternators may be used as synchronous motors, synchronous condensers, and for this duty they are equipped with squirrel cage winding in the pole faces, which does not interfere with their use as generators.

CAPACITY	Kv-a. 0.8 P-F.	Kw 0.8 or 1.0 P-F.	Speed R.P.M.	APPROX. SHIP. WT., LBS.	
				Without Exc.	With Direct Con. Exc.
37.5	30	30	1200	2100	2350
56.3	45	45	1200	2800	3150
75	60	60	1200	3250	3600
112.5	90	90	1200	3900	4400
112.5	90	90	900	4300	4800
150	120	120	900	5230	5930
150	120	120	720	5500	6300
150	120	120	600	6000	6800
225	180	180	900	6475	7175
†225	180	180	720	10470	11200
225	180	180	600	8100	9200
†225	180	180	600	11470	12380

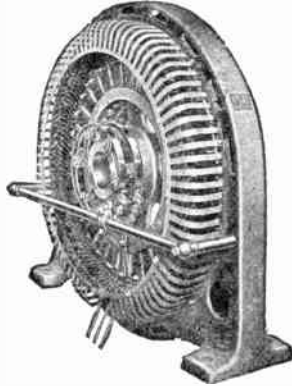
Excita- tion Req'd. at 125 Volts	Rating of 50° C. Exciter Recom- mended	Poles	EFFICIENCY					
			Kw. 1.0 P-F.			Kw. 0.8 P-F.		
			Full Load	½ Load	¼ Load	Full Load	½ Load	¼ Load
1½	1½	6	89.0	87.5	85.0	87.0	85.0	82.5
1½	2	6	90.0	88.7	85.5	88.5	86.2	83.0
1½	2	6	91.5	90.2	87.0	89.5	88.3	84.5
2½	3	6	92.5	91.2	88.3	91.0	90.0	87.4
2½	3	8	92.0	91.0	88.0	91.0	90.0	87.0
4	5	8	92.5	91.5	88.5	91.6	90.6	87.6
4	5	10	92.5	91.3	88.5	90.5	89.3	86.4
4	5	12	92.5	91.3	88.5	90.5	89.3	86.4
4	5	8	93.3	92.3	89.6	92.3	91.3	88.6
5	6	10	93.2	92.2	89.4	92.2	91.2	88.3
5	6	12	93.2	92.2	89.4	92.2	91.2	88.4
5	6	12	93.2	92.2	89.4	92.2	91.2	88.4

†These ratings are 3-bearing machines.

Prices upon application.

Western Electric Type ATB Continuous Rated A.C. Steam, Oil and Gas Engine Driven Generators

3 Phase, 60 Cycle—Separately Excited



Engine Driven Alternator

240, 480, 600, 2300 Volts

Frame No.	Kw. CAPACITY 50° C. RISE			Speed R.P.M.	Frame No.	Kw. CAPACITY 50° C. RISE			Speed R.P.M.
	1.0 P-F.	0.8 P-F.				1.0 P-F.	0.8 P-F.		
6184D	31.3	25	360		6304D	156	125	257	
6214B	31.3	25	327		6304D	156	125	240	
6214B	31.3	25	300		6304D	156	125	225	
6214B	31.3	25	277		6334D	156	125	200	
6214B	31.3	25	257						
6184D	43.8	35	360		6274D	187	150	400	
6214D	43.8	35	327		6274D	187	150	360	
6214D	43.8	35	300		6274D	187	150	327	
6244B	43.8	35	277		6304D	187	150	300	
6244B	43.8	35	257						
					6304D	187	150	277	
					6304D	187	150	257	
6214B	62.5	50	400		6304D	187	150	240	
6244B	62.5	50	360		6334D	187	150	225	
6244B	62.5	50	327						
6244B	62.5	50	300		6364D	187	150	200	
					6364D	187	150	180	
6244B	62.5	50	277		6404D	187	150	164	
6274B	62.5	50	257						
6274B	62.5	50	240		6274D	219	175	400	
6274B	62.5	50	225		6274D	219	175	360	
					6304D	219	175	327	
					6304D	219	175	300	
6244B	93.8	75	400						
6244B	93.8	75	360						
6244B	93.8	75	327		6304D	219	175	277	
6244D	93.8	75	300		6334D	219	175	257	
					6334D	219	175	240	
					6364D	219	175	225	
6244D	93.8	75	277						
6274B	93.8	75	257		6364D	219	175	200	
6274D	93.8	75	240		6404D	219	175	180	
6274D	93.8	75	225		6404D	219	175	164	
					6464D	219	175	150	
6244D	125	100	400						
6244D	125	100	360						
6244D	125	100	327		6304D	250	200	400	
6274D	125	100	300		6304D	250	200	360	
					6304D	250	200	327	
					6304D	250	200	300	
6274D	125	100	277						
6274D	125	100	257		6334D	250	200	277	
6274D	125	100	240		6334D	250	200	257	
6304D	125	100	225		6364D	250	200	240	
6304D	125	100	200		6364D	250	200	225	
6274D	156	125	400						
6274D	156	125	360		6364D	250	200	200	
6274D	156	125	327		6404D	250	200	180	
6274D	156	125	300		6464D	250	200	164	
6274D	156	125	277		6464D	250	200	150	

Oil and gas engine driven generators are designated as Type ATL.

Prices upon application.

Western Electric A.C. Horizontal Water Wheel Driven Generators

3-phase, 60-cycle, Separately Excited



Type ATB and TRC Water Wheel Driven Alternator with Pedestal Bearing Mounted on Sub-base

These water driven alternators combine the highest electrical operating characteristics with a most rugged mechanical construction presenting effective guarantee of uninterrupted service and perfect safety at relatively high speeds. They have proven exceptionally satisfactory during their many years of actual service, and embody in their design and construction the most improved features, resulting in a low cost of operation and a minimum cost of maintenance.

240, 480, 600, 2300 Volts

50° C. P-F.	Kw. CAPACITY		Speed R.P.M.	Wt., LBS., APPROX.		Poles
	Rise .8 P-F.			Heaviest Part	Total	
30	24.0		360	2000	6550	20
30	24.0		327	2000	6500	22
30	24.0		300	2000	6550	24
30	24.0		276	3000	7850	26
30	24.0		257	3000	7950	28
*†37.5	30.0		1200	1400	1800	6
42	33.6		360	2000	6550	20
42	33.6		327	2300	7050	22
42	33.6		300	2000	6500	24
42	33.6		276	3000	7800	26
42	33.6		257	3000	7850	28
*†56	45.0		1200	1650	2300	6
60	48.0		360	2200	7250	20
60	48.0		327	2200	7050	22
60	48.0		300	2200	7100	24
60	48.0		276	3000	7800	26
60	48.0		257	3000	7850	28
60	48.0		225	3100	10000	32
60	48.0		200	3100	10200	36
*†75	60.0		1200	2200	3100	6
75	60.0		360	2200	7250	20
75	60.0		327	2200	7100	22
75	60.0		300	2200	7100	24
75	60.0		276	2200	7100	26
75	60.0		257	3050	7900	26
75	60.0		257	3050	8000	28
75	60.0		225	3100	10100	32
75	60.0		200	3100	10250	36
90	72.0		360	3000	8200	20
90	72.0		327	3000	8200	22
90	72.0		300	3150	9500	24
90	72.0		276	3150	9300	26
90	72.0		257	3150	9400	28
90	72.0		225	3100	10150	32
90	72.0		200	3600	11150	36
100	80.0		360	3150	9250	20
100	80.0		327	3150	9350	22
100	80.0		300	3150	9350	24
100	80.0		276	3150	9300	26
100	80.0		257	3150	9350	28
100	80.0		225	3650	11150	32

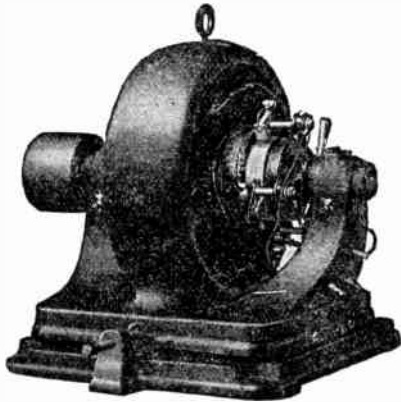
*Form PB; have end shield bearings.

†Type ATB, the remainder Type TRC.

Rheostat, base (when furnished), shaft and two bearings included in price of generator. Coupling extra. Exciter driving pulley not included except with machines marked (*). 125-volt exciters are not designed to operate continuously at more than 125 volts.

Prices upon application.

**Western Electric Type ML Form 1 D.C.
Belt-driven Generators and Exciters**



Type ML Generator, 125 or 250 Volts

The line of small, belted, direct-current exciters described are known as Type ML. They are standardized in the smaller sizes, from 1 to 35 kw., both compound and shunt wound.

These machines are standard for 125 and 250 volts, two-wired, and, in the sizes above and including 7 kw., for 250 volts, three-wire.

When used as exciters they are flat compound wound at 125 volts; otherwise they are compounded from 115 volts no load to 125 volts full load unless a shunt wound machine is wanted.

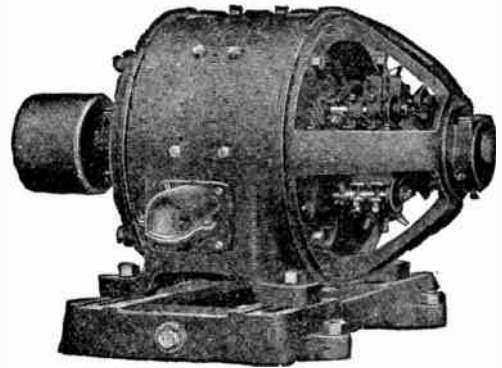
The sizes up to and including 9 kw. are also standard, shunt wound for 35 volts, for low-voltage storage battery service.

Frame	Kw.	Speed	Wt., Lbs. APPROX.		Poles
			Ship.	Net	
B	1	1200	230	150	4
B	1 1/4	1550	230	150	4
B	1 3/4	2000	230	150	4
C	1 3/4	1150	350	260	4
C	2 1/2	1500	350	260	4
C	3	1800	350	260	4
C	3 1/2	2000	350	260	4
D	3 1/2	1050	575	460	4
D	4 1/2	1350	575	460	4
E	4 1/2	875	825	685	4
D	6	1800	575	460	4
F	6	700	1200	1000	4
E	7	1275	825	685	4
F	7 1/2	850	1200	1000	4
E	9	1600	825	685	4
F	9	1050	1200	1000	4
G	9 1/2	650	1700	1465	4
F	12	1400	1200	1000	4
G	12	850	1700	1465	4
H	13	600	2100	1650	4
G	14	950	1700	1465	4
I	18	525	2500	2150	6
G	19	1250	1700	1465	4
H	19	875	2100	1650	6
H	25	1200	2100	1650	6
I	30	875	2500	2150	6
I	35	1050	2500	2150	6

No commutating poles furnished in the ML line.

Prices upon application.

**Western Electric Type R. C. Belt Driven
Generators and Exciters
Shunt and Compound Wound**



**Type R. C. Generator
Types BD and CD Generators and Exciters
125 and 250 Volts**

30 DEGREES C.			40 DEGREES C.		
Frame No.	Kw.	R.P.M.	Frame No.	Kw.	R.P.M.
BD-35	7/8	1150	CD-83	11	1150
BD-33	1 1/8	1750	CD-75	12	1750
BD-45	1 1/4	1150	CD-93	12	750
BD-43	1 3/4	1750	CD-103	12 1/2	575
CD-55	2	1150	CD-85	13 1/2	1150
BD-45	2 1/4	1750	CD-95	14	750
CD-73	3	750	CD-105	15	575
CD-55	3 1/2	1750	CD-83	16	1750
CD-75	4 1/2	750	CD-93	19	1150
CD-73	5 1/2	1150	CD-105	20	750
CD-65	6	1750	CD-113	20	575
CD-83	7	750	CD-85	21	1750
CD-75	7 1/2	1150	CD-95	22	1150
CD-73	9	1750	CD-113	25	750
CD-85	9	750	CD-115	25	575
.....	.....	.....	CD-93	30	1750
.....	.....	.....	CD-103	30	1150
.....	.....	.....	CD-115	30	750
.....	.....	.....	CD-123	30	575
.....	.....	.....	CD-95	35	1750
.....	.....	.....	CD-105	40	1150
.....	.....	.....	CD-125	40	575
.....	.....	.....	CD-113	50	1150
.....	.....	.....	CD-115	60	1150
.....	.....	.....	CD-123	75	1150

Type R. C. Generators

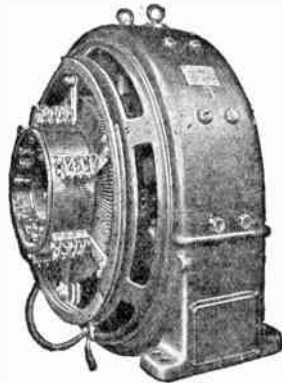
Frame No.	Kw.	Speed	Volts	Normal Ampere Rating
36		850	575	87
35	65	1150	125	520
35		1150	250	260
35		1250	575	113
37	75	750	125	600
37		750	250	300
36	90	1100	125	720
36		1100	250	360
36		1200	575	157
38	100	700	125	800
38		700	250	400
38		800	575	174
37A	125	1050	125	1000
37		1050	250	500
37		1150	575	218
39A	125	675	125	1000
39		675	250	500
39		775	575	218
38A	150	1900	125	1200
38		1000	250	600
38		1100	575	263
39A	175	950	125	1400
39A		950	250	700
39		1050	575	304

125-volt exciters are not designed to operate continuously at more than 125 volts.

Prices upon application.

Western Electric Engine-driven Generators

Type LD—Direct Current
Commutating Poles



Type LD D.C. Generator—2-wire

The Type LD and LDS engine type generators represent the highest development in generators designed primarily for central station and isolated plant equipment. All generators of this design are equipped with commutating poles which insure practically sparkless commutation over the entire range of operation. The general construction embodies simplicity and mechanical strength together with high efficiency and low operating temperatures.

Type and Frame No.	KW.	Speed	Volts	APPROX. SHIP. WT., LBS.		Normal Ampere Rating
				Generator	*For DS-2 Parts Add	
LD-3	35	310	125	3100	750	280
			250	3000	750	140
	†280	125	3200	750	280	
LD-4	50	300	125	3100	750	140
			250	3600	750	400
	†270	125	3600	750	200	
LD-5	75	290	125	4850	1100	600
			250	4850	1100	300
	†260	125	4950	1100	600	
LD-6	100	275	125	7050	1600	800
			250	6800	1600	400
	†250	125	7150	1600	800	
LD-7	125	260	125	8500	2000	1000
			250	8400	2000	500
	†235	125	8600	2000	1000	
LD-8	150	250	125	10600	2600	1200
			250	10500	2600	600
	†225	125	10700	2600	1200	
LD-9	200	225	125	11800	3100	1600
			250	11500	3100	800
	†200	125	12000	3100	1600	
			250	11800	3100	800

*DS-2 parts include base, shaft, two pedestals with bearings. Coupling is extra. Half coupling is not recommended.

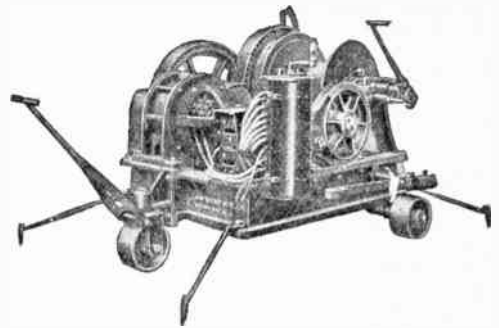
Base supports generator magnet frame and both bearings only. It is not a common base for engine and generator. Base is not designed to be self-supporting. Foundations must be so constructed as to prevent deflection.

†These machines are designated as slow speed.

Generators driven by gas engines should be recommended on D.D.-0 basis, i.e., without base, shaft or bearings.

Prices upon application.

Electric Hoists



Single Drum Hoist on Wheels

The hoist equipment may be either single friction drum, double friction drum or three friction drum, and with boom swinging gear mounted in front; or a separate electric swinger may be used. The drums are provided with powerful foot-operated band brakes and in addition an automatic mechanical brake or an electrically operated Solonoid brake can be furnished.

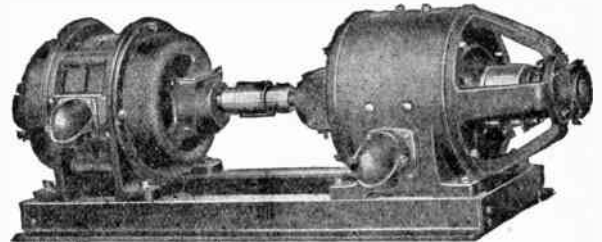
The shafts and bearings are unusually large while the electrical parts are designed to carry heavy overloads with safety. The motor controller and resistance are all mounted on the hoist frame, making the hoist entirely self-contained and readily moved from place to place.

Built in hoisting capacities ranging from 500 to 44000 pounds on a single line with rope speeds varying from 50 to 1200 feet per minute. The motors are rated from 3 to 350 H.P.

Price and data upon application.

Western Electric Small Motor Generator Sets

Motors, 60 Cycles, 110-2200 Volts, 3 or 2-phase
Generators 125 and 250 Volts D.C. Compound Wound



Induction Fourbearing Motor-generator Set
on Common Iron Subbase

50 Degrees Centigrade

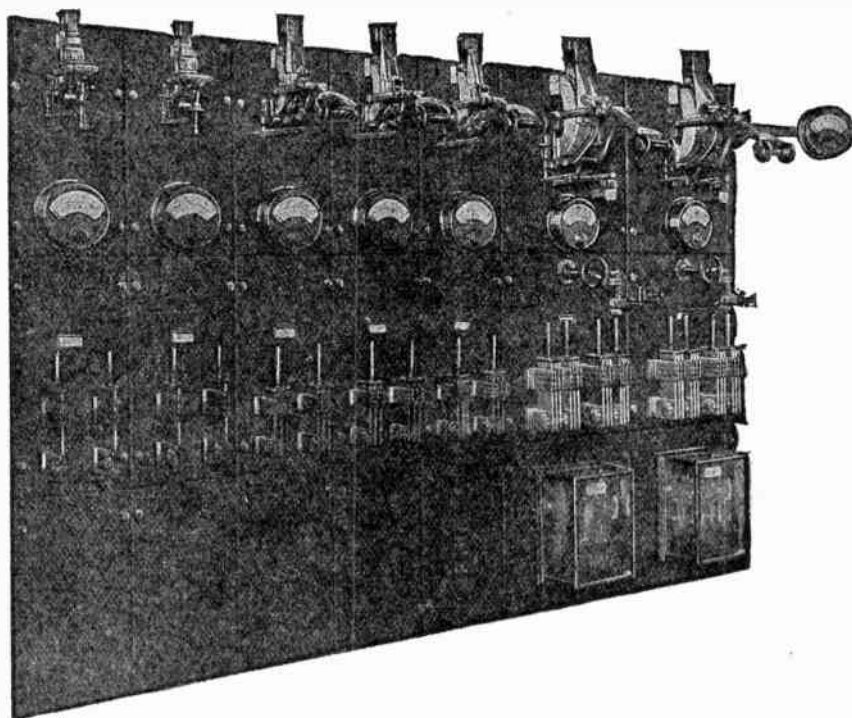
Kw.	Rated Speed R.P.M.	Volts		FRAME		H.P. of Motor
		Gen.	Mot.	Gen.	Mot.	
1 1/8	1800	125	110	BD-33	926	2
21 1/4	1800	125 or 250	220 or 440	BD-45	932	3
9	1800	250	550	CD-65	944	7 1/2
16	1800	250	550	CD-75	501	20
30	1800	125	220	CD-85	512	30
		250	2200	CD-95	527	50
		or 440-550	2200			

40 Degrees Centigrade

12	1800	125	220	CD-75	501	20
16	1800	250	550	CD-85	512	30
30	1800	125	220	CD-95	527	50
		250	2200			
		or 440-550	2200			

Prices upon application.

POWER SWITCHBOARDS



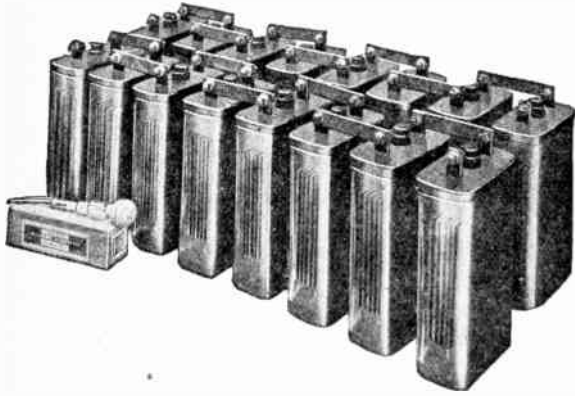
125 and 250-volt Two-wire, Direct Current Standard Unit
Central Station Switchboard

Whenever you are interested in the purchase of any type of switchboard, either for light or power, or both, let us submit figures on our product.

We feel that this catalogue will be in the hands of persons familiar with the electrical line generally and therefore that you are competent to make up a layout of practically any board you may wish a figure on.

With this in mind, we are soliciting your inquiries, asking that you give us detailed information when you submit your drawing, showing sizes of switches, etc.

Western Electric Storage Batteries



32-volt Sealed Glass Jar Batteries

Type	Watt Hour Capacity Intermittent Ratings 16 Cells	Normal Charging Rate Amperes	SINGLE CELL		16 CELLS	
			Net. Wt. Lbs.	Price Each	Ship. Wt. Lbs.	Price Each
WEG-70	2100	6.25	20 1/2	\$8.10	530	\$115.00
WEG-125	3750	11.25	26 1/2	10.03	670	151.00
WEG-185	5550	16.85	36	13.16	900	195.00
WEG-250	7500	22.50	47 1/2	16.29	1264	241.00
WEG-315	9450	28.10	52	18.54	1310	282.00
WEG-375	11250	33.75	65	22.47	1440	343.00
WEG-500	15000	45.0	78	27.64	1760	427.00

110-volt Sealed Glass Jar Batteries

Type	Watt Hour Capacity Intermittent Ratings 56 Cells	Normal Charging Rate Amperes	56 CELLS		62 CELLS AND 8 COUNTER CELLS	
			Ship. Wt. Lbs.	Price Each	Ship. Wt. Lbs.	Price Each
WEG-125	13750	11.25	2345	\$459.00	2904	\$543.00
WEG-250	27500	22.50	4424	731.00	5310	896.00
WEG-315	34650	28.10	4690	854.00	5628	1031.00
WEG-375	41250	33.75	5040	1042.00	6108	1265.00
WEG-500	55000	45.0	6160	1290.00	7464	1567.00
WEG-565	62150	50.6	6400	1428.00	7800	1736.00

Ratings, Dimensions, Etc.

Type	RATINGS			SPECIFIC GRAVITY	Normal Charge No. of Rate Plates	
	*INTERMITTENT RATINGS	8-HOUR RATINGS	CONTINUOUS RATINGS			
	Amperes	Amperes Hours	Amperes Discharge	Fully Charged	Discharged	
WEG-70	2.9	70	50	6.25	1250	1210
WEG-125	3.7	125	90	11.25	1250	1170
WEG-185	5.6	185	135	16.85	1250	1150
WEG-250	7.5	250	180	22.50	1250	1170
WEG-315	9.4	315	225	28.10	1250	1150
WEG-375	11.2	375	270	33.75	1250	1170
WEG-500	15.0	500	360	45.0	1250	1170
WEG-565	16.9	565	405	50.6	1250	1170

Type	SIZE OF PLATE, INCHES			DIMENSIONS, INCHES			Net Weight of Cells Complete in Pounds
	Width	Height	THICKNESS Positive Negative	Width	Length	Height	
WEG-70	5 3/8	5 7/8	7/32	7 5/8	3 1/4	10 1/2	20.5
WEG-125	5 3/4	7 1/8	7/32	7 1/2	3 3/8	12 3/8	26.5
WEG-185	7 3/4	7 3/4	7/32	9 1/8	3 3/8	13 3/8	36.0
WEG-250	7 3/4	7 3/4	7/32	9 3/4	5 3/4	13 1/2	47.5
WEG-315	7 3/4	7 3/4	7/32	9 3/4	5 3/4	13 1/2	52.0
WEG-375	7 3/4	7 3/4	7/32	9 1/4	6 3/4	13 3/8	65.0
WEG-500	7 3/4	7 3/4	7/32	9 1/8	8	13 3/8	78.0
WEG-565	7 3/4	7 3/4	7/32	9 3/8	8 3/4	13 3/8	87.0

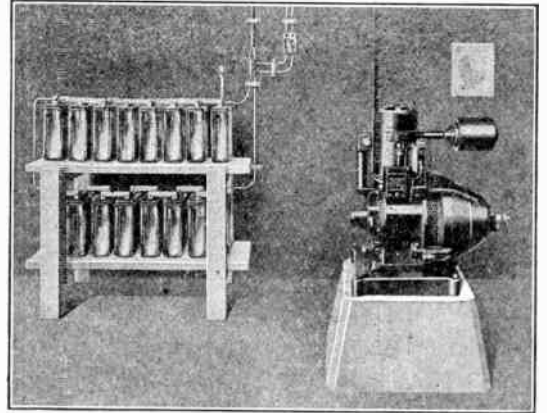
*The intermittent rating in amperes is the current the battery will give discharging 4 hours resting 16 hours, discharging 8 hours resting 16 hours, discharging 8 hours resting 16 hours, and discharging 4 hours to 1.7 volts per cell. This ampere rate multiplied by 24 gives the intermittent ampere hours.

†Negative plates are 5/32-inch thick inside and 5/16-inch thick outside, except 70 and 125 ampere hour sizes which are 5/16-inch throughout.

Negative group has one more plate than positive.

8DC Power and Light Outfits

32-volt, Direct Connected Type



Typical Installation 8DC Outfit

This outfit consists of a direct connected generator and engine, together with a glass cell battery. It has many of the features listed under the larger 15-DC outfit. The battery rack does not form a part of the outfit as regularly supplied, but can be furnished if desired.

The 8-DC outfit is conservatively rated 750 watts, but actually develops more on battery charging run.

Specifications Engine

PRINCIPLE.—Single cylinder, vertical, 4 cycle type.

HORSEPOWER.—1 1/2 H. P.

FUEL.—Kerosene or gasoline.

GOVERNOR.—Special design. Centrifugal governor holds uniform speed under all loads.

IGNITION.—Jump spark ignition.

COOLING.—Air cooled. A special protected fan of high efficiency mounted on crankshaft between the engine and generator draws air over the cylinder of engine, keeping temperature of set within proper limits.

BORE AND STROKE.—2 3/4 by 4 inches.

SPEED.—Approximately 1250 R. P. M.

OILING.—A positive splash feed oiling system supplies the lubrication.

Generator

VOLTS AND WATTS, AMPERES.—Volts, 36. Watts, 750. Amperes, 21.

DESIGN.—Shunt wound with series winding for starting.

MOUNTING.—Built into the engine, armature mounted on crankshaft of engine.

Control Panel

STARTING.—Set starts electrically by pressing button.

STOPPING.—Set automatically stops when batteries are charged. Button provided to stop set manually when desired.

9DC Wall Switchboard

This switchboard contains an ammeter, line switch and fuses. It is an additional feature which will prove useful in installations where it is considered advisable to know the exact amount of current generated by the set or consumed by the line load. It is to be mounted near the set. When this switchboard is included in the equipment the set is known as the 9-DC outfit.

Batteries

NUMBER.—16 glass jar cells fully charged.

CAPACITY.—Intermittent rating, 125 ampere hours.

Approximate Dimensions

Overall width, 18 inches. Overall length, 28 inches. Overall height, including base, 29 inches.

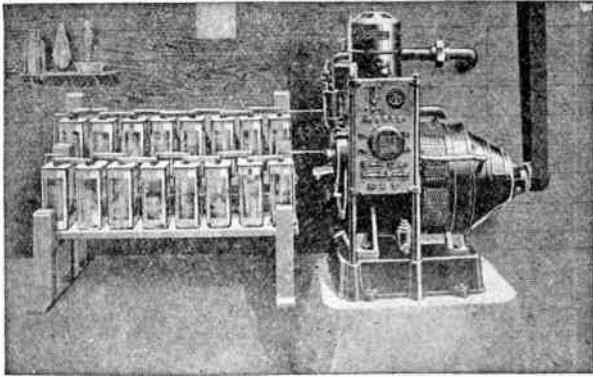
Type and Size	Intermittent Battery Rating	Watt Hours	Approximate Shipping Weight Pounds
8DC-125	3750	Watt Hours	900
9DC-125	3750	" "	900

Prices upon application.

15DC Power and Light Outfits

15DC Power and Light Outfits

32-volt, Direct Connected Type



Typical Installation 15DC Outfit

These Power and Light Outfits are time and labor savers. They make it practical for anyone, no matter how remote from central service, to use electricity on farm or country estate or in villages and towns.

The 15DC outfit is one where the gas engine and electrical generator are built on the same shaft. That means steady electric power and electric light three hundred and sixty-five days of the year.

By simply pressing a button you can have electric power and electric light any time and anywhere you want it—electric power to run all the machines you now turn by hand, separator, churn, feed grinder, grindstone, etc. Electric power to do housework too, such as sweeping, washing, ironing, sewing and dishwashing. It will automatically pump the water to the house, barn, dairy, garage and garden. Running water where and when you want it saves countless steps and makes the conveniences of a modern bathroom possible. Electric light makes night work easy; enables you to use all your daylight hours for outdoor work. Eliminates the disagreeable task of filling and trimming kerosene lamps and lanterns. Electric lights are safe.

Electric light in hen houses increases egg production. Tests made by agricultural stations have proved this.

Power and Light takes the drudgery out of farm and country life, adds to their attractiveness and substitutes comfort for discomfort.

The 15DC outfit is economical. It runs on kerosene—very often less than was used to keep oil lamps burning. The kerosene is poured into a tank on the base of the outfit. The capacity of this tank is such that it does not need to be filled during charging period. Easy to operate. A slight pressure on the lever starts it; it stops itself when the battery is charged. It gives the tapering charge which makes the battery last longer.

Has a circulating splash system of lubrication. Simply pour oil into the crank case and the engine does the rest. Oil is sprayed up on the cylinder walls and conveyed by pipe to the main bearing. Runs in a steady stream over the crank pin bearing and keeps every moving part in a bath of oil.

32-volt, Direct Connected Type

Continued

Every part of the outfit is easy to get at. By taking off four nuts the crank case cover is easily removed, making easy access to every part.

The engine cannot get out of time as the timing gears come off with the crank case plate, and when that is put back, the question of timing is taken care of automatically.

The engine is air cooled and equipped with a throttle governor so that, irrespective of load carried, the speed is always the same.

The outfit is ruggedly built, durable and dependable. With it the user is always sure of plenty of power and plenty of light.

The outfit as supplied under this code number consists of a direct-connected generator and engine, together with a glass cell battery. The battery rack does not form a part of the outfit as regularly supplied, but can be furnished if desired.

Specifications
Engine

PRINCIPLE.—4 cycles.

FUEL.—Kerosene or gasoline.

FUEL CONSUMPTION APPROX.—1.6 gallons to charge WE G-125; 2 gallons to charge WE G-250.

GOVERNOR.—Special design of throttling governor insuring a uniform speed at all loads.

IGNITION.—Jump spark ignition.

COOLING.—Air-cooled. A fan mounted on flywheel draws air over the cylinder of engine, keeping temperature of set within proper limits.

BORE AND STROKE.—Cylinder bore 3½ inches; stroke 4½ inches.

SPEED.—Speed Engine and Generator, approximately 1000 r.p.m.

OILING.—A splash feed oiling system supplies the lubrication.

PULLEY.—A pulley 4 inches in diameter and 3 inches face is provided on the main shaft to drive auxiliary line shafting or other machinery.

Generator

VOLTS AND AMPERES.—Volts 35-42. Amperes maximum 40.

DESIGN.—Special design of generator to give batteries a "tapering charge."

MOUNTING.—Built up on crank shaft of engine.

Control Panel

STARTING.—Set starts on its own power by pressing starting switch.

STOPPING.—Special regulator provided for automatically stopping set when batteries are fully charged.

OVERCHARGE SWITCH.—Provision is made for occasional overcharging of batteries.

POWER SWITCH.—Provision is made for opening electrical circuits when set is operated for engine power only.

PROTECTION.—Fuses and line switch are provided.

Batteries

NUMBER.—16 glass jar cells fully charged.

CAPACITY.—Intermittent ratings: 125, 185, 250 ampere hours.

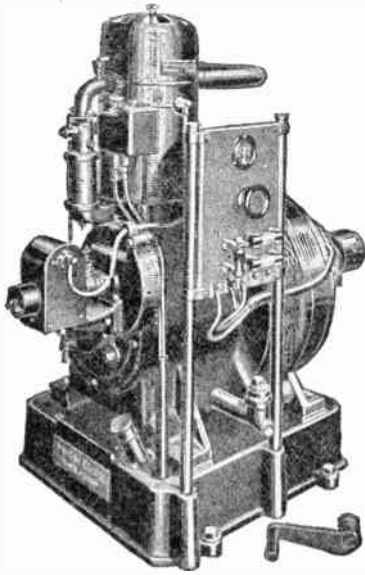
Type and Size	Intermittent Battery Rating	Watt Hours	Approximate Shipping Weight Lbs.
15DC125	3750	" "	1300
15DC185	5550	" "	1600
15DC250	7500	" "	1800

Prices upon application.

Information on larger size plants for 110 volts furnished upon request.

Power and Light Outfits

32-volt 15-DC Magneto Type Outfit



The 15-DC Magneto type outfit is designed and built to generate 32-volt current for a wide variety of applications, notable examples being schools, churches, road building work, dredges, traveling shows, service stations, pumping stations, pavilions, summer camps, signal battery charging stations, depots and for use in any place where utility, limited space and dependability are the real factors.

The special features of this outfit are: Unit construction, easily started and stopped, magneto equipped, runs on kerosene, special fueling system, exclusive oiling system, accessibility, air cooled, equipped with power pulley, constant speed, occupies small space and is easily transported.

Specifications
Engine

PRINCIPLE.—4 cycles.

FUEL.—Kerosene or gasoline.

FUEL CONSUMPTION.—The following quantity of kerosene will be required to charge the batteries when completely discharged:

Approximately 1.6 gallons for WE G-125

Approximately 2 gallons for WE G-250

GOVERNOR.—Special design of throttling governor insuring a uniform speed at all loads.

IGNITION.—Jump spark ignition.

COOLING.—Air cooled. A fan mounted on flywheel draws air over the cylinder of engine, keeping temperature of set within proper limits.

BORE AND STROKE.—Cylinder bore, 3½ inches.
Stroke, 4½ inches.

SPEED.—Speed engine and generator, approximately 1000 R. P. M.

OILING.—A splash feed oiling system supplies the lubrication.

PULLEY.—A pulley 4-inch diameter and 3-inch face is provided on the main shaft to drive auxiliary line shafting or other machinery.

Generator

VOLTS AND AMPERES.—Volts 35-42. Amperes, maximum 40.

DESIGN.—Special design to give batteries a "tapering charge."

MOUNTING.—Built into engine, armature mounted on main shaft of engine.

Magneto

The magneto is a Dixie High Tension.

Type	Approximate Shipping Weight Pounds	Price Each
15-DC Magneto	700	.....

Edison Electric Portable Lighting Outfits



The Edison Electric Portable Lighting Outfit is especially adapted for underground work. This set is neatly and compactly installed in a small steel black enameled box. The equipment includes an Edison Storage Battery, consisting of 5 cells, Type B-2, completely assembled in a tray, fully charged, ready for immediate service, together with two properly guarded 12 C. P. lamps with reflectors and with 11 foot leads. One of these lamps can be used for twenty hours on one complete charge of the battery, constantly burning. Both of them will burn for 10 hours. Edison Storage Battery is universally used for manhole lighting service, because it can be allowed to stand idle indefinitely in any condition of charge or discharge without injury or without care or attention.

Data on Standard Sets
Battery

Number of Cells, Type B-2.....	5
Volts.....	6.0
Ampere Hour Capacity.....	37.5
Total Weight in Tray, Pounds.....	27
Height, 9⅝ Inches; Width, 6⅜ Inches; Length, 11⅜ Inches.....	
Normal Rate of Charge for 7 Hour Amperes.....	7.5
Direct Current Voltage Necessary to Charge.....	9

Complete Outfits

DIMENS. OVER ALL, INCHES			Wt., Lbs.	Price Each
Height	Width	Length		
10⅜	7⅝	17⅝	40	\$100.00

Power and Light Hydrometers



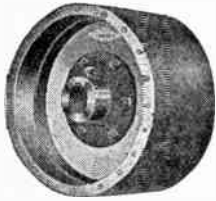
To install the hydrometer select the cell which is most convenient and where the light is best. Remove the hard rubber vent plug from the cell and install the hydrometer. The soft rubber plug in the bottom of the glass barrel rests on the top of the wood separators. The soft rubber bushing on the outside of the glass barrel should fit loosely into the hole in the cover, in order to provide vent for the cell.

To operate the hydrometer place one finger over the small hole in the top of the soft rubber bulb. Then squeeze the bulb and, while still holding a finger over the hole in the bulb, gradually release the pressure on the bulb and as it expands the solution will be drawn up into the glass barrel.

With the hydrometer floating freely note the position of the solution on the stem. This indicates whether the battery is full, half empty or empty. Make this test each morning. Before the battery is entirely empty fill the fuel tank and give the battery a full charge.

Price, Hydrometers.....each \$1.25

Rockwood Paper Pulleys



A paper pulley overcomes in a large degree the annoyance and loss caused by a slipping belt. The lighter tension on the belt permits lighter shafting, hangers, etc., reduces consumption of oil and loss from hot bearings. Tighteners are not necessary.

Rockwood Pulleys are used extensively on dynamos, motors, etc. Prices on larger sizes furnished upon request.

Diam. Inches	Face Inches	Price Each	Diam. Inches	Face Inches	Price Each	Diam. Inches	Face Inches	Price Each
2	2	\$2.00	7	7	\$3.80	12	14	\$11.70
2	3	2.05	7	8	4.15	12	15	12.75
2	4	2.10	7	9	4.50	12	16	13.85
2	5	2.20	7	10	4.95	12	17	15.10
2	6	2.35	7	11	5.45	12	18	16.35
2 1/2	2	2.05	7	12	6.00	13	3	4.50
2 1/2	3	2.10	8	3	3.40	13	4	4.75
2 1/2	4	2.15	8	4	3.45	13	5	5.05
2 1/2	5	2.25	8	5	3.55	13	6	5.45
2 1/2	6	2.40	8	6	3.75	13	7	5.90
3	2	2.10	8	7	4.00	13	8	6.40
3	3	2.15	8	8	4.30	13	9	6.95
3	4	2.20	8	9	4.70	13	10	7.55
3	5	2.30	8	10	5.10	13	11	8.25
3	6	2.45	8	11	5.60	13	12	9.00
3	7	2.65	8	12	6.20	13	13	9.90
3 1/2	2	2.15	8	13	6.90	13	14	12.80
3 1/2	3	2.20	9	3	3.55	13	15	13.95
3 1/2	4	2.25	9	4	3.65	13	16	15.20
3 1/2	5	2.35	9	5	3.75	13	17	16.45
3 1/2	6	2.50	9	6	3.95	13	18	17.60
3 1/2	7	2.70	9	7	4.20	13	19	19.20
3 1/2	8	2.95	9	8	4.50	14	3	4.75
4	2	2.20	9	9	4.90	14	4	5.00
4	3	2.25	9	10	5.30	14	5	5.30
4	4	2.30	9	11	5.80	14	6	5.70
4	5	2.40	9	12	6.40	14	7	6.10
4	6	2.55	9	13	7.50	14	8	6.60
4	7	2.75	10	3	3.75	14	9	7.20
4	8	3.00	10	4	3.80	14	10	7.80
4 1/2	2	2.25	10	5	3.95	14	11	8.50
4 1/2	3	2.30	10	6	4.15	14	12	9.25
4 1/2	4	2.35	10	7	4.40	14	13	10.50
4 1/2	5	2.45	10	8	4.70	14	14	13.15
4 1/2	6	2.60	10	9	5.05	14	15	14.25
4 1/2	7	2.80	10	10	5.50	14	16	15.50
4 1/2	8	3.05	10	11	6.00	14	17	16.75
4 1/2	9	3.35	10	12	6.55	14	18	17.75
5	2	2.30	10	13	8.10	14	19	19.50
5	3	2.35	10	14	9.45	14	20	21.00
5	4	2.40	10	15	10.35	14	21	22.60
5	5	2.50	10	16	11.35	15	3	5.00
5	6	2.65	11	3	4.00	15	4	5.30
5	7	2.85	11	4	4.15	15	5	5.70
5	8	3.10	11	5	4.30	15	6	6.10
5	9	3.40	11	6	4.55	15	7	6.60
5	10	3.75	11	7	4.90	15	8	7.20
5 1/2	2	2.35	11	8	5.25	15	9	7.80
5 1/2	3	2.40	11	9	5.70	15	10	8.50
5 1/2	4	2.45	11	10	6.20	15	11	9.25
5 1/2	5	2.55	11	11	6.75	15	12	10.05
5 1/2	6	2.70	11	12	7.40	15	13	11.20
5 1/2	7	2.90	11	13	8.70	15	14	14.30
5 1/2	8	3.15	11	14	10.55	15	15	15.45
5 1/2	9	3.45	11	15	11.55	15	16	16.75
5 1/2	10	3.80	11	16	12.60	15	17	18.10
6	3	3.05	11	17	13.75	15	18	19.20
6	4	3.15	11	18	14.95	15	19	21.00
6	5	3.25	12	3	4.25	15	20	22.60
6	6	3.45	12	4	4.45	15	21	24.25
6	7	3.70	12	5	4.70	15	22	25.95
6	8	4.00	12	6	5.00	16	3	5.30
6	9	4.40	12	7	5.40	16	4	5.70
6	10	4.80	12	8	5.80	16	5	6.10
6	11	5.30	12	9	6.30	16	6	6.60
7	3	3.20	12	10	6.90	16	7	7.20
7	4	3.25	12	11	7.50	16	8	7.80
7	5	3.40	12	12	8.20	16	9	8.50
7	6	3.55	12	13	9.30	16	10	9.25

Paul Self-priming Suction Pumps

A pump capable of drawing water through a suction pipe from a level below same without having any working parts extended into the water is called a suction pump. The height or vertical distance from the water level to the pump is the suction lift against which it works. The lift is theoretically limited by laws of nature and practically by resistance to the flow of water in the pump itself and in the piping, also by priming considerations. Suction pumps are not used under normal conditions on lifts over 20 to 24 feet, according to size, with moderate lengths of suction pipes installed air-tight.

On high lifts small pumps of conventional design cause much trouble by becoming unprimed due to air leaks and by being unable to reprime themselves even on moderate lifts. The Paul Pumps are self-priming and when started up dry they will also reprime themselves under ordinary conditions. For the same reason they will positively charge air into their air chamber and into pneumatic tanks if admitted into the suction side. These valuable features together with extreme simplicity and strength of design, automatic lubrication, absence of wear, accessibility and unusually high efficiency insure dependable service with the least amount of attention.

Paul Pumps are built in two types, according to size, each type in several capacities. All have the same characteristic general features. They are driven by pulleys. The pumps with motors are mounted on rigid cast iron bed plates supported on brackets and form complete, self-contained units.

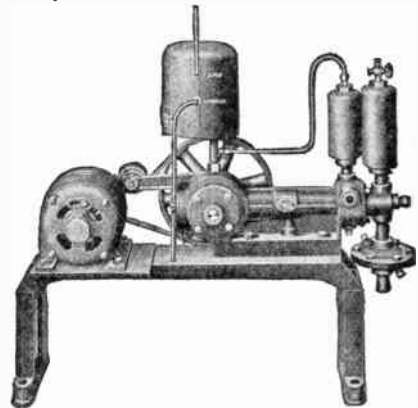
Pumps driven by electric motors must always be wired through a properly fused hand-switch near the pump. This switch is used for starting and stopping the pump when hand control is desired.

In case of pneumatic tank systems automatic service is obtained by means of a pressure controller connected to the discharge side of the pump or to the tank. The controller automatically closes the circuit and starts the pump at the low pressure and stops the pump by opening the circuit at the high pressure for which it is set.

Type K Paul Self-priming Suction Pumps

Motor Driven

Capacities: 100-210 Gallons per Hour



SPECIFICATION.—Each complete unit listed below consists of a standard Paul Self-priming Suction Pump, Type K, mounted on a cast iron bed plate with electric motor, belt, idler, automatic controller wired to motor and connected to discharge pressure, air chambers, air charger, strainer and floor or wall-brackets, as ordered.

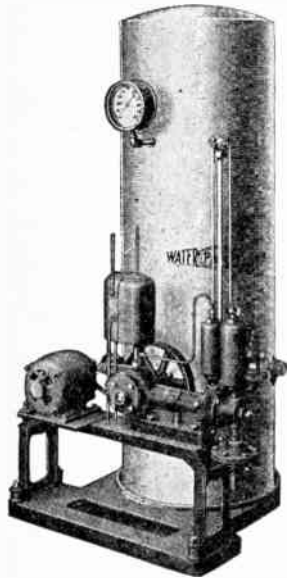
Water-direct-from-wall attachments, water relief valves, float switches, extra air chambers, unions and other accessories are described and listed on another page.

Cat. No.	Cap. Gal. Per Hour	Max. Suction Lift Feet	Motor H.P.	Pressure Range Lbs.	Disch. Pipe In.	OVERALL DIMENS. INCHES		Ship. Wt. Lbs.	
						Floor Sp.	Height		
97KM	100	20	1/8	20-40	1/2	27x	9 1/2	26	115
92KM	120	20	1/6	30-50	1/2	27x	9 1/2	26	120
95KM	180	21	1/6	20-40	3/4	31x	11	25	150
96KM	180	21	1/2	30-50	3/4	31x	11	25	155
93KM	210	21	1/4	20-40	3/4	35x	14	25	190

Paul Complete Water Systems

With Paul Type K Self-priming Suction Pumps

Capacities: 100-210 Gallons per Hour



SPECIFICATION.—Each complete Unit System listed below consists of a standard Paul Type K Self-priming Suction Pump mounted on a cast iron bed plate with electric motor, belt, idler, automatic pressure controller wired to motor and piped to discharge pressure, air chambers, air charger, strainer and floor brackets, bolted to a cast-iron sub-base, a pneumatic tank with water gauge and pressure gauge, mounted on the sub-base, piping between pump and tank with stop valve and water relief valve.

With Assembled Systems a complete set of fittings is furnished but no piping between pump and tank.

Water-direct-from-well attachments and other accessories are described and listed on another page. Any of these which can be applied

may be added or omitted in the specification to order.

Unit Systems

Cat. No. of System	PNEUMATIC TANK			Service Pipe Inches	OVERALL DIMENS.		Ship. Wt. Lbs.
	Size	Cap. Gals.	Finish		Floor Space Inches	Ht. Inches	
With No. 97-KM Pump—Capacity, 100 Gallons per Hour							
970MA	16 in. x 4 ft.	42	Galv.	1/2	27x28	54	220
970MB	20 " x 5 "	80	"	1/2	27x32	66	270
With No. 92-KM Pump—Capacity, 120 Gallons per Hour							
920MA	16 in. x 4 ft.	42	Galv.	1/2	27x28	54	225
920MB	20 " x 5 "	80	"	1/2	27x32	66	275
With No. 95-KM Pump—Capacity, 180 Gallons per Hour							
950MA	18 in. x 4 ft.	52	Galv.	3/4	27x32	54	325
950MB	22 " x 5 "	100	"	3/4	27x34	66	415
950MC	24 " x 5 "	120	"	1	30x36	66	435
950MD	24 " x 5 "	120	Black	1	30x36	66	435
With No. 96-KM Pump—Capacity, 180 Gallons per Hour							
960MA	18 in. x 4 ft.	52	Galv.	3/4	27x32	54	335
960MB	22 " x 5 "	100	"	3/4	27x34	66	425
960MC	24 " x 5 "	120	"	1	30x36	66	445
960MD	24 " x 5 "	120	Black	1	30x36	66	445
With No. 93-KM Pump—Capacity, 210 Gallons per Hour							
930MA	18 in. x 4 ft.	52	Galv.	3/4	27x32	54	340
930MB	22 " x 5 "	100	"	3/4	27x34	66	430
930MC	24 " x 5 "	120	"	1	30x36	66	450
930MD	24 " x 5 "	120	Black	1	30x36	66	450

Assembled Systems

With No. 95-KM Pump—Capacity, 180 Gallons per Hour							
950ME	24 in. x 5 ft.	120	Black	1	32x40	64	390
With No. 96-KM Pump—Capacity, 180 Gallons per Hour							
960ME	24 in. x 5 ft.	120	Black	1	32x40	64	400
With No. 93-KM Pump—Capacity, 210 Gallons per Hour							
930ME	24 in. x 5 ft.	120	Black	1	32x40	64	405
930MF	30 " x 6 "	220	"	1	32x46	79	730

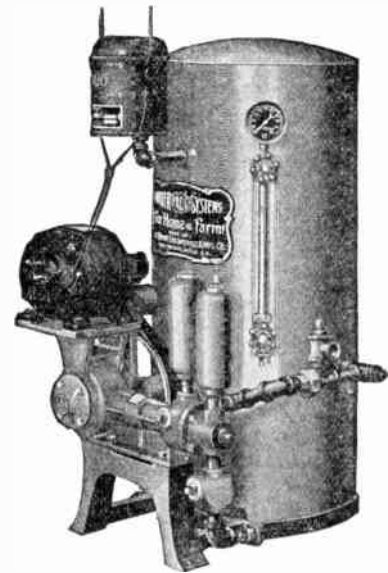
NOTE.—Over all dimensions of Assembled Systems are approximate for pumps and tanks located conveniently close to each other.

Specification of Pumps

Cat. No.	Cap. Gals. per Hour	Max. Suction Lift Feet	Motor H. P.	Controller Range Lbs.	Suction Pipe Inches	Disch. Pipe Inches
97KM	100	20	1/8	20-40	1/2	1/2
92KM	120	20	1/8	30-50	1/2	1/2
95KM	180	21	1/8	20-40	3/4	3/4
96KM	180	21	1/4	30-50	3/4	3/4
93KM	210	21	1/4	20-40	3/4	3/4

Type US Paul Water Systems

Capacities 100 to 360 Gallons per Hour For Shallow Wells



The system may be placed directly upon a level cement floor or it may be raised above the floor upon a cement pier or other convenient sub-structure capable of supporting its weight and eliminating vibration. All that is needed in the way of installation is to connect the suction pipe to the pump and the discharge opening in the tank to the service pipe of the house.

There is one condition that requires a little additional attention of installation, and that is when the water level in the cistern or at the supply stands higher than the pump. The pump is then without a natural suction lift and has a negative suction head, which makes it impossible to charge air and sometimes causes knocking due to lack of air in the air chambers. To avoid such conditions, when installing, place a riser with a stop valve in the suction pipe, formed by a piece of piping, having an air cock at the highest point. By throttling the suction until the pump draws air when running the riser and the air chambers can be charged with air which will make the operation of the pump smooth and quiet for a considerable length of time. The stop valve is left in the throttled position and need not be touched when additional air is required, and the riser should extend to a point above the highest water level to prevent flooding in case the air cock is left open.

The Paul Type US Systems consist of a standard Paul Type K suction pump, a special heavy duty pump motor (all A.C. motors are of the repulsion induction type), extra heavy galvanized tank (galvanized inside and out), and a standard Paul Type F pressure controller.

Assembled complete with pressure gauge, water gauge, relief valve and all fittings between pump and tank.

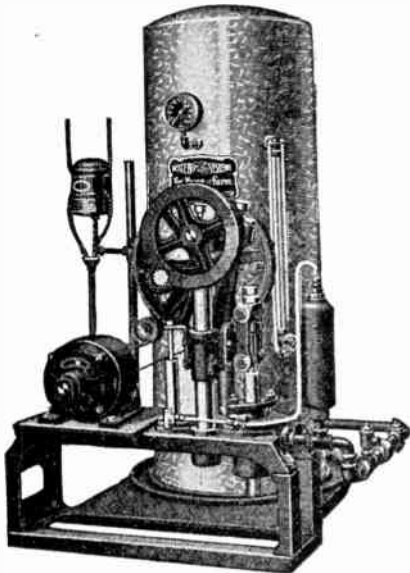
Each system shipped completely assembled in one crate.

Cat. No.	Cap. Gals. per Hour	Motor H.P.	Size Pipe In.	Tank Cap. Gals.	Ship. Wt. Lbs.	Price. Each A.C. 1-phase 110 or 220-volt 60-cycle or D.C. 32-volt 110 or 220-volt
850-US	100	1/8	1/2	10	130	\$100.00
851-US	120	1/8	1/2	10	140	104.00
970-US	100	1/8	1/2	30	200	115.00
920-US	120	1/8	1/2	30	205	117.00
950-US	180	1/8	3/4	30	225	127.00
960-US	180	1/4	3/4	30	230	132.00
930-US	210	1/4	3/4	30	230	137.00
819-US	360	1/3	1	50	270	185.00
820-US	360	1/2	1	50	275	192.00

If electric current available is 25 or 40-cycle, add \$10.00 to price of Nos. 850-851, 970-US, 920-US, and 950-US; \$12.00 to price of Nos. 960-US, 930-US, 819-US and 820-US.

**Paul Complete Water Systems
With Paul Type J Deep Well Pumps**

Capacities: 120-160 Gallons per Hour



SPECIFICATION.—Each complete system listed below consists of a standard Paul Type J Cushion Stroke Deep Well Pump mounted on a cast iron bed plate with electric motors belt idler, automatic pressure controller wired to motor and connected to discharge chamber, air compressor piped to discharge chamber, floor brackets and a pneumatic tank with water gauge and pressure gauge, tapped for discharge pipe from pump and service pipe.

Well cylinders, pump rods, drop pipe, frost-proof attachments, water-direct-from-well attachments, "shifter carriage" mountings, float switches and other accessories are described and listed on another page. Any of these which can be applied may be added or omitted in the specification to order.

Unit Systems

With Galvanized Vertical Tank

No. 48-JM Pump

Cat. No. of System	Size	PNEUMATIC TANK		OVERALL DIMENS. FEET		Ship Wts Lbs.
		Cat. Gal.	Service Pipe Tapping Inches	Floor Space	Height	
480MA	16 in. x 4 ft.	42	3/4	2x2 1/2	4 1/2	220
480MB	20 " x 5 "	80	3/4	2x3	5 1/2	240
480MC	24 " x 5 "	120	1	2x3 1/4	5 1/2	270

No. 49-JM Pump

490MA	16 in. x 4 ft.	42	3/4	2x2 1/2	4 1/2	230
490MB	20 " x 5 "	80	3/4	2x3	5 1/2	250
490MC	24 " x 5 "	120	1	2x3 1/4	5 1/2	280

Well Parts and Capacities

No 48-JM Pump

Motor H.P.	WELL CYLINDER	Cap. Gal. per Hour	Prop. Pipe Inches	Smallest Well Casing Inches	PUMP Rod Steel Inches	Disch. Pipe Inches	Greatest Depth to Water Feet
1/4	1 3/4 A	120	2	3	1 1/8	3/4	80
1/4	...	120	1 1/4	2	...	1/2	50

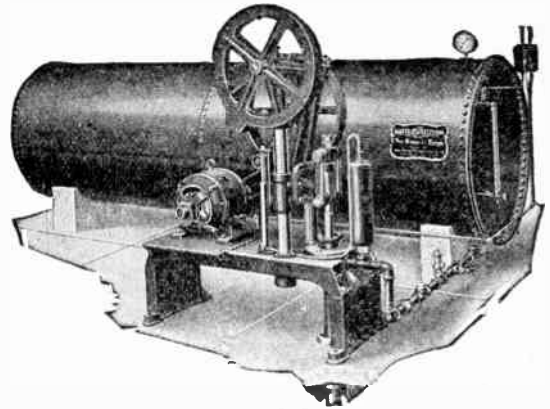
No 49-JM Pump

1/3	1 3/4 A	120	2	3	1 1/8	3/4	120
1/2	...	120	1 1/4	2	...	1/2	80
1/2	...	160	1 1/4	2 1/2	...	1/2	50

NOTE.—Pressure range of automatic controllers is 30-50 pounds.

Stroke of well cylinders listed is 10 inches. Stroke of pump is 3 inches.

**Paul Complete Water Systems
With Paul Type J Deep Well Pumps**



No. 540-M Systems

Capacities: 680-1260 Gallons Per Hour
With Vertical Tank and No. 54-JM Pump

Cat. No. of System	Size	PNEUMATIC TANK			OVER ALL DIMENS. FEET		Approx. Ship. Wt. Lbs.
		Cap. Gal.	Service Pipe Finish Tap. In.	Floor Space	Height		
540MA	30 in. x 6 ft.	220	Black	1	5x5 1/2	7	1440
540MB	36 " x 6 "	315	"	1 1/4	5x6	7	1600
With Horizontal Tank and No. 54-JM Pump							
540MC	36 in. x 8 ft.	420	Black	1 1/4	9x6	5 1/2	1700
540MD	36 " x12 "	630	"	1 1/4	13x6	5 1/2	2100
540ME	48 " x10 "	910	"	2	11x7	5 1/2	2900
540MF	48 " x16 "	1500	"	2	17x7	5 1/2	3600

NOTE.—Above are all "Assembled" Systems. Approximate dimensions are for pumps and tanks located conveniently close to each other.

Well Parts and Data

Mo. H. P.	WELL CYLINDER	Cap. Gals. per Hour	Drop Pipe In.	Smallest Well Casing In.	PUMP Rod Steel In.	Disch. Pipe In.	Greatest Depth to Water Inches
2	2 3/4 A	680	3	4	1 5/8	1 1/4	150
2	3 1/4 A	950	3 1/2	4 1/2	1 7/8	1 1/2	100
2	3 3/4 A	1260	4	6	1 7/8	2	75
2	...	680	1 1/2	3 1/2	...	1 1/2	120
2	...	950	2 1/2	4	...	5/8	80
2	...	1260	3	4 1/2	...	5/8	60

NOTE.—Pressure range of automatic controllers is 30-50 pounds.

Stroke of well cylinders listed is 16 inches. Stroke of pump is 10 inches.

No. 560-M Systems

Capacities: 815-1950 Gallons Per Hour
With Horizontal Tank and No. 56-JM Pump

Cat. No. of System	Size	PNEUMATIC TANK			OVER ALL DIMENS. FEET		Approx. Ship. Wt. Lbs.
		Cap. Gals.	Service Pipe Finish Tap. In.	Floor Space	Height		
560MA	36 in. x 9 ft.	420	Black	1 1/4	9x6 1/2	5 1/2	1700
560MB	36 " x12 "	630	"	1 1/4	13x6 1/2	5 1/2	2200
560MC	48 " x10 "	940	"	2	11x7 1/2	5 1/2	3000
560MD	48 " x16 "	1500	"	2	17x7 1/2	5 1/2	3700
560ME	48 " x20 "	1890	"	2	21x7 1/2	5 1/2	5100
560MF	48 " x24 "	2260	"	2	25x7 1/2	5 1/2	5800

Well Parts and Data

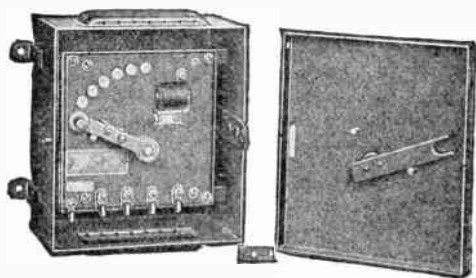
Mo. H.P.	WELL CYLINDER	Cap. Gals. per Hour	Drop Pipe In.	Smallest Well Casing In.	PUMP Rod Steel In.	Disch. Pipe In.	Greatest Depth to Water Feet
3	2 3/4 A	815	3	4	1 5/8	1 1/4	200
3	3 1/4 A	1140	3 1/2	4 1/2	1 7/8	1 1/2	140
3	3 3/4 A	1515	4	6	1 7/8	2	100
3	...	815	1 1/2	3 1/2	...	1 1/2	160
3	...	1140	2 1/2	4	...	5/8	110
3	...	1515	3	4 1/2	...	5/8	80
3	...	1930	3 1/2	5	...	5/8	50

NOTE.—Pressure ranges of automatic controllers is 30-50 pounds.

Stroke of well cylinders listed is 16 inches. Stroke of pump is 12 inches.

CR1003 Enclosed Heavy Duty Starting Rheostats

Under-voltage Protection—For Direct Current
For Series, Shunt or Compound-wound Motors



CR1003 rheostats are suitable for use with series, shunt or compound-wound direct current motors that do not require more than 150 per cent full load torque to start or longer than 30 seconds to attain full speed. They comply with E. P. C. Resistor Classification Nos. 34 and 35.

When ordering state Cat. No. of rheostat and horse power and voltage of motor.

32 Volts

Cat. No.	H. P. of Motor	Approx. Ship. Wt. Lbs.	Price Each	Cat. No.	H. P. of Motor	Approx. Ship. Wt. Lbs.	Price Each
2021100G15	1/4	20	\$9.00	2021000G31	1 1/2-2	40	\$14.00
2021100G17	1/4	20	9.90	2042441G7	3	120	30.00
2021000G29	3/4-1	40	14.00	2042441G8	5	120	33.00

115 Volts

2021100G3	1/8-1/2	20	\$9.00	2042441G2	10	90	\$36.00
2021100G7	3/4-1	20	9.00	2042441G3	15	90	36.00
2021000G3	1 1/2-2	40	14.00	2042593G2	20	175	45.00
2021000G7	3	40	14.00	2042593G3	25	175	45.00
2021000G11	5	50	16.00	2042593G4	30	175	46.00
2042440G2	7 1/2	80	27.00	2042593G6	35	175	46.00

230 Volts

2021100G5	1/8-1/2	20	\$9.00	2042593G7	35	175	\$47.00
2021100G9	3/4-1	20	9.00	2042593G8	40	175	47.00
2021000G5	1 1/2-2	40	14.00	2042593G9	50	175	47.00
2021000G9	3	50	14.00	2091686G3	55	400	147.00
2071000G13	5	50	16.00	2091686G4	60	400	147.00
2021000G15	7 1/2	50	17.00	2091686G5	75	400	147.00
2042440G3	10	105	32.00	2091686G6	85	400	147.00
2042441G4	15	105	37.00	2091687G6	100	550	189.00
2042441G5	20	105	37.00	2091687G7	125	550	195.00
2042441G6	25	105	38.00	2091687G8	150	550	195.00
2042593G5	30	175	47.00	.....	.....	.....	.....

440 Volts

2046400G3	1/8-1/2	45	\$16.00	2091688G4	35	350	\$110.00
2046400G5	3/4-1	45	16.00	2091688G5	40	350	110.00
2046400G7	1 1/2-2	45	16.00	2091689G2	50	350	110.00
2046400G9	3	50	16.00	2091689G3	55	350	116.00
2046400G11	5	50	17.00	2091690G2	60	400	142.00
2046400G13	7 1/2	50	21.00	2091690G3	75	400	142.00
2046828G2	10	80	58.00	2091691G2	85	400	158.00
2046828G4	15	80	59.00	2091691G3	100	400	158.00
2046828G6	20	90	63.00	2091691G4	125	400	163.00
2091688G2	25	350	110.00	2091691G5	150	400	163.00
2091688G3	30	350	110.00	.....	.....	.....	.....

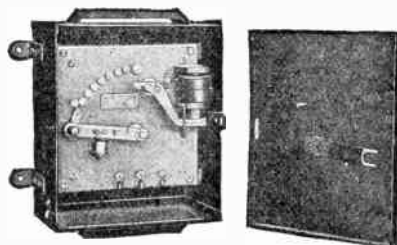
550 Volts

2046402G3	1/8-1/2	45	\$16.00	2091688G8	35	350	\$116.00
2046402G5	3/4-1	45	16.00	2091688G9	40	350	116.00
2046402G7	1 1/2-2	45	16.00	2091689G4	50	350	121.00
2046402G9	3	50	16.00	2091689G5	55	350	121.00
2046402G11	5	50	17.00	2091690G4	60	400	147.00
2046402G13	7 1/2	50	21.00	2091690G5	75	400	147.00
2046828G3	10	80	58.00	2091690G6	85	400	147.00
2046828G5	15	80	59.00	2091690G7	100	400	147.00
2046828G7	20	80	63.00	2091691G6	125	400	158.00
2091688G6	25	350	116.00	2091691G7	150	400	158.00
2091688G7	30	350	116.00	.....	.....	.....	.....

CR1026 A.C. Enclosed Starting Rheostats

For Type SCR Repulsion Induction Motors

40, 50 and 60 Cycles, Single-phase



These starters may be used with motors that do not require more than 150 per cent torque to start or longer than 30 seconds to attain full speed. They comply with E.P.C. Resistor Classification No. 35. They are primarily for use with the single-phase repulsion-induction motors (Type SCR) where the inrush of current resulting from throwing the motor directly upon the line is objectionable. When these motors are started by being thrown directly upon the line they require from 250 to 300 per cent full-load current. While in many cases this starting current may not be objectionable, it is recommended that a starter be installed in every case with the 7 1/2 and 10 h.p. motors and with the smaller motors when it is desired to reduce the starting current.

Starters for use with motors up to and including 5 h.p. 110 volts and 7 1/2 h.p. 220 volts are provided with button contacts. Larger sizes have renewable segments.

The switch, base, and resistor comprise a self-contained unit which may be removed bodily from the enclosing case.

The retaining magnet coil is connected across the line.

Off, Start and Run markings on the cover correspond to the respective switch position.

Starters are operated by an external handle.

Conduit knockouts are provided in the top and bottom of the enclosing case near the back, permitting a straight run of conduit.

110 Volts

Cat. No.	H.P. of Motor	Ship. Wt., Lbs.	Price Each
2021941G3	Up to 1	40	\$16.00
2021941G7	1 1/2	40	18.00
2021941G7	2	40	18.00
2021941G11	3	45	18.00
2021941G15	5	50	20.00

220 Volts

2021941G5	Up to 1	45	\$16.00
2021941G9	1 1/2	45	18.00
2021941G9	2	45	18.00
2021941G13	3	45	18.00
2021941G17	5	50	20.00
2021941G19	7 1/2	60	28.00
2042563G4	10	120	41.00

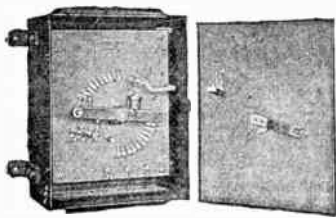
440 Volts

2209364G2	7 1/2	60	\$30.00
2209364G3	10	60	30.00

ORDERING DIRECTIONS.—State CR No. and Cat. No. of rheostat and horsepower, voltage and frequency of motor.

CR1028 A.C. Enclosed Starting Rheostats

For Slip-ring Induction Motors



Size No. 2

These rheostats are totally-enclosed in a case provided with convenient conduit knockouts, and are operated by a lever outside the case, thus conforming to safety regulations.

The starting arm is spring-retracted and is held in the running position by a latch, which can be tripped from outside.

The secondary circuit is not opened on the dial switch which, to avoid overheating the resistor must be operated to bring the motor up to speed as soon as the primary switch is closed.

For 60-cycle 40 Deg. C. Rated Motors

Cat. No.	Size No.	Motor Frame	H.P.	Sync. Speed R.P.M.	Primary Voltage	Approx. Ship. Wt., Lbs.	Price Each
2091300G10	1	926	3/4	900	110, 220, 440 and 500	27	\$24.00
2091300G8	1	926	1	1800		27	24.00
2091300G10	1	926	1	1200		27	24.00
2091300G8	1	932	1	900		27	24.00
2091300G10	1	932	1 1/2	900		27	24.00
2091300G10	1	926	2	1800		27	24.00
2091300G5	1	934	2	1200		27	24.00
2091300G5	1	936	2	900		27	24.00
2091300G5	1	932	3	1800		27	24.00
2091300G10	1	938	3	1200		27	24.00
2091300G10	1	944	3	900	27	24.00	
2091300G6	1A	936	5	1800	32	26.00	
2091300G6	1A	946	5	1200	32	26.00	
2091300G6	1A	952	5	900	32	26.00	
2091301G8	2	944	7 1/2	1800	80	45.00	
2091301G8	2	952	7 1/2	1200	80	45.00	
2091301G2	2	958	7 1/2	900	80	45.00	
2091301G4	2	948	10	1800	80	45.00	
2091301G4	2	956	10	1200	80	45.00	
2091301G3	2	510	10	900	80	45.00	
2091303G5	3	522	10	720	100	65.00	
2091302G2	3	501	15	1800	100	65.00	
2091302G2	3	502	15	1200	100	65.00	
2091303G6	3	512	15	900	220, 100	65.00	
2091303G4	3	532	15	720	440, 100	65.00	
2091303G5	3	532	15	600	and 100	65.00	
2091303G3	3	503	20	1800	550, 100	65.00	
2091303G3	3	512	20	1200	100	65.00	
2091303G4	3	522	20	900	100	65.00	
2091303G3	3	536	20	720	100	65.00	
2091303G4	3	536	20	600	100	65.00	

For 25-cycle 40 Deg. C. Rated Motors

2091300G3	1	122	1/2	750	110	27	\$24.00
2091300G4	1	160	1	750	220	27	24.00
2091300G5	1	180	2	750	440	27	24.00
2091300G10	1	182	3	750	and	27	24.00
2091300G11	1A	303	5	750	550	32	26.00
2091301G3	2	312	7 1/2	750		80	45.00
2091301G5	2	323	10	750	220	80	45.00
2091301G7	2	327	15	750	440	80	45.00
2091303G2	3	327	20	720	and 550	100	65.00

Order by catalogue number when the complete motor rating including horse power, revolutions per minute and frame number with which the rheostat is to be used, corresponds to the motor rating listed opposite the catalogue number of the rheostat.

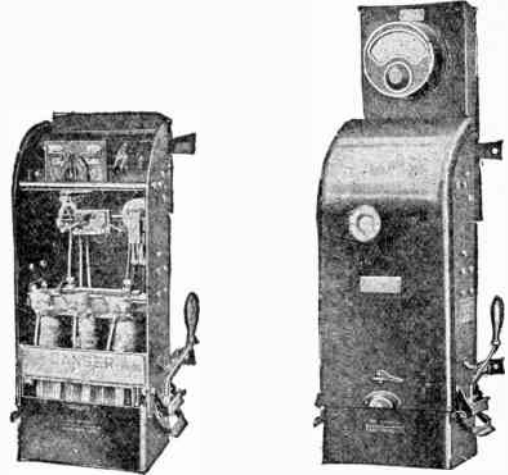
Orders or requests for quotations on rheostats differing from those listed above, should give the full name plate rating of the motor and the amperes secondary current per phase at full load, or the secondary volts per phase at standstill. The secondary volts per phase should be measured with full voltage on the primary, and with all secondary phases open-circuited.

These rheostats control the secondary circuit of the motor only. A primary switch is required in addition for the primary circuit. Push button stations are not required.

CR1034 A.C. Hand-starting Compensators

For 40-degree C. Squirrel Cage Induction Motors
With Undervoltage and Overload Protection

Form K1



Cover Removed Showing CR2824-TC-121 Relay Mounted

With Ammeter Attachment

The CR1034-K1 Compensator consists of an auto-transformer winding with taps, a switching device, an undervoltage protective device, and a 2-coil hand-reset temperature overload relay, all self-contained within a sheet metal case. A handle, on the outside of the case, is provided for operating the switch. All compensators are designed for wall mounting.

Multiple Rated Auto-transformer Coils

Used in the Size No. 1 Compensator only, making it possible to use one compensator for more than one size of motor for a given voltage. Therefore, in the Size No. 1, the temperature overload relay must be selected for the h.p., speed and voltage of the motor.

Switching Mechanism

Oil-immersed and has 3 definite positions: an off position, a starting position, and a running position. No. 6 oil is furnished for ordinary applications, but if the temperature is below 32 deg. F. (0 deg. C.) No. 21 oil is recommended.

Undervoltage Protection

Provided by a retaining magnet which holds the switch in the running-position. Upon failure of voltage, it releases the switch, which automatically returns to the off-position. The magnet is energized from full line potential for circuits of 600 volts or less.

Overload Protection

Provided by means of a temperature relay (CR2824-TC-121 for size No. 1 Compensators and CR2824-TC-221 for Sizes Nos. 2 and 3 Compensators), which upon an overload opens the undervoltage circuit.

Stop-reset Button

Each compensator has a double acting push-button in the front cover.

The stop feature—when the button is pressed, it opens the undervoltage release circuit, tripping the switch if it is in the running-position. The double acting mechanism of the push button also opens the contact and insures that the switch, if in the running-position, will be tripped upon starting to remove the front cover of the compensator.

Reset feature—designed so that in case the overload relay trips due to overload on the motor, by pressing the button the overload relay will be reset.

Ammeter Attachment

Consists of a dead-beat indicating ammeter mounted on a pressed steel box. Knockouts for conduit wiring are provided in the top, bottom and sides of the box, and in addition there are four 1/4-inch knockouts in the bottom of the box at the corners for bolting the attachment to the conduit wiring box of the compensator and 4 in the top at the corners that can be used for attaching a similar box containing other accessories such as a disconnecting switch.

Primary ammeters operating directly from the line are furnished for compensators of 600 volts and less.

CR1034 A.C. Hand Starting Compensators

Continued

For 40-degree C. Squirrel Cage Induction Motors
With Undervoltage and Overload Protection
Form K1 Size No. 1
3-phase—60 Cycles

MOTOR RATING H.P.	RATING Volts	COMPENSATOR (SIZE No. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
		Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019014G2	\$76.00	2019325G6	\$32.00
7½	110	2019014G2	76.00	2019325G7	32.00
10	110	2019014G2	76.00	2019325G8	34.00
15	110	2019014G2	76.00	2019326G1	34.00
5	220	2019014G3	76.00	2019325G4	30.00
7½	220	2019014G3	76.00	2019325G5	32.00
10	220	2019014G3	76.00	2019325G6	32.00
15	220	2019014G3	76.00	2019325G7	32.00
20	220	2019014G6	78.00	2019325G8	34.00
25	220	2019014G6	78.00	2019326G1	34.00
30	220	2019014G9	82.00	2019326G1	34.00
5	440	2019014G4	76.00	2019325G2	28.00
7½	440	2019014G4	76.00	2019325G3	28.00
10	440	2019014G4	76.00	2019325G4	30.00
15	440	2019014G4	76.00	2019325G5	32.00
20	440	2019014G7	78.00	2019325G6	32.00
25	440	2019014G7	78.00	2019325G6	32.00
30	440	2019014G10	82.00	2019325G7	32.00
40	440	2019014G12	88.00	2019325G8	34.00
50	440	2019014G12	88.00	2019326G1	34.00
5	550	2019014G5	76.00	2019325G1	28.00
7½	550	2019014G5	76.00	2019325G2	28.00
10	550	2019014G5	76.00	2019325G3	28.00
15	550	2019014G5	76.00	2019325G4	30.00
20	550	2019014G8	78.00	2019325G5	32.00
25	550	2019014G8	78.00	2019325G6	32.00
30	550	2019014G11	82.00	2019325G6	32.00
40	550	2019014G13	88.00	2019325G7	32.00
50	550	2019014G13	88.00	2019325G8	34.00

CR1034 A.C. Hand Starting Compensators

Continued

For 40-degree C. Squirrel Cage Induction Motors
With Undervoltage and Overload Protection
Form K1 Size No. 1
3-phase—50 Cycles

MOTOR RATING H.P.	RATING Volts	COMPENSATOR (SIZE No. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
		Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019014G14	\$76.00	2019325G6	\$32.00
7½	110	2019014G14	76.00	2019325G7	32.00
10	110	2019014G14	76.00	2019325G8	34.00
15	110	2019014G14	76.00	2019326G1	34.00
5	220	2019014G15	76.00	2019325G4	30.00
7½	220	2019014G15	76.00	2019325G5	32.00
10	220	2019014G15	76.00	2019325G6	32.00
15	220	2019014G15	76.00	2019325G7	32.00
20	220	2019014G18	78.00	2019325G8	34.00
25	220	2019014G18	78.00	2019326G1	34.00
30	220	2019014G21	82.00	2019326G1	34.00
5	440	2019014G16	76.00	2019325G2	28.00
7½	440	2019014G16	76.00	2019325G3	28.00
10	440	2019014G16	76.00	2019325G4	30.00
15	440	2019014G16	76.00	2019325G5	32.00
20	440	2019014G19	78.00	2019325G6	32.00
25	440	2019014G19	78.00	2019325G6	32.00
30	440	2019014G22	82.00	2019325G7	32.00
40	440	2019014G24	88.00	2019325G8	34.00
50	440	2019014G24	88.00	2019326G1	34.00
5	550	2019014G17	76.00	2019325G1	28.00
7½	550	2019014G17	76.00	2019325G2	28.00
10	550	2019014G17	76.00	2019325G3	28.00
15	550	2019014G17	76.00	2019325G4	30.00
20	550	2019014G20	78.00	2019325G5	32.00
25	550	2019014G20	78.00	2019325G6	32.00
30	550	2019014G23	82.00	2019325G6	32.00
40	550	2019014G25	88.00	2019325G7	32.00
50	550	2019014G25	88.00	2019325G8	34.00

CR2824-TC-121 Temperature Overload Relay

MOTOR RATING H.P.	SPEED	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	3600 to 1200	1746862G18	1746862G15	1746862G12	1746862G11
	900 to 600	1746862G19	1746862G16	1746862G13	1746862G12
7½	3600 to 1200	1746862G20	1746862G17	1746862G14	1746862G13
	900 to 600	1746862G21	1746862G18	1746862G15	1746862G14
10	3600 to 1200	1746862G21	1746862G18	1746862G15	1746862G14
	900 to 600	1746862G22	1746862G19	1746862G16	1746862G15
15	3600 to 1200	1746862G22	1746862G20	1746862G17	1746862G16
	900 to 600	1746862G21	1746862G18	1746862G17	1746862G17
20	3600 to 1200	.....	1746862G21	1746862G18	1746862G17
	900 to 600	.....	1746862G21	1746862G19	1746862G18
25	3600 to 1200	.....	1746862G22	1746862G19	1746862G18
	900 to 600	.....	1746862G22	1746862G19	1746862G19
30	1200 to 600	.....	1746862G22	1746862G20	1746862G19
	1800 to 600	.....	.....	1746862G21	1746862G20
40	1800 to 600	.....	.....	1746862G21	1746862G20
	1800 to 600	.....	.....	1746862G22	1746862G21

Ordering Directions for Size No. 1 Compensator

1. Order CR1034-K1 compensator by Cat. No.
2. Order a CR2824-TC-121-A temperature overload relay by Cat. No. for horsepower, speed and voltage of motor.
3. Order ammeter attachment by Cat. No.
4. Order CR1923 disconnecting switch by Cat. No.
5. Order CR1019 or CR1924 motor circuit switch by Cat. No.
6. Order pipe supports by Cat. No.

CR2824-TC-121 Temperature Overload Relay

MOTOR RATING H.P.	SPEED	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	1500 to 1000	1746862G18	1746862G15	1746862G12	1746862G11
	1500 to 1000	1746862G19	1746862G15	1746862G12	1746862G11
7½	1500 to 1000	1746862G20	1746862G17	1746862G14	1746862G13
	1500 to 1000	1746862G21	1746862G18	1746862G15	1746862G14
10	1500 to 750	1746862G22	1746862G19	1746862G16	1746862G15
	1500 to 1000	1746862G22	1746862G20	1746862G17	1746862G16
15	1500 to 750	1746862G22	1746862G21	1746862G18	1746862G17
	1500 to 600	1746862G22	1746862G20	1746862G17	1746862G16
20	1500 to 750	.....	1746862G21	1746862G18	1746862G17
	1500 to 600	.....	1746862G21	1746862G19	1746862G18
25	1500 to 750	.....	1746862G22	1746862G19	1746862G18
	1500 to 600	.....	1746862G22	1746862G20	1746862G19
40	1500 to 600	.....	.....	1746862G21	1746862G20
	1500 to 500	.....	.....	1746862G22	1746862G21

CR1034 A.C. Hand Starting Compensators

CR1034 A. C. Hand Starting Compensators

Continued
For 40-degree C. Squirrel Cage Induction Motors
With Undervoltage and Overload Protection

Continued
For 40-degree C. Squirrel Cage Induction Motors
With Undervoltage and Overload Protection

Form K1 Size No. 1
3-phase—40 Cycles

Form K1 Size No. 1
2-phase, 60 Cycles

MOTOR RATING		COMPENSATOR (SIZE No. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
H.P.	Volts	Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019014G34	\$76.00	2019325G6	\$32.00
7½	110	2019014G34	76.00	2019325G7	32.00
10	110	2019014G34	76.00	2019325G8	34.00
15	110	2019014G34	76.00	2019326G1	34.00
5	220	2019014G35	76.00	2019325G4	30.00
7½	220	2019014G35	76.00	2019325G5	32.00
10	220	2019014G35	76.00	2019325G6	32.00
15	220	2019014G35	76.00	2019325G7	32.00
20	220	2019014G38	82.00	2019325G8	34.00
25	220	2019014G38	82.00	2019326G1	34.00
30	220	2019014G38	82.00	2019326G1	34.00
5	440	2019014G36	76.00	2019325G2	28.00
7½	440	2019014G36	76.00	2019325G3	28.00
10	440	2019014G36	76.00	2019325G4	30.00
15	440	2019014G36	76.00	2019325G5	32.00
20	440	2019014G39	82.00	2019325G6	32.00
25	440	2019014G39	82.00	2019325G6	32.00
30	440	2019014G39	82.00	2019325G7	32.00
40	440	2019014G41	88.00	2019325G8	34.00
5	550	2019014G37	76.00	2019325G1	28.00
7½	550	2019014G37	76.00	2019325G2	28.00
10	550	2019014G37	76.00	2019325G3	28.00
15	550	2019014G37	76.00	2019325G4	30.00
20	550	2019014G40	82.00	2019325G5	32.00
25	550	2019014G40	82.00	2019325G6	32.00
30	550	2019014G40	82.00	2019325G6	32.00
40	550	2019014G42	88.00	2019325G7	32.00

MOTOR RATING		COMPENSATOR (SIZE No. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
H.P.	Volts	Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019013G2	\$76.00	2019325G6	\$32.00
7½	110	2019013G2	76.00	2019325G6	32.00
10	110	2019013G2	76.00	2019325G7	32.00
15	110	2019013G2	76.00	2019325G1	34.00
5	220	2019013G3	76.00	2019325G3	28.00
7½	220	2019013G3	76.00	2019325G5	32.00
10	220	2019013G3	76.00	2019325G5	32.00
15	220	2019013G3	76.00	2019325G6	32.00
20	220	2019013G6	78.00	2019325G7	32.00
25	220	2019013G6	78.00	2019325G8	34.00
30	220	2019013G9	82.00	2019325G1	34.00
5	440	2019013G4	76.00	2019325G1	28.00
7½	440	2019013G4	76.00	2019325G2	28.00
10	440	2019013G4	76.00	2019325G4	30.00
15	440	2019013G4	76.00	2019325G5	32.00
20	440	2019013G7	78.00	2019325G5	32.00
25	440	2019013G7	78.00	2019325G6	32.00
30	440	2019013G10	82.00	2019325G6	32.00
40	440	2019013G12	88.00	2019325G7	32.00
50	440	2019013G12	88.00	2019325G8	34.00
5	550	2019013G5	76.00	2019325G1	28.00
7½	550	2019013G5	76.00	2019325G2	28.00
10	550	2019013G5	76.00	2019325G3	28.00
15	550	2019013G5	76.00	2019325G4	30.00
20	550	2019013G8	78.00	2019325G5	32.00
25	550	2019013G8	78.00	2019325G5	32.00
30	550	2019013G11	82.00	2019325G6	32.00
40	550	2019013G13	88.00	2019325G6	32.00
50	550	2019013G13	88.00	2019325G7	32.00

CR2824-TC-121 Temperature Overload Relay

CR2824-TC-121 Temperature Overload Relay

MOTOR RATING	Speed	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	1200	1746862G18	1746862G15	1746862G12	1746862G11
7½	1200	1746862G20	1746862G17	1746862G14	1746862G13
	800	1746862G21	1746862G18	1746862G15	1746862G14
10	1200	1746862G22	1746862G19	1746862G16	1746862G15
	800	1746862G22	1746862G20	1746862G17	1746862G16
20	1200	1746862G19	1746862G17	1746862G17	1746862G17
	800	1746862G21	1746862G18	1746862G18	1746862G17
25	1200	1746862G22	1746862G19	1746862G19	1746862G18
	800	1746862G22	1746862G20	1746862G20	1746862G19
30	1200	1746862G21	1746862G21	1746862G21	1746862G20
	800	1746862G21	1746862G21	1746862G21	1746862G20

MOTOR RATING	Speed	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	3600	1746862G18	1746862G14	1746862G11	1746862G10
	1800 to 720	1746862G18	1746862G15	1746862G12	1746862G11
	600	1746862G19	1746862G16	1746862G13	1746862G12
7½	3600 to 1200	1746862G19	1746862G16	1746862G13	1746862G12
	900 to 600	1746862G20	1746862G17	1746862G14	1746862G13
	3600 to 1200	1746862G20	1746862G17	1746862G14	1746862G13
10	900 to 720	1746862G21	1746862G18	1746862G15	1746862G14
	600	1746862G21	1746862G19	1746862G16	1746862G14
	3600 to 900	1746862G22	1746862G19	1746862G16	1746862G15
15	900 to 720	1746862G22	1746862G20	1746862G17	1746862G16
	600	1746862G20	1746862G17	1746862G16	1746862G16
	3600 to 1200	1746862G21	1746862G18	1746862G15	1746862G14
20	900 to 720	1746862G21	1746862G18	1746862G15	1746862G14
	600	1746862G21	1746862G18	1746862G15	1746862G14
	3600 to 1800	1746862G21	1746862G18	1746862G15	1746862G14
25	1800 to 1200	1746862G21	1746862G18	1746862G15	1746862G14
	900 to 720	1746862G21	1746862G19	1746862G18	1746862G18
	600	1746862G22	1746862G19	1746862G18	1746862G18
30	1800 to 600	1746862G22	1746862G19	1746862G18	1746862G18
	1800 to 600	1746862G20	1746862G19	1746862G19	1746862G19
	1800 to 720	1746862G21	1746862G20	1746862G20	1746862G20
50	1800 to 600	1746862G22	1746862G21	1746862G21	1746862G21

3-phase 25 Cycles

MOTOR RATING		COMPENSATOR (SIZE No. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
H.P.	Volts	Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019014G26	\$78.00	2019325G6	\$32.00
7½	110	2019014G26	78.00	2019325G7	32.00
10	110	2019014G26	78.00	2019325G8	34.00
15	110	2019014G30	82.00	2019326G1	34.00
5	220	2019014G27	78.00	2019325G4	30.00
7½	220	2019014G27	78.00	2019325G5	32.00
10	220	2019014G27	78.00	2019325G6	32.00
15	220	2019014G31	82.00	2019325G7	32.00
5	440	2019014G28	78.00	2019325G2	28.00
7½	440	2019014G28	78.00	2019325G3	28.00
10	440	2019014G28	78.00	2019325G4	30.00
15	440	2019014G32	82.00	2019325G5	32.00
5	550	2019014G29	78.00	2019325G1	28.00
7½	550	2019014G29	78.00	2019325G2	28.00
10	550	2019014G29	78.00	2019325G3	28.00
15	550	2019014G33	82.00	2019325G4	30.00

CR2824-TC-121 Temperature Overload Relay

MOTOR RATING	Speed	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	1500 to 750	1746862G18	1746862G15	1746862G12	1746862G11
7½	1500 to 500	1746862G20	1746862G17	1746862G14	1746862G13
	1500 to 750	1746862G21	1746862G18	1746862G15	1746862G14
10	1500 to 500	1746862G22	1746862G19	1746862G16	1746862G15
	1500 to 500	1746862G22	1746862G20	1746862G17	1746862G16

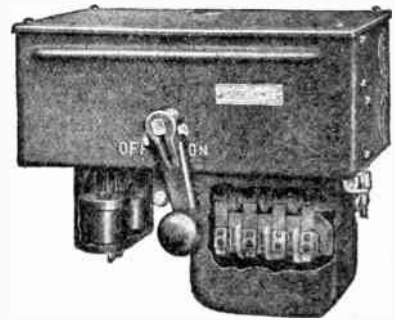
CR1034 A.C. Hand Starting Compensators

Continued
For 40-degree C. Squirrel Cage Induction Motors
 With Undervoltage and Overload Protection
Form K1—Size No. 1
 2-phase—40 Cycles
 Use 2-phase, 25-cycle Prices. Do Not Specify N R Number
 but Give Complete Motor Rating
 2-phase—25 Cycles

MOTOR RATING H.P.	Volts	COMPENSATOR (SIZE NO. 1)		AMMETER ATTACHMENT (INCLUDES AMMETER)	
		Cat. No.	Price Each	Cat. No.	Price Each
5	110	2019013G14	\$78.00	2019325G6	\$32.00
7½	110	2019013G14	78.00	2019325G6	32.00
10	110	2019013G14	78.00	2019325G7	32.00
15	110	2019013G17	82.00	2019326G1	34.00
5	220	2019013G15	78.00	2019325G3	28.00
7½	220	2019013G15	78.00	2019325G5	32.00
10	220	2019013G15	78.00	2019325G5	32.00
15	220	2019013G18	82.00	2019325G6	32.00
5	440	2019013G16	78.00	2019325G1	28.00
7½	440	2019013G16	78.00	2019325G2	28.00
10	440	2019013G16	78.00	2019325G4	30.00
15	440	2019013G19	82.00	2019325G5	32.00

CR1035 Type FP-110 Oil Circuit Breakers

Alternating Current



These switches are especially adapted for the protection of small induction motors which can be thrown directly on the line or can be used in connection with compensators, drum type switches or similar devices employed in starting alternating-current motors.

All live parts are enclosed. Frames, oil tanks and calibrating parts are practically dustproof. The frame is provided with a lug to take a padlock by which the switch may be locked in the open position.

Automatic switches trip free from the handle and cannot be held closed on overload or short circuit or left in an intermediate position. The handle follows the operation of contacts and the position of the contacts is indicated by On and Off stamped on the frame.

The frame is arranged for mounting on any flat surface or bracket and is held rigidly by 2 bolts.

The contact parts are insulated from ground and between phases by porcelain insulation, giving a high factor of safety, and are constructed as a unit so that they may be easily removed from or replaced in the frame. The contacts are double-break, opening by gravity, with speed augmented by springs. Contact fingers are so constructed that the burning occurs on a surface other than that used for contacting when the switch is in the closed position.

The mechanism is simple in construction and all parts are held by lock washers. Practically all of the parts are made from dies so that they are accurate and interchangeable.

The switch frame is arranged to take either open or conduit wiring at right-hand end.

All automatic switches equipped with inverse time relays have the time setting controlled by a needle valve. The time setting is easily adjusted to give the proper delay for motor starting without removing the dashpots from the calibrating tubes on which they are mounted.

The current setting recommended is 25 per cent above the normal (full-load) current of the motor for motors with 25 per cent overload guarantee and about 10 per cent above the normal (full-load) current of the motor for continuous rated motors. At this setting the time should be adjusted so that the switch will just fail to trip under starting conditions or in approximately 10 to 15 seconds under starting load. This will give a considerably longer time under ordinary overload conditions, but if the current-setting is correct, this time will allow the switch to trip out with the motor running single-phase before the motor will be injured by such operation.

Switches with under-voltage trip have mechanisms similar to the other automatic switches and trip free from the handle.

The under-voltage trip operates at approximately one-half rated voltage. Combinations are listed for 25, 40, 50 and 60 cycles at 110, 220, 440 and 550 volts.

The auto-transformers, where required, are mounted inside the switch, all wiring connections being enclosed.

All switches are triple or 4-pole, single-throw only. For single-phase use the triple-pole switch, leaving middle pole disconnected, using only one or both series trip coils as desired.

Quick break switches have knob handle.

Quick make and break switches have handle for shipper-rod connection. These are not adapted for operation by hand. Knob handles may, however, be substituted for shipper rod handles where required.

CR2824-TC-121 Temperature Overload Relay

MOTOR RATING H.P.	Speed	CATALOGUE NUMBERS			
		110 Volts	220 Volts	440 Volts	550 Volts
5	1500	1746862G17	1746862G14	1746862G11	1746862G10
	750	1746862G18	1746862G14	1746862G11	1746862G10
7½	1500	1746862G19	1746862G16	1746862G13	1746862G12
	750	1746862G20	1746862G17	1746862G13	1746862G12
10	1500	1746862G20	1746862G17	1746862G14	1746862G13
	750	1746862G21	1746862G18	1746862G15	1746862G14
15	1500	1746862G21	1746862G19	1746862G16	1746862G15
	750	1746862G22	1746862G19	1746862G16	1746862G15

Form K1—Sizes Nos. 2 and 3
 3-phase—60 Cycles

MOTOR RATING H.P.	Volts	Size No.	COMPENSATOR (SIZES NOS. 2 AND 3)		AMMETER ATTACHMENT (INCLUDES AMMETER)		
			Cat. No.	Price Each	Cat. No.	Price Each	
40	220	2	2019079G2	\$130.00	2019328G2	\$38.00	
50	220	2	2019079G3	135.00	2019329G1	48.00	
60	220	2	2019079G4	140.00	2019329G1	48.00	
	440	2	2019079G5	140.00	2019328G1	38.00	
	550	2	2019079G6	140.00	2019327G3	36.00	
75	220	2	2019079G7	140.00	2019330G1	48.00	
	440	2	2019079G8	140.00	2019328G2	38.00	
	550	2	2019079G9	140.00	2019328G1	38.00	
100	220	3	2019085G2	200.00	2019337G1	54.00	
	440	2	2019079G10	145.00	2019329G1	48.00	
	550	2	2019079G11	145.00	2019328G2	38.00	
125	220	3	2019085G3	210.00	2019338G1	56.00	
	440	2	2019079G12	150.00	2019329G1	48.00	
	550	2	2019079G13	150.00	2019329G1	48.00	
150	440	2	2019079G14	155.00	2019330G1	48.00	
	550	2	2019079G15	155.00	2019329G1	48.00	
	440	3	2019085G4	200.00	2019337G1	54.00	
200	550	3	2019085G5	200.00	2019330G1	48.00	
	440	3	2019085G6	220.00	2019338G1	56.00	
	550	3	2019085G7	220.00	2019337G1	54.00	
40	220	2	2019079G16	\$135.00	2019328G2	\$38.00	
	50	220	2	2019079G17	140.00	2019329G1	48.00
	220	2	2019079G18	145.00	2019329G1	48.00	
60	440	2	2019079G19	145.00	2019328G1	38.00	
	550	2	2019079G20	145.00	2019327G3	36.00	
	220	2	2019079G21	150.00	2019330G1	48.00	
75	440	2	2019079G22	150.00	2019328G2	38.00	
	550	2	2019079G23	150.00	2019328G1	38.00	
	220	3	2019085G8	200.00	2019337G1	54.00	
100	440	2	2019079G24	155.00	2019329G1	48.00	
	550	2	2019079G25	155.00	2019328G2	38.00	
	220	3	2019085G9	210.00	2019338G1	56.00	
125	440	2	2019079G26	170.00	2019329G1	48.00	
	550	2	2019079G27	170.00	2019329G1	48.00	
	440	2	2019079G28	180.00	2019330G1	48.00	
150	550	2	2019079G29	180.00	2019329G1	48.00	
	440	3	2019085G10	210.00	2019337G1	54.00	
	550	3	2019085G11	210.00	2019330G1	48.00	
200	440	3	2019085G12	230.00	2019338G1	56.00	
	550	3	2019085G13	230.00	2019337G1	54.00	

CR1035 Type FP-110 Oil Circuit Breakers

CR1035 Type FP-110 Oil Circuit Breakers

Alternating Current

Alternating Current

Continued
Maximum Rating with Squirrel-cage Motors: 5 H.P., 110 Volts
15 H.P., 220-440-550 Volts
Maximum Rating with Slip-ring Motors: 7 1/2 H.P., 110 Volts
15 H.P., 220 Volts; 30 H.P., 440-550 Volts

Maximum Rating with Squirrel-cage Motors: 5 H.P., 110 Volts
15 H.P., 220-440-550 Volts
Maximum Rating with Slip-ring Motors: 7 1/2 H.P., 110 Volts
15 H.P., 220 Volts; 30 H.P., 440-550 Volts

Non-automatic—Without Overload Release

Automatic—With Double Series IT Overload Trip and Under-voltage Trip

Each switch supplied with 1/2 gallon G-E No. 6 oil.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 1968923G1 and 1968924G1.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 1968925G1 and 1968925G2.

Automatic—With Double Series IT Overload Trip
Each switch supplied with 1/2 gallon G-E No. 6 also 1/4 pint G-E No. 21 oil for dashpots.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602727G1 through 2602727G13.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602728G1 through 2602728G13.

Automatic—With Double Series IT Overload Trip and Under-voltage Trip
Each switch supplied with 1/2 gallon G-E No. 6 also 1/4 pint G-E No. 21 oil for dashpots.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602729G1 through 2602729G13.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602730G1 through 2602730G13.

Continued
4-pole—220 Volts—25 Cycles; 440 Volts—50 and 60 Cycles

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602731G1 through 2602731G13.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602732G1 through 2602732G13.

Table with 3 columns: *Cap. A up. of Series Coils, Cat. No., Price Each. Rows include 2602733G1 through 2602733G13.

*Series coils will carry 25 per cent overload for 2 hours at 45 degrees Centigrade rise or less. The calibration of series coils is from normal (as listed) to twice normal, i. e., 2 to 4, 3 to 6, 25 to 50, 50 to 100, etc.

†The automatic quick make and break switches have shipper-rud handles which are not adapted for hand operation. Knob handles will be furnished at the same price if specified on the order.

‡The under-voltage trip and transformer where required are mounted within the switch frame and when properly adjusted, the switch cannot be held closed unless there is full voltage on the circuit.

The under-voltage coil is reset by the action of the operating handle. The under-voltage coil should be connected across one phase of the load side (if possible) with proper transformer tap (where transformer is used) in circuit. No resistance is required.

CR1035 Type FP-110 Oil Circuit Breakers

Alternating Current

Maximum Rating with Squirrel-cage Motors: 5 H.P., 110 Volts; 15 H.P., 220-440-550 Volts

Maximum Rating with Slip-ring Motors: 7½ H.P., 110 Volts; 15 H.P., 220 Volts; 30 H.P., 440-550 Volts

Continued

Quick Break—Automatic—With Under-voltage Trip

Each switch supplied with ½ gallon No. 6 oil.

3-pole

Cat. No.	Max. Cap. Amp.	Volts	Cycles	Ship. Wt., Lbs.	Price Each
2602725G1	50	110	40, 50, 60	22	\$18.00
2602725G2	50	110	25	22	18.00
2602725G2	50	220	40, 50, 60	22	18.00
2602725G3	50	220	25	22	18.00
2602725G3	50	440	50, 60	22	18.00
2602725G4	50	440	40	22	18.00
2602725G4	50	550	40, 50, 60	22	18.00
2602725G5	50	440	25	25	26.00
2602725G5	50	550	25	25	26.00

4-pole

Cat. No.	Max. Cap. Amp.	Volts	Cycles	Ship. Wt., Lbs.	Price Each
2602726G1	50	110	40, 50, 60	27	\$22.00
2602726G2	50	110	25	27	22.00
2602726G2	50	220	40, 50, 60	27	22.00
2602726G3	50	220	25	27	22.00
2602726G3	50	440	50, 60	27	22.00
2602726G4	50	440	40	27	22.00
2602726G4	50	550	40, 50, 60	27	22.00
2602726G5	50	440	25	30	30.00
2602726G5	50	550	25	30	30.00

Automatic—With Under-voltage Trip—Overload Protection by Thermal Cutouts—3-pole—Quick Break

The capacity of the thermal cutouts limits the use of this switch to 3-h. p., 110-volt; and 5-h. p., 220-, 440- and 550-volt, 3-phase induction motors.

Each switch supplied with ½ gallon No. 6 oil.

2602725G6	110	40, 50, 60	25	\$24.00
2602725G7	110	25	25	24.00
2602725G7	220	40, 50, 60	25	24.00
2602725G8	220	25	25	24.00
2602725G8	440	50, 60	25	24.00
2602725G9	440	25	30	32.00
2602725G9	550	25	30	32.00
2602725G10	440	40	24	24.00
2602725G10	550	40, 50, 60	24	24.00

Automatic—With Under-voltage Trip—4-pole—Quick Make and Break

Each switch supplied with ½ gallon No. 6 oil.

2602726G6	50	110	40, 50, 60	27	\$24.00
2602726G7	50	110	25	27	24.00
2602726G7	50	220	40, 50, 60	27	24.00
2602726G8	50	220	25	27	24.00
2602726G8	50	440	50, 60	27	24.00
2602726G9	50	440	40	27	24.00
2602726G9	50	550	40, 50, 60	27	24.00
2602726G10	50	440	25	30	32.00
2602726G10	50	550	25	30	32.00

*Cat. No. covers switch complete with receptacles for 2 thermal cutouts but does not include the cutouts which must be ordered as a separate item by Cat. No. from following table. †Price covers switch complete with 2 thermal cutouts.

‡Includes auto-transformer with taps tagged to indicate proper connection.

Thermal Cutouts

The thermal cutouts do not protect the branch circuit from short circuit and cannot be considered as taking the place of branch circuit fuses, which must be installed as specified in the Underwriters' Code.

Cat. No.	Ampere Rating	Full Load Current of Motor in Amp.	Cat. No.	Ampere Rating	Full-load Current of Motor in Amp.
245553	0.8	0.59-0.70	245562	4.3	3.16-3.75
245554	0.95	0.71-0.83	245563	5.1	3.78-4.45
245555	1.1	0.84-0.96	245564	6.0	4.46-5.25
245556	1.3	0.97-1.13	245565	7.1	5.26-6.20
165217	1.5	1.14-1.31	245566	8.4	6.21-7.35
245557	1.8	1.32-1.58	165225	10.0	7.36-8.75
245558	2.1	1.59-1.84	245567	11.8	8.76-10.3
245559	2.5	1.85-2.19	245568	14.0	10.4-12.3
245560	3.0	2.20-2.63	245569	16.6	12.4-14.6
245561	3.6	2.64-3.15	167538	20.0	14.7-17.5

Type CR1038 A. C. Starting Switches

For Small A. C. Motors



No. 256911 Switch

CR1038-A1-A2 or B2 Motor Starting Switches consist of a triple or 4-pole, single-throw, quick-make and break switch and two thermal cutouts mounted on a base, totally enclosed in a sheet steel case with operating handle projecting through the front of the case. Cat. No. 256911 and Cat. No. 258206 switches are for use with three-phase or two-phase three-wire motors, while Cat. No. 258205 switch is for use with two-phase four-wire motors. Overload protection is furnished by two inverse-time thermal cutouts. The cutouts are mounted by two metal strip

terminals, each slotted for a holding-down screw. By reason of the time lag in the heating coil, the momentary inrush starting current will not cause the thermal cutouts to open the circuit. The thermal cutouts protect the motor from such overloads as are ordinarily met with the service. Standard fuses must be used in series with the thermal cutouts.

Cast iron pedestals have been designed for use with the CR1038-A2 and -B2 switches where the thermal cutouts are mounted above the switch.

This design of the CR1038 switch is particularly applicable for pedestal mounting and where it is desired to have the service lines come in at the bottom of the switch.

Each switch is provided with a locking device.

Type CR1038-A1 3-phase (T-P., S-T Switch)

*Cat. No.	H. P. RATING				Approx. Ship. Wt., Lbs.	†Price Each
	110 V.	220 V.	440 V.	550 V.		
256911	3	5	7½	7½	25	\$9.00

Type CR1038-A2 3-phase (T-P., S-T Switch)

258206	3	5	7½	7½	25	\$9.00
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Type CR1038-B2 2-phase (4-P., S-T Switch)

258205	3	5	5	5	30	\$11.00
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*Cat. No. does not include the thermal cutouts which must be ordered as a separate item by Cat. No. given in the table below.

†Price covers switch complete with 2 thermal cutouts and 10 extra links. An allowance of \$1.50 will be made for the omission of the thermal cutouts.



Thermal Cutout

Pedestals

For Type CR1038-A2 3-phase (T-P., S-T Switch)

Cat. No.	For No. of Switches	Approx. Ship. Wt., Lbs.	Price Each
277026	1	16	\$2.50
269976	2	25	4.50

For Type CR1038-B2 2-phase (4-P., S-T Switch)

277026	1	16	2.50
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Pedestals must be ordered as a separate item and at an additional price.

Prices of Additional Parts

Price, Thermal Cutout with Spare Link	each	\$1.15
" Carton of 10 Cutouts, Assorted Ratings	"	9.50
" " " 10 " One Rating	"	9.00
" No. 167539, Fusible Link	per 10	.50
" " 167539 " " " " " " " "	100	3.50
" " 167539 " " " " " " " "	500	14.50

Cat. No.	Ampere Rating	Full Load Current of Motor in Amp.	Cat. No.	Ampere Rating	Full Load Current of Motor in Amp.
256913	0.8	0.59-0.70	256923	4.3	3.16-3.77
256914	0.95	0.71-0.83	256924	5.1	3.78-4.45
256915	1.1	0.84-0.96	256925	6.0	4.46-5.25
256916	1.3	0.97-1.13	256926	7.1	5.26-6.20
256917	1.5	1.14-1.31	256927	8.4	6.21-7.35
256918	1.8	1.32-1.58	256928	10.0	7.36-8.75
256919	2.1	1.59-1.84	256929	11.8	8.76-10.3
256920	2.5	1.85-2.19	256930	14.0	10.4-12.3
256921	3.0	2.20-2.63	256931	16.6	12.4-14.6
256922	3.6	2.64-3.15	256932	20.0	14.7-17.5

Fusible link, Cat. No. 167539 is the same for all thermal cutouts.

Ordering Directions

Order CR1038 switch by Cat. No.; thermal cutouts by Cat. No.; and pedestal by Cat. No.

CR1042-A3 A.C. Enclosed Resistor Starters
For Squirrel Cage Induction Motors
 Under-voltage and Overload Protection
3-phase—60, 50, 40 and 25 Cycles



Designed to keep the inrush currents within the limits allowed by the N. E. L. A. rules. The voltage at the motor terminals at starting averages 82%, giving a starting torque of approximately 65% of that developed when thrown on the line. The resistor capacity is such as to carry 3 times normal full-load current for 15 seconds once every 4 minutes for an hour, without exceeding Electric Power Club temperature limits.

Have a single-step resistor, equal parts of which are connected in each phase. The switching elements are of the contactor finger type—strong and readily renewable.

Operated by throwing handle to starting position and holding it there until motor is under way. Releasing handle will cause the starter to automatically throw over to running side without disconnecting motor from line.

Safety type, completely enclosed in a ventilated case, externally operated.

H.P.	Volts	Approx. Ship. Wt., Lbs.	60 CYCLES		50 CYCLES	
			†Cat. No.	*Price Each	†Cat. No.	*Price Each
5-7½	220	50	2829015G2	\$45.00	2829015G29	\$45.00
	440	50	2819015G5	45.00	2829015G32	45.00
	550	50	2829015G8	45.00	2829015G35	45.00
10	220	55	2829014G3	50.00	2829014G21	50.00
	440	55	2829014G5	50.00	2829014G23	50.00
	550	55	2829014G7	50.00	2829014G25	50.00
15	220	55	2829014G2	50.00	2829014G20	50.00
	440	55	2829014G4	50.00	2829014G22	50.00
	550	55	2829014G6	50.00	2829014G24	50.00
H.P.	Volts	Approx. Ship. Wt., Lbs.	40 CYCLES		25 CYCLES	
			†Cat. No.	*Price Each	†Cat. No.	*Price Each
5-7½	220	50	2829015G20	\$45.00	2829015G11	\$45.00
	440	50	2829015G23	45.00	2829015G14	45.00
	550	50	2829015G26	45.00	2829015G17	45.00
10	220	55	2829014G15	50.00	2829014G9	50.00
	440	55	2829014G17	50.00	2829014G11	50.00
	550	55	2829014G19	50.00	2829014G13	50.00
15	220	55	2829014G14	50.00	2829014G8	50.00
	440	55	2829014G16	50.00	2829014G10	50.00
	550	55	2829014G18	50.00	2829014G12	50.00

*Price is for the starting rheostat complete with a CR2824-TC-121-A temperature overload relay. The relay may be omitted at \$7.00.

†The starter is furnished with punched terminals which are rated 30 amperes maximum by the Underwriters. Where the normal current of the motor exceeds 30 amperes, a set of punched tube terminals, Cat. No. 1774499, should be ordered at no increase in price.

The following table gives catalogue number and symbol of the temperature relays and range of the full-load currents of 40-degree motors with which each may be used:

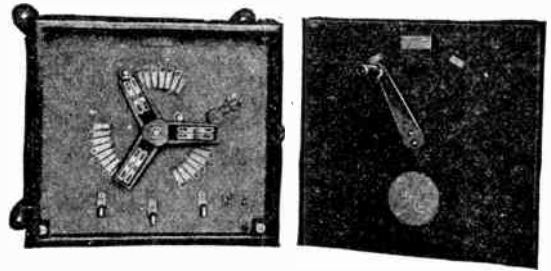
Cat. No.	Relay Symbol	Normal Rating in Amperes	Full-load Current of Motor in Amperes
1746862G11	TC-121-A11	6.5	4.7-5.8
1746862G12	TC-121-A12	8.0	5.9-7.2
1746862G13	TC-121-A13	10.0	7.3-9.2
1746862G14	TC-121-A14	13.0	9.3-11.6
1746862G15	TC-121-A15	16.0	11.7-14.4
1746862G16	TC-121-A16	20.0	14.5-18.0
1746862G17	TC-121-A17	25.0	18.1-22.0
1746862G18	TC-121-A18	30.0	22.1-28.0
1746862G19	TC-121-A19	40.0	28.1-36.0
1746862G20	TC-121-A20	50.0	36.1-46.0
1746862G21	TC-121-A21	65.0	46.1-58.0
1746862G22	TC-121-A22	80.0	58.1-80.0

Ordering Directions

The price of the starter given above includes the relay but the Cat. No. covers the starter only.

1. Order a CR1042-A3 starter by Cat. No.
2. Order a CR2824-TC-121-A temperature overload relay by Cat. No.
3. Order a set of terminals Cat. No. 1774499 if normal motor current exceeds 30 amperes.

CR1263 and CR1264 A. C. Enclosed Speed Regulating Rheostats
For Types MT or MQ Slip-ring Induction Motors
 For Secondary Control Only, 60 Cycles, 3 or 2-phase
 110, 220, 440 and 550 Volts



CR1263 and CR1264 Enclosed Rheostats are for use in the secondary circuit of Types MT and MQ slip-ring induction motors to reduce the speed 50 per cent. As they are not connected with the primary circuit of the motor, it is necessary to also install an oil circuit breaker, magnetic switch or similar device to control the primary circuit. They are enclosed in a case provided with convenient knockouts, and are operated by a lever outside the case.

CR1263 Rheostats are intended for use with motors where the torque requirements are practically constant throughout the speed range. The rheostats for motors up to 3 h.p. inclusive provide 50 per cent speed reduction at approximately 50 per cent torque, but have capacity for full load torque. The rheostats listed for motors above 3 h.p. provide 50 per cent speed reduction at approximately full load torque. The resistors comply with E.P.C. Resistor Classification No. 95.

CR1264 Rheostats are intended for use with motors that drive fans or other machines where the amount of torque required decreases as the speed is reduced. They have sufficient resistance to provide for speed reductions up to 50 per cent at 33⅓ per cent full-load torque. The resistors comply with E.P.C. Resistor Classification No. 93.

Both types of rheostats can be used where the torque requirements are somewhat less than the values given above but the speed reduction will be correspondingly less. For example, at 50 per cent full-load torque, the maximum speed reduction that can be obtained with a CR1263 Rheostat is 25 per cent instead of 50 per cent.

A 3 or 4-pole knife switch must be installed to open and close the primary circuit.

For 60-cycle Motors

CATALOGUE NUMBER	MOTOR RATING	Frame No.	H. P.	Speed	Approx. Ship. Wt. Lbs.	Price Each
2097631G8	¾	926	1800	23	\$30.00	
2097631G8	1	926	1200	23	30.00	
2097631G5	1	926	900	28	30.00	
2097631G8	1½	932	900	28	30.00	
2097631G10	2	932	1800	47	35.00	
2097151G4	2	934	1200	47	35.00	
2097151G5	2	936	900	47	35.00	
2097151G5	3	932	1800	47	35.00	
2097151G5	3	938	1200	47	35.00	
2097151G5	3	944	900	47	35.00	
2202766G5	5	936	1800	90	52.00	
2202766G5	5	946	1200	90	52.00	
2202766G5	5	952	900	90	52.00	
2202766G5	7½	944	1800	110	60.00	
2202769G4	7½	952	1200	110	60.00	
2202769G4	7½	953	900	110	60.00	
2202769G6	10	948	1800	125	67.00	
2207462G2	10	956	1200	125	67.00	
2207462G2	10	950	900	125	72.00	
2207464G2	10	322	720	125	72.00	
2207464G3	15	301	1800	160	82.00	
2207575G2	15	310	1200	160	82.00	
2207575G2	15	322	900	160	82.00	
2207575G3	15	332	720	160	82.00	
2207575G4	15	332	600	160	82.00	
2207575G4	15	332	15	600	82.00	

For 25-cycle Motors

2097631G7	1½	122	750	28	\$30.00
2097631G6	1	160	750	28	30.00
2097151G5	1	180	750	47	35.00
2097151G5	3	182	750	47	35.00
2202769G2	5	303	750	90	52.00
2202769G5	5	312	750	110	60.00
2207462G3	7½	312	750	125	67.00
2207462G3	10	323	750	125	67.00
2207575G2	15	327	750	160	82.00

CR1920-A2 and B1 Inverse-time Protective Cutouts

For A. C. Motors



DR1920-A2

The enclosing cases, containing thermal cutouts, are suitable for use with motor-starting devices where it is desired to obtain inverse-time overload protection, for example, with CR3900 drum type switches.

The CR1920-B1 case has one 3/4-inch knockout in each end. The CR1920-A2 case has three 3/4-inch knockouts in each side and 2 in each end.

CR1920-A2

Cat. No. covers sheet steel enclosing case and Cat. No. 2204800 Receptacle for 2 thermal cutouts.

*Cat. No.	Description	Approx. Ship. Wt., Lbs.	**Price Each
2209003	Case and Receptacle for 2 Thermal Cutouts.....	8	\$4.00

CR1920-B1

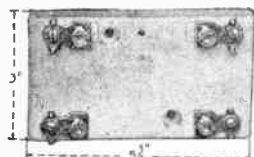
Cat. No. covers sheet steel enclosing case and Cat. No. 2204799 Receptacle for 1 thermal cutout.

*Cat. No.	Description	Approx. Ship. Wt., Lbs.	***Price Each
2209002	Case and Receptacle for 1 Thermal Cutout.....	4	\$3.00

*Catalogue number does not include thermal cutouts.

**Price is for case, receptacle and 2 thermal cutouts.

***Price is for case, receptacle and 1 thermal cutout.



Receptacles Only

Cat. No. 2204799 covers base with 2 terminals for mounting one thermal cutout. Cat. No. 2204800 covers base with 4 terminals for mounting 2 thermal cutouts.

Receptacle for CR1920-A2

*Cat. No.	Description	Approx. Ship. Wt., Lbs.	†Price Each
2204799	Base with 2 Terminals.....	2	\$0.70
2204800	“ “ 4 “	3	.75

*Cat. No. does not include thermal cutouts.

†Prices does not include thermal cutouts.

Conduit Fitting

Fitting consists of one conduit bushing and 2 conduit lock nuts for 3/4-inch conduit for mounting Cat. No. 2209002 and a CR1047-A switch together as a unit.

Approximate shipping weight, 1 pound.

Price No. 290053..... each \$1.15

Additional Parts

Thermal Cutout with Spare Link

Price, Thermal Cutout, Shipping Weight, 1/2 Pound..... each \$1.15

Price, Carton of 10 Thermal Cutouts, Assorted Ratings, Shipping Weight, 4 Pounds..... each 9.50

Price, Carton of 10 Thermal Cutouts, One Rating, Shipping Weight, 4 Pounds..... each 9.00

Fusible Link, Cat. No. 167539

Price..... per 10 \$0.50

“..... per 100 3.50

“..... 500 14.50

The following table gives the Cat. No. and ampere rating of each thermal cutout and the range of full-load current of motors with which each cutout may be used.

Cat. No.	Ampere Rating	Full-load Current of Motor in Amp.	Cat. No.	Ampere Rating	Full-load Current of Motor in Amp.
256913	0.8	0.59-0.70	256923	4.3	3.16-3.77
256914	0.95	0.71-0.83	256924	5.1	3.78-4.45
256915	1.1	0.84-0.96	256925	6.0	4.46-5.25
256916	1.3	0.97-1.13	256926	7.1	5.26-6.20
256917	1.5	1.14-1.31	256927	8.4	6.21-7.35
256918	1.8	1.32-1.58	256928	10.0	7.36-8.75
256919	2.1	1.59-1.84	256929	11.8	8.76-10.3
256920	2.5	1.85-2.19	256930	14.0	10.4-12.3
256921	3.0	2.20-2.63	256931	16.6	12.4-14.6
256922	3.6	2.64-3.15	256932	20.0	14.7-17.5

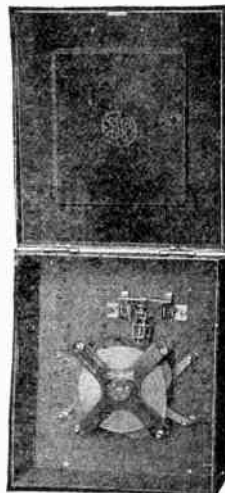
Fusible link, Cat. No. 167539 is the same for all cutouts.

CR2904-A1 Open-phase and Phase-reversal Relays

25 to 60 Cycles, 600 Volts or Less

For use with any motor-starting device that provides under-voltage release or under-voltage protection for a motor of 3 H.P. or larger.

A CR2904-A1 panel consists of an open-phase and phase-reversal relay mounted on an insulating base and enclosed in a sheet metal case with knockout holes on top, bottom, and sides, and with hasp and staple for locking the cover closed. Used in connection with the control of a polyphase motor to prevent the motor from starting when a phase of the power circuit is open or reversed, and to cause the motor to be disconnected from the line when a phase of the circuit opens when the motor is running. The relay does not open the motor circuit itself but opens the control circuit to the contactor or circuit breaker which handles the main motor circuit. This makes this panel suitable for use with any hand or automatic control device that provides under-voltage release or under-voltage protection.



Cat. No.	Continuous Capacity Amperes	Min. Amp. for Operation	Approx. Ship. Wt. Lbs.	Price Each
1764492G2	3.0	1.8	50	\$38.00
1764492G3	4.5	2.7	50	38.00
1764492G4	6.7	4.0	50	38.00
1764492G5	10.0	6.0	50	38.00
1764492G6	15.0	9.0	50	38.00
1764492G7	21.0	12.6	50	38.00
1764492G8	34.0	20.4	50	38.00
1764492G9	50.0	25.0	50	38.00
1764492G10	75.0	37.5	50	38.00
1764492G11	110.0	55.0	50	38.00
1764492G12	175.0	87.5	50	38.00
1764492G13	250.0	125.0	50	38.00

CR2990 Thermostats

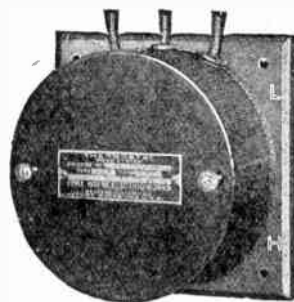
For A.C. or D.C. Circuits

Thermostat can be accurately adjusted for a wide variation in temperature.

Adjustment will not change from wear or vibration.

Wiping contacts are self-cleaning and do not affect adjustment.

The thermostat is ideal for installations where excessive vibration occurs, such as in railway service, etc. The small size (5 inches square) makes it inconspicuous and easily mounted.



Mechanism is of the quick-break type, supported on frictionless, long-wearing edges.

Will operate satisfactorily in damp places. Particularly suitable for refrigerator work.

All parts accessible and substantial.

Description	Amp. Cap.	Ship. Wt. Lbs.	Price Each
For Use on Either Alternating or Direct Current Circuits.....	125	0.5	7 \$12.00
	230	0.25	7 12.00
	550	0.1	7 12.00

Type CR2922-A1 Pressure Governors
For A. C. or D. C. Circuits



Type CR2922-A1 Pressure Governor

These governors are recommended for the automatic control of motor-driven pumps, air compressors, etc., and must always be used in connection with a suitable type of automatic starter. The relay is designed to handle the control circuit of any standard automatic starter and only 3 control wires are necessary for connecting the pressure governor to the starter. These governors can be used on any liquid or gas system that will not corrode the Bourdon tube.

To prevent fluctuations of pressure in the discharge pipe from affecting operation, the governor should be connected to the tank by an independent pipe and should not be connected to the discharge pipe from the pump. If this is not feasible, a small air tank of about 10-gallon capacity may be placed between the pressure governor and the discharge pipe. A needle valve may also be found necessary to further prevent fluctuations which affect the operation of the governor.

Shipping weight, 35 pounds.

†30 Pounds

60 or 50 Cycles	CAT. NOS.	25 Cycles	Direct Current	Voltage of Circuit	PRESSURE IN LBS.			Min. Range in Lbs.*	Price Each
					Min. Cut-in	Max. Cut-out	Max.		
177606362	177606363			110	6	24	1.5	\$50.00	
			177606363	115	6	24	1.5	50.00	
177606363	177606364			220	6	24	1.5	50.00	
1776063612	1776063613			110	12	48	3	\$50.00	
			1776063613	115	12	48	3	50.00	
1776063613	1776063614			220	12	48	3	50.00	
1776063622	1776063623			110	20	80	5	\$50.00	
			1776063623	115	20	80	5	50.00	
1776063623	1776063624			220	20	80	5	50.00	
1776063632	1776063633			110	32	128	8	\$50.00	
			1776063633	115	32	128	8	50.00	
1776063633	1776063634			220	32	128	8	50.00	
1776063642	1776063643			110	60	240	15	\$50.00	
			1776063643	115	60	240	15	50.00	
1776063643	1776063644			220	60	240	15	50.00	
1776063652	1776063653			110	100	400	25	\$50.00	
			1776063653	115	100	400	25	50.00	
1776063653	1776063654			220	100	400	25	50.00	

*The stop post indicators on the governor may be brought close enough together to give this range between high and low pressures.

†The pound is the full pressure scale rating of the governor. Each governor has a maximum pressure adjustment as indicated in the table.

Ordering Directions

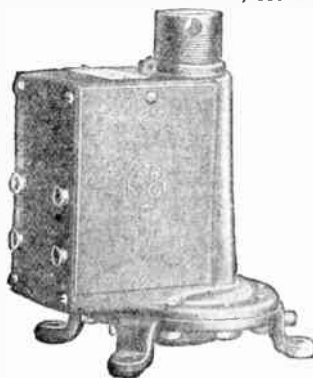
Order by CR number and by catalogue number.

Prices for governors for pressures above or below those listed and for other voltages and frequencies will be furnished on application.

Type CR2927 Pressure and Vacuum Switches

For A.C. or D.C. Circuit—Double-pole, Double-break

2 H.P., 110 or 220 Volts, D.C.; 3 H.P., 110 or 220 Volts, Single-phase, A.C.; 5 H.P., 110 or 220 Volts, 3 phase, A.C.; and 1 H.P., 550 Volts, A.C. or D.C.



Type CR2927 Pressure Switch

The Type CR2927 switches are suitable for use in the pilot circuit of any standard automatic starter A. C. or D. C., or directly in the motor circuit for throwing small motors across the line.

Switches having rubber diaphragms are designed for use on air compressors and water pumps. Those having metal diaphragms of phosphor bronze are for oil or steam, but can be used on air.

The switches consist essentially of a cast iron case, a phosphor bronze or rubber pressure diaphragm, an adjusting spring, and a switch mechanism.

The base of the case is a bowl-shaped casting which is covered by the pressure diaphragm and which forms the compression chamber. The 1/8-inch pipe tap in this chamber provides means for easy connection to a pressure line by means of a standard pipe or small hydraulic copper tubing. The casting can be rotated with the pipe tap through 180 degrees to make it more convenient for certain installations. The base is provided with feet, drilled for holding down screws. The pressure in the compression chamber is transmitted by the pressure diaphragm to a pressure plate against the adjusting spring and an adjusting screw. The movement of the pressure plate is transmitted to the switch mechanism by means of a switch arm, a tension spring, and a locking arm. The tension spring and locking arm provide quick make and quick break of the contacts.

Moving contacts for each pole of switch consist of 2 silver buttons fastened at opposite ends of a heavy copper bar. The 2 copper bars are fastened to opposite ends of an insulating cross bar. Loose rivets and coiled springs insure equal pressure on each of the 4 contact buttons.

The Form B switches have an unloader. The unloader is designed to reduce the pressure in the cylinder of the air compressor to atmosphere as soon as the pressure switch has opened the circuit of the driving motor. By doing this, the unloader reduces the starting torque required of the motor when the pressure switch again closes the circuit.

Forms D and K switches are equipped with a conduit box. The difference between the opening and closing values of a pressure switch is a fixed value and cannot be changed. The difference between the opening and closing values of a vacuum switch is adjustable through a wide range. The vacuum switch may be set to close at any value between 0 and 25 inches and can be set to open from 3 to 20 inches above the closing value provided that the opening value thus obtained is not above 28 inches.

Pressure Switches

Cat. No.	Form	Max. Volts	Dia-phragm	ADJUSTMENT IN LBS. PER SQUARE INCH						Price Each
				STANDARD Closes	MINIMUM Opens	MINIMUM Closes	MAXIMUM Opens	MAXIMUM Closes	MAXIMUM Opens	
1747356G1	A1	220	Metal	35	50	5	15	80	100	\$14.00
1747357G6	C6	220	Rubber	35	50	5	15	80	100	14.00
1747369G1	K1	550	Metal	35	50	5	15	80	100	18.00
1747356G2	A2	220	"	100	125	20	40	165	200	14.00
1747359G2	B2	220	"	100	125	20	40	165	200	16.00
1747357G7	C7	220	Rubber	100	120	20	40	175	200	14.00
1747369G2	K2	550	Metal	100	125	20	40	165	200	18.00

Shipping weight, 14 pounds.

Vacuum Switches

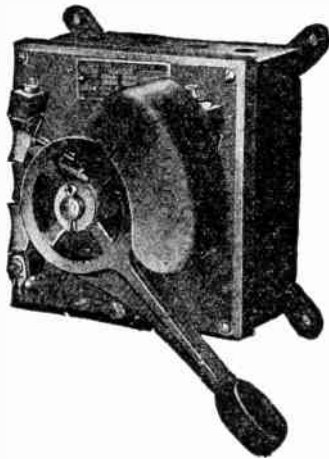
Cat. No.	Form	Max. Volts	Dia-phragm	ADJUSTMENT IN INCHES OF MERCURY						Price Each
				STANDARD Closes	MINIMUM Opens	MINIMUM Closes	MAXIMUM Opens	MAXIMUM Closes	MAXIMUM Opens	
1747358G5	D5	250	Rubber	3	8	1	4	24	28	\$24.00
1747358G6	D6	550	"	3	8	1	4	24	28	26.00

Shipping weight, 20 pounds.

Switches will be shipped set for standard adjustment as indicated in the table.

CR2930 Open Type Float Switches

For A.C. or D.C. Circuits



CR2930 Open Type Float Switches together with the usual accessories, namely, float, chain, pulleys, and counterweight, are suitable for automatically starting and stopping motors where it is desired to maintain a predetermined water level on an open tank or reservoir system. They may also be used as sump switches by reversing the positions of the float and counterweight. The switch contacts are designed for handling pilot circuits for automatic starters or for controlling the main line circuits of small motors.

While these switches are suitable for many installations, the CR2931 switch is recommended for general use because it is entirely enclosed in a weatherproof case. The case is provided with an opening which can be drilled for conduit wiring.

CR2930 float switches may be used to throw motors up to the following capacities directly on the line. For larger motors use a magnetic switch or automatic starter in addition.

Circuit	H.P. of Motor	Volts	No. of Poles of Switch
A.C.	2	110-220	1 or 2
Single-phase	3	440-550	1 " 2
A.C.	3	110	2
Two or Three-phase	5	220-440-550	2
D.C.	1	115-230-550	1 or 2

Ordering Directions

Order by Catalogue Number. Neither the Catalogue Number nor the price of the switch includes the accessories. If more than 15 feet of chain are required, order "Accessories similar to Cat. No. 58073 but with —" (give the number of feet of chain).

Cat. No.	Description	Capacity Amperes A. C. or D. C.	Approx. Ship. Wt. Lbs.	Price Each
58971	Single-pole	15 at 110 to 125 Volts	20	\$10.00
58971	"	10 " 220 " 250 "	20	10.00
58971	"	5 " 500 " 550 "	20	10.00
58972	Double-pole	25 " 110 " 125 "	45	16.00
58972	"	15 " 220 " 250 "	45	16.00
58972	"	10 " 500 " 550 "	45	16.00

Accessories

Cat. No.	Description	Price Each
58973	1 Copper Cylindrical Float	\$11.00
	2 Pulleys	
	15 Feet Bronze Chain	
	1 Counterweight	

If more than 15 feet of chain are required add \$.15 for each additional foot.

Float switches are not recommended for use where the freezing of the water in the tank will interfere with their operation. In such cases a CR2922 Pressure Governor or a CR2927 Pressure Switch should be installed.

CR2931 Enclosed Float Switches

For A. C. or D. C. Motors
Forms A, B, C and D



Form D

These float switches have a continuous capacity of 30 amperes, either alternating or direct current up to 550 volts. They may be used for throwing motors up to the following capacities directly on the line.

Circuit	H. P. of Motor	Volts	No. of Poles of Switch
A. C.	2	110-220	2
Single-phase			
A. C.	3	440-550	2
A. C.			
2 or 3-phase	5	220-440-550	2 " 4
D. C.			
	1	115-230-550	2

These switches are weatherproof and are suitable for either tank or sump operation. Shipment is made with the parts assembled for tank operation. If sump operation is desired, the operating parts can be easily reassembled. All electrical parts are enclosed by a heavy cast-iron weatherproof enclosing case drilled and tapped at the top for 1 1/4-in. conduit. The lower half of the case is removable to facilitate inspection of the contacts and make connections. The moving contacts are operated by a weighted arm falling over center which gives them a quick motion when opening and closing and insures a minimum amount of arcing and burning.

Form A is for clamping to the inside top edge of a tank and is operated by a rod and float. Range, 10 inches to 2 feet.

Form B is for bolting to a tank cover and requires a guide in the cover for the operating rod. Range, 10 inches to 3 1/2 feet.

Form C is for bolting to a tank cover. Range, 10 inches to 3 1/2 feet.

Form D is for bolting to a tank cover and is operated by a chain and float, thus being suitable for any depth of tank or any variation in water level not less than 10 inches

Cat. No.	Form	No. of Poles	Ship. Wt., Lbs.	Price Each
141637	A	D-p.	70	\$28.00
141639	A	4-p.	75	32.00
141641	B	D-p.	75	32.00
141643	B	4-p.	85	36.00
141645	C	D-p.	75	34.00
141647	C	4-p.	85	38.00
*141649	D	D-p.	70	36.00
*141651	D	4-p.	75	40.00

Forms L and M

These switches are of lighter construction than the A, B, C and D forms. Used on control circuits and for throwing small motors up to the following capacities directly in the line.

Circuit	H. P. of Motor	Volts	No. of Poles of Switch
A. C.	1	110	2
Single-phase			
A. C.	1 1/2	220-440-550	2
2 or 3-phase			
A. C.	3	110	2
2 or 3-phase			
D. C.	1	115	2
D. C.			
	2	230-550	2

All electrical parts are enclosed in a weatherproof enclosing case which is drilled and tapped at the bottom for a 3/4-inch conduit. The moving contacts are actuated by a snap action mechanism which assures a quick break. A double break is provided for each pole. Switches may be used for either sump or tank operation by interchanging the positions of the float and weight.

Form L is operated by a chain and float. Suitable for any variation in water level not less than 2 inches.

Form M is rod-operated. Range 2 in. to 4 ft. 6 in.

Cat. No.	Form	No. of Poles	Ship. Wt., Lbs.	Price Each
*2666739	L	D-p.	25	\$20.00
2666740	M	D-p.	25	20.00

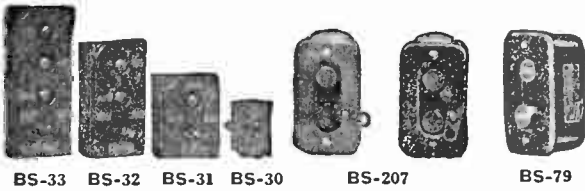
*Prices for Form D and Form L switches include 15 feet of bronze chain. Add 15 cents for each additional foot.

Ordering Directions

Order by CR Cat. No. and give the form letter and number of poles of the switch. Specify number of feet of chain required for Forms D and L switches.

CR2940 Push Button Stations

CR2940 Push Button Stations



The CR2940 Push-button Stations are primarily intended for use in the control circuits of automatic starters. They are designed to withstand the frequent operation and ordinary rough usage met with in the operation of machine tools and similar motor-driven machinery.

All stations except the CR2940-BS-79 and BS-207 are enclosed in a cast iron box drilled for conduit connection at the bottom. This box is furnished complete with a fitting that accommodates either 1/2 or 3/4-inch conduit. If it is desired to run conduit in at the top instead of at the bottom, the box may be installed with the conduit hole at the top instead of at the bottom. In such a case the name plates that indicate the functions of the buttons should be interchanged.

The CR-2940-BS-79 and BS-207 stations are enclosed in a pressed steel box with a pressed steel cover. This box is furnished with a fitting that accommodates either 1/2 or 3/4-inch conduit and is shipped for conduit connection at the top. If it is desired to make the connection at the bottom the push-button mechanism should be reversed in the box. In case of the CR-2940-BS-207 the cover should also be reversed to keep the locking bar with the stop-button. Each button is marked to indicate the functions it is to perform.

When ordering specify the type and form of station required as CR2940-BS-207J or give the type of the station as CR2940-BS-211 and specify how each button is to be marked. For the CR2940-BS-11N station give voltage of circuit if it is to be used for under-voltage protection or the amperes field current if it is to be used for field protection.

Type and Form of Station	Name Plate Markings	No. and Kind of Contacts	Price Each
BS-11B	None, Foot-operated	1 Disk	\$4.50
BS-11J	Raise, "	1 "	4.50
BS-11KK	Lower, "	1 "	4.50
BS-11LL	Max. Torque, Foot-op.	1 "	4.50
BS-11N	Reset, Under-voltage or Field Protection	1 Disk and Coil	12.00
*BS-79W	Stop	1 Copper Bar	2.00
BS-207U	Slow	1 Leaf Spring	3.50
BS-207V	Start	1 "	3.50
BS-207W	Stop	1 "	3.50
BS-207GG	Open	1 "	3.50
BS-207HH	Close	1 "	3.50
BS-211A	Stop	1 Disk	3.50
BS-211O	Max. Torque	1 "	3.50
BS-211D	Jog	1 "	3.50
BS-211E	Reset	1 "	3.50
BS-211G	Max. Torque, 3-point	1 "	5.50
BS-211K	Reverse	1 "	3.50
BS-211Q	Start	1 "	3.50
BS-211S	Reset, for Panel Mtg. 1/2-in. Hole in Back. No Conduit Inlet	1 "	3.50
*BS-79J	Start-Stop	2 Copper Bar	2.00
*BS-207J	" " Has a Locking Bar	2 Leaf Spring	3.00
*BS-207N	In-Out	2 "	3.00
*BS-207P	Cut-Return	2 "	3.00
*BS-207Q	Forward-Reverse	2 "	3.50
*BS-207R	Fast-Slow	2 "	3.50
*BS-207S	Raise-Lower	2 "	3.50

*The CR2940-BS-79 or BS-207 station can be used as a pendent switch when furnished with a pendent fitting, Cat. No. 197484, which can be obtained for \$2.00. The Cat. No. and price include a 15-foot 3-cord conductor. In ordering, mention the catalogue number in addition to the push button desired.

Type and Form of Station	Name Plate Markings	No. and Kind of Contacts	Price Each
*BS-207T	Open-Close	2 Leaf Spring	\$3.50
*BS-207TT	Start-Stop	2 "	3.50
BS-212A	" " Has Locking Bar	2 Disk	5.00
BS-212B	" " Reset	2 "	5.00
BS-212D	Stop-Stop	2 "	5.00
BS-212E	Slow	2 "	5.00
BS-212F	Forward-Reverse	2 "	5.00
BS-212G	Raise-Lower	2 "	5.00
BS-212J	Up-Down	2 "	5.00
BS-212N	Fast-Slow	2 "	5.00
BS-212R	Open-Close	2 "	5.00
BS-212BB	Start-Stop, for Panel Mtg. 5/8-in. Hole in Back, No Conduit Inlet	2 "	5.00
BS-212CC	Raise-Lower, for Panel Mtg. 5/8-in. Hole in Back, No Conduit Inlet	2 "	5.00
BS-212AB	Jog-Stop, No Shutter	2 "	5.00
BS-12M	Run-Stop, Buttons Interlocked, Remains in Position Pushed	2 "	18.00
BS-13B	Start-Stop-Reset	3 "	7.00
BS-13C	Forward-Reverse-Stop, Has Locking Bar	3 "	7.00
BS-13D	Stop-Start-Slow	3 "	7.00
BS-13E	Open-Close-Stop	3 "	7.00
BS-13R	Up-Down-Stop	3 "	7.00
BS-13U	Run-Jog-Stop, Has Shutter on Jog-Button	3 "	8.00
BS-13CC	Open-Close-Stop, for Panel Mtg. 3/4-in. Hole in Back, No Conduit Inlet	3 "	7.00
BS-13RR	Run-Jog-Stop, Jog Button Has No Shutter	3 "	7.00
BS-13PP	Forward-Reverse-Stop, for Panel Mtg. 3/4-in. Hole in Back, No Conduit Inlet	3 "	7.00
BS-13FE	Hoist-Lower-Stop	3 "	7.00
BS-13VV	In-Out-Stop	3 "	7.00
BS-14A	Fast-Slow-Stop-Start	4 "	10.00
BS-14B	Forward-Reverse-Stop-Jog No Shutter	4 "	10.00
BS-14C	Forward-Reverse-Stop-Run	4 "	10.00
BS-15A	Start-Stop-Speed-Up Slow -Down Signal	5 "	30.00
BS-15B	Forward-Jog Forward-Reverse-Jog Reverse-Stop, Shutter on Jog-buttons	5 "	30.00
BS-30A	Start-Safe Stop	1 Snap Switch	2.50
BS-30B	Open-Close	1 " "	2.50
BS-30D	Normal-Slow	1 " "	2.50
BS-30E	Fast-Slow	1 " "	2.50
BS-30G	Run-Stop	1 " "	2.50
BS-31A	Start-Safe Stop-Run	{ 1 Disk 1 Snap Switch }	5.00
BS-32A	Start-Stop-Safe-Run	{ 2 Disk 1 Snap Switch }	6.00
BS-32C	" " Slow-Fast	{ 2 Disk 1 Snap Switch }	6.00
BS-33C	Fast-Slow-Stop-Safe-Run	{ 3 Disk 1 Snap Switch }	11.00
BS-33E	Forward-Reverse-Stop-Slow-Fast	{ 3 Disk 1 Snap Switch }	11.00
BS-33F	Forward-Reverse-Stop-Safe-Run	{ 3 Disk 1 Snap Switch }	11.00
BS-33P	Run-Jog-Stop-Slow-Fast-Shutter on Jog-button	{ 3 Disk 1 Snap Switch }	12.00

*The CR2940-BS-79 or BS-207 station can be used as a pendent switch when furnished with a pendent fitting, Cat. No. 197484, which can be obtained for \$2.00. The Cat. No. and price include a 15-foot 3-cord conductor. In ordering, mention the catalogue number in addition to the push button desired.

CR2940 Push Button Stations

Dimensions and Weights

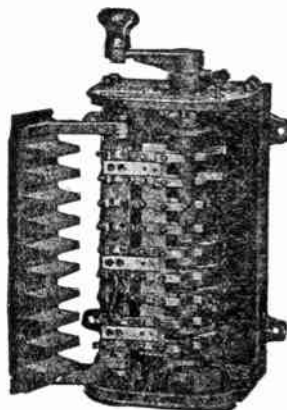
Type and Form of Station	For Conduit Sizes	DIMENSIONS, INCHES			App. Ship. Wt. Lbs.
		Width	Height	Depth	
BS-11B	1/2 or 3/4	4 3/8	...	3 1/2	5
BS-11JJ	1/2 or 3/4	4 3/8	...	3 1/2	4
BS-11KK	1/2 or 3/4	4 3/8	...	3 1/2	4
BS-11LL	1/2 or 3/4	4 3/8	...	3 1/2	4
BS-11N	1/2 or 3/4	4 3/8	...	4	6
*BS-79W	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-207U	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-207V	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-207W	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-207GG	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-207HH	1/2 or 3/4	2 1/2	4 1/4	2 1/4	2
BS-211A	1/2 or 3/4	4 3/8	...	3	4
BS-211O	1/2 or 3/4	4 3/8	...	3	4
BS-211D	1/2 or 3/4	4 3/8	...	3	4
BS-211E	1/2 or 3/4	4 3/8	...	3	4
BS-211G	1/2 or 3/4	4 3/8	...	3	4
BS-211K	1/2 or 3/4	4 3/8	...	3	4
BS-211Q	1/2 or 3/4	4 3/8	...	3	4
BS-211S	1/2 or 3/4	4 3/8	...	3	4
*BS-79J	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207J	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207N	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207P	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207Q	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207R	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207S	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207T	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
*BS-207TT	1/2 or 3/4	2 1/2	4 1/4	2 1/8	2
BS-212A	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212B	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212D	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212E	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212F	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212G	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212J	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212N	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212R	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212BB	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212CC	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-212AB	1/2 or 3/4	4 3/8	5 7/8	3	6
BS-12M	1/2 or 3/4	4 1/2	6 7/8	4 1/2	9
BS-13B	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13C	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13D	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13E	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13R	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13U	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13CC	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13RR	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13PP	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13EE	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-13VV	1/2 or 3/4	4 3/8	8 5/8	2 7/8	9
BS-14A	3/4	4 3/8	11 1/8	2 7/8	11
BS-14B	3/4	4 3/8	11 1/8	2 7/8	11
BS-14C	3/4	4 3/8	11 1/8	2 7/8	11
BS-15A	1	4 3/8	14 1/8	2 7/8	13
BS-15B	1	4 3/8	14 1/8	2 7/8	13
BS-30A	1/2	3 1/2	4 1/8	2 3/4	2
BS-30B	1/2	3 1/2	4 1/8	2 3/4	2
BS-30D	1/2	3 1/2	4 1/8	2 3/4	2
BS-30E	1/2	3 1/2	4 1/8	2 3/4	2
BS-30G	1/2	3 1/2	4 1/8	2 3/4	2
BS-31A	1/2 or 3/4	4 3/8	5 3/4	2 7/8	6
BS-32A	1/2 or 3/4	4 3/8	8 1/8	2 7/8	9
BS-32C	1/2 or 3/4	4 3/8	8 1/8	2 7/8	9
BS-33C	3/4	4 3/8	10 1/2	2 7/8	11
BS-33E	3/4	4 3/8	10 1/2	2 7/8	11
BS-33F	3/4	4 3/8	10 1/2	2 7/8	11
BS-33P	3/4	4 3/8	10 1/2	2 7/8	11

*The CR2940-BS-79 or BS-207 station can be used as a pendant switch when furnished with a pendant fitting, Cat. No. 197484, which can be obtained for \$2.00. The Cat. No. and price include a 15-foot 3-cord conductor. In ordering, mention the catalogue number in addition to the push button desired.

†Diameter.

CR3100 D.C. Drum Switches

For Series, Shunt or Compound-wound Motors Reversing or Non-reversing Armature Points Only, Resistors Not Included



R-122-A Drum Switch-cover Removed

CR3100 Switches provide full reverse rheostatic control for series, shunt, or compound-wound motors. When for use with shunt-wound motors, order should so state in order that proper wiring diagrams may be furnished. Some switches require a slight change in connections when for use with shunt-wound motors.

Switches when shipped are arranged for use with reversible motors. When desired for use with non-reversible motors, notation should be made on order. For starting duty use with CR3130 resistors. For speed regulating duty use with CR3131 resistors. For crane and hoist

duty use with CR3132 resistors.

Type R-307-A

Hole in bottom for leads. No leads furnished. Only for starting duty. Not recommended for crane, hoist, or regulating duty. Not suitable for use on 550-volt circuits.

HORSE POWER RATING						Points Approx.		Price Each
*CONTINUOUS			†INTERMITTENT			Forward	Ship.	
115 Volts	230 Volts	550 Volts	115 Volts	230 Volts	550 Volts	Reverse	Lbs.	
3	5	...	...	...	...	3	40	\$28.00

Type R-122-A

Hole in bottom for leads. No leads furnished. Does not open shunt field in off position. Should not be used with motors with intermittent shunt fields. With these motors use R-28 controller. Should not be used on circuits where the voltage exceeds 600 volts.

5	12	20	6	12	20	5	75	\$58.00
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Type R-28-V

Holes through side for leads. Use R-128-E for continuous duty.

...	15	30	60	5	125	\$90.00
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Type R-128-E

Holes through side for leads. Use R-28-V or R-164-A for intermittent duty.

15	25	50	5	135	\$105.00
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Type R-156-A

Holes through back for leads.

...	65	8	150	250
-----	-----	-----	-----	----	---	-----	-----	-------

Type R-164-A

Holes through back for leads.

20	35	75	25	50	100	8	250	\$160.00
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Type R-115-L

Holes through back for leads.

35	75	150	50	100	200	10	300	\$275.00
----	----	-----	----	-----	-----	----	-----	----------

*Continuous rating should be used in all cases when any point on drum switch will be used for any period exceeding 5 minutes. †Intermittent rating should be used for crane, hoist, or other applications when running time is not over 50 per cent of total and maximum continuous running time is not over 5 minutes. ‡Number of resistance steps is one less than number of drum switch points.

Drum Switches for Use with CR3137 Dynamic Braking Resistors or CR3170 Protective Panels

MAXIMUM H.P. CAPACITY	Points Forward and Reverse			Type	Approx. Ship. Wt. Lbs.	Price Each
	115 Volts	230 Volts	550 Volts			
3	5	..	..	R-307-A	40	\$28.00
5	10	15	4	R-187-A	75	90.00
5	10	15	4	R-122-P	75	68.00
15	25	35	4	R-128-T	135	120.00
20	35	65	7	R-164-J	200	195.00
35	75	..	10	R-115-M	300	360.00

Types R-307-A and R-122-P are for use with only CR3170 Protective Panels. Type R-187-A is for use with CR3137 dynamic braking resistors. Type R-115-M is not suitable for use on 550-volt circuits. §Number of resistance steps is one less than number of drum switch points.

CR3102 Type R-307 D.C. Drum Controllers

For Small Machine-tool and Similar Drives



The CR3102 equipment consists of an R-307 Drum Switch with starting resistor mounted on the back, the latter being protected by a separate enclosing cover.

This equipment is well suited for use with small machine tools and similar drives that require a small, compact and substantially made enclosed starting device.

Resistor

The resistor for the 5 h.p. 230-volt equipment is designed for 10-seconds starting duty; all other resistors are for 1-minute starting duty.

Connections

All connections between the resistor and drum switch are made before shipment. In installing the equipment all that is necessary is to pull the line and motor leads in through a hole in the bottom end of the frame and to connect them to terminals provided for the purpose.

Overload and Under-voltage Protection

When overload and under-voltage protection is desired, a CR3171 protective panel should be used.

Reversing—Includes Starting Resistor

*Cat. No.	H.P. of Motor	Points Forward and Reverse	Approx. Shipping Wt. Lbs.	Price Each	
115 Volts	230 Volts				
258344	258347	1	3	50	\$40.00
258345	258348	2	3	50	40.00
258346	258349	3	3	50	40.00
†	†258350	5	3	50	40.00

Non-reversing—Includes Resistor

Cat. No.	H.P. of Motor	Approx. Shipping Wt. Lbs.	Price Each	
115 Volts	230 Volts			
2042218	2042221	1	15	\$14.00
2042219	2042222	2	15	14.00
2042220	2042223	3	15	14.00
.....	†2042224	5	15	14.00

*Catalogue number and price include complete equipment consisting of R-307 controller with starting resistor on back.

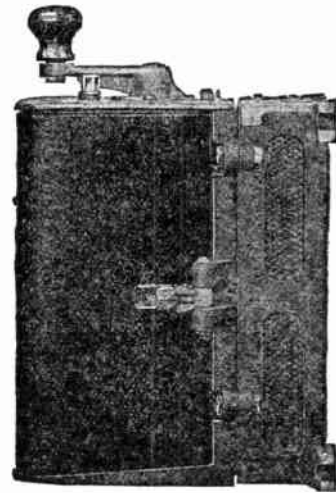
†Resistor has capacity for 10-second starting duty only. For heavier duty use R-307 drum switch with CR3130 starting resistor.

‡Not suitable for 5 h.p., 115-volt motor. Use CR3100 drum switch and CR3130 resistor.

Type CR3105 D.C. Drum Switches

For Use with Adjustable Speed Motors for Machine Tools, etc.

Reversing or Non-reversing Armature and Field Points



CR3105 Drum Switch Complete with Armature and Field Resistors

CR3105 Drum Switches are provided with armature points for starting duty and field points for continuous duty and are particularly adapted for use with adjustable speed motors for machine tools, etc. The field resistor is controlled by fingers in the same manner as the armature resistor and not by a dial switch in the base of the drum switch.

Dynamic Braking

The standard CR3105 Drum Switches, with the exception of the R-301-B, can be used with CR3137 resistors for providing dynamic braking at the off position. The R-301-B can be used with 115 and 230-volt motors for dynamic braking but with 550-volt motors it is necessary to use a contactor with the dynamic braking resistor. This requires a slight change in the drum switch. The changed drum switch is known as the R-301-A, having the same price as the R-301-B, and is suitable for use with motors up to and including 15 h. p. on 550 volts.

Resistor

With motors up to and including 2 h. p. with the R-302 and 3 h. p. with the R-301 drum switches, both the armature and field resistors are mounted directly on the back of the drum switch while in the larger sizes the field resistor only is attached to the drum switch and the armature resistor is furnished as a separate unit.

Reversible Drum Switches

All CR3105 Drum Switches can be used with reversible or non-reversible motors as each is provided with a nickel-plated stop in the cap plate to prevent reversing. The stop should be removed when used with reversible motors. A name plate on the front explains this feature.

Under-voltage and Overload Protection

Any of the CR3105 Drum Switches can be used with the CR3170 panel to provide under-voltage and overload protection. When ordering these drum switches for use with the protective panel a statement should be made to this effect upon the requisition so that the correct wiring diagram can be supplied.

Connection Diagram

A diagram showing the connections of the drum switch and resistor will be found on the inside of the sheet iron enclosing cover.

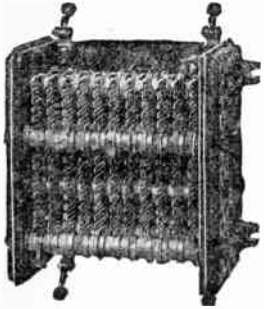
Type	MAX. 115 Volts	H.P. 230 Volts	CAPACITY 550 Volts	*POINTS FORWARD AND REVERSE Armatures	Field	Approx. Ship. Wt. Lbs.	Price Each
†R-302-B	3	3	...	2	10	75	\$60.00
R-301-B	5	10	15	3	18	85	78.00
R-182-A	12	20	40	4	18	140	125.00
R-98-B	20	35	70	4	22	200	165.00
†R-166-A	35	65	100	4	22	400	250.00

*Number of resistance steps is one less than the number of drum switch points.

†No magnetic blowout; not for use on 550-volt circuits.

‡Special form of drum switch required for 550 volt circuit. Do not specify R-166-A, but order R-166 Drum Switch for use on 550 volt circuits.

**CR3130 D.C. Starting Duty Resistors
For Machine Tool Service**



These resistors are for use with direct-current constant or adjustable-speed motors. Those listed for constant speed motors should be used with the CR3100 and those for the adjustable speed motors should be used with the CR3105 drum type switches. Designed primarily for starting duty, but, while they cannot be used for regulating duty continuously, it is possible to use them in this manner for short periods. This will be found convenient, particularly in connection with machine tools

during the "setting up" period.

Resistor Units

For constant speed motors up to and including 2 h.p., 110 volts, 5 h. p. 220 volts and 10 h. p. 550 volts, wire-wound resistor units are used, while cast grid units are used with the other motors.

The resistors for adjustable-speed motors up to and including 2 h.p. with the R-302 drum switch and 3 h.p. with the R-301 drum switch consist of a ribbon unit assembled between sheets of mica attached to a cast iron plate, and are mounted on the back of the drum switch with the field resistor. The resistors for the 3 h.p., 115 and 230-volt motors with the R-302 drum switch, and the 5 h.p. 230-volt and 5, 7½ and 10 h.p. 550-volt motors with the R-301 drum switch are composed of wire-wound units, while the resistors for the remaining motors consist of cast grid units.

The wire-wound and cast grid units are rigidly supported by tie rods from cast-iron end frames. Perforated sheet iron covers enclose the front and back. All terminals are within the enclosing cover which is suitable for conduit wiring.

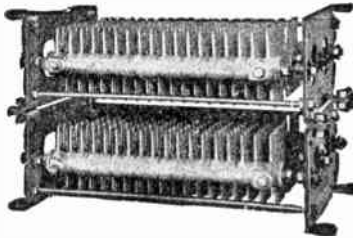
CR3131 D.C. Motor Regulating Duty Resistors

These resistors are for use with direct-current constant-speed motors in connection with drum switches CR3100 and are designed for continuous duty, giving 50 per cent speed reduction at ¾ full load and 65 per cent speed reduction at full load. Resistors for motors of 2 h. p. and less, 110 volts; 5 h.p. and less, 220 volts; and 10 h.p. and less, 550 volts, consist of Form R wire-wound units. Cast grid units are used for the larger resistors. The units are rigidly supported by tie rods attached to cast iron end frames. Sheet iron covers are placed over the back and front, the latter being perforated in order to insure good ventilation. All terminals are placed within the enclosing cover which is adapted for conduit wiring.

**CR3132 D.C. Intermittent Duty Resistors
For Crane and Hoist Service**

These resistors are for use with direct-current motors in connection with CR3100 Drum Type Switches.

These resistors for small motors consist of Form R wire-wound units assembled in a well ventilated box, while for the larger motors, Type SG cast grid units are used.



The cast grid units are assembled in one or more boxes and when more than one box is required, they may be bolted together to form the equivalent of a single unit. All boxes containing cast grid units have the same dimensions and all units have three supporting lugs equally spaced so that any unit will fit all boxes. Tie rods supporting cast grid units are insulated both from the units and from the end frames.

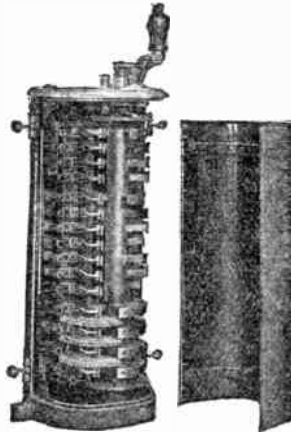
In order to secure proper ventilation, resistors using cast grid units should be mounted horizontally, that is, with the units on edge. When two or more boxes are bolted together the heating will be materially reduced if 6-inch spacers are used between the boxes. In no case should resistor sections be stacked more than six high, and at least 12 inches should be allowed between the stacks.

Prices upon application.

CR3202 A. C. Drum Switches

For Slip-ring Induction Motors

Reversing or Non-reversing, Primary and Secondary Control
3-phase



Types T-10-J and T-10-N

These drum switches are for use with slip-ring induction motors and, owing to the wide range of secondary currents for motors of the same horse power rating, it has been found advisable to list them by current capacity rather than by horse power capacity. Standard motors are listed with the proper drum switch, which has been selected after consideration has been given not only to the capacity of the drum switch, but also to the service. In no case should a drum switch of less capacity or fewer points be recommended, even if it appears permissible to do so from the secondary current and voltage of the motor with which the equipment will be used.

For starting duty use with CR3221 resistors.

For speed-regulating duty use with CR3223 resistors.

For crane and hoist duty use with CR3244 resistors.

The following drum switches open two legs of the circuit in the off-position, the third leg running direct to the motor. An additional switch should be installed which will entirely disconnect the motor from the line.

If it is desired to have the drum switch open all three legs of the motor at the off-position, a 2-phase drum switch should be used.

***Type T-133-R**

Has an auxiliary contact for use with a CR7006 primary switch or with a primary oil circuit breaker having a magnetic lock.

Type	MAXIMUM VOLTAGE		CURRENT PER PHASE		POINTS		Approx. Ship Wt. Lbs.	†Price Each
	Pri-ary	Sec-ondary	Pri-ary	Sec-ondary	For-ward	Re-verse		
T-133-R	550	550	125	125	9	9	125	\$82.00

***Type T-133-Q**

Has stop in cap plate to prevent reversing, otherwise same as T-133-R.

T-133-Q	550	550	125	125	9	None	125	\$82.00
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***Type T-10-J**

T-10-J	550	550	150	150	11	11	225	\$115.00
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***Type T-10-N**

T-10-N	550	550	150	150	11	None	225	\$105.00
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Has stop in cap plate to prevent reversing, otherwise same as T-10-J.

***Type T-94-C**

Has an auxiliary contact for use with a CR7006 primary switch or with a primary oil circuit breaker having a magnetic lock.

T-94-C	550	550	150	150	11	11	225	\$150.00
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***Type T-42-C**

T-42-C	550	550	250	250	13	13	450	\$260.00
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****Type T-42-P**

Has stop in cap plate to prevent reversing. When used with reversible motors, stop should be removed.

T-42-P	550	550	300	300	12	12	450	\$260.00
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****Type T-42-S**

Has an auxiliary contact for use with a CR7006 primary switch or with a primary oil circuit breaker having a magnetic lock.

T-42-S	550	550	300	300	12	12	450	\$280.00
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*Starts motor with single-phase secondary. Not recommended for motors above 75 h.p.

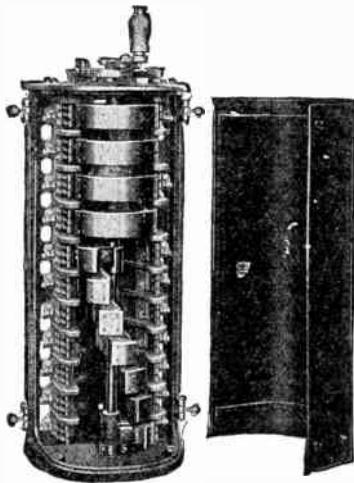
**Starts motor with 3-phase secondary.

†Price is for drum switch only.

CR3202 A.C. Drum Switches

For Slip-ring Induction Motors

Reversing or Non-reversing, Primary and Secondary Control
2-phase



Types T-79-D, T-79-H, and T-79-K

These drum switches are for use with slip-ring induction motors and, owing to the wide range of secondary currents for motors of the same horsepower rating, it has been found advisable to list them by current capacity rather than by horse power capacity.

Standard motors are listed with the proper drum switch, which has been selected after consideration has been given not only to the capacity of the drum switch but also to the service. In no case should a drum switch of less capacity or fewer points be recommended, even if it appears permissible to do so from the secondary current and voltage of the motor with which the equipment will be used.

For starting duty use with CR3221 resistors.

For speed-regulating duty use with CR3223 resistors.

For crane and hoist duty use with CR3244 resistors.

The following drum switches when used on a 2-phase, 4-wire circuit will open three legs of the circuit at the off-position, the fourth running direct to the motor, in which case an additional line switch is required to entirely disconnect the motor from the line. When used on a 3-phase or a 2-phase 3-wire circuit, they will open all three legs at the off-position.

***Type T-157-G**

Has an auxiliary contact for use with a CR7006 primary switch or with a primary oil circuit breaker having a magnetic lock.

Type	MAXIMUM VOLTAGE		CURRENT PER PHASE		POINTS		Approx. Ship. Wt. Lbs.	Price Each
	Pri-ary	Sec-ondary	Pri-ary	Sec-ondary	For-ward	Re-verse		
T-157-G	550	550	125	125	9	9	125	\$98.00

***Type T-94-A**

T-94-A	550	550	150	150	11	11	225	\$140.00
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***Type T-79-D**

T-79-D	550	550	250	250	13	13	450	\$350.00
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****Type T-79-H**

Has stop in cap plate to prevent reversing. When used with reversible motors, stop should be removed.

T-79-H	550	550	300	300	12	12	450	\$350.00
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****Type T-79-K**

Has an auxiliary contact for use with a CR7006 primary switch or with a primary oil circuit breaker having a magnetic lock.

T-79-K	550	550	300	300	12	12	450	\$370.00
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*Starts motor with single-phase secondary. Not recommended for motors above 75 h. p.

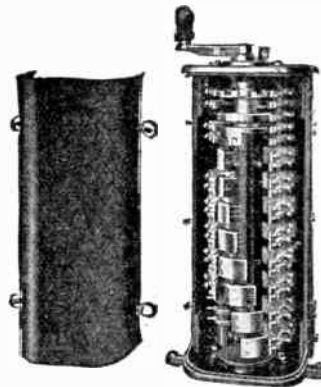
**Starts motor with 3-phase secondary.

†Price is for drum switch only.

CR3204 A.C. Drum Switches

For Slip-ring Induction Motors Having 3-phase
Secondaries

Non-reversing, Secondary Control



Type No. 1501-A

The CR3204 drum switches are for use with slip-ring motors having 3-phase secondaries and provide secondary control only. The resistors used with them are connected to prevent the opening of the rotor circuit, and a separate primary switch must be used to stop and disconnect the motor from the circuit. They are provided with auxiliary contacts which permit of connections to either a CR7006 magnetic primary switch or an oil-immersed circuit breaker in the motor primary circuit to afford under-voltage protection on all but the first point of the switch, and overload protection.

When the drum switch is used with a CR7006 magnetic primary switch without a separate push-button station, the handle of the drum switch must always be turned to the first position to close the CR7006 primary switch. The handle of the drum switch must be turned to the off-position to open the primary switch and stop the motor.

When the drum switch is used with a CR7006 magnetic primary switch and a separate push-button station, the handle of the drum switch must be turned to the off-position so that the start-button of the push-button station may be operated to close the CR7006 primary switch.

CONDUIT BOX.—The CR3204-1500-A drum switch is suitable for wall mounting. In making the installation the conduit box should first be secured to the wall or support. The CR3204-1501-A and CR3204-1503-A drum switches are adapted for floor mounting.

SWITCHBOARD MOUNTING.—The CR3204 drum switches for switchboard use are arranged for mounting vertically with the switchboard and are furnished with a bevel-gear mechanism for operating from the front of the panel.

A primary switch is required with CR3204 drum switches as they provide secondary control only and have no open-circuit point.

For starting duty use with CR3221 resistors.

For machine service regulating duty use with CR3223 resistors.

For fan service regulating duty use with CR3224 resistors.

Order CR3204 drum switch by Type No.

Type No.	CURRENT PER PHASE		Max. Secondary Voltage	Points	Approx. Ship. Wt. Lbs.	Price Each
	*Starting Duty	†Starting or Regulating Duty				
1500-A	250	150	550	11	140	\$65.00
1501-A	600	300	550	13	200	110.00
1503-A	1000	500	1000	11	400	260.00

For Vertical Switchboard Mounting

1500-B	250	150	550	11	170	\$110.00
1501-B	600	300	550	13	250	180.00
1503-B	1000	500	1000	11	450	360.00

*Starting duty, if separate short-circuiting switch is used. This rating should be used only when the drum switch will be in circuit not longer than 5 minutes and then short circuited by a separate device, such as a CR7002 magnetic switch or its equivalent. The CR3204 drum switches are furnished with an additional auxiliary contact on the last point which will provide an interlocking means between the drum switch and a magnetically operated short-circuiting switch.

†Starting or regulating duty, when no separate short-circuiting switch is used. This rating should be used in all cases where any point on the controller will be used as a running point.

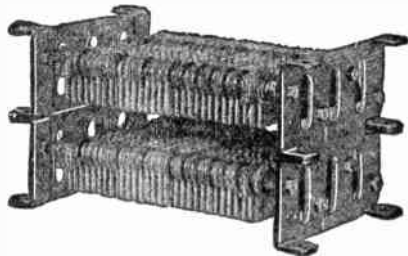
‡Price includes conduit box which may be omitted at \$3.00.

A.C. Heavy Duty Starting Resistors

Types CR3221, CR3223 and CR3224

For Slip-ring Induction Motors

Constant Torque, 60 Cycles, 2 or 3-phase



These resistors consist of Type IG grid units assembled in one or more boxes, and are for use with standard slip-ring induction motors having 3-phase rotors.

CR3221 Resistors are designed for starting duty only, and should not be used on applications where the drum switch may be left on an intermediate point. They comply with the E. P. C. Resistor Classification Nos. 34 and 35.

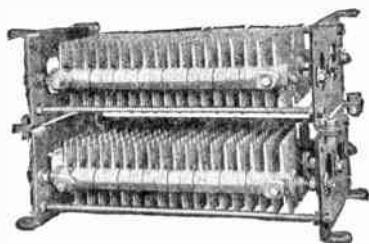
CR3223 Resistors are designed for speed-regulating machine service, i.e., where the torque is practically constant throughout the speed range. They will provide a speed variation of approximately 50 per cent, under torque conditions corresponding to the horse power guarantees at 50 per cent normal speed of the motors with which they are listed. They comply with the E. P. C. Resistor Classification No. 94.

CR3224 Resistors are similar to CR3223; but are designed for fan service, i.e., where the torque increases with the speed of the motor. They provide approximately 50 per cent speed reduction at 40 per cent torque, and should be used with ventilating fans, centrifugal pumps, ice cream freezers, and similar machines. They comply with the E. P. C. Resistor Classification No. 93.

CR3244 A.C. Intermittent Duty Resistors

For MTC or MQC Motors for Crane Service

60, 50 and 25 Cycles, 3 and 2-phase



These resistors are for use with Types MTC or MQC slip-ring motors for crane duty and comply with E. P. C. Resistor Classification No. 52. They are not recommended for use with motors where the service differs greatly from that usually experienced in crane work.

Prices on similar resistors for use with motors of other manufacture will be furnished upon application. All requests for prices should include the secondary data of the motors.

These resistors have a permanent block of resistance which gives better regulation during acceleration and prevents the motor from stalling as it enables the motor to exert its maximum starting-torque regardless of how rapidly the operator throws the controller handle to the full running position.

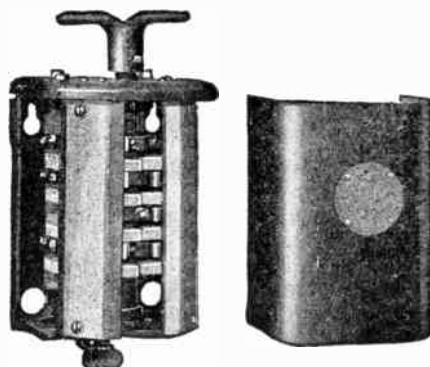
All resistors consist of Type SG cast grid resistor units assembled in one or more boxes. In case the resistor consists of more than one box, the boxes can be bolted together, if desired, to form a single unit. All resistor grids have three supporting lugs equally spaced, requiring the use of only one size of end frame. The tie-rods supporting the units are insulated both from the units and from the end frames. All boxes have the same over all dimensions.

Prices upon application.

CR3900 Drum Type Switches

For Small A.C. and D.C. Motors

Reversing or Non-reversing—Not for Elevator Service



Switch with Standard T Handle

These switches are recommended for throwing small direct and alternating current motors directly across the line.

The RD-80 switches have cast iron boxes with dust tight covers and the holes in the side of the frame through which the leads pass are fitted with rubber bushings.

The RD-417, RD-418, RD-419, RD-420, RD-421 and RD-422 switches have a cast iron frame with sheet metal cap-plate and cover. Two holes are provided in the bottom of the frame for the leads.

Type	MAXIMUM AMPERE CAPACITY					APPROX. S.H.P. WT. LBS.	Price Each
	A.C.			D.C.			
	110-220 Volts	440 Volts	550 Volts	115-230 Volts	600 Volts		
*RD-417-A	30	30	30	30	15	22	\$20.00
†RD-417-D	30	30	30	30	15	22	20.00
*RD-418-A	30	30	30	30	15	22	20.00
*RD-421-A	30	30	30	30	15	25	22.00
*RD-422-A	30	30	30	30	15	16	18.00
†RD-422-B	30	30	30	30	15	16	18.00
RD- 80-A	100	100	75	100	..	60	50.00
†RD- 80-F	100	100	75	100	..	60	50.00

Non-reversing							
Type	110-220 Volts	440 Volts	550 Volts	115-230 Volts	600 Volts	APPROX. S.H.P. WT. LBS.	Price Each
*RD-419-A	30	30	30	30	15	22	\$20.00
*RD-420-A	30	30	30	30	15	22	20.00

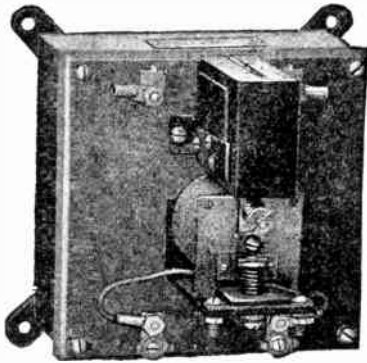
*These switches have a continuous capacity of 30 amperes but can not be used with motors where the starting current exceeds 45 amperes. When used for throwing small two or three-phase induction motors directly on the line, their use should be limited to the following sizes: 1½ h.p., 110 volts; 3 h.p., 220 volts; 5 h.p., 440 volts, and 7½ h.p., 550 volts.

†This switch is equipped with a spring return attachment which automatically brings the handle to the off-position when it is released.

The pawl and pawl spring are omitted and the switches should be used only where the shipper rod is provided with a spring or other centering device for insuring the handle being thrown to the full running or to the off-position. The handle for shipper-rod operation of the RD-419 may be assembled in the dotted position for counter-clockwise rotation of the cylinder.

In ordering, specify type and form of switch desired.

CR4002 D. C. Magnetic Switches



The CR4002 magnetic switches consist of a contactor or contactors mounted on a slate base, with feet for wall mounting, with or without a sheet metal enclosing case. Used extensively with accessory switches, such as float switches, pressure governors, push buttons, etc., to control small motors which can be thrown directly on the line. Also used where it is desired to control, from a distance, circuits carrying large currents and where it would be too expensive to run the main leads to the remote points. The control wires need be only large enough to furnish the requisite mechanical strength and maintain not less than 80 per cent normal voltage at the contactor coils.

The Form A2 requires two control wires between the contactor and the remote control point. A single-pole knife switch, or similar switch, may be used to close the contactor circuit, and the contactor will remain closed until the knife switch is opened, or until voltage fails or becomes low. If voltage fails the contactor will open and remain open until normal voltage is restored, when the contactor will close. This gives under-voltage release.

The Form B2 is similar to the Form A2, with the exception that an interlock is added to the contactor. Three control wires are required between the remote control point and the contactor. A two-button push-button station of the momentary contact type, instead of the knife switch, is used to control the contactor; one button to open and one to close the contactor. In case the voltage becomes low or fails, the contactor will drop out and upon return of normal voltage will not close until the closing push-button is pressed. This gives under-voltage protection.

Forms C2 and D2 are Forms A2 and B2, respectively, enclosed in sheet metal cases which have hinged doors and hasps for padlocking. The connections are made to terminals on the fronts of the panels. The enclosing cases are arranged for conduit connections.

Ordering Directions

State ampere capacity and voltage.

Order by Cat. No. when the voltage to be supplied at the terminals of the operating coil will never be lower than 20 per cent below or higher than 10 per cent above the voltage corresponding to the catalogue number. A 115-volt switch will operate on any voltage from 92 to 126.5; a 230-volt switch on any voltage from 174 to 253; and a 550-volt switch on any voltage from 440 to 605.

When the voltage to be supplied will not fall within any of the above limits order a switch similar to the nearest catalogue number and specify the operating voltage. The operating voltage mentioned must be such that any actual voltage supplied will never be lower than 20 per cent below it or higher than 10 per cent above it.

One of the following accessories or its equivalent should be ordered in addition to the switch:

FOR CR4002 FORMS A2 OR C2: HAND CONTROL.—Single-pole knife or snap switch.

AUTOMATIC CONTROL.—CR2930 or CR2931 float switch for open tank system. CR2922 pressure governor for pressure system. CR2925 or CR2927 pressure switch for pressure system.

FOR CR4002 FORMS B2 OR D2: HAND CONTROL.—CR 2940-B5-207 or CR2940-B5-212A momentary contact "Start" and "Stop" push-button station.

CR4002 D.C. Magnetic Switches

With and Without Enclosing Case

For Remote Control by Knife Switch, Float Switch, Pressure Governor, Thermostat, Etc.

Amp. Cap.	Voltage	No. Poles	CR2800 of Contactor No.	CR4002-A2	Price Each	CR4002-C2	Price Each
				Open Type Cat. No.		Enclosed Type Cat. No.	
20	115	1	1112	1772583G2	\$13.00	1772612G2	\$18.00
20	230	1	1112	1772583G3	13.00	1772612G3	18.00
20	115	2	1114	1772584G2	20.00	1772613G2	25.00
20	230	2	1114	1772584G3	20.00	1772613G3	25.00
40	115	1	1112	1772585G2	15.00	1772614G2	20.00
40	230	1	1112	1772585G3	15.00	1772614G3	20.00
40	115	*2	1112	1772586G2	25.00	1772615G2	32.00
40	230	*2	1112	1772586G3	25.00	1772615G3	32.00
80	115	1	1115	1772587G2	18.00	1772616G2	25.00
80	230	1	1115	1772587G3	18.00	1772616G3	25.00
80	550	1	1115	1772587G5	18.00	1772616G5	25.00
80	115	*2	1115	1772588G2	36.00	1772617G2	45.00
80	230	*2	1115	1772588G3	36.00	1772617G3	45.00
80	550	*2	1115	1772588G5	36.00	1772617G5	45.00
150	115	1	1117	1772589G2	22.00	1772618G2	29.00
150	230	1	1117	1772589G3	22.00	1772618G3	29.00
150	550	1	1117	1772589G5	22.00	1772618G5	29.00
150	115	*2	1117	1772590G2	44.00	1772619G2	54.00
150	230	*2	1117	1772590G3	44.00	1772619G3	54.00
150	550	*2	1117	1772590G5	44.00	1772619G5	54.00
300	115	1	1119	1772591G2	36.00	1772620G2	43.00
300	230	1	1119	1772591G3	36.00	1772620G3	43.00
300	550	1	1119	1772591G5	36.00	1772620G5	43.00
300	115	*2	1119	1772592G2	71.00	1772621G2	98.00
300	230	*2	1119	1772592G3	71.00	1772621G3	98.00
300	550	*2	1119	1772592G5	71.00	1772621G5	98.00
600	115	1	1121	1772593G2	58.00	1772622G2	79.00
600	230	1	1121	1772593G3	58.00	1772622G3	79.00
600	550	1	1121	1772593G5	58.00	1772622G5	79.00
600	115	*2	1121	1772594G2	116.00	1772623G2	147.00
600	230	*2	1121	1772594G3	116.00	1772623G3	147.00
600	550	*2	1121	1772594G5	116.00	1772623G5	147.00

For Remote Control by Momentary Contact Push-button Station

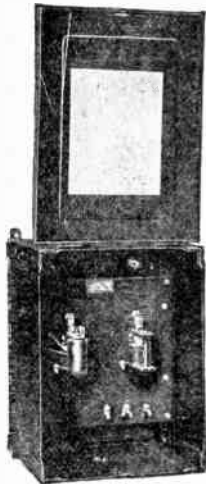
Amp. Cap.	Voltage	No. Poles	CR2800 of Contactor No.	CR4002-B2	Price Each	CR4002-D2	Price Each
				Open Type Cat. No.		Enclosed Type Cat. No.	
20	115	1	1112	1772598G2	\$15.00	1772626G2	\$20.00
20	230	1	1112	1772598G3	15.00	1772626G3	20.00
20	115	2	1114	1772599G2	22.00	1772627G2	27.00
20	230	2	1114	1772599G3	22.00	1772627G3	27.00
40	115	1	1112	1772600G2	17.00	1772628G2	22.00
40	230	1	1112	1772600G3	17.00	1772628G3	22.00
40	115	*2	1112	1772601G2	27.00	1772629G2	34.00
40	230	*2	1112	1772601G3	27.00	1772629G3	34.00
80	115	1	1115	1772602G2	20.00	1772630G2	27.00
80	230	1	1115	1772602G3	20.00	1772630G3	27.00
80	550	1	1115	1772602G5	20.00	1772630G5	27.00
80	115	*2	1115	1772603G2	38.00	1772631G2	47.00
80	230	*2	1115	1772603G3	38.00	1772631G3	47.00
80	550	*2	1115	1772603G5	38.00	1772631G5	47.00
150	115	1	1117	1772604G2	24.00	1772632G2	31.00
150	230	1	1117	1772604G3	24.00	1772632G3	31.00
150	550	1	1117	1772604G5	24.00	1772632G5	31.00
150	115	*2	1117	1772605G2	46.00	1772633G2	56.00
150	230	*2	1117	1772605G3	46.00	1772633G3	56.00
150	550	*2	1117	1772605G5	46.00	1772633G5	56.00
300	115	1	1119	1772606G2	38.00	1772634G2	45.00
300	230	1	1119	1772606G3	38.00	1772634G3	45.00
300	550	1	1119	1772606G5	38.00	1772634G5	45.00
300	115	*2	1119	1772607G2	73.00	1772635G2	100.00
300	230	*2	1119	1772607G3	73.00	1772635G3	100.00
300	550	*2	1119	1772607G5	73.00	1772635G5	100.00
600	115	1	1121	1772608G2	60.00	1772636G2	81.00
600	230	1	1121	1772608G3	60.00	1772636G3	81.00
600	550	1	1121	1772608G5	60.00	1772636G5	81.00
600	115	*2	1121	1772609G2	118.00	1772637G2	149.00
600	230	*2	1121	1772609G3	118.00	1772637G3	149.00
600	550	*2	1121	1772609G5	118.00	1772637G5	149.00

*Consists of two contactors on same base with coils wired in series.

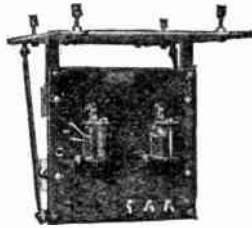
†Price does not include an accessory. See ordering directions.

**CR4031-A5 and CR4031-A6 D.C. Series
Contactor Type Automatic Starters**

Speed D. C. Motors
Under-voltage Release



CR4031-A5



CR4031-A6

These starters may be used with series, shunt, or compound wound motors which when fully loaded do not require more than 150 per cent full load torque to start or longer than 30 seconds to attain full speed. The resistors comply with E. P. C. Resistor Classification No. 16.

CR4031-A5 Automatic Starters

CR4031-A5 automatic starters are of the enclosed type. They are suitable for applications where automatic acceleration is desired after the closing of a line at some remote point.

CR4031-A6 Automatic Starters

CR4031-A6 starters are immersed in oil. For use in mines and similar places. Oil tank can be easily removed. A sufficient quantity of oil is furnished with each starter.

Without Line Switch

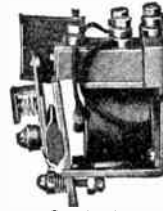
Volts	H.P. of Motor	*CR4031-A5 - ENCLOSED TYPE			*CR4031-A6 - OIL IMMERSED TYPE		
		Cat. No.	Approx. Ship. Wt., Lbs.	Price Each	Cat. No.	Approx. Ship. Wt., Lbs.	Price Each
115	1		43	\$35.00		150	\$70.00
115	2		43	35.00		150	70.00
115	3		43	35.00		150	70.00
115	5		73	55.00		275	100.00
115	7 1/2		73	65.00		275	115.00
115	10		73	70.00		275	120.00
115	15		95	105.00		375	155.00
115	20		110	110.00		390	160.00
230	1	1772370G5	43	33.00	1772370G8	150	60.00
230	2	1772370G6	43	33.00	1772370G9	150	60.00
230	3	1772370G7	43	33.00	1772370G10	150	60.00
230	5	1772371G5	65	45.00	1772371G8	265	85.00
230	7 1/2	1772371G6	65	45.00	1772371G9	265	85.00
230	10	1772371G7	65	50.00	1772371G10	265	90.00
230	15	1772372G4	73	65.00	1772372G6	275	100.00
230	20	1772372G5	73	70.00	1772372G7	275	105.00
230	25	1776142G6	95	90.00	1776142G10	375	135.00
230	30	1776142G7	95	95.00	1776142G11	375	145.00
230	35	1776142G8	95	100.00	1776142G12	390	145.00
230	40	1776142G9	100	100.00	1776142G13	390	145.00
550	1		65	60.00		255	100.00
550	2		65	60.00		255	100.00
550	3		65	60.00		255	100.00
550	5		70	80.00		265	105.00
550	7 1/2		70	85.00		265	105.00
550	10		70	85.00		265	110.00
550	15		76	90.00		270	110.00
550	20		76	100.00		270	125.00
550	25		76	105.00		270	130.00
550	30		85	110.00		280	140.00
550	35		90	110.00		285	140.00
550	40		90	110.00		285	140.00

*Catalogue numbers are assigned to the 280-volt panels only.

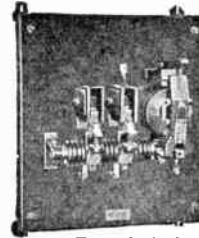
Ordering Directions

Order by Cat. No.; if not given, state type of panel wanted and complete rating of motor with which it is to be used.

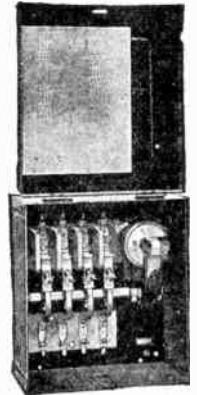
CR7002 A.C. Magnetic Switches



Contactor



Open Type Switch



Enclosed Type Switch

The CR7002 Magnetic Switches consist of a contactor mounted on a slate base, with feet for wall mounting, with or without sheet metal enclosing case. (The CR2810-1265 contactor, which is self-contained, is also furnished unmounted and without enclosing case.) The switches are used extensively where it is desired to control from a distance, circuits carrying large currents and where it would be too expensive to run the main leads to the remote points. The control wires need be only large enough to furnish the requisite mechanical strength and maintain not less than 80 per cent normal voltage at the contactor panel.

They are also suitable for controlling small A. C. motors that may be thrown directly across the line, provided over-load protection is not required.

The Form A2 switch requires two control wires between it and the remote control point. A single-pole knife switch or similar switch, may be used to close the contactor circuit, and the contactor will remain closed until the knife switch is opened, or until voltage fails or becomes low. If voltage fails, the contactor will then open and remain open until normal voltage is restored, when the contactor will close. This gives under-voltage release.

The Form B2 switch is similar to the Form A2, with the exception that an interlock is added to the contactor. Three control wires are required between the remote control point and the contactor type instead of the knife is used to control the contactor, one button to open and one to close the contactor. In case the voltage becomes low or fails, the contactor will open and upon return of normal voltage will not close until the closing push-button is pressed. This gives under-voltage protection.

The connections of both Forms A2 and B2 are made to the back of the panel as there is ample room between the panel and the wall for making them.

Forms C2 and D2 are Forms A2 and B2 respectively, enclosed in sheet metal cases with hinged doors and hasp for padlocking. The connections are made to terminals on the fronts of the panels. The enclosing cases are arranged for conduit connections.

The CR2810-1265 contactor is single-pole only, with double break in series. Where a double-pole switch is needed, two of these contactors are used with the coils connected in multiple. The contactor is furnished either mounted or unmounted for it is self-contained and can be mounted on an insulated or non-insulated base by means of bolts. This device is suitable for applications requiring a small compact contactor or relay for handling small currents.

Furnished to operate directly across the line without the use of any other series resistance for the coils. Designed so that all parts are open for inspection, and those parts subject to wear can be easily, cheaply and quickly renewed.

Directions for Ordering

FOR 60-CYCLE CIRCUITS OF STANDARD VOLTAGES.—Order by Cat. No. and, as a check, specify the complete CR number, ampere capacity, voltage, frequency and number of poles. If an accessory is required, order it as separate item.

FOR OTHER FREQUENCIES AND SPECIAL VOLTAGES.—Omit the Cat. No.

CR7002 A.C. Magnetic Switches

For Control by Knife Switch, Float Switch Pressure Governor, Etc.

Under-voltage Release—†60 Cycles 110 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-A2 Open Type Cat. No., Price †Each, CR7002-C2 Enclosed Type Cat. No., Price †Each. Rows include 15, 75, 150, 300, 500 Amp ratings.

220 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-A2 Open Type Cat. No., Price †Each, CR7002-C2 Enclosed Type Cat. No., Price †Each. Rows include 15, 75, 150, 300, 500 Amp ratings.

440 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-A2 Open Type Cat. No., Price †Each, CR7002-C2 Enclosed Type Cat. No., Price †Each. Rows include 75, 150, 300, 500 Amp ratings.

550 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-A2 Open Type Cat. No., Price †Each, CR7002-C2 Enclosed Type Cat. No., Price †Each. Rows include 75, 150, 300, 500 Amp ratings.

†Prices given above cover switch for all standard frequencies, but the Cat. No. covers 60-cycle switches only.

‡Self-contained contactors, unmounted.

¶Two single-pole contactors on single base. Coils connected in multiple.

CR7002 A.C. Magnetic Switches

For Control by Momentary Contact Push Button Station

Under-voltage Protection—†60 Cycles 110 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-B2 Open Type Cat. No., Price †Each, CR7002-D2 Enclosed Type Cat. No., Price †Each. Rows include 15, 75, 150, 300, 500 Amp ratings.

220 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-B2 Open Type Cat. No., Price †Each, CR7002-D2 Enclosed Type Cat. No., Price †Each. Rows include 15, 75, 150, 300, 500 Amp ratings.

440 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-B2 Open Type Cat. No., Price †Each, CR7002-D2 Enclosed Type Cat. No., Price †Each. Rows include 75, 150, 300, 500 Amp ratings.

550 Volts

Table with columns: Continuous No. Amp. of Cap., Type No. of Poles, CR7002-B2 Open Type Cat. No., Price †Each, CR7002-D2 Enclosed Type Cat. No., Price †Each. Rows include 75, 150, 300, 500 Amp ratings.

†Prices given above cover switch for all standard frequencies but the Cat. No. covers 60-cycle switches only.

‡Self-contained contactors, unmounted.

¶Two single-pole contactors on single base. Coils connected in multiple.

§Contactor used on CR7006-D4 panels. No blowouts. Name plate stamped CR7002-D3, four pole, no interlock.

∅Contactor used on CR7006-D4, no blowouts. Name plate stamped CR7002-D2, four-pole and interlock. ΔContactor used on CR7006-D5 with blowouts. Name plate stamped CR7002-D4, three-pole and interlock.

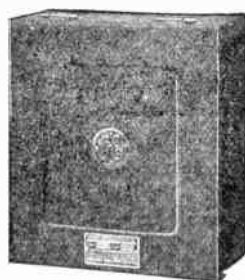
CR7005-A4 A. C. Enclosed Magnetic Switches

CR7005-A4 A. C. Enclosed Magnetic Switches

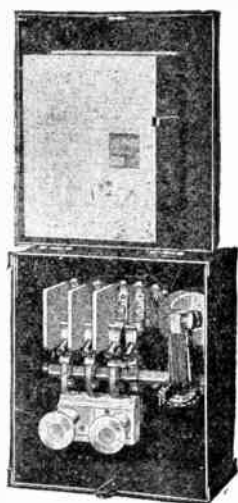
For 3 or 2-phase Motors up to 3 H. P., 110 Volts; 5 H. P., 220, 440, 550 and 600 Volts

Under-voltage Protection or Under-voltage Release
Inverse-time Overload Protection

Prices include CR2940-BS79J push button station, two thermal cutouts, 12 extra links. Approximate shipping weight, 30 pounds.



Closed



Open

The CR7005-A4 Enclosed Magnetic Switches are suitable for throwing small A. C. motors up to 3 h. p., 110 volts; and 5 h. p., 220, 440, 550 and 600 volts, directly on the line. They consist of a 3-pole contactor or magnetically operated switch and a thermal cutout receptacle for 2 thermal cutouts mounted in a sheet steel enclosing case. Incoming leads are easily connected to the stationary contacts which are thoroughly insulated by means of moulded material of which the base is composed. Outgoing leads are connected directly to the porcelain base of the thermal cutouts.

Enclosing Case

The enclosing case is furnished with a hinged cover which may be locked shut if desired. The enclosing case is provided with ten 3/4-inch knockout holes; 3 at the top, 3 at the bottom, and 2 at each side. Knockout holes are also provided in the top for mounting adapter, Cat. No. 2040400, which is required with the CR1923-A1 disconnecting switch.

Thermal Cutouts

Particular care should be used to select thermal cutouts of the correct size.

In case of an overload, the links of the cutouts will open the motor circuit, but the line contactor will not open automatically. The door of the enclosing case cannot be opened until the contactor is opened, because of an interlock between them. A conspicuous name plate on the cover calls attention to the fact that the cover cannot be lifted until the magnetic switch is de-energized by pressing the stop-button. This insures the cutouts and their receptacles being dead before the operator can replace blown fuse links.

Under-voltage Protection or Under-voltage Release

The switch is ordinarily operated by means of a CR2940-BS79J "Start" and "Stop" push-button station. This station is of the momentary contact type and an extra pole is provided on the magnetic contactor to provide an electrical interlock for the holding circuit. If such a push-button station is used and the voltage fails, the contactor will open and will not close automatically on return of voltage, but the Start button must be pressed to restart the motor. This scheme of connections provides Under-voltage Protection. If desired, the switch may be controlled from a number of places simply by installing a suitable number of CR2940-BS79J Push-button Stations.

The switch may also be operated by any master switch of the single-pole single-throw type, as for example, a CR2940-BS30A Push-button Station, a CR2922 Pressure Governor, or a CR2930 or CR2931 Float Switch. In wiring up such switches the connections to the interlock on the contactor should be omitted. The equipment will then provide Under-voltage Release for, when voltage returns, if the master switch is closed, the contactor will close and start the motor automatically. Before deciding to use this scheme care should be taken to be sure that Under-voltage Release, not Under-voltage protection is required.

3-pole Switches

Volts	60 Cycles	CAT. No. OF SWITCHES ONLY 50 Cycles	40 Cycles	25 Cycles	*Price Each
110	1776587G19	1776587G16	1776587G19	1776587G12	\$20.00
220	1776587G2	1776587G17	1776587G10	1776587G3	20.00
440	1776587G3	1776587G11	1776587G18	1776587G4	20.00
550	1776587G11	1776587G12	1776587G13	1776587G6	20.00
600	1776587G18	1776587G20	1776587G14	1776587G7	20.00

4-pole Switches

110	1777292G19	1777292G16	1777292G9	1777292G2	\$25.00
220	1777292G2	1777292G17	1777292G10	1777292G3	25.00
440	1777292G3	1777292G11	1777292G18	1777292G4	25.00
550	1777292G11	1777292G12	1777292G13	1777292G6	25.00
600	1777292G18	1777292G20	1777292G14	1777292G7	25.00

*The CR2940-BS79J push-button station may be omitted at a reduction of \$2.00, and the two thermal cutouts at \$1.50

Prices of Additional Parts

Thermal Cutout with Spare Link	Price Each
Price	\$1.15
" Carton of 10 Plugs, Assorted Ratings	9.50
" " " 10 " One Rating	9.00
Fusible Link, Cat. No. 167539	
Price, per 10	\$.50
" " 100	3.50
" " 500	14.50

The following table gives the Catalogue Number and ampere rating of each thermal cutout and the range of full load current of the motors with which each plug may be used.

Cat. No.	Ampere Rating	Full Load Current of Motor in Amperes
256913	0.8	0.59—0.70
256914	0.95	0.71—0.83
256915	1.1	0.84—0.96
256916	1.3	0.97—1.13
256917	1.5	1.14—1.31
256918	1.8	1.32—1.58
256919	2.1	1.59—1.84
256920	2.5	1.85—2.19
256921	3.0	2.20—2.63
256922	3.6	2.64—3.15
256923	4.3	3.16—3.75
256924	5.1	3.76—4.45
256925	6.0	4.46—5.25
256926	7.1	5.26—6.20
256927	8.4	6.21—7.35
256928	10.0	7.36—8.75
256929	11.8	8.76—10.3
256930	14.0	10.4—12.3
256931	16.6	12.4—14.6
256932	20.0	14.7—17.5

Fusible link, Cat. No. 167539 is same for all cutouts.

Ordering Directions

The Cat. No. of the switch does not include the push-button station or the two thermal cutouts. They must be ordered as separate items.

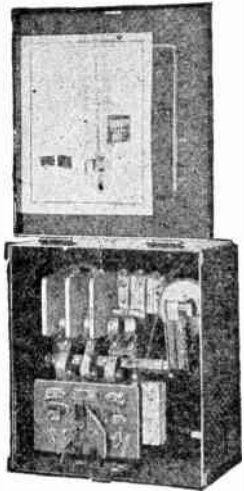
Order a switch by Cat. No.

Order a push-button or master switch by complete rating.

Order two thermal cutouts for each switch by Cat. No.

CR7006 Enclosed Magnetic Switches

For Alternating Current Motors



CR7006-D4

The CR7006 Enclosed Magnetic Switch consists of a three- or four-pole contactor and a two-coil hand-reset temperature overload relay enclosed in a sheet metal case.

With the exception of the contactor, parts of the CR7006-D4, D5 and D7 are similar. The contactor for the CR7006-D4 switch is provided with barriers between the poles. The contactor for the CR7006-D5 is provided with magnetic blowouts. The CR7006-D7 is identical with the CR7006-D5 except that the enclosing case is larger and ventilated to provide more heat radiation and thus give it a higher rating.

The three-pole forms are recommended for three-phase and two-phase three-wire motors and open all lines to the motor. The three-pole switch may be used with two-phase four-wire

motors provided it is permissible to leave one line of the circuit permanently connected to the motor. The four-pole switch should be used for two-phase four-wire motors when all lines must be opened. The CR7006-D5 or -D7 switch cannot be furnished four-pole.

Overload Protection

Overload protection is provided by means of a temperature relay, which upon an overload opens the contactor. This relay has two heating elements, one connected in each of two phases, so that it provides full overload protection for single, two, or three-phase motors.

After the relay trips, the contacts must be reset by hand and a resetting device operated from the outside of the case is provided for the purpose. Provision is made for attaching a cord to the resetting device for convenience in resetting the relay when the switch is mounted above the reach of the operator.

Under-voltage Protection or Under-voltage Release

The switch is ordinarily operated by means of a CR2940-BS79J "start" and "stop" push-button station. This station is of the momentary contact type and an extra pole is provided on the magnetic contactor to provide an electrical interlock for the holding circuit. If such a push-button station is used and the voltage fails, the contactor will open and will not close automatically on return of voltage, but the "start" button must be pressed to restart the motor. This scheme of connections provides "under-voltage protection." If desired, the switch may be controlled from a number of places simply by installing a suitable number of CR2940-BS79J push-button stations.

The CR7006 switch may also be operated by means of any master switch of the single-pole single-throw type, as for example, by means of a CR2940-BS30A push-button station, a CR2922 pressure governor, a CR2925 or CR2927 pressure switch, a CR2930 or CR2931 float switch, etc. In wiring up switches of this type the connections to the interlock on the contactor should be omitted. The equipment will provide "under-voltage release."

Enclosing Case

The enclosing case is provided with a hinged cover which may be locked shut if desired. It is provided with ten 3/4-inch knockout holes; three at the top, three at the bottom, and two at each side.

Ordering Directions

The price of the switch includes switch, overload relay, and push-button station; but the Cat. No. refers to switch. Order a switch by Cat. No.
 Order a temperature overload relay by Cat. No.
 Order a push-button or equivalent accessory.
 Order a cover interlock Cat. No. 1773107, if desired.
 Order a set of terminals Cat. No. 1774499, if the normal motor current is over 30 amperes.

CR7006 Enclosed Magnetic Switches

For Alternating Current Motors

Overload Protection by Hand Reset Temperature Overload Relay Under-voltage Protection or Under-voltage Release, Depending upon the Accessory Used. For Throwing Single-phase, Two-phase, or Three-phase Motors Directly on the Line

Maximum Horse Power Ratings

Volts	SQUIRREL-CAGE FORM KT AND KQ			SQUIRREL-CAGE FORM FTR			SLIP-RING FORM MT AND MQ		
	3-phase wire	2-phase wire	2-phase wire	3-phase wire	2-phase wire	2-phase wire	3-phase wire	2-phase wire	2-phase wire
Type CR7006-D4									
110	7 1/2	7 1/2	5	7 1/2	7 1/2	5	7 1/2	7 1/2	5
220	10	10	10	15	15	10	15	15	10
440	5	5	5	10	10	10	15	15	15
550/600	5	5	5	10	10	10	15	15	15
Type CR7006-D5									
110	7 1/2	7 1/2	5	7 1/2	7 1/2	5	7 1/2	7 1/2	5
220	15	15	15	15	15	15	15	15	10
440	25	25	25	35	35	30	35	40	30
550/600	25	25	25	35	35	35	40	50	40
Type CR7006-D7									
110	10	10	10	10	10	10	10	10	10
220	25	30	25	25	30	25	25	30	20
440	35	35	35	50	50	40	50	50	40
550/600	35	35	35	50	50	50	60	60	60

Prices

Volts	Cycles	3-POLE		4-POLE	
		Cat. No.	*Price Each	Cat. No.	*Price Each
110	60	1773589G19	\$27.00	1773590G19	\$32.00
220	60	1773589G2	27.00	1773590G2	32.00
440	60	1773589G3	27.00	1773590G3	32.00
550	60	1773589G11	27.00	1773590G11	32.00
600	60	1773589G18	27.00	1773590G18	32.00
110	50	1773589G16	27.00	1773590G16	32.00
220	50	1773589G17	27.00	1773590G17	32.00
440	50	1773589G11	27.00	1773590G11	32.00
550	50	1773589G12	27.00	1773590G12	32.00
600	50	1773589G20	27.00	1773590G20	32.00
110	25	1773589G2	27.00	1773590G2	32.00
220	25	1773589G3	27.00	1773590G3	32.00
440	25	1773589G4	27.00	1773590G4	32.00
550	25	1773589G6	27.00	1773590G6	32.00
600	25	1773589G7	27.00	1773590G7	32.00
Type CR7006-D5					
110	60	1773855G19	\$34.00	1773151G19	\$39.00
220	60	1773855G2	34.00	1773151G2	39.00
440	60	1773855G3	34.00	1773151G3	39.00
550	60	1773855G11	34.00	1773151G11	39.00
600	60	1773855G18	34.00	1773151G18	39.00
110	50	1773855G16	34.00	1773151G16	39.00
220	50	1773855G17	34.00	1773151G17	39.00
440	50	1773855G11	34.00	1773151G11	39.00
550	50	1773855G12	34.00	1773151G12	39.00
600	50	1773855G20	34.00	1773151G20	39.00
110	25	1773855G2	34.00	1773151G2	39.00
220	25	1773855G3	34.00	1773151G3	39.00
440	25	1773855G4	34.00	1773151G4	39.00
550	25	1773855G6	34.00	1773151G6	39.00
600	25	1773855G7	34.00	1773151G7	39.00

*Prices are for the switch complete with a CR2824-TC121A temperature overload relay and a CR2940-BS79J push-button station. The push-button station may be omitted at \$2.00. Additional thermal relay furnished for \$7.00 each.

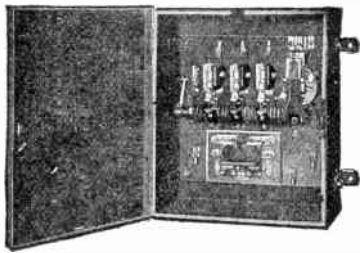
†The switch is furnished with punched terminals which are rated 30 amperes maximum. Where normal current of motor exceeds 30 amperes, a set of punched tube terminals Cat. No. 1774499 should be ordered at no increase in price.

The following table gives the Cat. No. of the temperature relays and the range of full-load currents of the motors with which each may be used.

Cat. No.	Normal Rating in Amp.	Full Load Current of Motor in Amp.	Cat. No.	Normal Rating in Amp.	Full Load Current of Motor in Amp.
1746862G1	0.65	0.40-0.58	1746862G12	8.0	5.9-7.2
1746862G2	0.8	0.59-0.72	1746862G13	10.0	7.3-9.2
1746862G3	1.0	0.73-0.92	1746862G14	13.0	9.3-11.6
1746862G4	1.3	0.93-1.16	1746862G15	16.0	11.7-14.4
1746862G5	1.6	1.17-1.44	1746862G16	20.0	14.5-18.0
1746862G6	2.0	1.45-1.80	1746862G17	25.0	18.1-22.0
1746862G7	2.5	1.81-2.2	1746862G18	30.0	22.1-28.0
1746862G8	3.0	2.3-2.8	1746862G19	40.0	28.1-36.0
1746862G9	4.0	2.9-3.6	1746862G20	50.0	36.1-46.0
1746862G10	5.0	3.7-4.6	1746862G21	65.0	46.1-58.0
1746862G11	6.5	4.7-5.8	1746862G22	80.0	58.1-80.0

CR7006-D9 Enclosed Magnetic Switches

For Alternating Current Motors



The CR7006-D9 magnetic switch consists of a 3-pole contactor and a 2-coil hand-reset temperature overload relay. It may be used for throwing squirrel-cage motors directly on the line if permitted by the power company. The switch has a more general application as a primary switch in connection with a slip-ring motor, the secondary of which is handled by a drum switch.

primary switch in connection with a slip-ring motor, the secondary of which is handled by a drum switch.

Overload Protection

Overload protection is provided by a CR2824-TC221 temperature overload relay which is made up of 2 units, one connected in each of 2 phases, so that full protection is provided for 2 or 3-phase motors. Each unit consists of a heating coil surrounded by a brass frame, a V-shaped strip of thermostatic metal rigidly fastened at one end to the brass frame and a contact mechanism normally held closed mechanically by the thermostatic strip but opened when the strip is heated above a certain temperature. The heating coil and the thermostatic strip, the latter bridged by a shunt, are connected in series in a line of the motor circuit.

Heating in the thermostatic strip occurs because of the current flowing through it and also because of the heat which is conducted through the brass frame from the heating coil. For small overloads, the heating coil raises the temperature of the thermostatic strip slowly due to the large volume of the brass frame which absorbs the heat.

With normal current in the thermostatic strip, the heat produced is not sufficient to raise its temperature greatly, but since the heating is proportional to the square of the current flowing through it, the heat produced with 3 or more times normal current is sufficient to cause the relay to trip quickly. Thus the metal frame around the heating coil may represent the iron of the motor and the thermostatic strip may represent the copper of the motor.

For small overloads of long duration the metal frame provides the correct thermal capacity and delays the tripping of the relay, while for large overloads, the heating of the thermostatic strip is accomplished immediately and the relay quickly trips.

The relay is provided with means for adjusting the tripping value over a range of from 80 to 120 per cent of its normal rating. The relay must be reset by hand from inside the switch enclosing case. After the relay has tripped it cannot be reset for about 30 seconds, or until the relay and motor have had an opportunity to cool.

Under-voltage Protection or Under-voltage Release

The switch is ordinarily operated by means of a CR2940-BS212A start-and-stop push-button station. This station is of the momentary contact type and an extra pole is provided on the magnetic contactor to provide an electrical interlock for the holding circuit. If such a push-button station is used and the voltage fails, the contactor will open and will not close automatically on return of voltage, but the start button must be pressed to restart the motor. This scheme of connections provides under-voltage-protection. If desired, the switch may be controlled from a number of places simply by installing a suitable number of CR2940-BS212A push-button stations.

When this switch is used to handle the primary circuit of a slip-ring motor in connection with any of the listed CR3204 secondary drum switches a start-and-stop push button is not required, as provision is made in the switch for closing the contactor coil circuit as the switch handle is turned to the first point, and to open it in returning the handle to the off-position. This combination of CR7006 magnetic switch and secondary drum switch provides under-voltage protection.

CR7006-D9 Enclosed Magnetic Switches

For Alternating Current Motors

Continued

The CR7006 switch may also be operated by means of any master switch of the single-pole single-throw type, as for example, by means of a knife switch, a CR2922 pressure governor, a CR2927 pressure switch, a CR2930 or CR2931 float switch, etc. In wiring up switches of this type connections to the interlock on contactor should be omitted. Equipment will provide under-voltage release.

Enclosing Case

The enclosing case is provided with a hinged cover which may be locked shut if desired. Two 2-inch and one 3/4-inch knockouts, for conduit connections, are provided in both the top and bottom of the enclosing case.

Maximum Horse Power Ratings

Volts	Type CR7006-D9—150 Amperes								
	SQUIRREL-CAGE FORMS KT OR MT			SQUIRREL-CAGE FORM FTR			SQUIRREL-CAGE FORMS MT OR MQ		
	3-phase wire	2-phase 4-wire	2-phase 3-wire	3-phase wire	2-phase 4-wire	2-phase 3-wire	3-phase wire	2-phase 4-wire	2-phase 3-wire
110	..	..	..	..	..	..	..	..	..
220	40	40	40	40	40	40	60	60	60
440	..	..	..	75	75	75	125	125	100
550	..	..	..	75	75	75	150	150	125

Volts	Type CR7006-D9—300 Amperes								
	SQUIRREL-CAGE FORMS KT OR MT			SQUIRREL-CAGE FORM FTR			SQUIRREL-CAGE FORMS MT OR MQ		
	3-phase wire	2-phase 4-wire	2-phase 3-wire	3-phase wire	2-phase 4-wire	2-phase 3-wire	3-phase wire	2-phase 4-wire	2-phase 3-wire
110
220	60	60	60	100	100	100
440	100	100	100	200	200	200
550	100	100	100	200	200	200

Prices

Volts	Cycles	CR7006-D9—150 AMPERES		CR7006-D9—300 AMPERES	
		Cat. No.	Price Each	Cat. No.	Price Each
110	60	1777245G2	\$120.00	2829025G2	\$160.00
220	60	1777245G3	120.00	2829025G3	160.00
440	60	1777245G4	120.00	2829025G4	160.00
550	60	1777245G5	120.00	2829025G5	160.00
110	50	1777245G6	120.00	2829025G6	160.00
220	50	1777245G7	120.00	2829025G7	160.00
440	50	1777245G5	120.00	2829025G5	160.00
550	50	1777245G8	120.00	2829025G8	160.00
110	25	1777245G3	120.00	2829025G3	160.00
220	25	1777245G4	120.00	2829025G4	160.00
440	25	1777245G12	120.00	2829025G12	160.00
550	25	1777245G13	120.00	2829025G13	160.00

Price is for switch complete with CR2824-TC221 temperature overload relay, and a CR2940-BS212A push-button station. The push-button station may be omitted at \$5.00. Additional temperature relays will be furnished at \$30.00 each.

The following table gives the catalogue number of the temperature relays and the range of full-load currents of the motors with which each may be used.

Cat. No.	Normal Rating in Amperes	Full Load Current of Motor in Amperes	Cat. No.	Normal Rating in Amperes	Full Load Current of Motor in Amperes
2019555G1	20	14-20	2019555G7	100	77-96
2019555G2	30	21-29	2019555G8	125	97-120
2019555G3	40	30-38	2019555G9	150	121-145
2019555G4	50	39-48	2019555G10	200	146-192
2019555G5	60	49-57	2019555G11	250	193-240
2019555G6	80	58-76	2019555G12	300	241-288

Ordering Directions

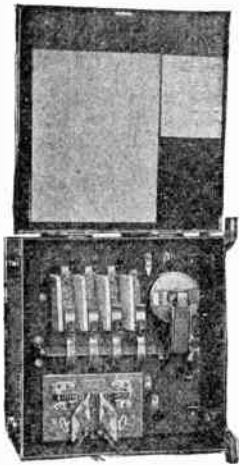
The price of the switch given above includes the switch, temperature overload relay, and push-button station; but the catalogue number refers to the switch only.

1. Order a CR7006-D9 switch by catalogue number.
2. Order a CR2824-TC221 temperature overload relay by catalogue number.
3. Order a CR2940-BS212A start-and-stop push-button station or equivalent accessory if desired.

CR7009 A. C. Enclosed Magnetic Reversing Switches

Overload Protection by Hand-reset Temperature Overload Relays

Under-voltage Protection or Under-voltage Release Depending Upon Accessory Used



CR7009-B5

For Reversing Single-phase, Two-phase or Three-phase Motors When Thrown Directly on the Line or When Used with Non-reversing Automatic Starters

The CR7009 switch consists of two three-pole mechanically interlocked contactors mounted back to back on a compound base, enclosed in a sheet metal case. The contact details of the contactors of the CR7009-B5 switch are the same as those of the CR7006-D4 magnetic switch and those of the CR7009-B6, the same as those of the CR7006-D5 magnetic switch.

The CR7009-B5 switch is suitable, as furnished, for use with single-phase, two-phase, three-wire, or three-phase motors. When used with a two-phase four-wire motor, the reversing connections must be changed by the customer to agree with the diagram furnished. This change can very easily be accomplished.

Since this is a three-pole switch, one of the lines must run directly to the motor. It may also be used to control small direct-current motors (14-ft.-lb. torque or less) where the period of operation does not exceed 30 seconds and where the motor is not operated more than once in the same direction every five minutes.

The CR7009-B6 switch is made up in two forms, one for three-phase or two-phase three-wire, the other for two-phase four-wire. This switch is also suitable for controlling direct current motors on intermittent duty within the time limitations as given above for CR7009-B5. The contactors, being equipped with blowouts, can be used with motors having a full load current of 75 amperes or less.

Overload Protection

These switches provide overload protection by means of a CR2824-TC121A temperature overload relay which has two heating elements, one connected in each of two phases, so that it provides full overload protection for single-phase, two-phase or three-phase motors. The relay is provided with calibrating arms for adjusting the tripping value over a range from 80 to 120 per cent of its normal rating. A resetting device operated from the outside of the case is provided for the purpose of resetting the contacts.

Under-voltage Protection or Under-voltage Release

The CR7009 switch is ordinarily operated from one or more CR2940-BS13 push-button stations, the combination providing under-voltage protection. It may also be operated by means of a single-pole, double-throw master switch, in which case the connections to the interlock are omitted and under-voltage release is provided.

The top of the enclosing case is provided with small knockout holes for fastening the adapter (Cat. No. 1775956) which is necessary when a CR1923-A1 disconnecting switch is used. The CR1923-A1 switch provides a convenient means for disconnecting the CR7009 switch and motor from the line for purposes of inspection and repairs.

Enclosing Case

The enclosing case is fitted with feet for wall-mounting, so arranged that the base, on which the contactors are mounted is perpendicular to the wall. Knockout holes for conduit fittings are provided at the top of the case close to the edge nearest the wall. Hinged door over each contactor.

Ordering Directions

The price of the switch includes switch complete with a CR2824-TC121A overload relay. Cat. No. refers to switch.

Order a CR7009 switch by Cat. No.

Order a CR2824-TC121A relay by Cat. No.

Order a CR2940-BS13 push-button station, or equivalent master switch.

Order, if desired, a CR1923-A1 disconnecting switch by Cat. No. with an adapter, Cat. No. 1775956.

CR7009 A. C. Enclosed Magnetic Reversing Switches

Continued

Maximum Ratings

CR7009-B5, without Magnetic Blowouts

10 H. P., 220 Volts
7½ H. P., 110 Volts
5 H.P., 440/650 Volts

CR7009-B6, with Magnetic Blowouts

10 H. P., 110 Volts; 25 H. P., 220 Volts
35 H. P., 440/650 Volts

Volts	CR7009-B5 without Magnetic Blowouts		CR7009-B6 with Magnetic Blowouts			
	3-PHASE; 2-PHASE 3-WIRE OR 4-WIRE		3-PHASE 2-PHASE, 3-WIRE		2-PHASE, 4-WIRE	
	Cat. No.	*Price Each	Cat. No.	*Price Each	Cat. No.	*Price Each
110	1775445G19	\$55	1775446G19	\$65	1776806G19	\$65
220	1775445G2	55	1775446G2	65	1776806G2	65
440	1775445G3	55	1775446G3	65	1776806G3	65
550	1775445G11	55	1775446G11	65	1776806G11	65
600	1775445G18	55	1775446G18	65	1776806G18	65
650	1775445G12	55	1775446G12	65	1776806G12	65
60 Cycles						
110	1775445G16	\$55	1775446G16	\$65	1776806G16	\$65
220	1775445G17	55	1775446G17	65	1776806G17	65
440	1775445G11	55	1775446G11	65	1776806G11	65
550	1775445G12	55	1775446G12	65	1776806G12	65
600	1775445G20	55	1775446G20	65	1776806G20	65
650	1775445G13	55	1775446G13	65	1776806G13	65
50 Cycles						
110	1775445G2	\$55	1775446G2	\$65	1776806	2 \$65
220	1775445G3	55	1775446G3	65	1776806	3 65
440	1775445G4	55	1775446G4	65	1776806	4 65
550	1775445G6	55	1775446G6	65	1776806	6 65
600	1775445G7	55	1775446G7	65	1776806	7 65
650	1775445G8	55	1775446G8	65	1776806	8 65
25 Cycles						
110	1775445G2	\$55	1775446G2	\$65	1776806	2 \$65
220	1775445G3	55	1775446G3	65	1776806	3 65
440	1775445G4	55	1775446G4	65	1776806	4 65
550	1775445G6	55	1775446G6	65	1776806	6 65
600	1775445G7	55	1775446G7	65	1776806	7 65
650	1775445G8	55	1775446G8	65	1776806	8 65

****D. C. Intermittent Duty Only**

115	1775445G27	\$55	1775446G27	\$65	.....
230	1775445G28	55	1775446G28	65	.....
550	1775445G29	55	1775446G29	65	.....

*Price includes switch complete with a CR2824-TC121A overload relay; Cat. No. covers the switch only. A suitable relay should also be ordered by Cat. No. from the table under Accessories.

**May be used for throwing small direct-current motors on the line on applications where either contactor coil will not be energized more than once every five minutes, no longer than 30 seconds at a time.

Accessories

TEMPERATURE RELAY.—May be omitted at \$7.00.

PUSH-BUTTON STATION.—A CR2940-BS13 three-button station should be included at a net price of \$7.00.

MASTER SWITCH.—A single point, forward and reverse, master switch may be used in preference to a push-button station.

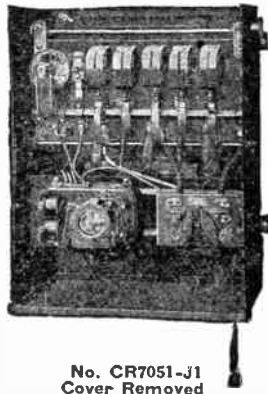
DISCONNECTING SWITCHES.—A Cat. No. 2040256 switch, at a price of \$14.00, is recommended for use with these reversing switches. If used, an adapter, Cat. No. 1775956, at 50 cents, is necessary for mounting the disconnecting switch on the enclosing case of CR7009.

Cat. No.	Relay Symbol	Normal Rating in Amperes	Full Load Current of Motor in Amperes
1746862G1	TC121A1	0.65	0.40 - 0.58
1746862G2	TC121A2	0.8	0.59 - 0.72
1746862G3	TC121A3	1.0	0.73 - 0.92
1746862G4	TC121A4	1.3	0.93 - 1.16
1746862G5	TC121A5	1.6	1.17 - 1.44
1746862G6	TC121A6	2.0	1.45 - 1.80
1746862G7	TC121A7	2.5	1.81 - 2.2
1746862G8	TC121A8	3.0	2.3 - 2.8
1746862G9	TC121A9	4.0	2.9 - 3.6
1746862G10	TC121A10	5.0	3.7 - 4.6
1746862G11	TC121A11	6.5	4.7 - 5.8
1746862G12	TC121A12	8.0	5.9 - 7.2
1746862G13	TC121A13	10.0	7.3 - 9.2
1746862G14	TC121A14	13.0	9.3 - 11.6
1746862G15	TC121A15	16.0	11.7 - 14.4
1746862G16	TC121A16	20.0	14.5 - 18.0
1746862G17	TC121A17	25.0	18.1 - 22.0
1746862G18	TC121A18	30.0	22.1 - 28.0
1746862G19	TC121A19	40.0	28.1 - 36.0
1746862G20	TC121A20	50.0	36.1 - 46.0
1746862G21	TC121A21	65.0	46.1 - 58.0
1746862G22	TC121A22	80.0	58.1 - 80.0

CR7051 Automatic Starting Compensators
For Squirrel-cage Induction Motors
 Definite-time Acceleration—Overload Protection
 220, 440 and 550 Volts



No. CR7051-J1
(Side View)



No. CR7051-J1
Cover Removed

The CR7051 Automatic Starting Compensators are suitable for starting squirrel-cage induction motors that do not require longer than 15 seconds to attain full speed, once every 4 minutes for an hour.

Consists chiefly of an auto-transformer for supplying reduced voltage to the motor for acceleration, a contactor for connecting the auto-transformer to its low-voltage taps during acceleration, a contactor for connecting the motor to the line, a temperature overload relay and a definite-time relay which causes the accelerating contactor to open and the line contactor to close at a pre-determined time.

The auto-transformer has 2 coils for 2-phase motors and 3 coils for 3-phase motors, which gives balanced starting currents and the maximum starting torque per ampere line current. For motors up to 18 h.p., 3 sets of starting taps are provided which furnish 50, 65 or 80 per cent line voltage with respective line currents of 25, 42 or 65 per cent of the current which would be required if no compensator were used. For motors above 18 h.p., 4 sets of starting taps are provided which furnish 40, 58, 70 or 85 per cent line voltage with respective line currents of 16, 34, 49 or 72 per cent of the current that would be required if no compensator were used.

Compensators are shipped with connections made to the set of taps that furnishes 58 or 65 per cent line voltage. Provision is made for conveniently changing them to any other set which may be found more desirable when installing.

An electrical interlock is provided on the starting contactor which prevents the running-contactor from closing until the starting-contactor has opened. As a further safeguard, there is also a mechanical interlock between the 2 contactors.

CR7051-J1 Compensators, Size No. 1

The CR7051-J1 Compensators are furnished for wall mounting but can be supplied for floor mounting by the addition of pipe supports, Cat. No. 1769917, at an additional price. The accelerating and running contactors are mounted back to back with the auto-transformer and relays mounted below. This reduces the wiring and results in a compact arrangement of all mechanical and electrical parts, completely enclosed in metal case. The enclosing case may be locked to conform with all safety requirements.

CR7051-K1 Compensators, Sizes No. 2 and 3

The CR7051-K1 Compensators sizes No. 2 and 3 are furnished for floor mounting. They are supported by angle iron frame work and are enclosed in a sheet metal enclosing case which extends to the floor. The hinged front door is provided with means for locking to conform with safety requirements. The cover for the back of the panel is easily removable for making line and motor connections.

CR7051-L1 Compensators, 2200 Volts

The CR7051-L1 Compensators for 2200 volts are electrically similar to the CR7051-J1 and K-1 compensators for 220 to 550 volts but are of a different mechanical construction. The contacts are oil-immersed, each pole being in an individual compartment. The definite-time accelerating relay, temperature over-relay and electrical interlocks are mounted on a slate base which is enclosed in a sheer metal case. Low-voltage for the control circuit is provided by means of a voltage transformer. The transformer is included in the price of the compensator but must be ordered as a separate item and mounted by the purchaser.

CR7051-J1 Automatic Starting Compensators
For Squirrel-cage Induction Motors
 Definite-time Acceleration—Overload Protection
 220, 440 and 550 Volts

40-degree, 3-phase, 60 Cycles

CR7051-J1				**AMMETER ATTACHMENT Jack-type			
MOTOR RATING H.P.	Volts	Cat. No.	Approx. Shipp.	Price Each	Cat. No.	Approx. Shipp.	Price Each
			Wt. Lbs.			Wt. Lbs.	
5	220	1775617G2	246	\$145.	2019325G4	55	\$30.
5	440	1775617G3	246	145.	2019325G2	55	28.
5	550	1775617G4	246	145.	2019325G1	55	28.
7 1/2	220	1775617G2	246	145.	2019325G5	55	32.
7 1/2	440	1775617G3	246	145.	2019325G3	55	28.
7 1/2	550	1775617G4	246	145.	2019325G2	55	28.
10	220	1775617G2	246	145.	2019325G6	55	32.
10	440	1775617G3	246	145.	2019325G4	55	30.
10	550	1775617G4	246	145.	2019325G3	55	28.
15	220	1775617G2	246	145.	2019325G7	55	32.
15	440	1775617G3	246	145.	2019325G5	55	32.
15	550	1775617G4	246	145.	2019325G4	55	30.
20	220	1775617G5	255	155.	2019352G8	55	34.
20	440	1775617G6	246	155.	2019325G6	55	32.
20	550	1775617G7	246	155.	2019325G5	55	32.
25	220	1775617G5	255	155.	2019325G1	55	34.
25	440	1775617G6	246	155.	2019325G6	55	32.
25	550	1775617G7	246	155.	2019325G6	55	32.
30	440	1775617G8	255	160.	2019325G7	55	32.
30	550	1775617G9	255	160.	2019325G6	55	32.
40	440	1775617G10	255	165.	2019325G8	55	34.
40	550	1775617G11	255	165.	2019325G7	55	32.
50	440	1775617G10	255	165.	2019325G1	55	34.
50	550	1775617G11	255	165.	2019325G8	55	34.

40-degree, 3-phase, 50 Cycles

5	220	1775618G2	246	\$145.	2019325G4	55	\$30.
5	440	1775618G3	246	145.	2019325G2	55	28.
5	550	1775618G4	246	145.	2019325G1	55	28.
7 1/2	220	1775618G2	246	145.	2019325G5	55	32.
7 1/2	440	1775618G3	246	145.	2019325G3	55	28.
7 1/2	550	1775618G4	246	145.	2019325G2	55	28.
10	220	1775618G2	246	145.	2019325G6	55	32.
10	440	1775618G3	246	145.	2019325G4	55	30.
10	550	1775618G4	246	145.	2019325G3	55	28.
15	220	1775618G2	246	145.	2019325G7	55	32.
15	440	1775618G3	246	145.	2019325G5	55	32.
15	550	1775618G4	246	145.	2019325G4	55	30.
20	220	1775618G5	255	155.	2019325G8	55	34.
20	440	1775618G6	246	155.	2019325G6	55	32.
20	550	1775618G7	246	155.	2019325G5	55	32.
25	220	1775618G5	255	155.	2019325G1	55	34.
25	440	1775618G6	246	155.	2019325G6	55	32.
25	550	1775618G7	246	155.	2019325G6	55	32.
30	440	1775618G8	255	160.	2019325G7	55	32.
30	550	1775618G9	255	160.	2019325G6	55	32.
40	440	1775618G10	255	165.	2019325G8	55	34.
40	550	1775618G11	255	165.	2019325G7	55	32.
50	440	1775618G10	255	165.	2019325G1	55	34.
50	550	1775618G11	255	165.	2019325G8	55	34.

40-degree, 3-phase, 25 Cycles

5	220	1775620G2	246	\$145.	2019325G4	55	\$30.
5	440	1775620G3	246	145.	2019325G2	55	28.
5	550	1775620G4	246	145.	2019325G1	55	28.
7 1/2	220	1775620G2	246	145.	2019325G5	55	32.
7 1/2	440	1775620G3	246	145.	2019325G3	55	28.
7 1/2	550	1775620G4	246	145.	2019325G2	55	28.
10	220	1775620G2	246	145.	2019325G6	55	32.
10	440	1775620G3	246	145.	2019325G4	55	30.
10	550	1775620G4	246	145.	2019325G3	55	28.
15	220	1775620G5	255	155.	2019325G7	55	32.
15	440	1775620G6	255	155.	2019325G5	55	32.
15	550	1775620G7	255	155.	2019325G4	55	30.

*Cat. No. 2040256 switch with Cat. No. 2040400 adapter; approximate shipping weight, 30 pounds; price, \$14.50.

**Includes ammeter.

†Price is for compensator complete with temperature overload relay.

For changing wall-mounted to floor-mounted compensators, add pipe supports, Cat. No. 1769917, at an additional price of \$16.00.

CR7051-J1 Automatic Starting Compensators

For Squirrel-cage Induction Motors
Definite-time Acceleration—Overload Protection
220, 440 and 550 Volts
40-degree, 2-phase, 3-wire, 60 Cycles

Motor Rating H.P.	Volts	CR7051-J1		**AMMETER ATTACHMENT Jack-Type			CR1923-A1 Dis-connect-ing Switch	
		Cat. No.	Approx. Ship. Wt. Lbs.	Price Each	Cat. No.	Approx. Ship. Wt. Lbs.		Price Each
5	220	1775621G2	216	\$145.	2019325G4	55	\$30.	*
5	440	1775621G3	216	145.	2019325G2	55	28.	*
5	550	1775621G4	216	145.	2019325G1	55	28.	*
7 1/2	220	1775621G2	216	145.	2019325G5	55	32.	*
7 1/2	440	1775621G3	216	145.	2019325G3	55	28.	*
7 1/2	550	1775621G4	216	145.	2019325G2	55	28.	*
10	220	1775621G2	216	145.	2019325G6	55	32.	*
10	440	1775621G3	216	145.	2019325G4	55	30.	*
10	550	1775621G4	216	145.	2019325G3	55	28.	*
15	220	1775621G2	216	145.	2019325G7	55	32.	*
15	440	1775621G3	216	145.	2019325G5	55	32.	*
15	550	1775621G4	216	145.	2019325G4	55	30.	*
20	220	1775621G5	255	155.	2019325G8	55	34.	*
20	440	1775621G6	216	155.	2019325G6	55	32.	*
20	550	1775621G7	216	155.	2019325G5	55	32.	*
25	220	1775621G5	255	155.	2019326G1	55	34.	*
25	440	1775621G6	255	155.	2019325G6	55	32.	*
25	550	1775621G7	255	155.	2019325G6	55	32.	*
30	440	1775621G8	255	160.	2019325G7	55	32.	*
30	550	1775621G9	255	160.	2019325G6	55	32.	*
40	440	1775621G10	255	165.	2019325G8	55	34.	*
40	550	1775621G11	255	165.	2019325G7	55	32.	*
50	440	1775621G10	255	165.	2019326G1	55	34.	*
50	550	1775621G11	255	165.	2019325G8	55	34.	*
40-degree, 2-phase, 3-wire, 25 Cycles								
5	220	1775622G2	216	\$145.	2019325G4	55	\$30.	*
5	440	1775622G3	216	145.	2019325G2	55	28.	*
5	550	1775622G4	216	145.	2019325G1	55	28.	*
7 1/2	220	1775622G2	216	145.	2019325G5	55	32.	*
7 1/2	440	1775622G3	216	145.	2019325G3	55	28.	*
7 1/2	550	1775622G4	216	145.	2019325G2	55	28.	*
10	220	1775622G2	216	145.	2019325G6	55	32.	*
10	440	1775622G3	216	145.	2019325G4	55	30.	*
10	550	1775622G4	216	145.	2019325G3	55	28.	*
15	220	1775622G5	255	155.	2019325G7	55	32.	*
15	440	1775622G6	255	155.	2019325G5	55	32.	*
15	550	1775622G7	255	155.	2019325G4	55	30.	*
40-degree, 2-phase, 4-wire, 60 Cycles								
5	220	1775623G2	216	\$145.	2019325G3	55	\$28.	*
5	440	1775623G3	216	145.	2019325G1	55	28.	*
5	550	1775623G4	216	145.	2019325G1	55	28.	*
7 1/2	220	1775623G2	216	145.	2019325G5	55	32.	*
7 1/2	440	1775623G3	216	145.	2019325G2	55	28.	*
7 1/2	550	1775623G4	216	145.	2019325G2	55	28.	*
10	220	1775623G2	216	145.	2019325G5	55	32.	*
10	440	1775623G3	216	145.	2019325G4	55	30.	*
10	550	1775623G4	216	145.	2019325G3	55	28.	*
15	220	1775623G2	216	145.	2019325G6	55	32.	*
15	440	1775623G3	216	145.	2019325G5	55	32.	*
15	550	1775623G4	216	145.	2019325G4	55	30.	*
20	220	1775623G5	255	155.	2019325G7	55	32.	*
20	440	1775623G6	246	155.	2019325G5	55	32.	*
20	550	1775623G7	246	155.	2019325G5	55	32.	*
25	220	1775623G5	255	155.	2019325G8	55	34.	*
25	440	1775623G6	255	155.	2019325G6	55	32.	*
25	550	1775623G7	255	155.	2019325G5	55	32.	*
30	440	1775623G8	255	160.	2019325G6	55	32.	*
30	550	1775623G9	255	160.	2019325G6	55	32.	*
40	440	1775623G10	255	165.	2019325G7	55	32.	*
40	550	1775623G11	255	165.	2019325G6	55	32.	*
50	440	1775623G10	255	165.	2019325G8	55	34.	*
50	550	1775623G11	255	165.	2019325G7	55	32.	*
40-degree, 2-phase, 4-wire, 25 Cycles								
5	220	1775624G2	216	\$145.	2019325G3	55	\$28.	*
5	440	1775624G3	216	145.	2019325G1	55	28.	*
5	550	1775624G4	216	145.	2019325G1	55	28.	*
7 1/2	220	1775624G2	216	145.	2019325G5	55	32.	*
7 1/2	440	1775624G3	216	145.	2019325G2	55	28.	*
7 1/2	550	1775624G4	216	145.	2019325G2	55	28.	*
10	220	1775624G2	216	145.	2019325G5	55	32.	*
10	440	1775624G3	216	145.	2019325G4	55	30.	*
10	550	1775624G4	216	145.	2019325G3	55	28.	*
15	220	1775624G5	255	155.	2019325G6	55	32.	*
15	440	1775624G6	255	155.	2019325G5	55	32.	*
15	550	1775624G7	255	155.	2019325G4	55	30.	*

*Cat. No. 2040256 switch with Cat. No. 2040400 adapter; approximate shipping weight, 30 pounds; price, \$11.50.

**Includes ammeter.

Price is for compensator complete with temperature overload relay.

For changing wall-mounted to floor-mounted compensators, add pipe supports, Cat. No. 1769917, at an additional price of \$16.00.

CR7051-J1 Automatic Starting Compensators

For Squirrel-cage Induction Motors

Definite-time Acceleration—Overload Protection
220, 440 and 550 Volts

CR2824-TC-121 Temperature Overload Relay
3-phase, 60 Cycles

Motor Rating H.P.	Speed	CATALOGUE NUMBERS		
		220 Volts	440 Volts	550 Volts
5	3600 to 1200	1746862G15	1746862G12	1746862G11
5	900 " 600	1746862G16	1746862G13	1746862G12
7 1/2	3600 " 1200	1746862G17	1746862G14	1746862G13
7 1/2	900	1746862G18	1746862G14	1746862G13
7 1/2	720-600	1746862G18	1746862G15	1746862G14
10	3600 to 1200	1746862G18	1746862G15	1746862G14
10	900	1746862G19	1746862G15	1746862G14
10	720	1746862G19	1746862G16	1746862G14
10	600	1746862G19	1746862G16	1746862G15
15	3600 to 720	1746862G20	1746862G17	1746862G16
15	600	1746862G21	1746862G18	1746862G17
20	3600 to 720	1746862G21	1746862G18	1746862G17
20	600	1746862G21	1746862G19	1746862G18
25	3000 to 600	1746862G22	1746862G19	1746862G18
30	1800	.....	1746862G19	1746862G18
30	1200 to 600	.....	1746862G20	1746862G19
40	1800 " 600	.....	1746862G21	1746862G20
50	1800 " 600	.....	1746862G22	1746862G21

3-phase, 50 Cycles

5	1500-1000	1746862G15	1746862G12	1746862G11
7 1/2	1500-1000	1746862G17	1746862G14	1746862G13
10	1500	1746862G18	1746862G15	1746862G14
10	1000-750	1746862G19	1746862G16	1746862G15
15	1500	1746862G20	1746862G17	1746862G16
15	1000	1746862G21	1746862G18	1746862G17
15	750-600	1746862G20	1746862G17	1746862G16
20	1500 to 750	1746862G21	1746862G18	1746862G17
20	600	1746862G21	1746862G19	1746862G18
25	1500 to 750	1746862G22	1746862G19	1746862G18
30	1500 " 600	.....	1746862G20	1746862G19
40	1500 " 600	.....	1746862G21	1746862G20
50	1500 " 500	.....	1746862G22	1746862G21

3-phase, 25 Cycles

5	1500-750	1746862G15	1746862G12	1746862G11
7 1/2	1500 to 500	1746862G17	1746862G14	1746862G13
10	1500-750	1746862G18	1746862G15	1746862G14
10	500	1746862G19	1746862G16	1746862G15
15	1500 to 500	1746862G20	1746862G17	1746862G16

2-phase, 3-wire, 60 Cycles

5	3600	1746862G14	1746862G11	1746862G10
5	180 to 720	1746862G15	1746862G12	1746862G11
5	600	1746862G16	1746862G13	1746862G12
7 1/2	3600 to 1200	1746862G16	1746862G13	1746862G12
7 1/2	900 " 600	1746862G17	1746862G14	1746862G13
10	3600 " 1200	1746862G17	1746862G14	1746862G13
10	900-720	1746862G18	1746862G15	1746862G14
10	600	1746862G19	1746862G16	1746862G14
15	3600 to 900	1746862G19	1746862G16	1746862G15
15	720-600	1746862G20	1746862G17	1746862G16
20	3600 to 1200	1746862G20	1746862G17	1746862G16
20	900-720	1746862G21	1746862G18	1746862G17
20	600	1746862G21	1746862G18	1746862G17
25	3600-1800	1746862G21	1746862G18	1746862G17
25	1200	1746862G21	1746862G18	1746862G17
25	900 to 600	1746862G21	1746862G19	1746862G18
30	1800 " 600	.....	1746862G19	1746862G18
40	1800 " 600	.....	1746862G20	1746862G19
50	1800 " 720	.....	1746862G21	1746862G20
50	600	.....	1746862G22	1746862G21

2-phase, 3-wire, 25 Cycles

5	1500-750	1746862G14	1746862G11	1746862G10
7 1/2	1500-750	1746862G16	1746862G13	1746862G12
7 1/2	500	1746862G17	1746862G13	1746862G12
10	1500	1746862G17	1746862G14	1746862G13
10	750-500	1746862G18	1746862G15	1746862G14
15	1500 to 500	1746862G19	1746862G16	1746862G15

CR7051-J1 Automatic Starting Compensators

For Squirrel-cage Induction Motors

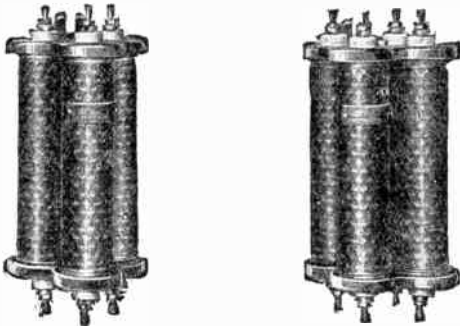
Definite-time Acceleration—Overload Protection
220, 440 and 550 Volts

CR2824-TC-121 Temperature Overload Relay

Cat. No. 1746862
For 50-cycle Motors
Continued

MOTOR RATING H.P.	Speed	GROUP No.					
		220 VOLTS 2-Phase 3-or 4-Wire		440 VOLTS 2-Phase 3-or 4-Wire		550 VOLTS 2-Phase 3-or 4-Wire	
25	1500	G22	....	G19	....	G18	....
25	1000	G22	....	G19	....	G18	....
25	750	G22	....	G19	....	G18	....
30	1500	....	....	G20	....	G19	....
30	1000	....	....	G20	....	G19	....
30	750	....	....	G20	....	G19	....
30	600	....	....	G20	....	G19	....
40	1500	....	....	G21	....	G20	....
40	1000	....	....	G21	....	G20	....
40	750	....	....	G21	....	G20	....
40	600	....	....	G21	....	G20	....
50	1500	....	....	G22	....	G21	....
50	1000	....	....	G22	....	G21	....
50	750	....	....	G22	....	G21	....
50	600	....	....	G22	....	G21	....
50	500	....	....	G22	....	G21	....
For 25-cycle Motors							
5	1500	G15	....	G12	....	G11	....
5	750	G15	....	G12	....	G11	....
7 1/2	1500	G17	....	G14	....	G13	....
7 1/2	750	G17	....	G14	....	G13	....
7 1/2	500	G17	....	G14	....	G13	....
10	1500	G18	....	G15	....	G14	....
10	750	G18	....	G15	....	G14	....
10	500	G19	....	G16	....	G15	....
15	1500	G20	....	G17	....	G16	....
15	750	G20	....	G17	....	G16	....
15	500	G20	....	G17	....	G16	....

CR9158 Cage Type Resistors with Enameled Resistor Units



Arranged for wall mounting. The perforated enclosing case protects the units and at the same time affords ample ventilation. The units can be connected on series or in parallel as desired and are in most general use on switchboards and in railway signal work.

In ordering specify CR9158 and give the number of resistor unit desired. The desired resistance of each unit should also be given. The resistance and current values as given for the 80-watt enclosed rated units apply to the form OE units used in these resistors.

Continuous Watt Capacity	No. of Form QE Size B Units	Approx. Ship. Wt. Lbs.	Price Each
80	1	3	\$1.65
160	2	5	3.40
240	3	7	4.75
320	4	9	6.30

CR7051-K1 Automatic Starting Compensators

For Squirrel-cage Induction Motors

Definite-time Acceleration—Overload Protection
220, 440 and 550 Volts

3-phase, 60 Cycles

MOTOR RATING H.P.	RATING Volts	Size No.	CATALOGUE NUMBERS		*Price Each
			CR705-K1	TC-221 Relay	
30	220	2	2829551G2	2019555G6	\$345.00
40	220	2	2829551G3	2019555G7	345.00
50	220	2	2829551G4	2019555G8	345.00
60	220	3	2829035G2	2019555G9	475.00
60	440	2	2829551G5	2019555G6	360.00
60	550	2	2829551G8	2019555G5	360.00
75	220	3	2829035G3	2019555G10	485.00
75	440	2	2829551G6	2019555G7	360.00
75	550	2	2829551G9	2019555G6	360.00
100	220	3	2829035G4	2019555G11	505.00
100	440	2	2829551G7	2019555G8	370.00
100	550	2	2829551G10	2019555G7	370.00
125	440	3	2829035G5	2019555G9	505.00
125	550	2	2829551G11	2019555G8	390.00
150	440	3	2829035G6	2019555G10	520.00
150	550	2	2829551G12	2019555G9	400.00
200	440	3	2829035G7	2019555G11	530.00
200	550	3	2829035G8	2019555G10	530.00
250	550	3	2829035G9	2019555G11	540.00

3-phase, 50 Cycles

30	220	2	2829551G13	2019555G6	\$345.00
40	220	2	2829551G14	2019555G7	345.00
50	220	2	2829551G15	2019555G8	345.00
60	220	3	2829035G10	2019555G9	475.00
60	440	2	2829551G16	2019555G6	360.00
60	550	2	2829551G19	2019555G5	360.00
75	220	3	2829035G11	2019555G10	485.00
75	440	2	2829551G17	2019555G7	360.00
75	550	2	2829551G20	2019555G6	360.00
100	220	3	2829035G12	2019555G11	505.00
100	440	2	2829551G18	2019555G8	370.00
100	550	2	2829551G21	2019555G7	370.00
125	440	3	2829035G13	2019555G9	505.00
125	550	2	2829551G22	2019555G8	390.00
150	440	3	2829035G14	2019555G10	520.00
150	550	3	2829035G16	2019555G9	520.00
200	440	3	2829035G15	2019555G11	530.00
200	550	3	2829035G17	2019555G10	530.00
250	550	3	2829035G18	2019555G11	540.00

3-phase, 25 Cycles

20	220	2	2829551G23	2019555G5	\$340.00
20	440	2	2829551G29	2019555G2	340.00
20	550	2	2829551G38	2019555G1	340.00
25	220	2	2829551G24	2019555G5	340.00
25	440	2	2829551G30	2019555G2	340.00
25	550	2	2829551G39	2019555G2	340.00
30	220	2	2829551G25	2019555G6	345.00
30	440	2	2829551G31	2019555G3	345.00
30	550	2	2829551G40	2019555G2	345.00
40	220	2	2829551G26	2019555G7	345.00
40	440	2	2829551G32	2019555G4	345.00
40	550	2	2829551G41	2019555G3	345.00
50	220	2	2829551G27	2019555G8	345.00
50	440	2	2829551G33	2019555G6	345.00
50	550	2	2829551G42	2019555G5	345.00
60	220	2	2829551G28	2019555G9	370.00
60	440	2	2829551G34	2019555G6	360.00
60	550	2	2829551G43	2019555G5	360.00
75	220	3	2829035G19	2019555G10	485.00
75	440	2	2829551G35	2019555G7	360.00
75	550	2	2829551G44	2019555G6	360.00
100	220	3	2829035G20	2019555G11	505.00
100	440	2	2829551G36	2019555G8	370.00
100	550	2	2829551G45	2019555G7	370.00
125	440	2	2829551G37	2019555G9	390.00
125	550	3	2829035G23	2019555G8	505.00
150	440	3	2829035G21	2019555G10	520.00
150	550	3	2829035G24	2019555G9	520.00
200	440	3	2829035G22	2019555G11	530.00
200	550	3	2829035G25	2019555G10	530.00

*Price is for compensator complete with temperature overload relay.

CR7051-K1 Automatic Starting Compensators

For Squirrel-cage Induction Motors
Definite-time Acceleration—Overload Protection
220, 440 and 550 Volts

2-phase, 3-wire, 60 Cycles

MOTOR RATING H.P.	VOLTS	SIZE No.	CATALOGUE NUMBERS		*Price Each
			CR7051-K1	TC-221 Relay	
30	220	2	2829136G2	2019555G6	\$345.00
40	220	2	2829136G3	2019555G6	345.00
50	220	3	2829137G2	2019555G8	475.00
60	220	3	2829137G3	2019555G9	475.00
60	440	2	2829136G4	2019555G5	360.00
60	550	2	2829136G6	2019555G4	360.00
75	220	3	2829137G4	2019555G9	485.00
75	440	2	2829136G5	2019555G6	360.00
75	550	2	2829136G7	2019555G5	360.00
100	440	3	2829137G5	2019555G8	485.00
100	550	2	2829136G8	2019555G7	370.00
125	440	3	2829137G6	2019555G9	505.00
125	550	3	2829137G8	2019555G8	505.00
150	440	3	2829137G7	2019555G9	520.00
150	550	3	2829137G9	2019555G9	520.00
200	550	3	2829137G10	2019555G10	530.00

2-phase, 3-wire, 25 Cycles

20	220	2	2829136G9	2019555G4	\$340.00
20	440	2	2829136G14	2019555G1	340.00
25	220	2	2829136G10	2019555G5	340.00
25	440	2	2829136G15	2019555G2	340.00
30	220	2	2829136G11	2019555G6	345.00
30	440	2	2829136G16	2019555G3	345.00
40	220	2	2829136G12	2019555G7	345.00
40	440	2	2829136G17	2019555G4	345.00
50	220	2	2829136G13	2019555G8	345.00
50	440	2	2829136G18	2019555G5	345.00
60	220	3	2829137G11	2019555G9	475.00
60	440	2	2829136G19	2019555G5	360.00
75	220	3	2829137G12	2019555G9	485.00
75	440	2	2829136G20	2019555G6	360.00
100	440	2	2829136G21	2019555G8	370.00
125	440	3	2829137G14	2019555G9	505.00

2-phase, 4-wire 60 Cycles

30	220	2	2829138G2	2019555G6	\$345.00
40	220	2	2829138G3	2019555G6	345.00
50	220	2	2829138G4	2019555G8	345.00
60	220	2	2829138G5	2019555G9	360.00
60	440	2	2829138G6	2019555G5	360.00
60	550	2	2829138G10	2019555G4	360.00
75	220	3	2829139G2	2019555G9	485.00
75	440	2	2829138G7	2019555G6	360.00
75	550	2	2829138G11	2019555G5	360.00
100	220	3	2829139G3	2019555G11	505.00
100	440	2	2829138G8	2019555G8	370.00
100	550	2	2829138G12	2019555G7	370.00
125	220	3	2829139G4	2019555G12	505.00
125	440	2	2829138G9	2019555G9	390.00
125	550	2	2829138G13	2019555G8	390.00
150	440	3	2829139G5	2019555G9	520.00
150	550	2	2829138G14	2019555G9	400.00
200	440	3	2829139G6	2019555G11	530.00
200	550	3	2829139G8	2019555G10	530.00
250	440	3	2829139G7	2019555G12	540.00
250	550	3	2829139G9	2019555G11	540.00

2-phase, 4-wire, 25 Cycles

20	220	2	2829138G15	2019555G4	\$340.00
20	440	2	2829138G21	2019555G1	340.00
25	220	2	2829138G16	2019555G5	340.00
25	440	2	2829138G22	2019555G2	340.00
30	220	2	2829138G17	2019555G6	345.00
30	440	2	2829138G23	2019555G3	345.00
40	220	2	2829138G18	2019555G7	345.00
40	440	2	2829138G24	2019555G4	345.00
50	220	2	2829138G19	2019555G8	345.00
50	440	2	2829138G25	2019555G5	345.00
60	220	2	2829138G20	2019555G9	360.00
60	440	2	2829138G26	2019555G5	360.00
75	220	3	2829139G11	2019555G9	485.00
75	440	2	2829138G27	2019555G6	370.00
100	220	3	2829138G12	2019555G11	505.00
100	440	2	2829138G28	2019555G8	370.00

*Price is for compensator complete with temperature overload relay.

CR7051-L1 Automatic Starting Compensators

For Squirrel-cage Induction Motors
Definite-time Acceleration—Overload Protection
2200 Volts

3-phase, 60 Cycles

Cat. No.	MOTOR RATING H.P.	SIZE No.	*Price Each	Cat. No.	MOTOR RATING H.P.	SIZE No.	*Price Each
2888164G3	25	1	545.00	2888164G12	200	1	600.00
2888164G4	30	1	550.00	2888164G13	250	1	620.00
2888164G5	40	1	550.00	2888165G12	300	2	1090.00
2888164G6	50	1	570.00	2888165G3	350	2	1090.00
2888164G7	60	1	570.00	2888165G4	400	2	1100.00
2888164G8	75	1	570.00	2888165G5	450	2	1130.00
2888164G9	100	1	575.00	2888165G6	500	2	1130.00
2888164G10	125	1	600.00				

3-phase, 50 Cycles

2888164G14	20	1	\$545.00	2888164G22	125	1	\$600.00
2888164G15	25	1	545.00	2888164G23	150	1	600.00
2888164G16	30	1	550.00	2888164G24	200	1	600.00
2888164G17	40	1	550.00	2888164G25	250	1	620.00
2888164G18	50	1	570.00	2888165G7	300	2	1055.00
2888164G19	60	1	570.00	2888165G8	350	2	1100.00
2888164G20	75	1	570.00	2888165G9	400	2	1100.00
2888164G21	100	1	575.00				

3-phase, 25 Cycles

2888164G26	20	1	\$645.00	2888164G34	125	1	\$825.00
2888164G27	25	1	650.00	2888164G35	150	1	835.00
2888164G28	30	1	655.00	2888164G36	200	1	845.00
2888164G29	40	1	660.00	2888164G37	250	1	885.00
2888164G30	50	1	660.00	2888165G12	300	1	1100.00
2888164G31	60	1	685.00	2888165G13	350	2	1200.00
2888164G32	75	1	690.00	2888165G14	400	2	1200.00
2888164G33	100	1	820.00				

2-phase, 4-wire, 60 Cycles

2888163G2	20	1	\$545.00	2888163G8	75	1	\$570.00
2888163G3	25	1	545.00	2888163G9	100	1	575.00
2888163G4	30	1	550.00	2888163G10	125	1	600.00
2888163G5	40	1	550.00	2888163G11	150	1	600.00
2888163G6	50	1	570.00	2888163G12	200	1	600.00
2888163G7	60	1	570.00	2888163G13	250	1	620.00

*Price includes temperature overload relay which is included in Cat. No. of CR7051-L1 compensator. Price also includes potential transformer but this must be ordered as a separate item.

**Accessories
For Hand Control**

A CR2940-BS-79-J Start and Stop push-button station, which provides under-voltage protection, may be used with CR7051-J1 compensators and CR2940-BS-212-A Start and Stop push-button station with all other forms of CR7051 compensators.

A single-pole knife or snap switch, which provides under-voltage release, can be used in the pilot circuit to start and stop the motor.

For Automatic Control (Under-voltage Release)

To maintain a water level in an open tank between definite limits, use a CR2930 or CR2931 float switch.

To maintain a definite pressure in a closed tank, use a CR2922 pressure governor or a CR2925 or CR2927 pressure switch.

Ordering Directions

For CR7051-J1 Compensators

1. Order the compensator by CR number and Cat. No. and specify the complete name plate rating of the motor.
2. Order a CR2824-TC-121-A temperature overload relay by Cat. No. 1746862 and group number from table for horsepower, speed and voltage of motor.
3. Order a push-button station or other accessory by its complete description.
4. Order an ammeter attachment by Cat. No.
5. Order pipe supports by Cat. No.

For CR7051-K1 Compensators

1. Order CR7051-K1 compensator by Cat. No.
2. Order a TC-221 temperature overload relay by Cat. No.
3. Order a push-button station or other desired accessory by its complete description.

For CR7051-L1 Compensators

1. Order CR7051-L1 compensator by Cat. No.
2. Order one Type H, 1½-kv-a., control circuit transformer.
3. Order a push-button station or other desired accessory by its complete description.

CR8000 and CR8001 Plate Type D. C. Field Rheostats

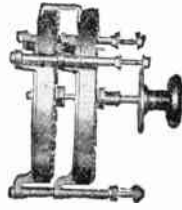
CR8000 and CR8001 Plate Type D. C. Field Rheostats

10, 12 and 15-inch Plates

10, 12 and 15-inch Plates



CR8000 Front of Panel Mounting



CR8001 Back of Panel Mounting

125 Volts

Continued
550 Volts

Ohms	AMPERE CAPACITY		No. of Plates in multiple	Diam. in. of Plates	CR8000 FOR FRONT OF PANEL MOUNTING		CR8001 FOR BACK OF PANEL MOUNTING	
	First Step	Last Step			Cat. No.	*Price Each	Cat. No.	*Price Each
353	1 5	0 71	1	10	108484	\$8	108485	\$10
300	0 5	0 25	1	10	43576	8	43577	10
286	2	1	1	10	108486	8	108487	10
240	0 63	0 32	1	10	43578	8	43579	10
210	2 8	1	1	10	108488	8	108489	10
200	0 75	0 38	1	10	43580	8	43581	10
175	3	1	1	10	108490	8	108491	10
150	1	0 5	1	10	43582	8	43583	10
146	4 5	1	1	12	108492	9	108493	11
120	1 25	0 63	1	10	43584	8	43585	10
100	1 5	0 75	1	10	43586	8	43587	10
100	5 5	1 7	1	12	108494	9	108495	11
88	6	2	2	12	108496	17	108497	19
75	2	1	1	10	43588	8	43589	10
70	9	1 4	2	12	108498	17	108499	19
60	2 5	1 25	1	10	43590	8	43591	10
55	10	2	2	12	108500	17	108501	19
50	3	1 5	1	10	43592	8	43593	10
45	14	2 4	2	15	108502	24	108503	26
42	16 5	3	3	15	108504	35	108505	37
37 5	4	2	1	10	43594	8	43595	10
30	5	2 5	1	12	43596	9	43597	11
30	21	3 6	3	15	108506	35	108507	37
25	6	3	1	12	43598	9	43599	11
22 5	28	4 8	4	15	108508	48	108509	50
22	12	4	2	12	61794	17	61795	19
18 8	8	4	1	12	43600	9	43601	11
15	10	5	1	15	43602	13	43603	15
15	14	6	2	12	61718	17	61719	19
15	18	6	2	15	61720	24	61721	26
12 5	12 5	6 3	2	12	64636	17	64637	19
12	25	7 5	3	15	61722	35	61723	37
9 4	16	8	2	12	43606	17	43607	19
7 5	20	10	2	15	43608	24	43609	26
6 3	25	12 5	3	15	64638	35	64639	37
6	30	12	3	15	61724	35	61725	37
5	30	15	3	15	43612	35	43613	37
3 75	40	20	4	15	43614	48	43615	50

250 Volts

Ohms	AMPERE CAPACITY		No. of Plates in multiple	Diam. in. of Plates	CR8000 FOR FRONT OF PANEL MOUNTING		CR8001 FOR BACK OF PANEL MOUNTING	
	First Step	Last Step			Cat. No.	*Price Each	Cat. No.	*Price Each
2000	0 6	0 3	1	15	49144	\$13 00	49145	\$15 00
1600	0 7	0 35	1	15	49146	13 00	49147	15 00
1300	0 76	0 38	1	15	49148	13 00	49149	15 00
1000	0 84	0 40	1	12	49150	9 00	49151	11 00
800	0 9	0 45	1	12	49152	9 00	49153	11 00
600	1	0 5	1	10	43652	8 00	43653	10 00
480	1 25	0 63	1	10	43654	8 00	43655	10 00
400	1 5	0 75	1	12	43656	9 00	43657	11 00
400	2	0 8	1	15	61792	13 00	61793	15 00
300	2	1	1	12	43658	9 00	43659	11 00
300	3	1 2	2	12	61786	17 00	61787	19 00
300	4	1 2	2	15	61788	24 00	61789	26 00
250	2 5	1 25	1	15	43660	13 00	43661	15 00
225	6 5	1 8	4	15	61784	48 00	61785	50 00
200	3	1 5	1	15	43662	13 00	43663	15 00
160	6	2 2	3	15	61782	35 00	61783	37 00
150	4	2	2	12	43664	17 00	43665	19 00
150	5	2	2	15	61790	24 00	61791	26 00
125	5	2 5	2	15	43666	24 00	43667	26 00
100	6	3	2	15	43668	24 00	43669	26 00
82	7 5	3 8	3	15	43670	35 00	43671	37 00
60	10	5	4	15	43672	48 00	43673	50 00

6-inch Plates

Ohms	AMPERE CAPACITY		No. of Plates in multiple	Diam. in. of Plates	CR8000 FOR FRONT OF PANEL MOUNTING		CR8001 FOR BACK OF PANEL MOUNTING	
	First Step	Last Step			Cat. No.	*Price Each	Cat. No.	*Price Each
400	1 25	0 25	1	6	1916254	\$5 00	1916255	\$7 00
352	1 3	0 27	1	6	1916252	5 00	1916253	7 00
300	1 4	0 33	1	6	1916250	5 00	1916251	7 00
250	1 5	0 38	1	6	1916248	5 00	1916249	7 00
200	1 6	0 45	1	6	1916246	5 00	1916247	7 00
150	1 7	0 56	1	6	1916244	5 00	1916245	7 00
103	1 93	0 75	1	6	1916242	5 00	1916243	7 00
70	2 2	1 0	1	6	1916240	5 00	1916241	7 00
60	2 4	1 1	1	6	1916238	5 00	1916239	7 00
40	2 7	1 45	1	6	1916236	5 00	1916237	7 00
30	3 0	1 75	1	6	1916234	5 00	1916235	7 00
20	3 4	2 2	1	6	1916232	5 00	1916233	7 00
15	4 0	2 7	1	6	1916230	5 00	1916231	7 00
10	4 5	3 3	1	6	1916228	5 00	1916229	7 00
5	6 5	5 2	1	6	1916226	5 00	1916227	7 00
3	8 0	6 7	1	6	1916224	5 00	1916225	7 00
2	9 0	8 0	1	6	1916222	5 00	1916223	7 00
1	10 0	10 0	1	6	1916220	5 00	1916221	7 00

250 Volts

Ohms	AMPERE CAPACITY		No. of Plates in multiple	Diam. in. of Plates	CR8000 FOR FRONT OF PANEL MOUNTING		CR8001 FOR BACK OF PANEL MOUNTING	
	First Step	Last Step			Cat. No.	*Price Each	Cat. No.	*Price Each
600	0 8	0 28	1	6	1916218	\$5 00	1916219	\$7 00
480	0 85	0 31	1	6	1916216	5 00	1916217	7 00
400	0 90	0 37	1	6	1916214	5 00	1916215	7 00
300	1 0	0 45	1	6	1914895	5 00	1916213	7 00
250	1 1	0 50	1	6	1916210	5 00	1916211	7 00
200	1 2	0 60	1	6	1916208	5 00	1916209	7 00
150	1 3	0 75	1	6	1916206	5 00	1916207	7 00
125	1 4	0 83	1	6	1916204	5 00	1916205	7 00
100	1 6	0 98	1	6	1916202	5 00	1916203	7 00
75	1 7	1 13	1	6	1916200	5 00	1916201	7 00
60	1 9	1 3	1	6	1916198	5 00	1916199	7 00
50	2 0	1 43	1	6	1916196	5 00	1916197	7 00
40	2 3	1 58	1	6	1916194	5 00	1916195	7 00
30	2 6	2 0	1	6	1916192	5 00	1916193	7 00
20	3 0	2 42	1	6	1916190	5 00	1916191	7 00

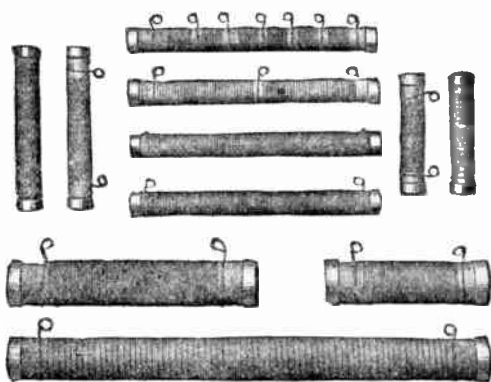
550 Volts

Ohms	AMPERE CAPACITY		No. of Plates in multiple	Diam. in. of Plates	CR8000 FOR FRONT OF PANEL MOUNTING		CR8001 FOR BACK OF PANEL MOUNTING	
	First Step	Last Step			Cat. No.	*Price Each	Cat. No.	*Price Each
3500	0 32	0 11	1	6	1915698	\$5 00	1915699	\$7 00
3000	0 35	0 12	1	6	1915696	5 00	1915697	7 00
2500	0 38	0 14	1	6	1915694	5 00	1915695	7 00
2000	0 40	0 165	1	6	1915692	5 00	1915693	7 00
1500	0 45	0 20	1	6	1915690	5 00	1915691	7 00
1000	0 50	0 26	1	6	1915688	5 00	1915689	7 00
800	0 55	0 31	1	6	1915686	5 00	1915687	7 00
600	0 65	0 38	1	6	1915684	5 00	1915685	7 00
500	0 70	0 43	1	6	1915682	5 00	1915683	7 00
400	0 75	0 48	1	6	1915680	5 00	1915681	7 00
300	0 85	0 58	1	6	1915678	5 00	1915679	7 00
250	0 90	0 64	1	6	1915676	5 00	1915677	7 00
200	1 0	0 73	1	6	1915674	5 00	1915675	7 00
150	1 1	0 85	1	6	1915672	5 00	1915673	7 00

*Price is for rheostat with black polished handwheel.

*Price is for rheostat with black polished handwheel.

CR9000 Resistor Units



CR9000 resistor units consist of resistance wire wound on asbestos tubes. The wire used has a low temperature coefficient so that the resistance remains constant as the temperature increases. After being wound, the tube is treated with either a special blue compound or with a moistureproof varnish depending upon the form of tube. This compound or varnish forms a coating on the inside and outside of the unit, which reinforces the tube and makes a strong, solid construction. A porcelain or metal bushing (depending upon the form of unit) is then cemented into each end of the tube, after which the entire unit is thoroughly baked.

Form P and PM units are treated with the special blue compound. The form P unit is fitted with a porcelain bushing at each end for purpose of mounting so that the resistance wire may be insulated from the support. The Form PM unit is fitted with a metal bushing at each end to which the resistance wire is connected, each bushing forming a terminal for the winding. Units having a resistance of 500 ohms or more require use of fine resistance wire for which it is necessary to afford special protection. Form P or Form PM units can only be furnished with resistances of less than 500 ohms. When units for a resistance of 500 ohms or more are required, Type CR9006 Resistor units should be ordered.

Ratings

Form P units are made in six standard sizes, and Form PM is made in three standard sizes as listed. The continuous capacities given are correct for units assembled in frames that afford good ventilation. As resistor units are used for many different purposes, it is difficult to assign definite watt ratings to them, and the ratings listed should be used only when two or more units are assembled in a frame that affords free ventilation.

Taps

All listed forms of CR9000 resistor units can be furnished with taps so that several different resistance steps can be obtained from a single tube.

Ordering Directions

Form PM units are made in the A, B and C sizes of the Form P units, and have the same ratings. The General Electric Company is not prepared to furnish PM units in the D, E and F sizes of Form P units.

The fuse clips, screws, nuts and washers necessary for supporting the PM units are covered by Cat. No. 58728, for the A, B and C sizes only. Therefore, in ordering, it is necessary to give only the rating of the unit and the Cat. No. For example: 25-A, CR9000, Form PM unit and two Cat. No. 58728 holders.

Orders for units with extra taps should specify the additional taps required, for example, CR9000-25C-1/2 indicates a 25-ohm C size unit with one extra tap located in the center of the unit, and CR-9000-25C-3/4 indicates a 25-ohm C size unit with 5 extra taps located so as to provide 6 equal divisions of resistance.

CR9000 Resistor Units

Continued

Size A

5 1/2 Inches Long, 1 1/8 Inches Diameter

Price, \$.50 Each

Form P or PM

Capacity, 36 Watts

Symbol	Ohms	Amp Cont.	Symbol	Ohms	Amp. Cont.
0.25A	0.25	12.0	10A	10	1.9
0.3A	0.30	11.0	15A	15	1.5
0.4A	0.40	9.5	20A	20	1.3
0.5A	0.50	8.5	25A	25	1.2
0.75A	0.75	6.9	35A	35	1.0
1A	1	6.0	45A	45	0.89
1.25A	1.25	5.4	50A	50	0.85
1.5A	1.5	4.9	60A	60	0.77
2A	2	4.2	75A	75	0.69
2.5A	2.5	3.8	100A	100	0.60
3A	3	3.5	125A	125	0.54
4A	4	3.0	150A	150	0.49
5A	5	2.7	200A	200	0.42
7.5A	7.5	2.2	300A	300	0.35

Size B

7 1/2 Inches Long, 1 1/8 Inches Diameter

Price, \$.55 Each

Form P or PM

Capacity, 50 Watts

Symbol	Ohms	Amp Cont.	Symbol	Ohms	Amp. Cont.
0.1B	0.1	22.0	25B	25	1.4
0.2B	0.20	16.0	30B	30	1.3
0.25B	0.25	18.0	35B	35	1.2
0.3B	0.30	13.0	50B	50	1.0
0.4B	0.40	11.0	60B	60	0.91
0.5B	0.50	10.0	75B	75	0.82
0.6B	0.60	9.1	100B	100	0.71
0.75B	0.75	8.2	125B	125	0.63
1B	1	7.1	150B	150	0.58
1.5B	1.5	5.8	175B	175	0.53
2B	2	5.0	200B	200	0.50
2.5B	2.5	4.5	225B	225	0.47
3B	3	4.1	250B	250	0.45
3.5B	3.5	3.8	275B	275	0.43
4B	4	3.5	300B	300	0.41
5B	5	3.2	325B	325	0.39
6B	6	2.9	350B	350	0.38
7.5B	7.5	2.6	375B	375	0.36
10B	10	2.2	400B	400	0.35
15B	15	1.8	450B	450	0.33
20B	20	1.6	.....	...	....

Size C

11 1/2 Inches Long 1 1/2 Inches Diameter

Price, \$.60 Each

Form P or PM

Capacity, 80 Watts

Symbol	Ohms	Amp Cont.	Symbol	Ohms	Amp. Cont.
0.1C	0.10	28.0	25C	25	1.8
0.2C	0.20	20.0	30C	30	1.6
0.25C	0.25	18.0	35C	35	1.5
0.3C	0.30	16.0	50C	50	1.3
0.4C	0.40	14.0	60C	60	1.1
0.5C	0.50	13.0	75C	75	1.0
0.6C	0.60	12.0	100C	100	0.89
0.75C	0.75	10.0	125C	125	0.80
1C	1	8.9	150C	150	0.73
1.5C	1.5	7.3	175C	175	0.67
2C	2	6.3	200C	200	0.63
2.5C	2.5	5.6	225C	225	0.59
3C	3	5.1	250C	250	0.56
3.5C	3.5	4.8	275C	275	0.54
4C	4	4.5	300C	300	0.51
5C	5	4.0	325C	325	0.49
6C	6	3.6	350C	350	0.48
7.5C	7.5	3.3	375C	375	0.46
10C	10	2.8	400C	400	0.45
15C	15	2.3	450C	450	0.42
20C	20	2.0	.....	...	....

CR9006 Enameled Resistor Units

Form QL



The QL unit has stranded copper leads for making external connections.

Form QD



Has stranded copper leads and porcelain bushings to facilitate mounting.

Form QC



Designed for fuse clip mounting. Leads are connected to the metal ferrules.

Form QS



Provided with a screw base for mounting in lamp sockets. The 3/4-inch size has a candleabra base and the 1 1/8-inch size has a standard Edison base.

Form QF



Form QF is provided with metal feet to which the leads are connected and through which the external connections are made.

Description

CR9006 enameled resistor units employ a strong, high-heat resisting silicate compound body developed to withstand sudden and extreme temperature changes without weakening or in any way being injured.

The resistance wire has a low temperature coefficient so that the resistance remains nearly constant as the temperature increases.

The wire, after being wound on the body, is embedded in a blue vitreous enamel which is fused at a high temperature to a uniform, glassy structure.

The enamel is moistureproof, extremely durable, and forms a mechanically strong and airtight casing for the resistor windings.

Ordering Directions

When ordering give the symbol, including form and size, and ohms resistance of the unit.

In case fuse clips are desired for mounting the 1 3/4 units, the catalogue number or punching number of the clip should also be given. For example:

Ten CR9006 QCK1924014 125-ohm enameled resistor units, each complete with 2 Cat. No. 58728 fuse clips.

Standard resistance values should be specified when possible. However, intermediate values can be furnished at the same price. Units with resistance values lower or higher than those shown in the table of prices can be furnished; prices will be quoted on application.

CR9006 Enameled Resistor Units

Continued

*22-watt Units

Form	Size	Price Each	Form	Size	Price Each	Form	Size	Price Each
QL	K1924025	\$.40	QF	K2155965	\$.50	QS	K1924034	\$.60

*57-watt Units

Form	Size	Price Each	Form	Size	Price Each	Form	Size	Price Each
QL	K1924029	\$.50	QC	K2155968	\$.60	QF	K1924030	\$.60

*85-watt Units

Form	Size	Price Each	Form	Size	Price Each	Form	Size	Price Each
QL	K1924012	\$.55	QC	K1924014	\$.70	QS	K1924049	\$.75
QD	K1924013	.60	QF	K2155983	.70			

*122-watt Units

Form	Size	Price Each	Form	Size	Price Each	Form	Size	Price Each
QL	K1924015	\$.60	QC	K1924017	\$.75	QS	K1924050	\$.80
QD	K1924016	.65	QF	K1924020	.75			

*180-watt Units

Form	Size	Price Each	Form	Size	Price Each	Form	Size	Price Each
QL	K2155954	\$.75						

*This rating is based on a single unit mounted with free ventilation. The rating is reduced if ventilation is hindered by adjacent units or by enclosure.

Ratings

†Standard Resistance Values in Ohms	MAXIMUM AMPERES				
	22-watt Unit	57-watt Unit	85-watt Unit	122-watt Unit	180-watt Unit
1	4.5	...	...	...	...
3	2.6	4.3	5.1	...	...
5	2.0	3.3	4.0	4.9	6.0
10	1.4	2.3	2.7	3.5	4.3
15	1.1	1.9	2.3	2.8	3.4
20	1.0	1.6	2.0	2.4	3.0
25	0.9	1.5	1.8	2.2	2.7
30	0.8	1.3	1.6	2.0	2.4
40	0.71	1.1	1.4	1.8	2.0
50	0.63	1.05	1.2	1.5	1.9
60	0.58	0.96	1.1	1.4	1.7
75	0.52	0.86	1.0	1.3	1.6
100	0.45	0.74	0.90	1.1	1.3
125	0.40	0.66	0.80	1.0	1.2
150	0.36	0.60	0.73	0.90	1.1
175	0.34	0.56	0.67	0.83	1.0
200	0.31	0.52	0.63	0.77	0.95
250	0.28	0.47	0.56	0.69	0.84
300	0.26	0.43	0.51	0.63	0.72
400	0.22	0.37	0.45	0.55	0.67
500	0.20	0.33	0.40	0.49	0.60
600	0.18	0.30	0.36	0.45	0.55
700	0.17	0.28	0.34	0.41	0.50
800	0.16	0.26	0.32	0.39	0.47
900	...	0.25	0.30	0.37	0.45
1000	...	0.23	0.28	0.35	0.43
1200	...	0.21	0.26	0.32	0.39
1400	...	0.20	0.24	0.29	0.35
1600	...	0.185	0.22	0.27	0.33
1800	...	0.175	0.21	0.26	0.32
2000	...	0.16	0.20	0.24	0.30
2500	...	0.15	0.18	0.22	0.25
3000	...	0.13	0.16	0.20	0.24
4000	...	...	0.14	0.17	0.20
5000	...	...	...	0.15	0.19
6000	...	...	...	...	0.17
8000	...	...	...	...	0.14
10000	...	...	...	...	0.13

†Resistance of standard units varies from 95 to 110 per cent of these values. Prices for units of less resistance variation will be quoted on request.

Intermediate taps, 5 cents extra per tap. Fuse holder for 22-watt Form QC unit punching 418783, 5 cents each; fuse clips Cat. No. 58728 for 85, and 122-watt Form QC units, 10 cents each. Two fuse clips are required for each unit.

Model 1 Weston Portable Voltmeters

For Direct Current



Single and double range instruments are furnished with locking contact and key or will be provided with a reversing switch instead of contact key at an additional cost of \$3.25. Equipped with zero-correcting device.

Metal case, dull black finish, base is of Bakelite.

Single Range

Range in Volts	Number of Scale Divisions	Price Each	Range in Volts	Number of Scale Divisions	Price Each
3	150	\$72.00	250	125	\$81.25
15	150	72.00	300	150	81.25
50	100	72.00	500	100	81.25
75	150	72.00	600	120	81.25
150	150	*68.75	750	150	87.50
150	150	72.00	...	...	.....

*Furnished without contact key.

Double Range

15 } 3 }	150	\$82.00	500 } 250 }	125	\$91.25
150 } 3 }			600 } 150 }		
150 } 15 }	150	82.00	600 } 300 }	150	91.25
150 } 75 }			150			82.00	750 } 150 }	150	97.50
300 } 150 }	150	91.25		...	...		.....

Triple Range

150 } 15 } 3 }	150	\$92.00	750 } 300 }	150	\$107.50		
300 } 150 }		
3 }			...				

Model 1 Weston Portable Ammeters

For Direct Current
Single Range



This instrument is accurate, direct reading, compact and serviceable for rapid work. All instruments are self-contained and are only made regularly with a single range.

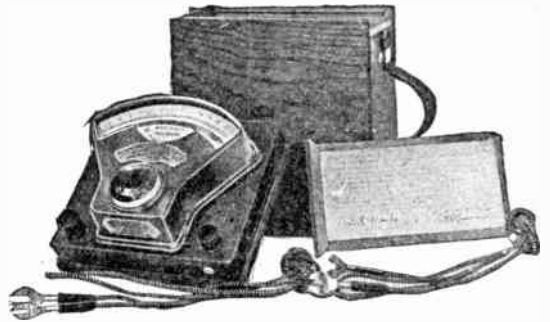
Instruments have zero-correcting devices. Bakelite base and sub-base.

Range in Amperes	Number of Scale Divisions	Price Each	Range in Amperes	Number of Scale Divisions	Price Each
1	100	\$68.75	50	100	\$81.25
1.5	150	68.75	100	100	87.75
2	100	75.00	150	150	93.75
2.5	125	75.00	200	100	100.00
3	150	75.00	250	125	100.00
5	100	81.25	300	150	100.00
10	100	81.25	400	80	112.50
15	150	81.25	500	100	112.50
25	125	81.25	...	...	.....

Model 1 Weston Portable Millivoltmeters

For Direct Current

With Shunts for Ampere Measurements



This millivoltmeter in connection with Weston Patent Alloy Shunts, reads directly in amperes. Shunts of different sizes can be adjusted to the same instrument, and it can, therefore, be used to measure a current of 2000 amperes with the same degree of accuracy as a current of one ampere. The combination of millivoltmeter and shunt is practically compensated for temperature and is correct within 1/4 of 1 per cent. If, at any time, the user of this combination desires to employ additional ranges to those for which the instrument is already adjusted, it is simply necessary to purchase additional shunts of the ranges required, thus saving the expense of an additional instrument. The scales of the instrument can be divided into 100, 120 or 150 divisions. In selecting shunts of different range for use in connection with one instrument, it should be considered that the higher ranges must be even multiples of the lower one in order to suit the same scale on the instrument.

These shunts can be supplied in two or more ranges combined in one case, as indicated in price list below. Price, Model 1 Standard Portable Millivoltmeter, each \$62.50

Shunts for Millivoltmeters

With Single Range

Prices below include adjustment between millivoltmeter and shunts.

Range in Amperes	Price Each	Range in Amperes	Price Each	Range in Amperes	Price Each
1	\$13.75	75	\$34.50	600	\$75.75
3	17.25	100	41.25	750	82.50
5	20.75	150	44.75	800	89.50
10	20.75	200	48.25	1000	110.00
15	20.75	250	51.75	1500	178.75
25	24.25	300	55.00	2000	240.75
30	27.50	400	62.00	...	.....
50	30.75	500	68.75	...	.....

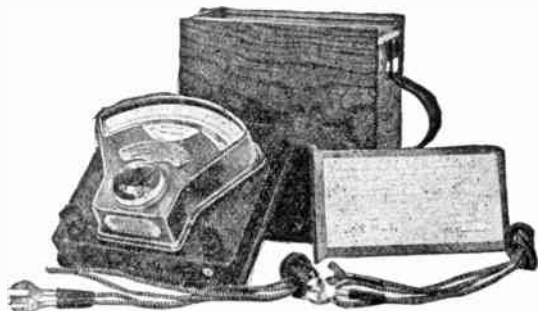
With Two Ranges Combined in One Case

5-1	\$27.50	100-10	\$55.00	400-200	\$89.50
10-1	30.75	150-15	58.50	500-50	86.00
15-1.5	34.50	150-30	62.00	500-100	89.50
15-3	34.50	200-20	65.50	500-200	89.50
30-3	34.50	300-15	72.25	600-60	89.50
40-4	38.00	300-30	75.75	600-300	110.00
50-5	41.25	300-150	82.50	750-300	123.75
75-15	48.25	400-40	82.50	1000-500	192.50

With Three or More Ranges Combined in One Case

15-3-0.75	\$41.25	75-15-1.5	\$58.50	150-75-15-1.5	\$89.50
15-3-1.5	41.25	100-10-1	62.00	150-75-15-1.5-0.75	96.25
30-15-1.5	48.25	100-20-2	62.00	200-20-2	75.75
30-15-3	48.25	100-50-20-2	82.50	200-100-10	82.50
30-15-7.5-1.5	65.50	100-50-20-10-5-1	96.25	300-15-1.5	82.50
50-5-0.5	55.00	150-15-1.5	68.75	300-30-3	82.50
50-10-1	55.00	150-15-1.5-0.15	82.50	300-75-15	89.50
50-20-5-0.5	75.75	150-75-15	75.75	.....	.....

**Model 1 Weston Portable Millivoltmeters
For Direct Current**

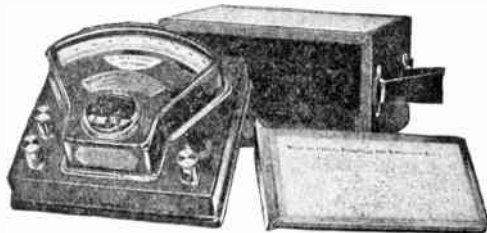


This millivoltmeter may be arranged for use with alloy shunts for current measurements at an additional cost of \$6.25.

Range in Millivolts	Number of Scale Divisions	Price Each	Range in Millivolts	Number of Scale Divisions	Price Each
20	100	\$62.50	**20 } 200 }	100	\$68.75
10-0-10	100	62.50			
*10-0-10	100	68.75	...	...	.....
100-0-100					

*Supplied with contact key by use of which either range may be employed.
** Has three binding posts.

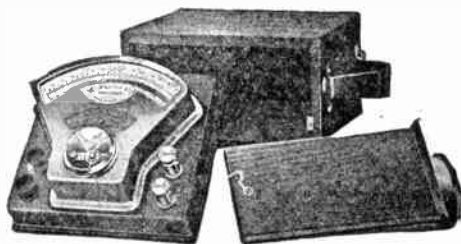
**Model 1 Weston Portable Milliammeters
For Direct Current**



Single Range					
Range in Milliampères	Number of Scale Divisions	Price Each	Range in Milliampères	Number of Scale Divisions	Price Each
1.5	150	\$68.75	75	150	\$62.50
3	150	68.75	150	150	62.50
7.5	150	68.75	300	150	62.50
15	150	62.50	750	150	62.50
30	150	62.50	1000	100	68.75
Double Range					
500 } 50 }	100	\$75.00	*500 } 10 }	100	\$87.00
500 } 10 }			...		

*Supplied with resistance box having two coils. When box is connected in series with binding posts marked 10 lower scale is read in volts. A full scale deflection is secured with 10 or 100 volts according to coil multiplier used.

**Model 1 Weston Portable Voltmeters
For Direct Current**



Model 1 voltmeters of other ranges made on special order.

— RANGE —			Number of Scale Div.	Price Each	— RANGE —			Number of Scale Div.	Price Each
Volts	Amps.	Div.			Volts	Amps.	Div.		
150	1.5	150		\$93.75	150	3	150	\$93.75	

Model 1 Type 2 Weston Portable Direct Reading Ohmmeters



May be operated on ordinary dry cells, thereby dispensing with the necessity of using a troublesome or expensive storage battery as a constant source of e.m.f.

No auxiliary rheostat, voltmeter, or other apparatus is required and as only six dry cells are essential for the highest range instrument (fewer cells being required for the low range instruments) the complete apparatus may be readily carried from place to place as a unit.

If the instrument is connected by its proper binding posts to the battery it then merely becomes necessary to connect the unknown resistance to the two binding posts provided for the purpose; press the contact key and read directly in ohms.

Instruments are made with double and triple ranges, a plug switch serving to make the change from one range to the other.

The instrument is guaranteed to be accurate within 1/4 of one per cent of full scale at any temperature from 10° C (50° F) to 30° C (86° F).

When not indicating, the pointer stands in a free zero position, there being no initial tension on the movable coil springs. Any inaccuracy at zero can therefore be instantly determined and corrected by means of the zero corrector.

Range Ohms	Volts Necessary to Operate	Price Each
0-2.5, 0-25, 25-50	*1.5	\$106.25
0-10, 0-50, 50-100	*1.5	106.25
0-200, 0-1000, 1000-2000	6	112.50
0-300, 0-1500, 1500-3000	9	112.50
0-1000, 0-5000, 5000-10000	24	120.00

*When used for long periods on the low range it is recommended that 2 cells be used in multiple.

Model 280 Weston Garage Testing Instruments



This instrument is compact (pocket size) and has a uniform and legible scale, is accurate and serviceable, damped, quick in action, shielded from the disturbing influence of external magnetic fields, permanent and durable. It is adjusted for ranges of 30 and 3 volts and 100 milli-volts (all self-contained), and is provided with external shunts of 3, 30 and

300 ampere rating for use in making current measurements.
Price, Model 280, Testing Instrument.....each \$41.25
" Carrying Case....." 5.00
" Multiplier for 150-volt Range....." 4.75
" Cadmium Cables.....per pair 5.00

Model 45 Weston Battery Testing Voltmeters

This instrument has been developed for the battery service station which is called upon to repair, charge and test batteries on a large scale. It is substantially constructed to withstand hard usage, the vital parts being contained in a cast-iron case about which is a wooden carrying box.

The range is 0.2-0-3 volts, which is particularly adapted for making voltage and cadmium tests on the individual cells of the battery.



Price, Model 45.....each \$41.25
" Cadmium Test Cables.....per pair 5.00

**Model 45 Weston Portable Voltmeters
For Direct Current**



The movement is completely enclosed in an iron case, securely fastened in a wooden carrying box, which protects it from stray magnetic fields. Has zero correcting device.

Double and triple range voltmeters will be furnished when desired in the combinations listed under Model 1 voltmeter. To determine the price of such instruments add \$7.50 for each additional range to the price listed for the highest range.

Box is provided with a hinged cover, which protects the scale and binding posts.

Range in Volts	Number of Scale Divisions	Price Each	Range in Volts	Number of Scale Divisions	Price Each
2-0-3	160	\$41.25	150	150	\$48.75
3	150	41.25	300	150	53.75
5	100	41.25	600	120	57.75
15	150	41.25	750	150	61.00

**Model 280 Weston Miniature Precision
Portable Instruments
For Direct Current**



These instruments are all the same size and can be carried in an ordinary coat pocket. They are made in a great many varieties of ranges and are admirably adapted to all kinds of commercial and experimental testing that falls within their limits of e.m.f. and current.

Single-range Millivoltmeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
50	50	\$18.75	120	60	\$18.75	300	60	\$18.75
60	60	18.75	130	65	18.75	400	40	18.75
75	75	18.75	150	75	18.75	500	50	18.75
80	40	18.75	200	40	18.75	600	60	18.75
100	50	18.75	250	50	18.75	750	75	18.75

Single-range Voltmeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
1	50	\$18.75	7.5	75	\$18.75	50	50	\$18.75
1.2	60	18.75	8	40	18.75	60	60	18.75
1.5	75	18.75	10	50	18.75	75	75	13.75
2	40	18.75	12	60	18.75	80	40	18.75
2.5	50	18.75	15	75	18.75	100	50	18.75
3	60	18.75	20	40	18.75	120	60	18.75
4	40	18.75	25	50	18.75	130	65	18.75
5	50	18.75	30	60	18.75	150	75	18.75
6	60	18.75	40	40	18.75	...	...	...

Double-range Voltmeters

20-2	40	\$21.75	50-2.5	50	\$21.75	100-10	50	\$21.75
20-8	40	21.75	50-5	50	21.75	150-15	75	21.75
25-2.5	50	21.75	80-8	40	21.75	150-3	75	21.75
30-3	60	21.75	...	...	...	...	...	...

Triple-range Voltmeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
25-10-2.5	50	\$24.75	50-25-10	50	\$24.75
30-3-1.5	30	24.75	80-20-4	40	24.75
30-6-3	60	24.75	100-25-2.5	50	24.75
30-15-3	30	24.75	150-15-1.5	75	24.75
40-20-4	40	24.75	150-15-3	30	24.75
50-5-2.5	50	24.75	150-30-3	30	24.75
50-25-5	50	24.75	...	...	...

Single-range Milliampmeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
50	50	\$18.75	120	60	\$18.75	300	60	\$18.75
60	60	18.75	130	65	18.75	400	40	18.75
75	75	18.75	150	75	18.75	500	50	18.75
80	40	18.75	200	40	18.75	600	60	18.75
100	50	18.75	250	50	18.75	750	75	18.75

Single-range Ammeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
1	50	\$18.75	5	50	\$18.75	20	40	\$18.75
1.2	60	18.75	6	60	18.75	25	50	18.75
1.5	75	18.75	7.5	75	18.75	30	60	18.75
2	40	18.75	8	40	18.75	*50	50	23.75
2.5	50	18.75	10	50	18.75	*75	75	23.75
3	60	18.75	12	60	18.75	*100	50	23.75
4	40	18.75	15	75	18.75	...	...	...

Double-range Ammeters

1-0.1	50	\$21.75	8-2	40	\$21.75	25-2.5	50	\$21.75
2.5-0.25	50	21.75	10-1	50	21.75	25-5	50	21.75
5-0.1	50	21.75	15-1.5	75	21.75	30-3	60	21.75
5-0.5	50	21.75	20-2	40	21.75	...	...	...

Triple-range Ammeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
5-2.5-0.25	50	\$24.75	20-8-2	40	\$24.75
10-1-0.1	50	24.75	25-2.5-0.5	50	24.75
10-1-0.5	50	24.75	25-5-2.5	50	24.75
10-5-0.5	50	24.75	25-10-2.5	50	24.75
10-25-1	50	24.75	25-10-5	50	24.75
15-3-0.15	30	24.75	30-3-1.5	30	24.75
15-3-1.5	30	24.75	30-6-3	60	24.75
20-4-2	40	24.75	30-15-3	30	24.75

*Provided with external shunt.

**Model 45 Weston Portable Ammeters
For Direct Current**

The movement is completely enclosed in an iron case, securely fastened in a wooden carrying box, which protects it from stray magnetic fields. This box is provided with a hinged cover.

Instrument has zero correcting device.

Double and triple range voltmeters will be furnished when desired in the combinations listed under Model 1 voltmeter. Ammeters, having a maximum range of 25 amperes or less, are provided with self-contained shunts. Higher range adjusted to external type shunts.

Range in Amps.	Number of Scale Div.	Price Each	Range in Amps.	Number of Scale Div.	Price Each	Range in Amps.	Number of Scale Div.	Price Each
1.5	150	\$41.25	100	100	\$43.75	500	100	\$48.75
5	100	41.25	150	150	44.50	750	150	52.00
15	150	41.25	200	100	46.25	...	...	...
50	100	42.00	300	150	46.75	...	...	...

**Model 45 Weston Portable Milliammeters
For Direct Current**



The movement is completely enclosed in an iron case, securely fastened in a wooden carrying box. Equipped with knife edge pointer and mirror scale.

This instrument is of the pivoted movable coil permanent magnet type, and is designed to meet the demand for a medium-priced instrument of sufficient accuracy (one half of one per cent) for general testing in plants.

Range in Milliampers	No. of Scale Div.	Price Each	Range in Milliampers	No. of Scale Div.	Price Each
1.5	150	\$49.50	100	100	\$41.25
3	150	49.50	150	150	41.25
7.5	150	49.50	300	150	41.25
15	150	41.25	750	150	41.25
30	150	41.25	1500	150	41.25

Model 280 Weston Miniature Precision Portable Instruments

For Direct Current

These instruments are all the same size and can be carried in an ordinary coat pocket. They are made in a great variety of ranges and are admirably adapted to all kinds of commercial and experimental testing that falls within their limits of e.m.f. and current.

Instrument provided with zero-correcting device. Case is dust-proof and made of sheet steel which shields magnetic system from any action of external fields.



Single Range Voltammeters

RANGE		Number of Scale Div.	Price Each	RANGE		Number of Scale Div.	Price Each
Volts	Amperes			Volts	Amperes		
1.5	3	30	\$28.50	20	4	40	\$28.50
3	1.5	30	28.50	20	20	40	28.50
3	3	60	28.50	25	1	50	28.50
3	12	60	28.50	25	5	50	28.50
3	15	30	28.50	25	25	50	28.50
3	30	60	28.50	30	1.5	30	28.50
4	8	40	28.50	30	3	60	28.50
5	1	50	28.50	30	6	60	28.50
5	5	50	28.50	30	30	60	28.50
5	10	50	28.50	40	2	40	28.50
6	6	60	28.50	40	8	40	28.50
6	12	60	28.50	40	20	40	28.50
6	30	60	28.50	50	1	50	28.50
7.5	1.5	75	28.50	50	5	50	28.50
7.5	7.5	75	28.50	50	10	50	28.50
7.5	15	75	28.50	50	25	50	28.50
8	2	40	28.50	60	3	60	28.50
8	4	40	28.50	60	15	30	28.50
8	8	40	28.50	60	30	60	28.50
8	20	40	28.50	75	15	75	28.50
10	1	50	28.50	80	20	40	28.50
10	5	50	28.50	100	1	50	28.50
10	10	50	28.50	100	10	50	28.50
10	25	50	28.50	100	25	50	28.50
12	30	60	28.50	120	3	60	28.50
15	1.5	75	28.50	120	12	60	28.50
15	3	30	28.50	120	30	60	28.50
15	7.5	75	28.50	150	1.5	75	28.50
15	15	75	28.50	150	3	30	28.50
15	30	30	28.50	150	15	75	28.50
20	2	40	28.50	150	30	30	28.50

Double Range Voltammeters

20-2	8	-2	40	\$34.50	50-5	1-0.1	50	\$34.50
20-8	20	-2	40	34.50	50-5	5-0.1	50	34.50
25-2.5	2.5	0-0.25	50	34.50	50-5	10-1	50	34.50
25-2.5	5	-0.5	50	34.50	50-5	25-2.5	50	34.50
25-2.5	25	-2.5	50	34.50	50-5	25-5	50	34.50
*30-3	6	-0.3	60	34.50	80-8	20-2	40	34.50
30-3	15	-1.5	30	34.50	100-10	25-2.5	50	34.50
30-3	30	-3	60	34.50	150-15	15-1.5	75	34.50
50-2.5	5	-0.5	50	34.50	150-15	30-3	30	34.50

Triple Range Voltammeters

25-10-2.5	10-2.5-1	50	\$40.50	50-25-10	10-2.5-1	50	\$40.50
30-3-1.5	30-3-1.5	30	40.50	50-25-10	25-10-5	50	40.50
30-6-3	30-6-3	60	40.50	80-20-4	20-3-2	40	40.50
30-15-3	15-3-0.15	30	40.50	100-25-2.5	25-10-2.5	50	40.50
30-15-3	30-15-3	30	40.50	150-15-1.5	15-1.5-0.15	75	40.50
40-20-4	20-4-2	40	40.50	150-15-1.5	30-3-1.5	30	40.50
50-5-2.5	5-2.5-0.25	50	40.50	150-15-1.5	30-15-1.5	30	40.50
50-5-2.5	10-1-0.1	50	40.50	*150-15-3	15-1.5-0.15	30	40.50
50-5-2.5	25-5-2.5	50	40.50	150-15-3	15-3-1.5	30	40.50
50-5-2.5	10-5-0.5	50	40.50	150-15-3	30-3-1.5	30	40.50
50-25-2.5	25-2.5-0.5	50	40.50	150-15-3	30-15-3	30	40.50
50-25-5	25-5-2.5	50	40.50	150-30-3	30-0.6-0.06	30	40.50
50-25-10	10-1-0.5	50	40.50	.....	.....	.....	.....

*This instrument is particularly adapted for railway signal testing.

Model 341 Weston Portable Voltmeters For Alternating and Direct Current

These instruments are electro-dynamometer meters and may be used with equal accuracy on either alternating current or direct current circuits. They are contained in highly polished mahogany boxes, provided with carrying handles, locks and covers equipped with slip hinges. The weight is approximately 11 pounds, and the dimensions are 8x10 1/4 x 5 3/4 inches over all.

The entire movable and field coil system is mounted in a double closed iron shield, which effectually protects it from external magnetic field and electrostatic influences.



Single Range

Range	Approx. Resist. Ohms	Price Each	Range	Approx. Resist. Ohms	Price Each
1	2	\$107.25	15	100	\$103.25
1.5	3	107.25	30	470	99.00
2	4	107.25	75	1180	99.00
3	6	107.25	120	2700	99.00
5	18	107.25	150	3300	99.00
7.5	50	103.25	300	6700	103.25
10	66	103.25	600	20000	111.50
12	80	103.25	750	25000	115.50

Double Range

5-1	10-2	\$115.50	150-75	3300-1650	\$107.25
15-1.5	30-3	115.50	300-150	6700-3350	111.50
3-1.5	6-3	115.50	600-150	20000-5000	119.75
6-3	21-10.5	115.50	600-300	20000-10000	119.75
15-7.5	100-50	111.50	750-150	25000-5000	123.75
30-15	300-150	111.50	750-300	25000-10000	123.75
120-60	2700-1350	107.25	.....	.....	.....

Weston Y-Boxes for Models 310 and 432 Wattmeters

These multipliers are resistors having a definite multiplying constant, the resistance material of which is highly insulated and arranged for proper heat dissipation.

They are so adjusted that the readings of the instrument may be multiplied by a specific constant.

Normal Voltage of Instrument	Y-Box Constant	Normal Line Voltage With Y-Box	MAXIMUM VOLTAGE With Y-Box Model 310	Model 432	PRICE, EACH	
					Model 310	Model 432
75	3	150	200	170	\$24.00	\$18.00
150	3	300	400	340	24.00	18.00
150	4	400	550	450	28.00	18.00
150	5	500	700	550	30.00	18.00
150	6	600	750	650	45.00	18.00

The multipliers listed are those most commonly required, but intermediate ranges or sub-divisions will be provided when so ordered.

Model 311 Weston Potential Transformers

Designed for use on circuits of any frequency from 25 to 133 cycles per second.

They have an accuracy better than one-half of one per cent for loads not exceeding 15 volt amperes at any power factor.

The variation in ratio of transformation for various applied voltages within the range of the connected instrument is small.

Range Volts	Price Each
2200-1100 to 110	\$74.25
1100-550 " 110	70.75
440-220 " 110	66.75



Model 370 Weston Portable Instruments
For Alternating and Direct Current

These instruments are electro-dynamometer ammeters, and may be used with equal accuracy on either direct current circuits or on alternating current circuits of any frequency up to 133 cycles per second and of any wave form. They are contained in polished mahogany boxes, provided with carrying handles, locks and covers equipped



with slip hinges. The weight is approximately 11 lbs., and the dimensions are 8x10¼x5¼ inches over all.

Millimeters—Single Range

Approx. Range Ohms	Resist. Each	Price Each	Approx. Range Ohms	Resist. Each	Price Each	Approx. Range Ohms	Resist. Each	Price Each
15	1400	\$111.50	75	50	\$111.50	300	3 2	\$111.50
20	720	111.50	100	26.5	111.50	500	1 2	111.50
30	350	111.50	150	19.5	111.50	750	0 9	111.50
50	167	111.50	200	7.5	111.50

Ammeters—Double Range

2-1 ...	\$123.75	5-2½ ...	\$123.75	10-5 ...	\$123.75
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Model 310 Weston Portable Wattmeters
For Alternating and Direct Current

These instruments represent the latest development in electro-dynamometer wattmeters and embody many characteristics hitherto considered unattainable in instruments of this class.

They are contained in highly polished mahogany boxes, provided with carrying handles, locks and covers equipped with slip hinges. The weight is approximately 11 lbs., and the dimensions are 8x10¼x5¼ inches over all.

Scales

Scales are 5¼ inches long, are uniform throughout their entire length, and are provided with mirrors to prevent parallax mirrors.

The pointers are of the Weston triangular truss type with knife edges, and are equipped with simple zero setting devices controlled from the outside of the case.

Ranges

Double ranges for both the current and voltage circuits are provided. The double current, range feature is obtained by connecting the two field coil sections either in series or in multiple by means of links and binding screws, conveniently located on the top of the instrument. These links are provided with handles to facilitate their manipulation, and are slotted, making it unnecessary to remove them entirely each time the range is changed. The double voltage ranges are controlled by means of independent binding posts.

As each instrument has a number of ranges, a scale cannot be made which is readable with equal facility for all ranges. In each case however, a scale is provided which gives 1, 2 or 5 units per division for the range marked, and simple multiplying factors for the other ranges.

Special Model for Very Low Power Factors

MAXIMUM CAPACITY IN AMPS.		WATT RANGES				Price Each
Maximum Volts	Fields in Series	Fields in Multiple	Fields in Series	Fields in Multiple	Number of Scale Lines	Price Each
150/75	0.5	1	15/7.5	30/15	150	\$132.00
150/75	1	2	30/15	60/30	150	132.00
150/75	2.5	5	75/37.5	150/75	150	132.00
150/75	5	10	150/75	300/150	150	132.00
150/75	10	20	300/150	600/300	150	140.25
150/75	20	40	600/300	1200/600	120	140.25
150/75	50	100	1500/750	3000/1500	150	140.25

Model 310 Weston Portable Wattmeters
For D.C. and A.C. S. Ph. Nor. 100/50, Max. 150/75 V.

AMPERE		WATT RANGES		Field Coils in Series	Field Coils in Multiple	Number of Scale Lines	Price Each
NORMAL Series	MAXIMUM Series	NORMAL Series	MAXIMUM Series	in Series	in Multiple	of Scale Lines	Price Each
1	2	2	4	100/50	200/100	100	\$115.50
2.5	5	5	10	250/125	500/250	125	115.50
5	10	10	20	500/250	1000/500	100	115.50
10	20	20	40	1/1.5 K.W.	2/1 K.W.	100	115.50
20	40	40	80	2/1 K.W.	4/2 K.W.	100	123.75
30	60	60	120	3/1.5 K.W.	6/3 K.W.	150	123.75
50	100	75	150	5/2.5 K.W.	10/5 K.W.	100	123.75
Normal 150/75, Maximum 250/125 Volts							
1	2	2	4	150/75	300/150	150	\$115.50
2.5	5	5	10	375/187.5	750/375	150	115.50
5	10	10	20	750/375	1500/750	150	115.50
10	20	20	40	1.5/1.75 K.W.	3/1.5 K.W.	150	115.50
20	40	40	80	3/1.5 K.W.	6/3 K.W.	150	123.75
30	60	60	120	5/2.5 K.W.	10/5 K.W.	100	123.75
50	100	75	150	7.5/3.75 K.W.	15/7.5 K.W.	150	123.75
Normal 200/100, Maximum 300/150 Volts							
1	2	2	4	200/100	400/200	100	\$123.75
2.5	5	5	10	500/250	1000/500	100	123.75
5	10	10	20	1/1.5 K.W.	2/1 K.W.	100	123.75
10	20	20	40	2/1 K.W.	4/2 K.W.	100	123.75
20	40	40	80	4/2 K.W.	8/4 K.W.	100	132.00
30	60	60	120	6/3 K.W.	12/6 K.W.	120	132.00
50	100	75	150	10/5 K.W.	20/10 K.W.	100	132.00
Normal 300/150, Maximum 450/250 Volts							
1	2	2	4	300/150	600/300	150	\$123.75
2.5	5	5	10	750/375	1500/750	150	123.75
5	10	10	20	1.5/1.75 K.W.	3/1.5 K.W.	150	123.75
10	20	20	40	3/1.5 K.W.	6/3 K.W.	150	123.75
20	40	40	80	6/3 K.W.	12/6 K.W.	120	132.00
30	60	60	120	10/5 K.W.	20/10 K.W.	100	132.00
50	100	75	150	15/7.5 K.W.	30/15 K.W.	150	132.00
Normal 500/100, Maximum 600/150 Volts							
1	2	2	4	500/100	1000/200	100	\$140.25
2.5	5	5	10	1250/250	2500/500	125	140.25
5	10	10	20	2500/500	5000/1000	100	140.25
10	20	20	40	5/1 K.W.	10/2 K.W.	100	140.25
20	40	40	80	10/2 K.W.	20/4 K.W.	100	148.50
30	60	60	120	15/3 K.W.	30/6 K.W.	150	148.50
50	100	75	150	25/5 K.W.	50/10 K.W.	100	148.50
Normal 500/250, Maximum 600/375 Volts							
1	2	2	4	500/250	1000/500	100	\$140.25
2.5	5	5	10	1250/625	2500/1250	125	140.25
5	10	10	20	2.5/1.25 K.W.	5/2.5 K.W.	125	140.25
10	20	20	40	5/2.5 K.W.	10/5 K.W.	100	140.25
20	40	40	80	10/5 K.W.	20/10 K.W.	100	148.50
30	60	60	120	15/7.5 K.W.	30/15 K.W.	150	148.50
50	100	75	150	25/12.5 K.W.	50/25 K.W.	125	148.50
Normal 600/150, Maximum 675/250 Volts							
1	2	2	4	600/150	1200/300	150	\$144.50
2.5	5	5	10	1500/375	3000/750	150	144.50
5	10	10	20	3/1.75 K.W.	6/1.5 K.W.	150	144.50
10	20	20	40	6/1.5 K.W.	12/3 K.W.	150	144.50
20	40	40	80	12/3 K.W.	24/6 K.W.	120	152.75
30	60	60	120	20/5 K.W.	40/10 K.W.	100	152.75
50	100	75	150	30/7.5 K.W.	60/15 K.W.	150	152.75
Normal 600/300, Maximum 675/450 Volts							
1	2	2	4	600/300	1200/600	120	\$144.50
2.5	5	5	10	1.5/1.75 K.W.	3/1.5 K.W.	150	144.50
5	10	10	20	3/1.5 K.W.	6/3 K.W.	150	144.50
10	20	20	40	6/3 K.W.	12/6 K.W.	120	144.50
20	40	40	80	12/6 K.W.	24/12 K.W.	120	152.75
30	60	60	120	20/10 K.W.	40/20 K.W.	100	152.75
50	100	75	150	30/15 K.W.	60/30 K.W.	150	152.75
Normal 750/150, Maximum 750/250 Volts							
1	2	2	4	750/150	1500/300	150	\$148.50
2.5	5	5	10	1875/375	3750/750	150	148.50
5	10	10	20	3750/750	7500/1500	150	148.50
10	20	20	40	7.5/1.5 K.W.	15/3 K.W.	150	148.50
20	40	40	80	15/3 K.W.	30/6 K.W.	150	156.75
30	60	60	120	25/5 K.W.	50/10 K.W.	100	156.75
50	100	75	150	37.5/7.5 K.W.	75/15 K.W.	150	156.75
Normal 750/300, Maximum 750/450 Volts							
1	2	2	4	750/300	1500/600	150	\$148.50
2.5	5	5	10	2000/800	4000/1600	150	148.50
5	10	10	20	3750/1500	7500/3000	150	148.50
10	20	20	40	7.5/3 K.W.	15/6 K.W.	150	148.50
20	40	40	80	15/6 K.W.	30/12 K.W.	150	156.75
30	60	60	120	25/10 K.W.	50/20 K.W.	100	156.75
50	100	75	150	37.5/15 K.W.	75/30 K.W.	150	156.75

Model 329 Weston Portable Polyphase Wattmeters



These instruments are contained in highly polished mahogany boxes, provided with carrying handles, locks and covers equipped with slip hinges.

This form of instrument really consists of two single phase wattmeters, electrically independent, but having their movable coils mounted on a common shaft, so that they rotate together. Each coil, however, moves in its own system of field coils.

Scales are uniform throughout their entire length, and are 5 1/4 inches long.

The pointers are equipped with simple zero setting devices, and are of the Weston triangular truss type with knife edges. To prevent parallax errors mirrors are provided.

Approximate weight, 17 1/2 pounds.
Dimensions overall, 9 1/2 x 10 1/2 x 8 1/8 inches.

Normal 100/50, Maximum 150/75 Volts

AMPERES				*Watt Ranges Field Coils in Series	Field Coils in Multiples	No. of Scale Lines	Price Each
Normal	Series	Multiple	Maximum				
1	2	2	4	200/100	400/200	100	\$181.50
2.5	5	5	10	500/250	1000/500	100	181.50
5	10	10	20	1/.5 K.W.	2/1 K.W.	100	181.50
10	20	20	40	2/1 K.W.	4/2 K.W.	100	189.75

Normal 150/75, Maximum 250/125 Volts

1	2	2	4	300/150	600/300	150	\$181.50
2.5	5	5	10	750/375	1500/750	150	181.50
5	10	10	20	1.5/.75K.W.	3/1.5 K.W.	150	181.50
10	20	20	40	3/1.5 K.W.	6/3 K.W.	150	189.75

Normal 200/100, Maximum 300/150 Volts

1	2	2	4	400/200	800/400	100	\$189.75
2.5	5	5	10	1/.5 K.W.	2/1 K.W.	100	189.75
5	10	10	20	2/1 K.W.	4/2 K.W.	100	189.75
10	20	20	40	4/2 K.W.	8/4 K.W.	100	198.00

Normal 300/150, Maximum 450/250 Volts

1	2	2	4	600/300	1200/600	120	\$189.75
2.5	5	5	10	1.5/.75 K.W.	3/1.5 K.W.	150	189.75
5	10	10	20	3/1.5 K.W.	6/3 K.W.	150	189.75
10	20	20	40	6/3 K.W.	12/6 K.W.	120	198.00

Normal 500/100, Maximum 600/150 Volts

1	2	2	4	1000/200	2000/400	100	\$206.25
2.5	5	5	10	2500/500	5000/1000	100	206.25
5	10	10	20	5/1 K.W.	10/2 K.W.	100	206.25
10	20	20	40	10/2 K.W.	20/4 K.W.	100	214.50

Normal 500/250, Maximum 600/375 Volts

1	2	2	4	1000/500	2000/1000	100	\$206.25
2.5	5	5	10	2.5/1.25 K.W.	5/2.5 K.W.	125	206.25
5	10	10	20	5/2.5 K.W.	10/5 K.W.	100	206.25
10	20	20	40	10/5 K.W.	20/10 K.W.	100	214.50

Normal 600/150, Maximum 675/250 Volts

1	2	2	4	1200/300	2400/600	120	\$210.50
2.5	5	5	10	3/.75 K.W.	6/1.5 K.W.	150	210.50
5	10	10	20	6/1.5 K.W.	12/3 K.W.	150	210.50
10	20	20	40	12/3 K.W.	24/6 K.W.	120	218.75

Normal 600/300, Maximum 675/450 Volts

1	2	2	4	1.2/.6 K.W.	2.4/1.2 K.W.	120	\$210.50
2.5	5	5	10	3/1.5 K.W.	6/3 K.W.	150	210.50
5	10	10	20	6/3 K.W.	12/6 K.W.	120	210.50
10	20	20	40	12/6 K.W.	24/12 K.W.	120	218.75

Normal 750/150, Maximum 750/250 Volts

1	2	2	4	1500/300	3000/600	150	\$214.50
2.5	5	5	10	3750/750	7500/1500	150	214.50
5	10	10	20	7.5/1.5 K.W.	15/3 K.W.	150	214.50
10	20	20	40	15/3 K.W.	30/5 K.W.	150	222.75

Normal 750/300, Maximum 750/450 Volts

1	2	2	4	1500/600	3000/1200	150	\$214.50
2.5	5	5	10	3750/1500	7500/3000	150	214.50
5	10	10	20	7.5/3 K.W.	15/6 K.W.	150	214.50
10	20	20	40	15/3 K.W.	30/12 K.W.	150	222.75

*Range not marked K. W. read in watts.

Model 312 Weston Current Transformers



They have an accuracy better than one-half of one per cent for loads not exceeding 15 volt amperes at any power factor.

The variation in ratio of transformation for various applied voltages within the range of the connected instrument is very small, and for all ordinary measurements no correction is necessary.

Secondary, 5 amperes.

Capacity, 25 volt amperes.

Test, 10,000 volts for 1 minute.

Frequency, 25 to 133 cycles.

Range Amperes	Price Each
10- 20- 40 to 5	\$81.75
25- 50-100 " 5	81.75
50-100-200 " 5	81.75

Model 313 Weston Current Transformers

The ranges listed correspond to the primary current for a conductor passing through the opening once. Range can be changed by passing the primary conductor through the opening more than once. Transformer has a short-circuiting switch in the secondary. Designed for use on potentials as high as 2500 volts. Secondary, 5 amperes. Capacity, 25 volt amperes. Test 10,000 volts for 1 minute. Frequency, 25 to 133 cycles.



Range Amperes	Opening Inches	Price Each
1200 to 5	2x3 1/2	\$63.25
1800 " 5	2x4 1/2	66.75
2400 " 5	2x4 1/2	70.75

Model 461 Weston Portable Multi-range Current Transformers



There is a wide variety of testing that can only be conveniently and successfully conducted by means of a portable current transformer that is comprehensive as to range of values; accurate within the order of accuracy of any precision portable instrument with which it may be used; compact in size; light in weight and reasonable in cost. Weston Model 461 Portable Current Transformer meets these qualifications.

It has three self-contained primary ranges of 10, 20 and 40 amperes to which connections are made by binding posts. The secondary has a range of 5 amperes and is provided with a special short circuiting switch. The core of the transformer has an opening through which one turn of primary will give a range of 800 amperes, two turns 400 amperes, four turns 200 amperes, eight turns 100 amperes, etc. Hence the primary ranges extend from 10 to 800 amperes.

Has a ratio accuracy within the guaranteed precision of any standard Weston portable A. C. ammeter or wattmeter when used on circuits of 60 cycle frequency. The maximum error on circuits of 25 cycle frequency is .3 of 1 per cent of full load value at 1/2 secondary current. May be used on frequencies from 25 cycles up to 133 cycles and on line voltages up to and including 2500 volts.

It is compact, its dimensions being 6 1/4 x 7 3/4 x 3 inches (158.8x196.9x76.2 m.m.) It is light, weighing only 6 1/4 pounds (2.84 kilograms).

Price, Model 461 Multi-range Current Transformer
.....each \$55.00

**Model 155 Weston Portable Voltmeters
For Alternating Current**



This instrument may be used on circuits of any frequency from 15 to 140 cycles per second without appreciable errors resulting.

Voltmeters are all self-contained. Voltmeters having ranges of 125 volts or higher require 75 milliamperes to produce a full scale deflection. Equipped with zero correcting device.

Dimensions, small size, 7x7 1/8 x 3 1/4 inches; large size, 7 3/4 x 8 3/4 x 4 inches.

Single Range

Range in Volts	Number of Scale Div.	Approx. Resistance Ohms	Price Each	Range in Volts	Number of Scale Div.	Approx. Resistance Ohms	Price Each
30	150	150	\$33.75	300	150	4000	\$40.50
50	100	415	33.75	500	100	6700	47.00
75	150	509	33.75	600	120	8000	48.75
125	125	1670	33.75	750	150	10000	52.75
150	150	2000	34.50	...	...	...	...

Double Range

150-75	150	...	\$42.00	600-150	150	...	\$56.25
300-150	150	...	48.00	750-300	150	...	60.25
600-300	150	...	56.25	750-150	150	...	60.25

Triple Range

600-300-150	150	...	\$63.75	750-300-150	150	...	\$67.75
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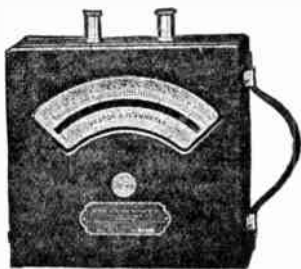
**Model 155 Weston Portable Ammeters
For Alternating Current**

The ammeters listed may be used on circuits having a difference in potential of 2300 volts.

The current transformers must be used for the measurement of all the alternating currents greater than 500 amperes.

Instrument provided with zero-correcting device.

Dimensions, small size, 7x7 1/8 x 3 1/4 inches; large size, 7 3/4 x 8 3/4 x 4 inches.



Single Range

Range in Amps.	Number of Scale Div.	Price Each	Range in Amps.	Number of Scale Div.	Price Each
1	100	\$32.75	75	150	\$32.25
2	100	32.25	100	100	32.25
3	150	31.25	150	150	33.00
5	100	31.25	200	100	33.75
10	100	31.25	250	125	34.50
15	150	31.25	300	150	34.75
25	125	31.25	400	80	38.00
50	100	32.25	500	100	41.25

Double Range

10-5	100	\$48.75
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**Model 155 Weston Portable Milliammeters
For Alternating Current**



This instrument is contained in a polished black walnut case which is without cover, but has leather carrying handles. It is dust-proof.

Provided with zero-correcting device.

Dimensions, small size, 7x7 1/8 x 3 1/4 inches; large size, 7 3/4 x 8 3/4 x 4 inches.

Range in Milli-amperes	Number of Scale Div.	Approx. Resistance Ohms	Price Each	Range in Milli-amperes	Number of Scale Div.	Approx. Resistance Ohms	Price Each
75	150	123.00	\$32.75	500	100	2.25	\$32.75
150	150	33.00	32.75	750	150	1.10	32.75
250	125	12.00	32.75	...	...	...	.....

**Model 433 Weston Portable Voltmeters
For Alternating Current**



Model 433 Voltmeter is of the electromagnetic or movable iron type depending for its operation upon the mutual repulsion of two properly shaped pieces made from a special iron alloy, one fixed and the other movable, which are polarized by a current passing through a field coil in which they are mounted. The movable piece is fastened to the pointer through a staff so that its motion is communicated to the pointer.

Made as single range or double range instrument. In the case of the double range instruments three binding posts are provided, one of these being common to both ranges.

All the voltmeters listed are self-contained. Ranges higher than those listed can be obtained by means of an external multiplier or by using a potential transformer in conjunction with an instrument having a 150-volt range. For ranges above 750 volts transformers must be used.

Effectively shielded from the effects of external magnetic and electrostatic influences, the movable system being contained within a drawn steel shielding cup.

Motion of the movable system is controlled to a proper degree by means of an efficient air damper of special design and construction. The damping is of such a quality that the movable system instantly follows circuit fluctuations without undue oscillation.

The pointer is of the trussed type of construction, assuring maximum strength and eliminating vibration at all commercial frequencies. It has a knife-edge tip, which is of valuable aid in obtaining accurate readings.

Model 433 Voltmeter scales necessarily are not uniformly divided throughout their length. By means of special design and construction it has been possible to make the scale divisions nearly uniform over the upper two-thirds of the scale.

Over All Width	5 5/16 Inches	147.6 Millimeters
" " Depth	5 1/4 "	133.3 "
" " Height	3 1/2 "	88.9 "
Scale Length	3.8 "	97.5 "
Approx. Weight	2 1/2 Pounds	1.1 Kilograms

Single Ranges

Range Volts	Scale Divisions	Price Each	Range Volts	Scale Divisions	Price Each
10	100	\$30.00	75	75	\$30.00
15	75	30.00	100	100	30.00
20	100	30.00	125	125	30.00
30	60	30.00	150	75	30.00
50	100	30.00	250	50	32.50
60	60	30.00	300	60	32.50

Double Ranges

20	100	\$37.50	150	75	\$37.50
10			75		
30			300		
15	150	37.50	150	150	39.00
60			150		
30	60	37.50	...	...	.....

Resistor Multipliers can be furnished for voltage ranges in excess of 300 volts and up to and including 750 volts. Prices will be quoted upon application.

For ranges above 750 volts a Weston Portable Potential Transformer is recommended.

Model 433 Weston Portable Ammeters and Milliammeters

For Alternating Current



Model 433 Ammeters and Milliammeters depend for their operation on the electromagnetic or movable-iron principle.

This principle consists of the mutual repulsion of two properly shaped pieces made from a special iron alloy, one fixed and the other movable, which are polarized by a current passing through a field coil in which they are mounted. The movable piece is fastened to the pointer through a staff so that its motion is communicated to the pointer.

Made in single ranges only. They are all self-contained up to and including 50 amperes.

Ranges above 50 amperes can be obtained by using a current transformer with a 5-ampere instrument. Weston Model 312, 313 and 461 Portable Current Transformers are recommended for this purpose.

For proper protection from the action of external magnetic and electrostatic influences, the movable systems of these instruments are placed in a shielding cup of drawn steel.

By means of a very efficient air damper of special Weston design, motion of the movable system is effectually controlled so that no undesirable oscillation occurs. The pointer follows the circuit fluctuations with rapidity, making it possible to obtain accurate instantaneous readings.

The pointers are of the trussed construction assuring rigidity and absence of vibration. The pointer is provided with a knife-edge tip.

Model 433 ammeter and milliammeter scales have characteristics similar to those of the voltmeter scales. These scales are easily read over their working range. A mirror is provided which, with the knife-edge pointer, facilitates the taking of accurate readings through the elimination of parallax errors.

May be used on any frequency as high as 500 cycles per second without appreciable error. Errors in indication due to changes in temperature are negligible. These instruments may be left in circuit continuously without overheating or causing error in the instrument indication.

Over All Width.....	5 1/8 Inches	123 5 Millimeters
" Depth.....	6 3/8 "	153.0 "
" Height.....	3 1/2 "	88.9 "
Scale Length.....	3.8 "	97.5 "
Approximate Weight.....	2 1/2 Pounds	1.1 Kilograms

Model 433 Milliammeters

Range Milliamperes	Scale Divisions	Price Each	Range Milliamperes	Scale Divisions	Price Each
75	75	\$28.00	300	60	\$28.00
100	100	28.00	400	80	28.00
150	75	28.00	500	100	28.00
200	100	28.00	600	60	28.00
250	50	28.00	750	75	28.00

Model 433 Ammeters

Range Amperes	Scale Divisions	Price Each	Range Amperes	Scale Divisions	Price Each
1	100	\$28.00	10	100	\$28.00
1.5	150	28.00	15	75	28.00
2	100	28.00	25	50	28.00
3	60	28.00	30	60	28.00
5	100	28.00	50	100	28.00
7.5	75	28.00	..	...	....

Model 432 Weston Portable Wattmeters

For D.C. and Single-phase A.C.



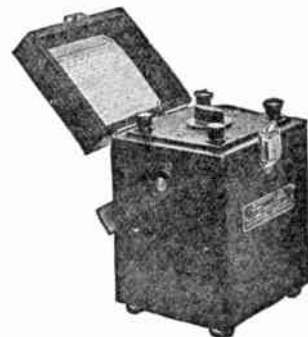
The Model 432 Wattmeter is an electro-dynamometer instrument having electrically independent potential and current circuits. All of these instruments are made with a single current range and double voltage ranges. Standard normal current ranges are available from 1 ampere up to and including 50 amperes. The voltage range combinations are 75-150 and 150-300 volts. All of the listed ranges are self-contained. Current ranges can be extended beyond 50 amperes by using a 5-ampere instrument in

conjunction with a current transformer. Width overall, 6 1/8 inches. Depth overall, 5 1/4 inches. Height overall, 3 1/2 inches. Scale length, 3.8 inches. Approximate weight, 3 1/4 pounds.

Normal Volts	AMPERES		RANGE WATTS		Price Each
	Nor.	Max.	Low Range	High Range	
75-150	1	1.5	75	150	\$50.00
150-300	1	1.5	150	300	57.50
75-150	2	3	150	300	50.00
150-300	2	3	300	600	57.50
75-150	5	7.5	375	750	50.00
150-300	5	7.5	.75 K.W.	1.5 K.W.	57.50
75-150	10	15	.75 K.W.	1.5 K.W.	55.00
150-300	10	15	1.5 K.W.	3 K.W.	62.50
75-150	20	30	1.5 K.W.	3 K.W.	55.00
150-300	20	30	3 K.W.	6 K.W.	62.50
75-150	50	75	3.75 K.W.	7.5 K.W.	60.00
150-300	50	75	7.5 K.W.	15 K.W.	67.50

Resistor multipliers can be furnished for voltage ranges in excess of 300 volts and up to and including 750 volts. Prices upon application. For ranges above 750 volts a Weston Portable Potential Transformer is recommended.

Model 457 Weston Portable Potential Transformers



Designed to supply the need for a compact light weight transformer which the user can easily and conveniently carry in addition to the measuring instruments with which it is to be used. Consequently, this transformer has been made as small and as light in weight as possible yet maintaining a high degree of accuracy in performance.

The transformer is contained in a neat polished wooden case having a removable cover. It is also provided with a strong carrying strap.

Model 457 potential transformers have two primary ranges, the higher range being four times the value of the lower range. A primary range changing switch is provided which enables either primary range to be brought into use instantly.

The range changing switch is mounted on the bakelite top of the transformer. The knob is of bakelite and bears an index mark so as to show which range is in use. On this top are also mounted the primary and secondary binding posts. Markings on the transformer top clearly indicate which are the primary and which the secondary binding posts. By means of the marking the primary and secondary binding posts of like instantaneous polarity are designated.

Normal	RATIO, VOLTS		Frequency Cycles	Price Each
	Minimum	Maximum		
2200-500 to 110	3000-750	to 150	60 to 150	\$65.00
2200-550 " 110	2500-625	" 125	50 " 150	65.00
3000-750 " 100	3750-937.5	" 125	50 " 150	65.00

Model 57 Weston Round Pattern Switchboard Instruments

For Direct Current



These instruments are made in three patterns: Regular, for front of board connection. Back connection, in which the binding-posts are carried through to the rear of the switchboard. Flush type, in which a flange is provided for the front, allowing the entire body of the instrument to pass through for connection in the rear of the switchboard.

The cases of these instruments are regularly supplied in No. 11 dull black japan finish.

Diameter, 9.5 inches. Shipping weight, 22 pounds.

Ammeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
1	50	\$37.50	150	75	\$40.50	750	75	\$47.25
5	50	37.50	200	40	42.00	1000	50	48.75
10	50	37.50	250	50	42.50	1200	60	50.25
15	75	37.50	300	60	42.50	1500	75	59.00
25	50	37.50	400	40	42.75	2000	40	65.75
50	50	38.25	500	50	44.25	2500	50	68.00
75	75	39.00	600	60	45.75	3000	60	71.25
100	50	39.75	...	...	...	...	...	...

For ranges of 75 amperes or less specify whether external or self-contained shunt is desired.

Voltmeters

3	60	\$37.50	50	50	\$39.75	250	50	\$47.25
6	60	37.50	75	75	41.00	300	60	48.75
15	75	37.50	130	65	42.50	600	60	52.25
25	50	39.00	150	75	44.25	750	75	54.25

Voltmeters may be made with an additional lower range at an increase in price. These prices are for No. 11 finish dull black japan. No extra charge will be made for above instruments with back connection or flush-type cases. Always specify the style desired when ordering.

Model 24 Weston Round Pattern Switchboard Instruments

For Direct Current

The cases are supplied in three types: regular, to be attached directly to and connected from the front of the switchboard; back connected regular, but with binding-posts projecting through to the back of the board; and flush type instrument, intended to be countersunk so that the front of the case is practically flush with the face of the board, causing the body of the instrument and the binding-posts to project through to the back of the board.

Finished in dull black japan. Specify style desired, when ordering. Diameter, 7 1/4 inches. Shipping weight, 15 pounds.



Ammeters

Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each	Range	No. of Scale Divisions	Price Each
1	50	\$24.75	100	50	\$26.50	500	50	\$32.25
5	50	24.75	130	65	27.25	600	60	33.75
10	50	24.75	150	75	27.25	750	75	35.50
15	75	25.50	200	40	28.00	1000	50	37.25
25	50	25.50	250	50	29.75	1200	60	38.75
50	50	26.25	300	60	30.25	1500	75	48.50
80	40	26.25	400	40	30.50	...	...	...

In ordering, please specify whether self-contained or external shunts are desired, when the range is 80 amperes or less.

Voltmeters

3	60	\$25.50	25	50	\$26.50	150	75	\$28.00
5	50	25.50	50	50	26.50	250	50	32.25
6	60	25.75	80	40	26.50	300	60	33.75
10	50	26.50	100	50	27.25	600	60	36.00
15	75	26.50	130	65	27.25	...	...	...

Weston Fan-shaped Switchboard Instruments

For Direct Current



Compact in size and have remarkably long, open and legible scales. Each instrument is provided with a zero shifting device.

The standard finish of case is a heavy, rich, dull black japan that has the appearance of hard rubber, and exceptionally durable.

All instruments are of the back connected type and are secured to the switchboard by means of studs projecting from the rear of the case.

Dimensions

Model	Width Inches	Height Inches	Scale Length Inches	Weight
267	4.1	3.35	2.5	10.9 oz.
269	5 5/8	4 7/8	4	1 lb. 8 oz.
271	7 7/8	6 1/4	5 3/4	3 lb. 4.5 oz.
273	9 5/8	7 1/2	7 1/4	4 lb. 13 oz.

Voltmeters

Range Volts	Model 267		Model 271		Model 269		Model 273	
	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each
1	50	\$16.25	50	\$21.00	50	\$24.75	100	\$38.50
1.2	60	16.25	60	21.00	60	24.75	60	38.50
1.5	30	16.25	75	21.00	75	24.75	75	38.50
2	40	16.25	40	21.00	40	24.75	100	38.50
2.5	50	16.25	50	21.00	50	24.75	50	38.50
3	30	16.25	60	21.00	60	24.75	60	38.50
4	40	16.25	40	21.00	40	24.75	40	38.50
5	50	16.25	50	21.00	50	24.75	50	38.50
6	30	16.25	60	21.00	60	24.75	60	38.50
7.5	75	16.25	75	21.00	75	24.75	75	38.50
8	40	16.25	40	21.00	40	24.75	80	38.50
10	50	16.25	50	21.00	50	24.75	100	38.50
12	60	16.25	60	21.00	60	24.75	60	38.50
15	30	16.25	75	21.00	75	24.75	75	38.50
20	40	16.25	40	21.00	40	24.75	100	38.50
25	50	16.25	50	21.00	50	24.75	50	38.50
30	30	16.25	60	21.00	60	24.75	60	38.50
40	40	16.25	40	21.00	40	24.75	40	38.50
50	50	16.25	50	21.00	50	24.75	50	38.50
60	30	16.25	60	21.00	60	24.75	60	38.50
75	75	16.25	75	21.00	75	24.75	75	38.50
80	40	16.25	40	21.00	40	24.75	80	38.50
100	50	16.25	50	21.00	50	24.75	100	38.50
120	60	16.25	60	21.00	60	24.75	60	38.50
130	65	16.25	65	21.00	65	24.75	65	38.50
150	30	16.25	75	21.00	75	24.75	75	38.50
250	...	...	50	25.25	50	30.00	50	43.25
300	30	21.00	60	25.25	60	30.00	60	43.25
600	...	...	...	...	60	\$34.75	60	\$48.50
750	...	...	...	...	75	\$38.25	75	\$52.00

*List price includes external resistor.

Model 267 zero center voltmeter having a range of 150-0-150 volts or less will be furnished at the price of the zero left instrument stated above.

The price of Model 269, 271 and 273 instruments with zero at the center of the scale, may be determined by adding the highest numerals on both sides of the scale and referring to the above price list for the price of an instrument having a range equal to the combined range of the zero center instrument.

Millivoltmeters

Range Milli-volts	Model 267		Model 269		Model 271		Model 273	
	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each
50	50	\$16.25	50	\$20.00	50	\$23.00	50	\$34.75
75	75	16.25	75	20.00	75	23.00	75	34.75
100	50	16.25	50	20.00	50	23.00	100	34.75
150	30	16.25	75	20.00	75	23.00	75	34.75
200	40	16.25	40	20.00	40	23.00	100	34.75
250	50	16.25	50	20.00	50	23.00	50	34.75
300	30	16.25	30	20.00	60	23.00	60	34.75
400	40	16.25	40	20.00	40	23.00	40	34.75
500	50	16.25	50	20.00	50	23.00	50	34.75
600	30	16.25	60	20.00	60	23.00	60	34.75
750	75	16.25	75	20.00	75	23.00	75	34.75
800	40	16.25	40	20.00	40	23.00	80	34.75

**Weston Fan-shaped Switchboard Instruments
For Direct Current**



Compact in size and have remarkably long, open and legible scales. Each instrument is provided with a zero shifting device. The standard finish of case is a heavy, rich, dull black japan that has the appearance of hard rubber, and exceptionally durable.

All instruments are of the back connected type and are secured to the switchboard by means of studs projecting from the rear of the case.

Dimensions

Model	Width Inches	Height Inches	Scale Inches	Weight
267	4 1/2	3 3/8	2 1/2	10.9 oz.
269	5 5/8	4 7/16	4	1 lb. 8 oz.
271	7 7/8	6 1/4	5 3/4	3 " 4.5 oz.
273	9 1/8	7 1/2	7 1/4	4 " 13 oz.

Ammeters

Range Amp.	Model 267		Model 269		Model 271		Model 273	
	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each
1	50	\$16.25	50	\$20.00	50	\$23.00	100	\$34.75
1.2	60	16.25	60	20.00	..	..	..	..
1.5	30	16.25	75	20.00	75	23.00	75	34.75
2	40	16.25	40	20.00	40	23.00	100	34.75
2.5	50	16.25	50	20.00	..	..	..	..
3	30	16.25	60	20.00	60	23.00	60	34.75
4	40	16.25	40	20.00	..	..	..	..
5	50	16.25	50	20.00	50	23.00	50	34.75
6	30	16.25	60	20.00	..	..	..	..
7.5	75	16.25	75	20.00	..	..	..	..
8	40	16.25	40	20.00	..	..	..	..
10	50	16.25	50	20.00	50	23.00	100	34.75
12	60	16.25	60	20.00	..	..	..	..
15	30	16.25	75	20.00	75	23.00	75	34.75
20	40	16.25	40	20.00	..	..	..	..
25	50	16.25	50	20.00	50	23.00	50	34.75
30	30	16.25	60	20.00	..	..	..	..
40	40	18.50	40	20.00	..	..	..	..
50	50	18.50	50	20.00	50	23.00	50	34.75
75	75	18.50	75	22.25	75	23.00	75	34.75
100	50	18.50	50	22.25	50	23.00	100	34.75
150	30	18.50	75	22.25	75	23.00	75	34.75
200	40	21.25	40	22.25	40	23.00	100	34.75
250	50	21.25	50	22.25	50	23.00	50	34.75
300	..	..	60	22.75	60	23.50	60	35.00
400	..	..	40	23.00	40	24.00	40	35.50
500	..	..	50	24.75	50	25.25	50	36.75
600	..	..	..	..	60	27.00	60	38.50
750	..	..	..	..	75	28.50	75	40.25
1000	..	..	..	..	50	30.00	100	41.50

Model 267, up to and including 30 amperes, and Model 269, up to and including 50 amperes, furnished with self-contained shunts.

Models 267 and 269, external shunts, have drop of 100 millivolts. Shunts for Model 269 above 150 amperes have 50 millivolts drop.

Models 271 and 273, all ranges, external shunts only. Shunts have 50 millivolts drop.

Zero center ammeters will be furnished without extra charge.

Milliammeters

Range Milli-Amp.	Model 267		Model 269		Model 271		Model 273	
	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each	No. of Scale Div.	Price Each
50	50	\$16.25	50	\$20.00	50	\$23.00	50	\$34.75
75	75	16.25	75	20.00	75	23.00	75	34.75
100	50	16.25	50	20.00	50	23.00	100	34.75
150	30	16.25	75	20.00	75	23.00	75	34.75
200	40	16.25	40	20.00	40	23.00	100	34.75
250	50	16.25	50	20.00	50	23.00	50	34.75
300	30	16.25	60	20.00	60	23.00	60	34.75
400	40	16.25	40	20.00	40	23.00	40	34.75
500	50	16.25	50	20.00	50	23.00	50	34.75
600	30	16.25	60	20.00	60	23.00	60	34.75
750	75	16.25	75	20.00	75	23.00	75	34.75
800	40	16.25	40	20.00	40	23.00	40	34.75

**Models 159 and 160 Weston Eclipse Switchboard Instruments
For Direct Current**

These instruments belong to the soft-iron or electro-magnetic type, and yet have none of the many disadvantages and errors commonly associated with instruments of this class. They possess a degree of accuracy and general electrical excellence. Made in two models, namely: Models 160 and 159, the only difference being in the dimensions.

These models do not indicate polarity. Cannot be made as zero center instruments.



Dimensions

Model	Diameter Inches	Depth Inches	Length Scale Inches	Shipping Wt., Lbs
159	7.25	3.15	5.25	15
160	9.56	3.15	6.5	20

Voltmeters

Model 159		Model 160	
Range	Price Each	Range	Price Each
75	\$19.75	500	\$29.75
125	19.75	600	29.75
150	19.75	750	31.75
300	27.25	..	..
..	..	300	34.00

Ammeters

Range	Price Each	Range	Price Each
1	\$19.75	75	\$20.75
2	19.75	100	21.50
3	19.50	150	21.50
5	19.00	200	22.25
10	19.00	250	23.00
15	19.00	300	24.00
25	19.00	400	24.75
50	20.75	500	26.50
..

**Model 301 Weston Switchboard Instruments
For Direct Current**



Recommended for small panels and switchboards. Recommended for radio in controlling the filament and plate voltage.

Each instrument has zero-adjuster. Furnished in nickel finish.

Voltmeters

Ranges above 50 volts have external resistor. Ranges above 150 volts will be furnished with Bakelite case.

Range in Volts	Number of Scale Div.	Price Each	Range in Volts	Number of Scale Div.	Price Each
1	20	\$8.00	15	30	\$8.00
1.5	30	8.00	20	20	8.00
2	20	8.00	25	25	8.00
2.5	25	8.00	30	30	8.00
3	30	8.00	40	20	8.00
4	20	8.00	50	25	8.00
5	25	8.00	100	20	13.00
7	35	8.00	500	25	17.75
8	40	8.00	1000	20	24.75
10	20	8.00	1500	30	30.75
12	24	8.00	2000	20	36.75

Ammeters

Bakelite cases should be specified for these ammeters when used on circuits above 150 volts when it is not possible to ground the instrument case. Bakelite case, 75 cents extra.

Range	Price Each	Range	Price Each	
1	20	\$8.00	10	20
1.5	30	8.00	12	24
2	20	8.00	15	30
2.5	25	8.00	20	20
3	30	8.00	25	25
4	20	8.00	30	30
5	25	8.00	50	25
8	40	8.00	..	..

Model 151 Weston Round Pattern Switchboard Voltmeters For Alternating Current

Model 151 Voltmeter is contained in a cast-iron case and is self-contained for ranges as high as and including 300 volts. For use on higher voltages a current transformer must be used. Provided with normal index pointers and zero correcting device.



Case of voltmeter made of cast-iron. Diameter of case, 9.56 inches; depth, 3.15 inches; length scale, 6.5 inches.

Range in Volts	Price Each	Range in Volts	Price Each
75	\$30.50	300	\$37.25
125	30.50	500	38.50
150	31.00	600	39.00
250	37.25	750	41.00

Model 151 Weston Round Pattern Switchboard Ammeters For Alternating Current

The case is provided with a ground terminal which must be connected to earth when the potential difference of circuits exceeds 200 volts. Case is made of cast iron. Diameter, 9.56 inches; depth, 3.15 inches. Length of scale, 6.5 inches. Self cont. up to 500A.

Range in Amps.	Price Each	Range in Amps.	Price Each
1	\$29.50	50	\$29.00
2	29.00	75	29.00
3	28.00	100	29.00
5	28.00	150	29.75
10	28.00	200	30.50
15	28.00	250	31.00
20	28.00	300	31.25
25	28.00	400	32.25
30	28.00	500	33.00
40	29.00	...	.....



Model 156 Weston Round Pattern Switchboard Voltmeters For Alternating Current

Made for direct connection to circuits up to and including 750 volts up to and including the 300 volt range the resistors are self-contained. Above 300 and up to and including 750 volts an external resistor is provided. Voltages above 750 necessitate the use of potential transformers. Fitted with zero-correcting device.



Voltmeter is contained in cast iron case. Diameter of case, 7.25 inches; depth, 3.15 inches; length of scale, 5.25 inches.

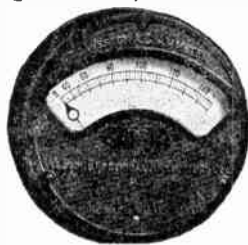
Range in Volts	Price Each	Range in Volts	Price Each
75	\$24.00	500	\$32.25
130	24.00	600	34.75
150	24.50	750	38.75
300	30.50	...	.....

Model 156 Weston Round Pattern Switchboard Ammeters For Alternating Current

Case is provided with a "ground terminal," which must be connected to earth when the potential difference of circuits exceeds 200 volts. Zero-correcting device.

Ammeter contained in cast iron case. Diameter of case, 7.25 inches; depth, 3.15 inches; length of scale, 5.1 inches.

Range Amperes	Price Each	Range Amperes	Price Each
1	\$23.00	50	\$22.75
2	22.75	75	22.75
3	22.25	100	22.75
5	22.25	150	23.75
10	22.25	200	24.25
15	22.25	250	24.75
20	22.25	300	25.50
25	22.25	400	27.25
30	22.75	500	29.00
40	22.75	...	.....



Models 167 and 343 Weston Switchboard Wattmeters For D.C. and Single-phase A.C.

For current ranges in excess of 100 amperes it is necessary to use current transformers.

For voltages above 750 volts for any current range both current and potential transformers must be employed. All current circuits have an overload capacity of double normal value permitting full-scale readings to be made at 50 per cent power factor. Dull black japan finish.



Model 167

Diameter, 9 5/8 inches. Depth, 3 7/8 inches. Length of scale, 6 5/8 inches.

Self-contained

100-150 Volts			200-300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
1	150 W.	\$68.75	1	300 W.	\$72.50
2	300 W.	68.75	2	600 W.	72.50
5	500 W.	68.75	5	1 K.W.	72.50
5	750 W.	68.75	5	1.5 K.W.	72.50
10	1 K.W.	68.75	10	2 K.W.	72.50
10	1.5 K.W.	68.75	10	3 K.W.	72.50
20	2 K.W.	68.75	20	4 K.W.	72.50
20	3 K.W.	68.75	20	6 K.W.	72.50
50	5 K.W.	68.75	20	7.5 K.W.	72.50
50	7.5 K.W.	68.75	50	10.15 K.W.	72.50
100	10 K.W.	77.00	100	20 K.W.	80.00
100	15 K.W.	77.00	100	30 K.W.	80.00

External Resistor

400-600 Volts			600-750 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
1	600 W.	\$76.25	1	750 W.x	\$76.75
2	1.2 K.W.	76.25	2	1.5 K.W.	76.75
5	2 K.W.	76.25	5	2.5 K.W.	76.75
5	3 K.W.	76.25	5	4 K.W.	76.75
10	4 K.W.	76.25	10	5 K.W.	76.75
10	6 K.W.	76.25	10	7.5 K.W.	76.75
20	8 K.W.	76.25	20	10 K.W.	76.75
20	12 K.W.	76.25	20	15 K.W.	76.75
50	20 K.W.	76.25	50	25 K.W.	76.75
50	30 K.W.	76.25	50	40 K.W.	76.75
100	40 K.W.	84.50	100	50 K.W.	85.00
100	60 K.W.	84.50	100	75 K.W.	85.00

Model 343

Diameter, 7 3/4 inches. Depth, 4 1/2 inches. Length of scale, 5 1/8 inches.

Self-contained

100-150 Volts			200-300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
1	150 W.	\$63.25	1	300 W.	\$67.50
2	300 W.	63.25	2	600 W.	67.50
5	500 W.	63.25	5	1 K.W.	67.50
5	750 W.	63.25	5	1.5 K.W.	67.50
10	1 K.W.	63.25	10	2 K.W.	67.50
10	1.5 K.W.	63.25	10	3 K.W.	67.25
20	2 K.W.	63.25	20	4 K.W.	67.25
20	3 K.W.	63.25	20	6 K.W.	67.50
50	5 K.W.	63.25	50	10 K.W.	67.50
50	7.5 K.W.	63.25	50	15 K.W.	67.50
100	10 K.W.	72.00	100	20 K.W.	76.00
100	15 K.W.	72.00	100	30 K.W.	76.00

External Resistor

400-600 Volts			600-750 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
1	600 W.	\$70.75	1	750 W.	\$71.25
2	1.2 K.W.	70.75	2	1.5 K.W.	71.25
5	2 K.W.	70.75	5	2.5 K.W.	71.25
5	3 K.W.	70.75	5	4 K.W.	71.25
10	4 K.W.	70.75	10	5 K.W.	71.25
10	6 K.W.	70.75	10	7.5 K.W.	71.25
20	8 K.W.	70.75	20	10 K.W.	71.25
20	12 K.W.	70.75	20	15 K.W.	71.25
50	20 K.W.	70.75	50	25 K.W.	71.25
50	30 K.W.	70.75	50	40 K.W.	71.25
100	40 K.W.	79.50	100	50 K.W.	80.00
100	60 K.W.	79.50	100	75 K.W.	80.00

Models 216 and 368 Weston Switchboard Wattmeters

For Polyphase Alternating Current



Semi-flush Type

Furnished in semi-flush or full front case, dull black finish.

For current ranges above 100 amperes current transformers must be used.

For voltages above 750 volts for any current range and potential transformers are necessary. Current circuits can be used continuously on double normal current enabling full-scale readings to be made at 50 per cent power factor.

Model 216

Full-front: Diameter, 9¹¹/₁₆ inches. Depth, 6⁷/₁₆ inches.
Semi-flush: Diameter, 10 inches. Depth, 4 inches. Scale, 6⁵/₈ inches.

Self-contained

100-150 Volts			200-300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
5	1 K.W.	\$96.25	5	2 K.W.	\$103.25
5	1.5 K.W.	96.25	5	3 K.W.	103.25
10	2 K.W.	96.25	10	4 K.W.	103.25
10	3 K.W.	96.25	10	6 K.W.	103.25
20	4 K.W.	96.25	20	8 K.W.	103.25
20	6 K.W.	96.25	20	12 K.W.	103.25
20	7.5 K.W.	96.25	50	20 K.W.	103.25
50	10 K.W.	96.25	50	30 K.W.	103.25
50	15 K.W.	96.25	100	40 K.W.	110.00
100	20 K.W.	103.25	100	60 K.W.	110.00
100	30 K.W.	103.25	.....	.....	.....

External Resistor

400-600 Volts			600-750 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
5	4 K.W.	\$107.50	5	5 K.W.	\$107.50
5	6 K.W.	107.50	5	7.5 K.W.	107.50
10	8 K.W.	107.50	10	10 K.W.	107.50
10	12 K.W.	107.50	10	15 K.W.	107.50
20	20 K.W.	107.50	20	20 K.W.	107.50
20	30 K.W.	107.50	20	30 K.W.	107.00
50	40 K.W.	107.50	50	50 K.W.	107.50
50	60 K.W.	107.50	50	75 K.W.	107.50
100	80 K.W.	114.50	100	100 K.W.	114.50
100	120 K.W.	114.50	100	150 K.W.	114.50

Model 368

Furnished in semi-flush type only.

Resistance for all ranges furnished in external boxes arranged for mounting on the back of the switchboard.

Diameter, 7³/₄ inches. Depth, 4¹/₂ inches. Scale, 5¹/₂ inches.

100-150 Volts			200-300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
5	1 K.W.	\$93.00	5	2 K.W.	\$104.25
5	1.5 K.W.	93.00	5	3 K.W.	104.25
10	2 K.W.	93.00	10	4 K.W.	104.25
10	3 K.W.	93.00	10	6 K.W.	104.25
20	4 K.W.	93.00	20	8 K.W.	104.25
20	6 K.W.	93.00	20	10 K.W.	104.25
400-600 Volts			600-750 Volts		
5	4 K.W.	\$104.25	5	5 K.W.	\$104.25
5	6 K.W.	104.25	5	7.5 K.W.	104.25
10	8 K.W.	104.25	10	10 K.W.	104.25
10	12 K.W.	104.25	10	15 K.W.	104.25
20	20 K.W.	104.25	20	20 K.W.	104.25
20	30 K.W.	104.25	20	30 K.W.	104.25

Models 215 and 356 Weston Power-factor Meters

For Alternating Current



By virtue of a novel mode of construction, the Weston power-factor meter has been rendered practically perfect in its operation. From ³/₁₀ load to full load it indicates the true phase angle to within 1 per cent independent of any variable conditions found on ordinary commercial circuits. Polyphase power-factor meters may be used on any commercial frequency. Single phase meters require a phase-splitting device and, therefore, must be calibrated for the frequency at which they are to operate. The following ranges are regularly carried in stock: 25, 40, 50, 60, 125 and 133 cycles per second. Polyphase power-factor meters are arranged for the following systems: two-phase three-wire, and three-phase three-wire for balanced loads. Meters above 150-volt range are equipped with external resistance box. All meters have the same kind of scale, reading from 0.50 lag to 0.50 lead. Special scales for power-factors as low as 0.30 may be had at slight extra cost. This instrument may also be arranged as a sine or cosine meter. For two-phase four-wire circuits, two-phase three-wire instruments in conjunction with two potential transformers. Polyphase instruments are made for balanced load only.

Model 215

Diameter, 9⁵/₈ inches. Depth, 4 inches. Scale, 6¹/₂ inches.
Polyphase

100 to 125 or 125 to 150 Volts			200 to 250 or 250 to 300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
5	.5-1-.5	\$75.75	5	.5-1-.5	\$82.50
10	.5-1-.5	75.75	10	.5-1-.5	82.50
20	.5-1-.5	82.50	20	.5-1-.5	89.50
50	.5-1-.5	82.50	50	.5-1-.5	89.50
100	.5-1-.5	89.50	100	.5-1-.5	96.25
400 to 500 or 500 to 600 Volts			600 to 750 Volts		
5	.5-1-.5	\$96.25	5	.5-1-.5	\$103.25
10	.5-1-.5	95.25	10	.5-1-.5	103.25
20	.5-1-.5	103.25	20	.5-1-.5	110.00
50	.5-1-.5	103.25	50	.5-1-.5	110.00
100	.5-1-.5	110.00	100	.5-1-.5	117.00

External resistor furnished on ranges above 150 volts.

Single-phase

Single-phase meters require an auxiliary device for splitting the phase, which is mounted in an external box. The price of Single-phase Power-factor Meters, including auxiliary device, is \$13.75 more than the price of corresponding range polyphase meters. They are made for direct connection only up to 300 volts.

When ordering, always specify the frequency.

Model 356

Diameter, 7¹/₂ inches. Depth, 4¹/₂ inches. Scale, 5¹/₂ inches. Prices given below are for polyphase only.

Single-phase meters including external phase splitting reactors carry list prices \$14.75 more than the corresponding range polyphase meters. Single-phase meters are made for direct connection to circuits of 300 volts maximum. All resistors for all ranges are self-contained. Always specify frequency when ordering.

Two-phase, Three-wire, and Three-phase			Two-phase, Three-wire, and Three-phase		
100 to 125 or 125 to 150 Volts			200 to 250 or 250 to 300 Volts		
Amp.	Scale	Price Each	Amp.	Scale	Price Each
5	.50-1-.50	\$70.75	5	.50-1-.50	\$78.00
10	.50-1-.50	70.75	10	.50-1-.50	78.00
20	.50-1-.50	78.00	20	.50-1-.50	85.50
50	.50-1-.50	78.00	50	.50-1-.50	85.50
100	.50-1-.50	85.25	100	.50-1-.50	93.00
400 to 500 or 500 to 600 Volts			660 to 750 Volts		
5	.50-1-.50	\$93.00	5	.50-1-.50	\$100.50
10	.50-1-.50	93.00	10	.50-1-.50	100.50
20	.50-1-.50	100.50	20	.50-1-.50	107.75
50	.50-1-.50	100.50	50	.50-1-.50	107.75
100	.50-1-.50	107.75	100	.50-1-.50	115.25

Model 214 Weston Frequency Meters
For Alternating Current

Indications are independent of changes of temperature, voltage and wave form, such as may be encountered in the commercial circuits of to-day. Standard meters are made for one voltage, 100 to 125 volts. Every frequency meter is provided with an external box which contains reactors and resistors.



Diameter, 9 5/8 inches.
Depth, 4 inches.

100-125 or 125-150 Volts

Cycles	Price Each	Cycles	Price Each
25	\$82.50	60	\$82.50
40	82.50	125	82.50
50	82.50	133	82.50

For 200-250 or 250-300 volts, add \$7.00 list to above prices.

Model 355 Weston Frequency Meters
For Alternating Current

Indications are practically independent of changes of temperature, voltage and wave form, such as may be encountered in the commercial circuits of to-day. Standard meters are made for one voltage, 100 to 125 volts. Every frequency meter is provided with an external box which contains reactors and resistors.



Diameter, 7 3/4 inches. Depth, 4 1/2 inches.

100-125 or 125-150 Volts

Cycles	Price Each	Cycles	Price Each
25	\$78.00	60	\$78.00
40	78.00	125	78.00
50	78.00	133	78.00

For 200-250 or 250-300 volts, add \$7.50 list to above prices.

Model 226 Weston Synchrosopes
For Alternating Current



Consists of a phase angle indicator mounted with its pointer behind a ground glass scale and illuminated by a small synchronizing lamp. A difference in frequency between machines causes the pointer to swing back and forth. Perfect synchronism is indicated by the pointer remaining at rest in the middle of the scale with the lamp lighted.

Made for 100-125 volts and any commercial frequency up to 60 cycles.

Price, Model 226.....each \$86.00
Specify voltage and frequency when ordering.

Model 375 Weston Students' Galvanometers



The instrument is mounted on a base, so that the face, or scale is inclined at an angle of 45 degrees. The scale is 2.35 inches in length, is uniformly divided, and is calibrated 30-0-30. Each instrument is provided with a zero-adjusting device. The resistance is approximately 25 ohms. The current required for a millimeter (1 scale division) deflection is 22 micro-amperes.

With one volt, a deflection of 1 millimeter (1 scale division) will be obtained through 45,500 ohms, but as a deflection of 0.2 of a scale division can be readily detected, the galvanometer is, in reality, serviceable through 227,500 ohms.

Price, Model 375.....each \$13.50

Models 260 and 261 Weston Round Pattern Switchboard Instruments

For Alternating Current



Voltmeters with a range above 300 volts are provided with external resistance.

Every ammeter is tested before shipment for insulation with 4,600 volts for one minute.

The case of each ammeter is provided with a ground terminal, which must be connected to earth when the potential difference of circuits exceeds 200 volts.

Transformers must be used on all circuits carrying over 500 amperes, and a value of 5 amperes for the secondary is recommended. Models 260 and 261 have drawn steel cases.

Dimensions

Model	Diameter Inches	Depth Inches	Model	Diameter Inches	Depth Inches
260	7 3/4	4 1/2	261	9 5/8	4

Voltmeters

Model 260				Model 261			
Range	Price Each	Range	Price Each	Range	Price Each	Range	Price Each
130	\$28.00	500	\$36.00	75	\$34.75	300	\$41.25
150	28.50	600	36.50	130	34.75	500	42.75
300	34.75	750	38.50	150	35.25	600	43.25
...	.....	...	.....	250	41.25	750	45.25

Ammeters

Model 260		Model 261	
Range	Price Each	Range	Price Each
5	\$26.50	5	\$32.25

Models 251 and 252 Weston Round Pattern Switchboard Instruments

For Direct Current



Same instruments as the Models Nos. 57 and 24, except being mounted in drawn steel cases so as to correspond with the alternating current instruments.

Voltmeters are furnished with self-contained resistors for circuits up to and including 300 volts. For higher potentials external resistors are provided arranged for mounting on the back of switchboard.

Model 251

Voltmeters		Ammeters	
Range Volts	Price Each	Range Amp.	Price Each
125	\$46.75	200	\$46.25
150	48.75	250	46.75
250	52.00	300	46.75
300	53.75	400	47.00
600	58.75	500	48.75
750	62.25	600	50.25
...	.....	750	52.00
...

Model 252

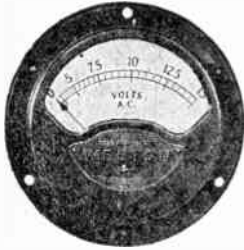
Voltmeters		Ammeters	
Range Volts	Price Each	Range Amperes	Price Each
130	\$27.25	250	\$29.75
150	28.00	300	30.25
250	32.25	400	30.50
300	33.75	500	32.25
600	38.00	600	33.75
...	.....	750	35.50

Voltmeters above 300 volts have external resistors. Ammeters, all ranges, have external shunts.

All ammeters are furnished as millivoltmeters adjusted for use with external shunts only. Prices for lower or higher ranges will be quoted upon request.

Model 429 Weston Round Pattern Switchboard Instruments

For Alternating Current



Model 429 voltmeters, ammeters, and milliammeters operate on the electro magnetic or movable iron principle in which is utilized the repulsion action between a fixed and a movable piece of iron placed within a field coil.

All scales are calibrated by hand in reference to standard instruments. The angle of deflection is approximately 86° and the scale

length 2.7 inches (68.6 m.m.). These scales have the same general characteristics as those of the larger Weston A. C. Instruments, being slightly congested at the lower end but remarkably uniform over the working range, which comprises approximately the upper four-fifths of the scale.

Voltmeters are made self-contained in the listed ranges up to and including 150 volts. Ranges above this value are provided with an external resistor box. For use with potential transformers, the 150-volt instrument can be supplied having the scale calibrated to indicate the primary voltage, if this is desired. Voltmeters are accurate within 1 per cent of full scale value, over the working range of the scale, under normal working conditions on any frequency between 25 and 133 cycles per second. Changes in temperature have no effect on the accuracy of indications, neither are instruments affected by length of time they are left in circuit. Low range voltmeters of this type necessarily require a larger current for operation than the high range instruments. At times, this larger current may become an important factor in altering the normal circuit conditions; therefore, the resistance of each range has been stated in the price list in order that the purchaser may be better enabled to select the proper instrument for his purpose.

Ammeters and milliammeters are self-contained in the ranges listed. Ranges above 50 amperes can be obtained by using a 5-ampere instrument with a current transformer of proper range. When desired, the ammeter will be calibrated to indicate the primary amperes. In cases where an overload capacity is required, a 6 1/4-ampere instrument can be provided with scale calibrated to indicate primary amperes.

Prices will be quoted upon application.

Dimensions		Surface	Flush
Diameter of Flange.....inches		4 3/8	4 3/8
" " Body....."		.....	3 9/16
Total Depth....."		2	1 7/8
Extension from Panel....."		2	2 7/16
Length of Scale....."		2.7	2.7
Approximate Weight.....pounds		1.25	1.25

Voltmeters			
Range Volts	Resist. Ohms	Scale Div.	Price Each
10	68	50	\$20.00
15	144	30	20.00
20	192	40	20.00
30	400	30	20.00
50	1100	50	20.00
60	2000	60	20.00

*Provided with external resistor.

NOTE.—For voltmeters to be used on 500 cycles add \$3.00 to the above price.

Ammeters			
Range Amp.	Scale Div.	Price Each	Range Amp.
1	50	\$18.00	10
1.5	30	18.00	15
2	40	18.00	25
3	30	18.00	30
5	50	18.00	50
7.5	75	18.00	..

Milliammeters			
Range Milliammeters	Scale Div.	Price Each	Range Milliammeters
75	75	\$18.00	300
100	50	18.00	400
150	30	18.00	500
200	40	18.00	600
250	25	18.00	750

Model 427 Weston Switchboard Wattmeters

For D. C. and Single-phase A. C.



Model 427 Wattmeters operate on the electro-dynamometer principle; consequently they can be used on both direct and alternating current.

Flush and semi-flush types of cases are provided for this model. In order that the semi-flush case should harmonize with the surface type instruments of the other models, its projection from the switch-board has been made the same as for the other surface type instruments.

These instruments are accurate within 1 per cent of full scale value at any part of the scale, under normal working conditions on direct current or on alternating current of any frequency between 25 and 133 cycles per second and of any wave form met with in commercial practice. Temperature errors are negligible.

The current circuits of these wattmeters are capable of withstanding an overload current of 50 per cent of the normal current without overheating. This feature is of value when the power factor of the circuit is low.

Model 427 Wattmeters are regularly made with self-contained voltage ranges up to and including 250 volts.

Above this value and up to and including 750 volts, an external resistor is provided. Voltage ranges may also be extended by using a potential transformer of suitable range in connection with a 150-volt instrument.

Current ranges are self-contained up to and including 20 amperes normal (30 amperes maximum). For high current ranges, it is necessary to use a current transformer in connection with a 5-ampere instrument.

Dimensions

Diam. Flange	Diam. Body	Depth	Length Scale
4 3/8	3 9/16	3 3/32	2.5

Self-contained

100-150 Volts			200-250 Volts		
AMPERES Nor.	Range Max.	Price Watts Each	AMPERES Nor.	Range Max.	Price Watts Each
1	1.5	100	1	1.5	200
1	1.5	150	1	1.5	300
2	3	200	2	3	400
2	3	300	2	3	600
5	7.5	500	5	7.5	1K.W.
5	7.5	750	5	7.5	1.5K.W.
10	15	1K.W.	10	15	2K.W.
10	15	1.5K.W.	10	15	3K.W.
20	30	2K.W.	20	30	4K.W.
20	30	3K.W.	20	30	6K.W.

External Resistor

400-600 Volts			600-750 Volts		
AMPERES Nor.	Range Max.	Price Watts Each	AMPERES Nor.	Range Max.	Price Watts Each
1	1.5	400	1	1.5	500
1	1.5	600	1	1.5	750
2	3	800	2	3	1K.W.
2	3	1.2K.W.	2	3	1.5K.W.
5	7.5	2K.W.	5	7.5	2.5K.W.
5	7.5	3K.W.	5	7.5	4K.W.
10	15	4K.W.	10	15	5K.W.
10	15	6K.W.	10	15	7.5K.W.
20	30	8K.W.	20	30	10K.W.
20	30	12K.W.	20	30	15K.W.

Radio Instruments

150 Volts			500 Cycles			300 Volts		
Amp. Max.	Range Watts	Price Each	Amp. Max.	Range Watts	Price Each	Amp. Max.	Range Watts	Price Each
3	300	\$42.50	3	300	\$47.50	3	300	\$47.50
4	400	42.50	4	400	47.50	4	400	47.50
7.5	750	42.50	7.5	750	47.50	7.5	750	47.50
15	1.5K.W.	42.50	15	1.5K.W.	47.50	15	1.5K.W.	47.50
30	3K.W.	42.50	30	3K.W.	47.50	30	3K.W.	47.50

Model 496 Weston Rectangular Switchboard Instruments For Alternating Current



These instruments are of the electro-magnetic or movable-iron type.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields.

Case is 5 3/4 inches wide, 6 inches high and projects 4 1/4 inches from front of the switchboard. Designed for back connection and surface mounting

only. Finish, dull black japan.

Scale is 5 1/8 inches in length, hand calibrated.

Voltmeters

External resistors required for all ranges.

Ranges above 750 volts require the use of potential transformers.

Volts	Number of Scale Divisions	Approximate Resistance Ohms	Price Each
100	50	1300	\$28.00
130	65	1700	28.00
150	75	2000	28.50
300	30	8300	34.75
500	50	14000	36.00
600	60	16600	36.50
750	75	21000	38.50

Ammeters

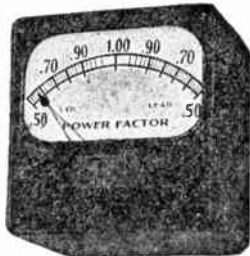
Ranges above 10 amperes and 750 volts require the use of current transformers.

Amperes	Number of Scale Divisions	Approximate Resistance Ohms	Price Each
3	30	.13	\$26.50
5	50	.044	26.50
7.5	75	.022	26.50
10	50	.013	26.50

Model 497 Weston Rectangular Switchboard Power Factor Meters For Alternating Current Single-phase, 2-phase 3-wire and 3-phase

The Power Factor Meter is constructed on the electro-dynamometer principle.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields. Case is 5 3/4 inches wide, 6 inches high, and projects 4 1/4 inches from front of the switchboard. Designed for back connection and surface mounting only. Finish, dull black japan.



Scale is 5 1/8 inches in length, hand calibrated.

External resistors required for all ranges. Current ranges above 5 amperes require the use of current transformers. State actual voltage when ordering.

Single-phase Meters

Made for direct connection to circuits of 300 volts maximum. Always specify frequency when ordering.

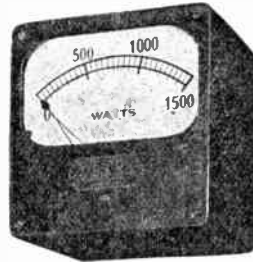
Single-phase meters including external phase splitting reactors carry prices \$14.75 more than the corresponding range polyphase meters as given below.

2-phase 3-wire and 3-phase

Made for direct connection to circuits of 750 volts maximum. For 2-phase 4-wire circuits use 2 phase 3-wire instrument with 2 potential transformers. All details in regard to ratio and connections of transformers to be used on 3-phase circuits should be given.

Volts	Amps.	Price Each	Volts	Amps.	Price Each
100 to 125	5	\$70.75	400 to 500	5	\$93.00
125 " 150	5	70.75	500 " 600	5	93.00
200 " 250	5	78.00	600 " 750	5	93.50
250 " 300	5	78.00	.....	..	.....

Model 498 Weston Rectangular Switchboard Single-phase Wattmeters For Alternating Current



This instrument is constructed on the electro-dynamometer principle.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields.

Case is 5 3/4 inches wide, 6 inches high, and projects 4 1/4 inches from front of switchboard.

Designed for back connection and surface mounting only.

Finish is dull black japan.

Scale is 5 1/8 inches in length, hand calibrated.

External resistors required for all ranges.

Current ranges above 5 amperes require the use of current transformers and potential ranges above 750 volts require the use of both current and potential transformers.

Volts	Normal Amperes	Scale	Price Each
100 to 150	5	500 W.	\$63.25
100 " 150	5	750 W.	63.25
200 " 300	5	1 K.W.	67.50
200 " 300	5	1.5 K.W.	67.50
400 " 600	5	2 K.W.	70.75
400 " 600	5	3 K.W.	70.75
600 " 750	5	2.5 K.W.	71.25
600 " 750	5	4 K.W.	71.25

Model 499 Weston Rectangular Switchboard Polyphase Wattmeters For Alternating Current



This instrument is constructed on the electro-dynamometer principle.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields.

Case is 5 3/4 inches wide, 6 inches high, and projects 4 1/4 inches from front of switchboard.

Designed for back connection and surface mounting only.

Finish, dull black japan.

Scale is 5 1/8 inches in length, hand calibrated.

External resistors required for all ranges.

Current ranges above 5 amperes require the use of current transformers and potential ranges above 750 volts require the use of both current and potential transformers.

Volts	Normal Amperes	Scale	Price Each
100 to 150	5	1 K.W.	\$93.00
100 " 150	5	1.5 K.W.	93.00
200 " 300	5	2 K.W.	104.25
200 " 300	5	3 K.W.	104.25
400 " 600	5	4 K.W.	104.25
400 " 600	5	6 K.W.	104.25
600 " 750	5	6 K.W.	104.25
600 " 750	5	7.5 K.W.	104.25

Model 500 Weston Rectangular Switchboard Frequency Meters

For Alternating Current



This instrument is of the electro-magnetic or movable-iron type.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields.

Case is 5 3/4 inches wide, 6 inches high, and projects 4 1/4 inches from front of switchboard.

Designed for back connection and surface mounting only.

Finish is dull black japan.

External reactance required for all ranges.

Higher ranges require the use of a potential transformer.

State actual voltage when ordering.

For 220-volt service, add \$7.50 to prices given below.

Volts	Cycles	Price Each	Volts	Cycles	Price Each
100 to 125	25	\$78.00	100 to 125	60	\$78.00
or	40	78.00	or	125	78.00
125 to 150	50	78.00	125 to 150	133	78.00

Model 501 Weston Rectangular Switchboard Triplex Ammeters

For Alternating Current



The Triplex Ammeter consists of three separate and distinct ammeter movements mounted one above the other and contained all in one case. Designed for back connection and surface mounting only.

The dust-proof iron case serves to protect the movements from the influence of external magnetic fields.

Case is 5 3/4 inches wide, 15 1/2 inches high, and projects 4 1/4 inches from front of switchboard.

Finish, dull black japan.

Scales are 5 1/8 inches in length, hand calibrated.

Ranges above 10 amperes and 750 volts require the use of current transformers.

Amperes	Number of Scale Divisions	Approximate Resistance Ohms	Price Each
3	30	.13	\$70.00
5	50	.044	70.00
7.5	75	.022	70.00
10	50	.013	70.00

Model 502 Weston Rectangular Switchboard Instruments

For Direct Current



These Rectangular D.C. Instruments are of the permanent magnet, movable coil type, similar to the round pattern Model 24 Instruments.

Each instrument is mounted in a dust-proof iron case which serves to protect the movement from the influence of external magnetic fields. Case is 5 3/4 inches wide, 6 inches high, and projects 4 1/4 inches from front of switchboard.

Designed for back connection and surface mounting only. Finish is dull black japan. Scales are 5 1/8 inches in length, hand calibrated.

Voltmeters

Resistance self-contained up to 800 volts.

The resistance of these instruments is 100 ohms per volt.

Volts	Number of Scale Division	Price Each	Volts	Number of Scale Division	Price Each
120	60	\$27.25	300	30	\$33.75
150	30	28.00	600	30	38.00
250	50	32.25	...	...	.....

Prices for higher or lower ranges upon application.

Ammeters

All ammeters are furnished for use with 50 M. V. external shunts only.

Standard 8-foot cables are supplied.

Amperes	Number of Scale Division	Price Each	Amperes	Number of Scale Division	Price Each
250	50	\$29.75	500	50	\$32.25
300	30	30.25	600	30	33.75
400	40	30.50	800	40	37.25

Prices for higher or lower ranges upon application.

Model 443 Weston Battery Testing Voltmeters

This instrument meets every requirement for a means of testing the individual cells of a storage battery.

The acid-proof case is of Bakelite.

In addition to its normal scale of 0 to 3 volts, this instrument is calibrated so that a portion of its scale is specially divided and figured for making the Cadmium Test. This special test which goes as added equipment has terminal consisting of a spike and a protected Cadmium stick, whereas the cable regularly supplied with the instrument has only the spike terminal.

Price, Model 443 Voltmeter, each \$14.00
 " Cadmium Test Cable. " 2.75



Model 453 Weston Heavy Discharge Battery Testers

To obtain the actual working condition of an automotive storage battery the voltage of each cell of battery should be tested while a relatively heavy current is flowing.

The Model 453 consists of a prod upon which is mounted a direct-current voltmeter having a range of 3-0-3 volts.

Price, Model 453, Complete.....each \$14.00
 " Prod Only....." 5.50



Model 425 Weston Radio Frequency Instruments



Consists of a heating element and Weston direct-current permanent magnet movable coil instrument mounted in the same case. They are regularly made as ammeters, milliammeters and galvanometers or current squared meters. All are back connected. These instruments are furnished in dull black finish with either flush or surface type cases. All instruments have a zero adjusting device. The indications

are not affected by changes in temperature and are equally accurate on any audio or radio frequencies. The galvanometers and milliammeters cannot be used on direct currents. The power required to operate these instruments is small. They have a safe overload capacity of 50 per cent.

Dimensions

Flush			Surface		
Diam. In.	Depth In.	Scale In.	Diam. In.	Depth In.	Scale In.
3.25	1.17	2.35	2.75	1.23	2.35

Milliammeters

Range	No. of Scale Div.	Price Each	Range	No. of Scale Div.	Price Each
125	25	\$18.50	500	50	\$18.50
250	50	18.50	...	...	.....

Ammeters

1	50	\$17.00	5	50	\$17.00
1.5	30	17.00	6	60	17.00
2	40	17.00	8	40	18.00
2.5	50	17.00	10	50	18.00
3	60	17.00	15	30	18.00
4	40	17.00	20	40	18.00

Galvanometers

Description	No. of Scale Divisions	Price Each
115 Milliammeters 4.5 Ohms	50	\$18.50

NOTE.—When ordering, specify whether surface or flush type is desired.

Model 400 Weston Thermo Ammeters

Weston Model 400 Radio Frequency ammeters or thermo ammeters consist of a heating element and a direct current permanent magnet indicator calibrated to indicate directly the current passing through the heating element.

These instruments are made self-contained with either front or back connection studs for currents up to and including 100 amperes. Above 100 amperes external heating elements must be used. Ranges of 100 amperes or below are also supplied with external heating elements when desired although for the lower ranges it is preferable to use the self-contained instrument.

Instruments for use with external elements are always made back connected.

Indications are not affected by changes in room temperature. Each instrument has a zero correcting device for rectifying any slight accidental changes in the zero position of the pointer. The standard finish is dull black japan.

Dimensions

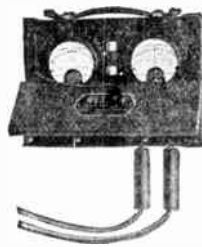
Diameter at Base	..... inches	7 3/4
Depth of Case	..... "	4
Overall Width of Front Connected Instrument	..... "	10 3/8
Scale Length	..... "	6.5

Prices

Range Amp.	Approx. Wt., Lbs.	Price Each	Range Amp.	Approx. Wt., Lbs.	Price Each
1	7.3	\$51.75	25	7.3	\$51.75
2	7.3	51.75	50	7.3	51.75
3	7.3	51.75	40	7.3	51.75
4	7.3	51.75	50	7.3	51.75
5	7.3	51.75	60	7.3	58.25
10	7.3	51.75	80	7.3	71.00
15	7.3	51.75	100	7.3	77.50
20	7.3	51.75	...	...	.....



Model 441 Weston Fault-finders



The Fault-finder consists of an ammeter and a voltmeter mounted in a strong, compact carrying box with carrying strap. The ammeter and voltmeter being electrically independent of each other, simultaneous readings of current and voltage can be made.

The voltmeter has ranges of 2-0-30 and 0.2-0-3 volts. The latter range is particularly adapted to making cadmium tests.

Each Fault-finder is provided with a pair of flexible rubber-covered cables.

Price. Model 441..... each \$31.00
" Cadmium Test Cables..... per pair 2.75

Model 354 Weston Dashboard Ammeters

For Direct Current

Furnished in two styles—(A) Flush style, with a wide flange, so that the instrument can be fastened directly to the dashboard; and (B) Surface style, projecting out from the dashboard; and held in place by the back connection studs, which also serve for making the electrical connections.

Finished in dull black or full nickel, with silver grey or black scales.

Finished in the following ranges: 10-0-10, 15-0-15, 20-0-20, and 30-0-30.

Price..... each \$3.50

When ordering, specify the style, range, finish of scale desired.

Ford Adaptor Flange, 25 cents extra.



Sterling Pocket Meters



Sterling Pocket Ammeters, Voltmeters and Voltammeters are always reliable and accurate. They not only indicate the strength or condition of batteries but are invaluable in locating ignition and starting trouble. They are especially valuable for this purpose because they show polarity and thus indicate the direction of the current. The best permanent magnets obtainable are employed in connection with an electro magnet.

The ammeter is for testing dry cells; the voltmeter for storage batteries. The voltammeter, a combination of both ammeter and voltmeter, is invaluable to those who work with both dry and storage batteries. Types 34C, 35, 37, 38 and 39 voltmeters are designed especially for testing "B" batteries. Type 36 has two scales, one 0-10 volts for "A" batteries, and one 0-50 volts for "B" batteries. Type 45 voltammeter is particularly useful in radio work in measuring the amperage of dry cells used for operating tubes and the voltage of "B" batteries.

Type No.	Capacity	Divisions	Price Each
24	Ammeter	0- 35 Amps.	\$1.00
33	Voltmeter	0- 3 Volts	1.25
34	"	0- 10 "	1.25
34A	"	0- 16 "	1.50
34B	"	0- 30 "	2.00
34C	"	0- 50 "	2.25
37	"	0- 75 "	2.50
35	"	0-120 "	3.50
38	"	0-150 "	3.50
36	"	0- 10 " 0- 50 Volts	3.50
39	Comb. Voltmeter	0-8, 0-160 "	4.00
44	Voltammeter	0- 10 Volts 0- 35 Amps.	1.50
44A	"	0- 16 " 0- 35 "	2.00
45	"	0- 50 " 0- 35 "	3.50

Duncan Direct Current Watthour Meters
Models E, EA and ER



Model E

Models E and EA meters are of the series type and are made for capacities as shown in the price list. The Model E meters are also made with astatic field coils and armature in sizes including 25 amperes and larger and when this feature is wanted, please specify Model EA.

Model ER is of the shunted type and is provided with a shunt that is connected in series in the main feeder or line and having flexible cables that connect it with the field coils of the meter. This arrangement allows only a portion of the main current to pass through the field coils of the Model ER and for this reason it adapts itself most admirably for heavy currents and we are prepared to furnish it for any capacity up to and including 30,000 amperes at either 110, 220 or 500 volts. The armature in the Model ER is slightly different from the armature employed in the other series type models. Its form resembles that of a squirrel cage instead of the coils being wound around the armature, the same as is practiced in the building of a form wound armature for dynamos, and for this reason repairs to the armature are easily taken care of and made at small expense.

Duncan Direct Current Watthour Meters
Models FR and R



Model R

Model FR meters are of the shunted type and include sizes from 100 to 30,000 amperes. They have their internal metal parts finished in frosted nickel and are provided with a sheet metal cover having an all glass window in front only. The outside of the case and back support are enameled in plain black which is neat and durable.

All Model R watthour meters are of the shunted type. They are provided with a neat cover of plate glass and extruded metal, the front of the back support are finished in black enamel; the field coils and magnets are finished in hard rubber black and the rest of the mechanism will be finished in polished copper, polished nickel or hard rubber black and nickel combination. The latter finish will be furnished unless otherwise advised.

Both the Model FR and R meters are provided with 5-foot cables as a standard length; for additional lengths see prices below.

Amperes	Models E and EA							
	110 to 125 Volts, 2-wire		220 to 250 Volts, 2-wire		400 to 600 Volts, 2-wire		220 to 250 Volts, 3-wire	
	Model E	Model EA	Model E	Model EA	Model E	Model EA	Model E	Model EA
5	\$30.70	.....	\$35.60	.....	\$45.40	.....	\$35.60	.....
10	33.40	.....	39.20	.....	50.50	.....	39.20	.....
15	37.80	.....	46.30	.....	59.40	.....	46.30	.....
25	44.20	\$50.00	54.90	\$60.80	70.10	\$77.50	54.90	\$60.80
50	57.20	63.70	67.80	75.50	86.30	95.20	70.10	77.50
75	73.50	82.40	76.30	84.00	102.50	112.80	84.40	93.00
100	88.30	99.00	90.50	99.80	117.80	129.50	100.50	111.80
150	100.50	111.80	115.80	127.50	147.20	162.00	123.80	136.50
200	112.90	125.60	132.50	146.20	169.30	186.20	147.20	162.00
300	127.50	141.30	147.20	162.30	191.30	210.50	171.80	189.50
400	147.20	165.00	166.90	183.30	210.00	230.00	.....	.....
500	166.90	186.50	186.50	206.00	230.00	250.00	.....	.....
600	186.50	210.80	206.00	226.50	250.00	270.00	.....	.....

Amperes	Model ER			
	110 to 125 Volts, 2-wire	220 to 250 Volts, 2-wire	400 to 600 Volts, 2-wire	220 to 250 Volts, 3-wire
100	\$205.00	\$215.00	\$230.00	\$235.00
150	207.50	217.50	232.50	240.00
200	210.00	220.00	235.00	245.00
300	212.50	222.50	237.50	250.00
400	220.00	230.00	245.00	265.00
500	230.00	240.00	255.00	285.00
600	235.00	245.00	260.00	295.00
800	242.00	252.00	267.00	309.00
1000	248.00	258.00	273.00	321.00
1200	255.00	265.00	280.00	335.00
1500	265.00	275.00	290.00	355.00
2000	275.00	285.00	300.00	375.00
2500	295.00	305.00	320.00	415.00
3000	310.00	320.00	335.00	445.00
4000	337.50	347.50	362.50	500.00
5000	370.00	380.00	395.00	565.00

Amperes	Models FR and R					
	110 to 125 Volts, 2-wire		220 to 250 Volts, 2-wire		400 to 600 Volts, 2-wire	
	Model FR	Model R	Model FR	Model R	Model FR	Model R
100	\$220.00	\$270.00	\$230.00	\$280.00	\$245.00	\$295.00
150	222.50	272.50	232.50	282.50	247.50	297.50
200	225.00	275.00	235.00	285.00	250.00	300.00
300	227.50	277.50	237.50	287.50	252.50	302.50
400	235.00	285.00	245.00	295.00	260.00	310.00
500	245.00	295.00	255.00	305.00	270.00	320.00
600	250.00	300.00	260.00	310.00	275.00	325.00
800	257.00	307.00	267.00	317.00	282.00	332.00
1000	263.00	313.00	273.00	323.00	288.00	338.00
1200	270.00	320.00	280.00	330.00	295.00	345.00
1500	280.00	330.00	290.00	340.00	305.00	355.00
2000	290.00	340.00	300.00	350.00	315.00	365.00
2500	310.00	360.00	320.00	370.00	335.00	385.00
3000	325.00	375.00	335.00	385.00	350.00	400.00
4000	352.50	402.50	362.50	412.50	377.50	427.50
5000	385.00	435.00	395.00	445.00	410.00	460.00
6000	430.00	480.00	440.00	490.00	455.00	505.00
8000	500.00	550.00	510.00	560.00	525.00	575.00
10000	575.00	625.00	585.00	635.00	600.00	650.00
12000	650.00	700.00	660.00	710.00	675.00	725.00
15000	730.00	780.00	740.00	790.00	755.00	805.00
20000	790.00	840.00	800.00	850.00	815.00	865.00

Amperes	220 to 250 Volts, 3-wire		Amperes	220 to 250 Volts, 3-wire	
	Model FR	Model R		Model FR	Model R
	Price, Each	Price Each		Price, Each	Price, Each
100	\$250.00	\$300.00	2000	\$390.00	\$440.00
150	255.00	305.00	2500	430.00	480.00
200	260.00	310.00	3000	460.00	510.00
300	265.00	315.00	4000	515.00	565.00
400	280.00	330.00	5000	580.00	630.00
500	300.00	350.00	6000	670.00	720.00
600	310.00	360.00	8000	810.00	860.00
800	324.00	374.00	10000	960.00	1010.00
1000	336.00	386.00	12000	1110.00	1160.00
1200	350.00	400.00	15000	1270.00	1320.00
1500	370.00	420.00	20000	1390.00	1440.00

Shunt Cables For Models FR and R Meters (In excess of 5 feet)					
Length Feet	Price Extra	Length Feet	Price Extra	Length Feet	Price Extra
6	\$2.80	10	\$15.55	16	\$50.00
8	8.45	12	26.50	20	68.70

The Model ER Watthour Meter is of the shunted type. The prices listed include, for each meter, one set of 5-foot shunt cables, one shunt for the 2-wire, and two shunts for the 3-wire meter.

When cables in excess of five feet are required and specified, the following extra list prices will be charged.

Total Length—Shunt to Meter					
Length Feet	Price Each	Length Feet	Price Each	Length Feet	Price Each
6	\$2.65	10	\$14.75	16	\$47.40
8	8.00	12	25.00	20	65.00

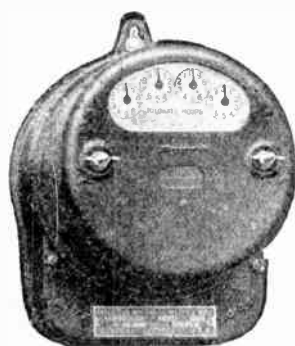
†Specify normal voltage when ordering.

†Specify normal voltage of circuit when ordering.

Type I-14 Watthour Meters

Front Connected—Metal or Glass Covers

Single-phase, Alternating Current



This watthour meter is self-contained, that is, requires no instrument transformer, except when the current exceeds 300 amperes, 2-wire, and 150 amperes, 3-wire, a current transformer is necessary, or when the voltage is more than 600 volts, both current and potential transformers are required.

Shipping weights per box: 5 to 25 amperes, 6 in a box with metal covers, 60 pounds; with glass covers, 65 pounds. 50 to 75 amperes, 4 in a box with metal covers, 55 pounds; with glass covers, 79 pounds. 100 to 300 amperes, 1 in a box with metal cover, 25 pounds; with glass cover, 27 pounds.

When ordering, state frequency and nature of circuit.

Type I-14—Self-contained—Require No Instrument Transformers

110-volt—2-wire

Amp.	25 CYCLES		50 CYCLES		60 CYCLES		Price Each
	Metal Cover	Glass Cover	Metal Cover	Glass Cover	Metal Cover	Glass Cover	
5	152860	290900	290920	290930	151942	290960	\$16.65
10	152861	290901	290921	290931	151943	290961	17.60
15	152862	290902	290922	290932	151944	290962	21.50
25	152863	290903	290923	290933	151945	290963	26.00
50	152864	290904	290924	290934	151946	290964	35.50
75	152865	290905	290925	290935	151947	290965	41.00
100	152866	290906	290926	290936	151948	290966	45.00
150	152867	290907	290927	290937	151949	290967	48.50
200	152868	290908	290928	290938	151950	290968	50.00
300	152869	290909	290929	290939	151951	290969	51.00

220-volt—2-wire

5	152870	290910	290940	290950	151952	290970	\$18.65
10	152871	290911	290941	290951	151953	290971	19.60
15	152872	290912	290942	290952	151954	290972	23.50
25	152873	290913	290943	290953	151955	290973	28.50
50	152874	290914	290944	290954	151956	290974	38.50
75	152875	290915	290945	290955	151957	290975	44.00
100	152876	290916	290946	290956	151958	290976	48.00
150	152877	290917	290947	290957	151959	290977	52.00
200	152878	290918	290948	290958	151960	290978	54.00
300	152879	290919	290949	290959	151961	290979	55.00

220-volt—3-wire (4-terminal)

5	152880	290980	290988	290996	151962	291004	\$18.65
10	152881	290981	290989	290997	151963	291005	19.60
15	152882	290982	290990	290998	151964	291006	23.50
25	152883	290983	290991	290999	151965	291007	28.50
50	152884	290984	290992	291000	151966	291008	38.50
75	152885	290985	290993	291001	151967	291009	44.00
100	152886	290986	290994	291002	151968	291010	48.00
150	152887	290987	290995	291003	151969	291011	52.00

220-volt—3-wire (6-terminal)

5	286165	291124	291132	291140	291148	291156	\$18.65
10	286166	291125	291133	291141	291149	291157	19.60
15	286167	291126	291134	291142	291150	291158	23.50
25	286168	291127	291135	291143	291151	291159	28.50
50	291120	291128	291136	291144	291152	291160	38.50
75	291121	291129	291137	291145	291153	291161	44.00

Type I-14—For Use with Instrument Transformers

110-volt—2-wire

5	188640	291201	291200	291202	188641	291203	\$21.00
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*220-volt—2-wire

5	188642	291205	291204	291206	188643	291207	\$23.00
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220-volt—3-wire

5	291698	291209	291208	291210	291699	291211	\$23.00
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*For 3-wire transformer rated circuits, 800 amperes and below, the 2-wire meters, as listed, are to be used with a double primary and single-secondary 5-ampere winding Form WM current transformer. For circuits above 800 amperes, the 3-wire meters as listed, are to be used with 2 single-primary transformers.

Type I-14 Watthour Meters

Front Connected—Metal or Glass Covers

Single-phase, Alternating Current

Continued

Type I-14—Self-contained—Require No Instrument Transformers

Meters with Removable Terminal Cover

110-volt—2-wire

Amp.	CATALOGUE NUMBERS						Price Each
	25 CYCLES		50 CYCLES		60 CYCLES		
	Metal Cover	Glass Cover	Metal Cover	Glass Cover	Metal Cover	Glass Cover	
5	291012	291018	291036	291042	291060	291066	\$16.65
10	291013	291019	291037	291043	291061	291067	17.60
15	291014	291020	291038	291044	291062	291068	21.50
25	291015	291021	291039	291045	291063	291069	26.00
50	291016	291022	291040	291046	291064	291070	35.50
75	291017	291023	291041	291047	291065	291071	41.00
100	152866	290906	290926	290936	151948	290966	45.00
150	152867	290907	290927	290937	151949	290967	48.50
200	152868	290908	290928	290938	151950	290968	50.00
300	152869	290909	290929	290939	151951	290969	51.00

220-volt—2-wire

5	291024	291030	291048	291054	291072	291078	\$18.65
10	291025	291031	291049	291055	291073	291079	19.60
15	291026	291032	291050	291056	291074	291080	23.50
25	291027	291033	291051	291057	291075	291081	28.50
50	291028	291034	291052	291058	291076	291082	38.50
75	291029	291035	291053	291059	291077	291083	44.00
100	152876	290916	290946	290956	151958	290976	48.00
150	152877	290917	290947	290957	151959	290977	52.00
200	152878	290918	290948	290958	151960	290978	54.00
300	152879	290919	290949	290959	151961	290979	55.00

220-volt—3-wire (4-terminal)

5	291084	291090	291096	291102	291108	291114	\$18.65
10	291085	291091	291097	291103	291109	291115	19.60
15	291086	291092	291098	291104	291110	291116	23.50
25	291087	291093	291099	291105	291111	291117	28.50
50	291088	291094	291100	291106	291112	291118	38.50
75	291089	291095	291101	291107	291113	291119	44.00
100	152886	290986	290994	291002	151968	291010	48.00
150	152887	290987	290995	291003	151969	291011	52.00

220-volt—3-wire (6-terminal)

5	291164	291170	291176	291182	291188	291194	\$18.65
10	291165	291171	291177	291183	291189	291195	19.60
15	291166	291172	291178	291184	291190	291196	23.50
25	291167	291173	291179	291185	291191	291197	28.50
50	291168	291174	291180	291186	291192	291198	38.50
75	291169	291175	291181	291187	291193	291199	44.00

Type I-14—For Use with Instrument Transformers

110-volt—2-wire

5	291212	291215	291213	291216	291214	291217	\$21.00
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*220-volt—2-wire

5	291218	291221	291219	291222	291220	291223	\$23.00
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220-volt—3-wire

5	291224	291227	291225	291228	291226	291229	\$23.00
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*For 3-wire transformer rated circuits, 800 amperes and below, the 2-wire meters, as listed are to be used with a double-primary and single-secondary 5-ampere winding Form WM current transformer. For circuits above 800 amperes the 3-wire meters, as listed are to be used with 2 single-primary transformers.

Ordering Directions

Meters listed as self-contained require no instrument transformers. When the currents to be metered exceed the listed ratings, current transformers are required, or when the voltage of the circuit is more than 600 volts, both current and potential transformers are required. In such cases, meters for use on the secondary of transformers should be ordered, designating such meters by catalogue numbers and ratings as given above. Catalogue numbers of meters listed for use with transformers do not include transformers.

Unless otherwise specified, meters when ordered with transformers or for use with transformers in customer's possession, will be calibrated and furnished with suitable register to read directly the primary energy.

These meters may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside of these limits, the normal operating voltage must be specified.

Type D-7 Watthour Meters
Front Connected—Metal or Glass Covers
Polyphase, Alternating Current



The operation of this meter is based on the 2-wattmeter principle in metering the energy in a polyphase system. It utilizes 2 single-phase elements acting on a common moving element and recording on a single register. It is suitable for metering 3-wire, 2-phase and 4-wire, 2-phase balanced or unbalanced systems. Meters for 4-wire, 3-phase differ very slightly in their design.

Approximate shipping weight, all voltages: 5 to 25 amperes, one in a box, metal cover 34 pounds, glass cover 36 pounds; 2 in a box, metal cover 60 pounds, glass cover 64 pounds.

50 and 75 amperes, one in a box, metal cover 45 pounds, glass cover 47 pounds; 2 in a box, metal cover 85 pounds, glass cover 89 pounds. 100 and 150 amperes, one in a box, metal cover 49 pounds, glass cover 51 pounds; 2 in a box, metal cover 90 pounds, glass cover 94 pounds.

When ordering, state frequency and nature of circuit.

Type D-7—Self-contained—Require No Instrument Transformers

These meters listed are self-contained, that is, require no instrument transformers. When the currents to be metered exceed 150 amperes, current transformers are necessary; or when the voltage of the circuit is more than 600 volts, both current and potential transformers are required. In such cases, meters for use on the secondary of transformers should be ordered, designating the meters by catalogue numbers and ratings.

These meters may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside of these limits, the normal operating voltage must be specified.

110-volt—3-wire, 2 or 3-phase

Table listing meter specifications for 110-volt, 3-wire, 2 or 3-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 60 Cycles.

Type D-7 Watthour Meters

Front Connected—Metal or Glass Covers
Polyphase, Alternating Current

Type D-7—Self-contained—Require No Instrument Transformers

Continued

110-volt—4-wire, 2-phase

Table listing meter specifications for 110-volt, 4-wire, 2-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 60 Cycles.

220-volt—4-wire, 2-phase

Table listing meter specifications for 220-volt, 4-wire, 2-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 60 Cycles.

440-volt—4-wire, 2-phase

Table listing meter specifications for 440-volt, 4-wire, 2-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 60 Cycles.

550-volt—4-wire, 2-phase

Table listing meter specifications for 550-volt, 4-wire, 2-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 60 Cycles.

Type D-7—Self-contained—Require No Instrument Transformers

These meters are self contained, that is, require no instrument transformers. When the currents to be metered exceed 75 amperes, 3 current transformers are necessary; or when the voltage of the circuit is more than 500 volts, 3 current and 2 potential transformers are required. In such cases meters for use on the secondary of transformers should be ordered, designating the meters by catalogue numbers and ratings as shown under Meters for Use with Instrument Transformers.

These meters may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside of these limits the normal operating voltage must be specified.

220Δ and 127Y Volts—4-wire, 3-phase

Table listing meter specifications for 220Δ and 127Y Volts, 4-wire, 3-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 75 Cycles.

440Δ and 254Y Volts—4-wire, 3-phase

Table listing meter specifications for 440Δ and 254Y Volts, 4-wire, 3-phase circuits. Columns include Amp., Metal Cover, Glass Cover, and Price Each. Rows are categorized by 25, 50, and 75 Cycles.

Type D-7 Watthour Meters

Front Connected—Metal or Glass Covers
Polyphase, Alternating Current
3-element Meters—Self-contained

The self-contained 3-element meters listed require no instrument transformers. When the currents to be metered exceed the listed self-contained capacities 3 current transformers are necessary or when the Δ voltage of the circuit is more than 600 volts, 3 current and 3 potential transformers are required. In such cases 3-element meters for use on the secondary of transformers should be ordered, designating the meters by catalogue numbers and ratings as shown under Meters for Use with Instrument Transformers.

Shipping weight, 4-wire, 3-phase, 3-element, 5 to 25-ampere meters, 1 in a box, 50 pounds.

220 and 127Y Volts—4-wire, 3-phase

Amp.	CATALOGUE NUMBERS						Price Each
	25 CYCLES		50 CYCLES		60 CYCLES		
	Metal Cover	Glass Cover	Metal Cover	Glass Cover	Metal Cover	Glass Cover	
5	291650		291658		291666		\$89.00
10	291651		291659		291667		97.00
15	291652		291660		291668		101.00
25	291653		291661		291669		110.00
440Δ and 254Y Volts—4-wire, 3-phase							
5	291674		291682		291690		\$101.00
10	291675		291683		291691		109.00
15	291676		291684		291692		113.00
25	291677		291685		291693		122.00

Meters for Use with Instrument Transformers

110 Volts—3-phase, 3-wire and 2-phase, 3 and 4-wire							
5	291610	291612	291611	291613	188633	291614	\$52.00
220 Volts—3-phase, 3-wire and 2-phase, 3 and 4-wire							
5	291615	291617	291616	291618	188634	291619	\$58.00
440 Volts—3-phase, 3-wire and 2-phase, 3 and 4-wire							
5	291620	291622	291621	291623	188635	291624	\$72.00
550 Volts—3-phase, 3-wire and 2-phase, 3 and 4-wire							
5	291625	291627	291626	291628	188636	291629	\$72.00

Meters for Use with Current and Potential Transformers

190Δ and 110Y Volts—4-wire, 3-phase							
5	291630	291632	291631	291633	188637	291634	\$58.00

Meters for Use with Current Transformers Only

220Δ and 127Y Volts—4-wire, 3-phase							
5	291635	291637	291636	291638	188638	291639	\$58.00
440Δ and 254Y Volts—4-wire, 3-phase							
5	291640	291642	291641	291643	188639	291644	\$72.00

3-element Meters, for Use with Current and Potential Transformers

190Δ and 110Y Volts—4-wire, 3-phase							
5	291645		291646		286173		\$89.00

3-element Meters, for Use with Current Transformers Only

220Δ and 127Y Volts—4-wire, 3-phase							
5	291700		291701		291702		\$89.00
440Δ and 254Y Volts—4-wire, 3-phase							
5	291706		291707		291708		\$101.00

Ordering Directions for Meters for Use with Transformers

Always state frequency and nature of circuit. If 4-wire, 3-phase, state both the Delta and Y voltages.

These catalogue numbers cover the meter only and do not include transformers. If transformers are to be furnished, they should be ordered by catalogue number and rating. For 3-phase 4-wire transformer rated circuits, 3 current transformers are necessary. For description and prices, refer to current and potential transformers. If meters are to be used with instrument transformers in customer's possession, the ratio of these transformers must be given on the order.

Unless otherwise specified, meters when ordered with transformers (or for use with transformers in customer's possession) will be calibrated and furnished with suitable register to read directly the primary energy.

These meters may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside of these limits, the normal operating voltages must be specified.

Type IP-5 Watthour Meters

Single-phase, Prepayment



Where the service to certain classes of consumers must be rendered under somewhat unfavorable conditions from the viewpoint of the usual method of metering, such for instance as transient or shifting populations involving frequent "cutting in" or "out" of service, reading, billing, collecting, etc., such cases may be metered more efficiently and conveniently through the use of the prepayment type of meter.

The Type IP-5 prepayment meter is made for this class of service and is arranged so that after the prepayment of one or more coins (25-cent piece) in the usual manner the consumer may receive energy up to the full amount for which payment has been made. The coin device permits prepayment of from one to twenty coins at a time. When the energy paid for has been used the meter automatically opens the line switch.

The mechanism is entirely mechanical in its operation. The element of the single-phase Type 1-14 meter is employed. Front connected, metal cover, dull black finish.

These meters may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter.

When ordering meters for voltages outside of these limits the normal operating voltage must be specified.

Approximate shipping weight, one in a box, 31 pounds; two in a box, 57 pounds.

Cat. No.	25-30 Cycles		110 Volts, 2-wire		40-133 Cycles	
	Amps.	Price Each	Cat. No.	Amps.	Price Each	
199631	5	\$66.25	192840	5	\$66.25	
199632	10	69.00	192841	10	69.00	
199633	15	71.50	192842	15	71.50	
220 Volts, 2-wire						
199634	5	\$68.25	192844	5	\$68.25	
199635	10	71.00	192845	10	71.00	
199636	15	73.50	192846	15	73.50	
220 Volts, 3-wire						
199637	5	\$68.25	192848	5	\$68.25	
199638	10	71.00	192849	10	71.00	
199639	15	73.50	192850	15	73.50	

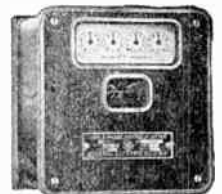
When ordering, state cycles desired and the rate of charge per kilowatt-hour.

Types IS-4 and IS-5 Watthour Meters

Single-phase, for Switchboard Service

The Types IS-4 and IS-5 meters, made expressly for switchboard service, are of strong and simple construction.

They possess the fundamental features of the Type I-14 worked into an attractive switchboard housing. Their electrical characteristics are, therefore, the same. They are back-connected, but in order to facilitate testing are equipped with a very convenient form of testing terminal so designed that access to the back of the panel is unnecessary in order to introduce testing instruments, or to cut the meter out of service. They are equipped with micrometer adjustments for full and light loads.



Type IS-4



Type IS-5
 the metal parts being finished in dull black and nickel.

The Type IS-4 is furnished with a cast metal case finished in dull black with the raised parts of polished nickel.

The Type IS-5 is furnished with a glass cover as shown in the illustration

Type IS-4 Watthour Meters

Back-connected, Metal Cover

Single-phase, Alternating Current, 25-133 Cycles, 2-wire

110 Volts			220 Volts		
Cat. No.	Amp.	Price Each	Cat. No.	Amp.	Price Each
187698	5	\$50.00	187706	5	\$52.00
187699	10	53.00	187707	10	55.00
187700	15	56.00	187708	15	58.00
187701	25	60.00	187709	25	62.00
187702	50	68.00	187710	50	70.00
187703	75	72.50	187711	75	74.50
187704	100	75.50	187712	100	77.50
187705	150	79.00	187713	150	81.00
440 Volts			550 Volts		
187714	5	62.00	187722	5	62.00
187715	10	65.00	187723	10	65.00
187716	15	68.00	187724	15	68.00
187717	25	72.00	187725	25	72.00
187718	50	79.50	187726	59	79.50
187719	75	84.50	187727	75	84.50
187720	100	88.00	187728	100	88.00
187721	150	91.00	187729	150	91.00

When ordering, state cycles desired.

For Use with Instrument Transformers

25-133 Cycles, 2-wire

Cat. No.	Amp.	Volts	Price Each	Cat. No.	Amp.	Volts	Price Each
187730	5	110	\$50.00	187731	5	220	\$52.00
187732	5	440	62.00	187733	5	550	62.00

Approximate shipping weight, all voltages: one in a box, 60 pounds; two in a box, 110 pounds.

Type IS-5 Watthour Meters

Back-connected, Glass Cover

Single-phase, Alternating Current, 25-133 Cycles, 2-wire

110 Volts			220 Volts		
Cat. No.	Amp.	Price Each	Cat. No.	Amp.	Price Each
199221	5	\$75.00	199229	5	\$77.00
199222	10	78.00	199230	10	80.00
199223	15	81.00	199231	15	83.00
199224	25	85.00	199232	25	87.00
199225	50	93.00	199233	50	95.00
199226	75	97.50	199234	75	99.50
199227	100	100.50	199235	100	102.50
199228	150	104.00	199236	150	106.00
440 Volts			550 Volts		
199237	5	87.00	199245	5	87.00
199238	10	90.00	199246	10	90.00
199239	15	93.00	199247	15	93.00
199240	25	97.00	199248	25	97.00
199241	50	104.50	199249	50	104.50
199242	75	109.50	199250	75	109.50
199243	100	113.00	199251	100	113.00
199244	150	116.00	199252	150	116.00

For Use with Instrument Transformers

25-133 Cycles, 2-wire

Cat. No.	Amp.	Volts	Price Each	Cat. No.	Amp.	Volts	Price Each
199253	5	110	\$75.00	199254	5	220	\$77.00
199255	5	440	87.00	199256	5	550	87.00

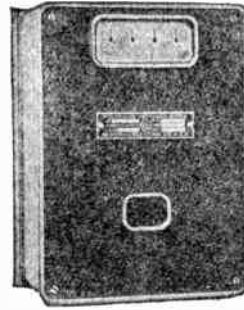
When ordering, state cycles desired.

Approximate shipping weight, all voltages: one in a box, 65 pounds; two in a box, 115 pounds.

Types DS-6 and DS-7 Watthour Meters

For Switchboard Service

Polyphase, Alternating Current



Type DS-6

The Type DS-6 and DS-7 meters are designed expressly for switchboard service. In principle they are like the Type D-7 but are provided with housing as shown adapting them for mounting on panels. They possess the same electrical characteristics as the Type D-7. They are provided with special testing terminals so that access to the back of the panel is unnecessary in order to introduce testing instruments or to cut the meter out of service. Micrometer adjustments are provided for full and light load and

for the balance of elements. A suitable power-factor adjustment is also available.

The Type DS-6 is furnished in an attractive cast metal case finished in dull black with raised portions of polished nickel very similar to the single-phase Type IS-4.

The Type DS-7 is furnished with a glass cover, the metal parts being finished in dull black and nickel.

Type DS-6 Watthour Meter

Back-connected, Metal Cover, Dull Black Finish

For 3-phase, 3-wire; 2-phase, 3-wire; 2-phase, 4-wire Circuits

25 to 133 Cycles, Self-contained

Cat. No.	Amp.	Approx. Kilowatt Rating of Meter	H. P. Rating of Motor with which Meter can be Used	Price Each	
				110 Volts	220 Volts
187734	5	1	1	\$72.50	
187735	10	2	2	77.00	
187736	15	3	3	81.50	
187737	25	5	5	88.50	
187738	50	10	10	102.00	
187739	75	15	15	112.00	
187740	100	20	20	120.00	
187741	150	30	30	136.50	
220 Volts					
187742	5	2	2	\$79.50	
187743	10	4	4	84.00	
187744	15	6	6	88.00	
187745	25	10	10	95.00	
187746	50	20	20	108.50	
187747	75	30	30	119.00	
187748	100	40	40	128.00	
187749	150	60	60	144.00	
440 Volts					
187750	5	4	4	\$89.50	
187751	10	8	8	94.50	
187752	15	12	12	99.00	
187753	25	20	20	106.50	
187754	50	40	40	121.50	
187755	75	60	60	132.50	
187756	100	80	80	142.00	
187757	150	120	120	160.00	
550 Volts					
187758	5	5	5	\$89.50	
187759	10	10	10	94.50	
187760	15	15	15	99.00	
187761	25	25	25	106.50	
187762	50	50	50	121.50	
187763	75	75	75	132.50	
187764	100	100	100	142.00	
187765	150	150	150	160.00	

Meters for Use with Transformers

Cat. No.	Amp.	Volts	Price Each	Cat. No.	Amp.	Volts	Price Each
187766	5	110	\$72.50	187768	5	440	\$89.50
187767	5	220	79.50	187769	5	550	89.50

When ordering, state frequency and nature of circuit.

Type DS-6 Watthour Meters

For Switchboard Service
Back-connected, Metal Cover

For 3-phase, 4-wire Circuits Only; 25-133 Cycles, Self-contained
220 Volts, Delta; 127 Volts Y

Cat. No.	Amp.	Approx. Kilowatt Rating of Meter	H.P. Rating of Motor with which Meter can be Used	Price Each
188344	5	2	2	\$79.50
188345	10	4	4	84.00
188346	15	6	6	88.00
188347	25	10	10	95.00
188348	50	20	20	108.50
188349	75	30	30	119.00
440 Volts, Delta; 254 Volts Y				
188350	5	4	4	\$89.50
188351	10	8	8	94.50
188352	15	12	12	99.00
188353	25	20	20	106.50
188354	50	40	40	121.50
188355	75	60	60	132.50

Meters for Use with Transformers
For Use with Current Transformers

Cat. No.	Amp.	Volts Δ	Volts Y	Price Each
188356	5	220	127	\$79.50
188357	5	440	254	89.50

For Use with Current and Potential Transformers

188358	5	190	110	\$79.50
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Approximate net weight each, 39 pounds. Approximate shipping weight, one in box, 72 pounds; two in box, 140 pounds.

When ordering, state frequency and nature of circuit.

Type DS-7 Watthour Meters

Back-Connected, Glass Cover

For 3-phase, 3-wire; 2-phase, 3-wire and 4-wire Circuits
25-133 Cycles, Self-contained
110 Volts

Cat. No.	Amp.	Kw. Capacity Non-Ind. Loads	Motor H.P. Rating 2 and 3 Phase	Price Each
199257	5	1	1	\$110.00
199258	10	2	2	114.50
199259	15	3	3	119.00
199260	25	5	5	126.00
199261	50	10	10	139.50
199262	75	15	15	149.50
199263	100	20	20	157.50
199264	150	30	30	174.00
220 Volts				
199265	5	2	2	\$117.00
199266	10	4	4	121.50
199267	15	6	6	125.50
199268	25	10	10	132.50
199269	50	20	20	146.00
199270	75	30	30	156.50
199271	100	40	40	165.50
199272	150	60	60	181.50
440 Volts				
199273	5	4	4	\$127.00
199274	10	8	8	132.00
199275	15	12	12	136.50
199276	25	20	20	144.00
199277	50	40	40	159.00
199278	75	60	60	170.00
199279	100	80	80	179.50
199280	150	120	120	197.50
550 Volts				
199281	5	5	5	\$127.00
199282	10	10	10	132.00
199283	15	15	15	136.50
199284	25	25	25	144.00
199285	50	50	50	159.00
199286	75	75	75	170.00
199287	100	100	100	179.50
199288	150	150	150	197.50

When ordering, state frequency and nature of circuit.

Type DS-7 Watthour Meters

For Switchboard Service

Back-Connected, Glass Cover

For 3-phase, 3-wire, 2-phase, 3-wire and 4-wire

Meters for Use with Instrument Transformers

Cat. No.	Amp.	Volts	Price Each	Cat. No.	Amp.	Volts	Price Each
199289	5	110	\$110.00	199291	5	440	\$127.00
199290	5	220	117.00	199292	5	550	127.00

For Four-wire, Three-phase Circuits Only

25-133 Cycles Self-contained

220Δ 127 Y Volts

Cat. No.	Amp.	Kw. Capacity Non-Inductive Load	Motor H.P. Rating	Price Each
199293	5	2	2	\$117.00
199294	10	4	4	121.50
199295	15	6	6	125.50
199296	25	10	10	132.50
199297	50	20	20	146.00
199298	75	30	30	156.50

440Δ 254 Y Volts

199299	5	4	4	\$127.00
199300	10	8	8	132.00
199301	15	12	12	136.50
199302	25	20	20	144.00
199303	50	40	40	159.00
199304	75	60	60	170.00

Meters listed above are self-contained, that is, require no instrument transformers. When the currents to be metered exceed 75 amperes, current transformers are necessary, or when the Δ voltage of the circuit is more than 600 volts, both current and potential transformers are required. In such cases meters for use on the secondary of transformers should be ordered designating the meters by catalogue numbers and ratings as given below.

Meters for Use with Current and Potential Transformers

Cat. No.	Amp.	Volts	Price Each
199307	5	190Δ110Y	\$117.00

Meters for Use with Current Transformers Only

199305	5	220Δ127Y	\$117.00
199306	5	440Δ254Y	127.00

The catalogue numbers cover the meter and do not include transformers which should be ordered in addition giving complete rating. Unless otherwise specified, meters when ordered with transformers will be calibrated and furnished with suitable register to read directly the primary energy.

Approximate net weight each, 34 pounds. Approximate shipping weight, one in a box, 85 pounds; two in a box, 160 pounds.

Always specify the nature and frequency of the circuit on which the meter is to be used.

When ordering three-phase, four-wire meters listed, always state both the Δ and Y voltage of the circuit.

All meters listed may be used on circuits the voltage of which is not more than 10 per cent above or below the rated voltage of the meter. When ordering meters for voltages outside of these limits the normal operating voltage must be specified.

All meters listed under "Self-Contained" require no transformers.

When the current to be metered exceeds the maximum listed above current transformers are necessary, or when the voltage of the circuit is more than 600 both current and potential transformers are necessary. In such cases meters for use on the secondary of transformers should be ordered by catalogue number and rating as listed under "Meters for Use with Transformers."

These catalogue numbers cover the meter only and do not include transformers.

Transformers should be ordered separately by catalogue number and rating.

Type C-6 Watthour Meters
Thomson—Side Connected Metal Cover
Direct Current



This meter is made for direct current circuits. It has unusually high torque, light weight moving element, small commutator gravity control brushes and adjustable shunt field coil. It can be furnished for back connections. Prices on application.

Approximate shipping weight, all voltages, 5 to 50 amperes, inclusive, one in a box, 26 lbs., two in a box, 50 lbs.; 75 amperes, one in a box, 35 lbs., two in a box, 69 lbs.; 100 to 600 amperes, one in a box, 48 lbs.

State normal operating voltage of circuit when ordering.

100-120 Volts, Direct Current, Two-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
37594	5		\$31.00	37599	75		\$72.00
37595	10		33.00	37600	100		85.00
37596	15		37.00	37601	150		99.00
37597	25		44.00	37602	300		126.00
37598	50		58.00	37603	600		180.00

200-240 Volts, Direct Current, Two-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
37614	1 1/4	5	\$35.00	37619	20	75	\$74.00
37615	2	10	40.00	37620	25	100	87.00
37616	3 1/2	15	47.00	37621	40	150	112.00
37617	7	25	54.00	37622	80	300	144.00
37618	15	50	68.50	37623	160	600	200.00

200-240 Volts, Direct Current, Three-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
37604	5		\$35.00	37609	75		\$79.00
37605	10		40.00	37610	100		94.00
37606	15		47.00	37611	150		121.00
37607	25		54.00	37612	300		166.00
37608	50		71.00				

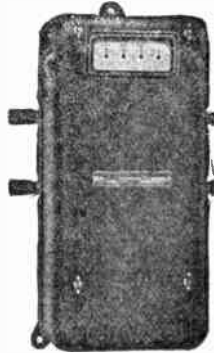
Type CS-3 Watthour Meters
Astatic—Side Connected—Metal Covers
Direct Current

Type CS-3 is an astatic watthour meter for direct current service and is especially designed by an astatic arrangement of the armature and field coils for operation with accuracy in the presence of stray fields.

This meter can be furnished in back connected form, known as Type CS-4. Prices on application.

Approximate shipping weight, all capacities and voltages, 60 pounds.

Always state normal operating voltage of circuit when ordering.



100-200 Volts, Direct Current, Two-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
195737	15		\$100.00	195742	150		\$130.00
195738	25		105.00	195743	200		140.00
195739	50		110.00	195744	300		160.00
195740	75		115.00	195745	400		180.00
195741	100		120.00	195746	600		210.00

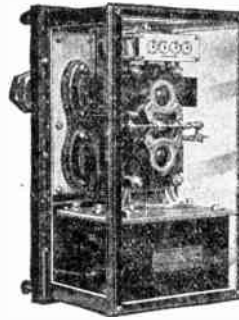
200-240 Volts, Direct Current, Two-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
195748	4	15	\$110.00	195753	40	150	\$150.00
195749	7	25	117.50	195754	50	200	160.00
195750	15	50	125.00	195755	80	300	180.00
195751	20	75	132.50	195756	100	400	200.00
195752	25	100	140.00	195757	160	600	230.00

200-240 Volts, Direct Current, Three-wire

Cat. No.	CAPACITY H.P.	Amps.	Price Each	Cat. No.	CAPACITY H.P.	Amps.	Price Each
195759	15		\$115.00	195764	150		\$165.00
195760	25		125.00	195765	200		175.00
195761	50		135.00	195766	300		195.00
195762	75		145.00	195767	400		215.00
195763	100		155.00				

Type CS Watthour Meters
For Switchboard Service
Direct Current Astatic



This meter embodies the double or astatic arrangement of field coil and armature as in the CS-3 meter. The magnets are astatically arranged and magnetically shielded by a laminated iron box which totally surrounds them. The resistance for the potential circuit is mounted within the case so that all parts are at the same relative temperature, minimizing errors arising from this source. It is furnished with glass cover, the finish of the meter being dull black and nickel.

When ordering, state normal operating voltage of circuit.

100 to 105, 106 to 110, 111 to 115, 116 to 120 Volts Two-wire

Cat. No.	Amp.	Price Each
58235	50	\$250.00
58236	75	260.00
58237	100	270.00
58238	150	280.00
58239	200	290.00
58240	300	310.00
58241	400	330.00
58242	600	360.00
58243	800	390.00
58244	1200	420.00
58245	1500	450.00

200 to 210, 211 to 220, 221 to 230, 231 to 240 Volts Two-wire

Cat. No.	H.P.	Amp.	Price Each
58246	15	50	\$270.00
58247	20	75	280.00
58248	25	100	290.00
58249	40	150	305.00
58250	50	200	315.00
58251	80	300	335.00
58252	108	400	355.00
58253	160	600	390.00
58254	200	800	420.00
58255	320	1200	450.00
58256	400	1500	480.00

200 to 210, 211 to 220, 221 to 230, 231 to 240 Volts Three-wire

Cat. No.	Amp.	Price Each
58257	50	285.00
58258	75	300.00
58259	100	315.00
58260	150	340.00
58261	200	355.00
58262	300	380.00
58263	400	410.00
58264	600	460.00
58265	800	510.00
58266	1200	560.00
58267	1500	610.00

500 to 550, 551 to 600 Volts Two-wire

Cat. No.	H.P.	Amp.	Price Each
58268	30	50	290.00
58269	50	75	300.00
58270	60	100	310.00
58271	100	150	330.00
58272	120	200	340.00
58273	200	300	360.00
58274	240	400	380.00
58275	400	600	420.00
58276	500	800	450.00
58277	800	1200	480.00
58278	1000	1500	510.00

Type G-3 Watthour Meters
For Switchboard Service
Direct Current Astatic

This type of meter is made along the same lines as the Type CS with the exception that the series "field coil" is a straight copper bar. It embodies the same astatic arrangement of elements, shielding of magnets, internal resistance, etc.

When ordering, state normal operating voltage of circuit.

100 to 105, 106 to 110 111 to 115, 116 to 120 Volts 2-wire

Cat. No.	Amp.	Price Each
58350	2000	\$550.00
58351	3000	600.00
58352	4000	650.00
58353	6000	750.00

200 to 210, 211 to 220, 221 to 230, 231, to 240 Volts 2-wire

Cat. No.	H.P.	Amp.	Price Each
58356	550	2000	\$580.00
58357	800	3000	630.00
58358	1100	4000	680.00
58359	1600	6000	780.00



500 to 550, 551 to 600 Volts 2-wire

Cat. No.	H.P.	Amp.	Price Each
58366	1300	2000	\$610.00
58367	2000	3000	660.00
58368	2600	4000	710.00
58369	4000	6000	810.00

Type C-15 D.C. Watthour Meters



Type C-15 2-wire

The Type C-15 direct-current watt-hour meter is identical in principle with the Type C-6 meter and retains those essential features of the latter which insure successful operation. It differs, however, in many of its mechanical details, such as in the use of the Type 1-14 meter register and magnets, the D-7 meter cover and a material reduction in over-all dimensions and weight.

The back is an aluminum alloy casting following out as far as possible the idea introduced in the I-14 meter, i. e., one central casting to which all parts are attached. The terminal chamber is at the bottom with a separately concealed cover identical with the I-14.

This meter is built only in the smaller ratings of 5 to 15 amperes, 110 and 220 volts, 2 and 3-wire.

2-wire—Bottom Connected—Metal Cover

100-120 Volts			200-220 Volts		
Cat. No.	Amp.	Price Each	Cat. No.	Amp.	Price Each
269862	5	\$26.00	269864	5	\$29.00
269863	10	28.00	269865	10	33.00
279274	15	32.00	279275	15	39.00

3-wire—Bottom Connected—Metal Cover

200-220 Volts							
Cat. No.	Amp.	No. of Terminals	Price Each	Cat. No.	Amp.	No. of Terminals	Price Each
269866	5	4	\$29.00	290855	5	6	\$29.00
269867	10	4	33.00	290856	10	6	33.00
279276	15	4	39.00	290857	15	6	39.00

State normal operating voltage of circuit when ordering.

Jewels and Pivots for Watthour Meters Removable Sapphire Jewels



No. 3132R



No. 39924

Cat. No.	Description	Finish
31320	For Meters with Single Aluminum Disk Earlier than Types C and I	Nickel
6672	For Meters with Single Copper Disk (Similar to Cat. No. 31320 Excepting that It has a Heavier Spring)	Brass
39924	For Types I, C, CQ, IS-2, IS-3, D-3, DS-4, and DS-5 Meters	"
157465	For Types I-14, D-6, IS-4, DS-6 and DS-7 Meters	"
105210	For Type I-10 Meters	"

Removable Diamond Jewels

Cat. No.	Description	Finish
39925	For Types C and CS Meters	Brass
39926	" " " " E " " G and Other Commutating	"
118569	For Types CS, G-2 and G-3 Meters	Copper Nickel

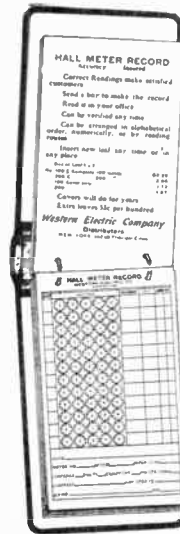
Pivots



Cat. No.	Description	Finish
6827	Pivot or Shaft End for All Jewels	.....

Prices upon application.

Watthour Loose Leaf Meter Books



Meter Book Complete

The Hall Loose Leaf Meter Book is made in two sizes Nos. 100 and 200. No. 100 is designed to hold 100 meter sheets.

No. 200 will accommodate 200 sheets. No. 100C consists of a No. 100 cover and 100 sheets.

No. 200C comprises a No. 200 cover and 200 sheets.

Size of leaf is 5x8 1/2 inches.

No. 100C

Meter book complete with 100 leaves. Price No. 100C.....each \$3.75

No. 200C

Meter book complete with 200 leaves. Price No. 200C.....each \$4.58

Covers Only

Price No. 100.....each \$3.00
" " 200....." 3.23

Leaves Only

Price in 1000 Lots.....per 1000 \$6.00
" " 100....." 100 .68

Indexes

Price.....per set \$2.48

Type L Matthews Woodpecker Telefaults



For use on telephone, telegraph, or signal cable. A self-contained instrument that will exactly locate water in cables, shorts of all kinds in cables, crosses, grounds, split pairs, in fact, everything except "opens." It only uses one dry cell battery, maximum voltage under 5 volts. The tone is like a woodpecker on a pole and does not "noise" up other working pairs, because of the inductive field created.

Can also be used as a tone test set, as a howler to make subscribers hang up receivers.

The Type L Matthews Woodpecker Telefault is held in a neat, strong case, and furnished with a carrying strap. The vibrator, battery, head phone and exploring coil are all contained in this box.

No batteries are furnished.

Shipping weights, Type L Telefaults complete, 8 pounds; extra exploring coils, 2 pounds; extra receivers, 1 pound.

Price, Type L Telefault Complete.....each \$132.00
" Extra Exploring Coils....." 30.00
" " Receivers....." 8.00

Foot-candle Meters



The foot-candle meter is a small, self-contained instrument which measures illumination intensities in foot-candles. This unit is rapidly becoming recognized as the popular as well as the scientific measure of intensity in illumination, which makes the application practical. Technical knowledge is not required in the use of the meter because the ad-

justment is simple and determinations are readily made. The foot-candle meter shows where increased intensities must be installed to get the desired results. It should be returned at least once every four months for recalibration.

Size In.	Meter Only	Wt., Lbs. Meter and Case	Shipping Complete	Price Each	Recalibration Charge
8x6x1 1/2	3	4	7	\$25.00	\$1.50

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled



The Single-phase Distribution Transformers are built on the distributed core, which has been found best adapted both electrically and mechanically to this type of transformer.

Various coil constructions have been developed to meet the particular requirements of designs depending upon unit size and voltage rating. In the larger sizes, circular coils of either disk or cylindrical form are used on account of their greatly superior mechanical qualities, and the facilities they give for rigid mechanical support.

The windings of the Distribution Transformers are carefully dried under vacuum, and filled under pressure with an insulating compound. This process not only removes all moisture from the insulation and seals the windings against the entrance of moisture, but also makes the winding a solid mass, thus giving it greater mechanical strength and heat conductivity. In the core-wound transformers this treatment is applied to the complete unit, consisting of core and coils. In the form-wound transformers the complete winding is treated as a unit before assembly on the core.

For Operation on 2200-2300-2400-volt Circuits

APPLICATION.—By connections of the low voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200 kv-a. which are suitable for series and three-wire service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts, Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive. When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a. inclusive.

Transformer weights include suspension hooks up to 100 kv-a. inclusive.

Name Plate Voltage Rating

Line No. 1		Line No. 2		Kv-a. Cont. Rating 55° C. Rise	Oil Req. Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage	Low Voltage	High Voltage	Low Voltage			
2200/3810 Y	to 110/220	2200/3810 Y	to 122/244			
2300/4000 Y	" 115/230					
2400/4160 Y	" 120/240					
Line No. 1 Cat. No.	Line No. 2 Cat. No.					
79047	79041	1.5	2	200		
79050	79044	3	3	245		
165651	165751	5	5 1/4	350		
165652	165752	7.5	8 1/4	475		
165653	165753	10	14 1/2	495		
165654	165754	15	19	660		
165656	165756	25	23 1/2	870		
198389	198392	37.5	43	1260		
165659	165759	50	55	1570		
165660	165760	75	53	1850		
165661	165761	100	50	2120		
172735	172741	150	160	4080		
172736	172742	200	200	4660		

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 440-460-480 and 550-575-600-volt Circuits

APPLICATION.—By connection of the low voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 10 kv-a., inclusive, in the 440-volt class and with sizes up to 15 kv-a., inclusive, in the 550-volt class. When cutouts are desired for sizes 15 and 25 kv-a., in the 440-volt class or for sizes 25 and 37.5 kv-a., in the 550-volt class, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a. inclusive.

Transformer weights include suspension hooks up to 100 kv-a. inclusive.

Name Plate Voltage Rating		Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gal.	Approx. Shipping Wt., Incl. Oil, Lbs.
High	Low			
440 to 110/220	550 to 110/220			
460 " 115/230	575 " 115/230			
480 " 120/240	600 " 120/240			
Cat. No.	Cat. No.			
43394	76745	1.5	2	190
43397	76748	3	2 1/4	225
43399	76750	5	4 3/4	335
43400	76751	7.5	9	465
43401	76752	10	15	465
43402	76753	15	19	640
43404	76755	25	23 1/2	870
198400	198396	37.5	43	1260
43407	76758	50	55	1565
78958	78960	75	53	1830
78959	78961	100	50	2070

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 2200-2300-2400-volt Circuits

APPLICATION.—By connection of the low voltage leads outside the tank, transformers are arranged for series and multiple service.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive. When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

Line No. 1		Line No. 2		Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gal.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage	Low Voltage	High Voltage	Low Voltage			
2200/3810 Y	to 220/440	2200/3810 Y	to 244/488			
2300/4000 Y	" 230/460					
2400/4160 Y	" 240/480					
Line No. 1 Cat. No.	Line No. 2 Cat. No.					
224951	79178	1.5	2	190		
197128	79181	3	3	245		
197129	180182	5	5 1/4	375		
197130	180183	7.5	8 1/4	495		
197131	180184	10	14 1/2	490		
197132	180185	15	19	640		
197134	180187	25	23 1/2	870		
198408	198393	37.5	43	1260		
197137	180190	50	55	1565		
197138	180191	75	53	1830		
197139	180192	100	50	2070		
197141	148136	150	160	4080		
197142	148137	200	200	4660		

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 2300-volt Circuits

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200 kv-a. which are suitable for series and three-wire service only. Transformers having low-voltage rating of 230/360 are suitable for series and multiple service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive.

When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 2070/2185/2300/4000Y to Low Voltage 115/230

High Voltage 2070/2185/2300/4000Y to Low Voltage 230/360

Low Voltage		Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
115/230 Cat. No.	230/460 Cat. No.			
224948	224949	1.5	2 3/4	230
200407	222153	3	5	295
200408	222154	5	5 1/4	355
200409	222155	7.5	8 1/4	495
200410	222156	10	14 1/2	495
200411	222157	15	19	660
200413	222158	25	23 1/2	870
198407	222159	37.5	43	1260
200416	222160	50	55	1570
200417	222161	75	53	1850
200418	222162	100	50	2120
200420	222163	150	160	4980
200421	222164	200	200	4560

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 1100, 1150, 1200-volt Circuits

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 25 kv-a., inclusive. When cutouts are desired for sizes 37 1/2 to 75 kv-a., inclusive, two Cat. No. 260773 should be ordered separately, and two Cat. No. 230001 for 100 kv-a.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 1100/2200/3810Y to Low Voltage 110/220

High Voltage 1150/2300/4000Y to Low Voltage 115/230

High Voltage 1200/2400/4160Y to Low Voltage 120/240

Cat. No.	Kv-a., Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
195657	3	5	295
195658	5	5 1/4	355
24008	7.5	8 1/4	490
24009	10	14 1/2	495
24010	15	19	660
24012	25	23 1/2	870
198388	37.5	43	1260
24015	50	55	1570
78970	75	53	1850
78971	100	50	2120

Type A Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 1100 or 2200-volt Circuits

Type A transformers are standard for nominal 1100-volt service and are also suitable for nominal 2200-volt service.

APPLICATION.—The high voltage windings of sizes 1 to 50 kv-a., inclusive, may be connected for either 1150, 2300 or 4000Y volts. The high voltage windings of sizes 75 and 160 kv-a. may be connected for 2300 or 4000Y volts only. By connections of the low voltage leads outside the tanks, transformers are arranged for series, multiple or three-wire service.

SERVICE.—Suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive. When cutouts are desired for sizes 75 and 100 kv-a., for 2300 or 4000Y volt operation, or for sizes 37.5 and 50 kv-a., for 1150-volt operation, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive.

Transformer weights include suspension hooks up to 50 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage, 1150/2300/4000Y to Low Voltage, 115/230

Cat. No.	Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
192570	3	5 1/4	300
192571	5	3 1/2	315
192572	7.5	6 1/2	460
192573	10	11 1/2	435
192574	15	15	560
192575	25	22	660
192576	37.5	39	1080
192577	50	40	1210
192578	75	53	1780
192579	100	60	2520

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 2200-2300-2400-volt Circuits

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive. When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 2200/3810Y to Low Voltage 550

High Voltage 2300/4000Y to Low Voltage 575

High Voltage 2400/4160Y to Low Voltage 600

Cat. No.	Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
207369	3	3	245
207370	5	5 1/4	350
207371	7.5	8 1/4	475
207372	10	14 1/2	495
207373	15	19	660
207374	25	23 1/2	870
207375	37.5	43	1260
207376	50	55	1570
207377	75	53	1850
207378	100	50	2120
207380	150	160	4080
207381	200	200	4660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 3300-volt Circuits

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple, or three-wire service, with the exception of 150 and 200 kv-a. which are suitable for series and three-wire service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive.

When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 3300 to Low Voltage 122/244

Cat. No.	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
79162	1.5	2	200
79165	3	3	245
79167	5	5 1/4	350
79168	7.5	8 1/4	475
79169	10	14 1/2	495
79170	15	19	660
79172	25	23 1/2	870
198404	37.5	43	1260
79175	50	55	1580
78972	75	53	1860
78973	100	50	2120
172732	150	160	4080
172733	200	200	4660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 4000-volt Circuits

These transformers are to provide service where it is more economical or desirable to connect transformers across phases than between line and neutral on 2300-4000 volt Y circuits. The use of these transformers gives the same service voltages as 10:1 ratio transformers connected between line and neutral.

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service, with the exception of 150 and 200 kv-a. which are suitable for series and three-wire service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers. When cutouts are desired two Cat. No. 260773 should be ordered separately.

SUSPENSION HOOKS.—Suspension hooks are supplied with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 4000 to Low Voltage 115/220

No.	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
246241	1.5	2 3/4	230
246242	3	4 3/4	315
246243	5	5 1/4	355
246244	7.5	8 1/4	495
246245	10	14 1/2	495
246246	15	19	660
246247	25	23	865
246248	37.5	45	1280
246249	50	55	1600
246250	75	53	1840
246251	100	50	2110
246252	150	160	4080
246253	200	200	4660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 2200-4400, 2300 4600
and 2400-4800-volt Circuits

APPLICATION.—By connection of the low voltage leads outside the tank, transformers are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200 kv-a., which are suitable for series and three-wire service only.

SERVICE.—Suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers. When cutouts are desired, two of Cat. No. listed below should be ordered separately.

Transformer High Voltage Rating Kv-a. Sizes Incl. Cutouts Recommended Cat. No. Transformer High Voltage Rating Kv-a. Sizes Incl. Cutouts Recommended Cat. No.
4400 to 4800 Up to 75 270335 2200 to 2400 Up to 50 104227
4400 " 4800 100 " 200 260773 2200 " 2400 75 " 200 260773

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive.

Transformer weights include suspension hooks up to 100 kv-a., inclusive.

Name Plate Voltage Rating

Line 1		Line 2		
High Voltage	Low Voltage	High Voltage	Low Voltage	
2200/4400/7620Y to 110/220	2300/4600/8000Y to 115/230	2200/4400/7620Y to 122/244	2200/4400/7620Y to 122/244	
2400/4800/8320Y to 120/240	Line No. 1	Kv-a., Cont. Rating 55° C. Rise	Oil Req'd	
Line No. 2	Cat. No.	Oil Req'd	Approx. Ship. Wt. Incl. Oil, Lbs.	
224953	224952	1.5	2 3/4	230
195645	195639	3	5 1/4	350
195646	195640	5	5 1/4	355
79927	79910	7.5	8 1/4	495
79928	79911	10	14 1/2	495
79929	79912	15	19	665
79931	79914	25	33	1010
198391	198390	37.5	45	1280
79934	79917	50	55	1690
79935	79918	75	53	1840
79936	79919	100	50	2110
172729	172726	150	160	4080
172730	172727	200	200	4660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 2200-4400, 2300 and 2400-4800-volt Circuits

APPLICATION.—By connection of the low-voltage leads outside the tank, transformers are arranged for series and multiple service only. All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers. When cutouts are desired, two of Cat. No. listed below should be ordered separately.

Transformer High Voltage Rating Kv-a. Sizes Incl. Cutouts Recommended Cat. No. Transformer High Voltage Rating Kv-a. Sizes Incl. Cutouts Recommended Cat. No.
4400 to 4800 Up to 75 270335 2200 to 2400 Up to 50 104227
4400 " 4800 100 " 200 260773 2200 " 2400 75 " 200 270773

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 100 kv-a., inclusive. Transformer weights include suspension hooks, up to 100 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 2200/4400, 7620Y to Low Voltage 220/440
High Voltage 2300/4600/8000Y to Low Voltage 230/460
High Voltage 2400/4800, 8320Y to Low Voltage 240, 480

Cat. No.	Kv-a., Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Ship. Wt. Incl. Oil, Lbs.
224954	1.5	2 3/4	230
224434	3	5 1/4	350
224435	5	5 1/4	355
224436	7.5	8 1/4	495
224437	10	14 1/2	495
224438	15	19	660
224439	25	33	990
224440	37.5	45	1280
224441	50	55	1690
224442	75	53	1850
224443	100	50	2110
224444	150	160	4080
224445	200	200	4660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operating on 6600-volt Circuits

APPLICATION.—For operation on 6600-volt circuits and for supplying service voltages 600 and below.

Transformers of these name plate ratings are also designed for operation as follows:

Low Voltage Rating
High Voltage Rating **Line No. 1** **Line No. 2** **Line No. 3**
 6600/11430Y/ 6200/6000/5700 to 110/220 220/440 550
 7200/12470Y/ 6875 6545/6220 120/240 240/480 600

By connection of the low voltage leads outside the tank, transformers having low voltage rating of 115/230 are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200, which are suitable for series and three-wire service only. Transformers having low voltage rating of 230/460 are suitable for series and multiple service only. Suitable for indoor or outdoor installation.

SUSPENSION HOOKS.—Provided with, and included in transformer weights of all sizes up to 50 kv-a., inclusive.

Name Plate Voltage Rating			Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
Line No. 1, High Voltage, 6900/11950Y/6585/6275/5960 To Low Voltage, 115/230	Line No. 2, High Voltage, 6900/11950Y/6585/6275/5960 To Low Voltage, 230/460	Line No. 3, High Voltage, 6900/11950Y/6585/6275/5960 To Low Voltage, 575			
Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.			
199346	199374	204392	1.5	5	265
199347	199375	204393	3	5	315
199348	199376	204394	5	7½	450
199349	199377	204395	7.5	11	420
199350	199378	204396	10	11½	485
199351	199379	204397	15	17	660
199352	199380	204398	25	29	920
199353	199381	204399	37.5	37	1220
199354	199382	204400	50	49	1570
199355	199383	204401	75	57	2670
199356	199384	204402	100	82	3050
199358	199386	204404	150	155	4260
199359	199387	204405	200	197	4970

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 6600-volt Circuits

APPLICATION.—For operation on 6600-volt circuits and for supplying 2300 or 4000-volt distribution and motors.

Transformers having voltage rating of 6600/11430Y to 2300 are, when operated in bank, suitable for transforming from 6600 to 2300; from 6600 to 4000Y or from 11430Y to 2300. They should not be used connected in Y on both high- and low-voltage sides simultaneously to transform from 11430Y to 4000Y as this connection may result in the presence of excessive stresses in the windings due to harmonic voltages.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not included with these transformers.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive.

Transformer weights include suspension hooks up to 50 kv-a., inclusive.

Name Plate Voltage Rating			Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage 6600/11430Y/6270/5940 To Low Voltage 2300 Delta					
Cat. No.					
204406	1.5	6	295		
204407	3	9½	455		
204408	5	11½	550		
204409	7.5	11	420		
204410	10	18	580		
204411	15	26	715		
204412	25	27	960		
204413	37.5	42	1210		
204414	50	50	1530		
204415	75	57	2500		
204416	100	67	2880		
204418	150	135	4140		
204419	200	174	4710		

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 11000-volt Circuits

APPLICATION.—For 11000-volt circuits and for supplying service voltages 600 and below. Transformers of these name plate ratings are also designed for operation as follows:

High Voltage Rating **Line No. 1** **Line No. 2** **Line No. 3**
 11000, 10450/9900 to 110/220 220/440 550

By connection of the low-voltage leads outside the tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or three-wire service with the exception of sizes 150 and 200, which are suitable for series and three-wire service only. Transformers having low voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Provided with and included in weights of all sizes up to 50 kv-a., inclusive.

Name Plate Voltage Rating			Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Lbs. Incl. Oil
Line No. 1 High Voltage, 11500/10925/10350 To Low Voltage 115/230	Line No. 2 High Voltage, 11500/10925/10350 To Low Voltage, 230/460	Line No. 3 High Voltage, 11500/10925/10350 To Low Voltage, 575			
Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.			
204420	204432	204444	2.5	4½	290
204421	204433	204445	5	13	415
204422	204434	204446	10	18	545
204423	204435	204447	15	26	755
204424	204436	204448	25	29	920
204425	204437	204449	37.5	38	1190
204426	204438	204450	50	54	1630
204427	204439	204451	75	72	2800
204428	204440	204452	100	82	3110
204430	204442	204454	150	155	4370
204431	204443	204455	200	217	5250

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 11000-volt Circuits

APPLICATION.—For operation on 11000-volt circuits and for supplying 2300 or 4000 volt distribution and motors.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive.

Transformer weights include suspension hooks up to 50 kv-a., inclusive.

Name Plate Voltage Rating			Kv-a. Cont. Rating 55° C. Rise	Oil Req'd Gals.	Approx. Shipping Wt., Lbs. Incl. Oil
High Voltage, 11000/10450/9900 To Low Voltage 2300/4000Y					
Cat. No.					
204456	2.5	9½	440		
204457	5	11	430		
204458	10	18	580		
204459	15	23	745		
204460	25	27	950		
204461	37.5	39	1150		
204462	50	51	1540		
204463	75	57	2500		
204464	100	68	2810		
204466	150	135	4140		
204467	200	174	4710		

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 13200-volt Circuits

APPLICATION.—For 13200-volt circuits and for supplying service voltages 600 and below. Transformers of these name plate ratings are also designed for operation as follows:

Low Voltage Rating			
High Voltage Rating	Line No. 1	Line No. 2	Line No. 3
13200/12540/11880	to 110/220	220/440	550

By connection of the low-voltage leads outside the tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or three-wire service, with the exception of 150 and 200 kv-a., which are suitable for series and three-wire service only. Transformers having low-voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Provided with and included in weights of all sizes up to 50 kv-a., inclusive.

Name Plate Voltage Rating

Line No. 1 High Voltage, 13800/13110/12420	To Low Voltage, 115/230
Line No. 2 High Voltage, 13800/13110/12420	To Low Voltage, 230/460
Line No. 3 High Voltage, 13800/13110/12420	To Low Voltage, 575

Line No. 1	Line No. 2	Line No. 3	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
204468	204480	204492	2.5	9	330
204469	204481	204493	5	13	475
204470	204482	204494	10	18	580
204471	204483	204495	15	24	705
204472	204484	204496	25	27	960
204473	204485	204497	37.5	53	1480
204474	204486	204498	50	55	1640
204475	204487	204499	75	57	2670
204476	204488	204500	100	83	3120
204478	204490	204502	150	155	4370
204479	204491	204503	200	217	5250

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 13200-volt Circuits

APPLICATION.—For operation on 13200-volt circuits and for supplying 2300 or 4000-volt distribution and motors.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive.

Transformer weights include suspension hooks up to 50 kv-a., inclusive.

Name Plate Voltage Rating

High Voltage 13200/12540 11880	To Low Voltage 2300/4000Y
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Cat. No.	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
204504	2.5	11½	375
204505	5	11	430
204506	10	18	580
204507	15	25	705
204508	25	27	960
204509	37.5	54	1440
204510	50	55	1600
204511	75	75	2690
204512	100	68	2810
204514	150	135	4140
204515	200	174	4710

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 22000-volt Circuits

APPLICATION.—For operation on 22000-volt circuits and for supplying service voltages 600 and below. Transformers of these name plate ratings are also designed for operation as follows:

Low Voltage Rating			
High Voltage Rating	Line No. 1	Line No. 2	Line No. 3
22000/20900/19800	to 110/220	220/440	550

By connection of the low-voltage leads outside the tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or three-wire service with the exception of 150 and 200 kv-a. which are suitable for series and three-wire service only. Transformers having low-voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—All sizes are suitable for outdoor and indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are not provided with these transformers.

Name Plate Voltage Rating

Line No. 1, High Voltage, 23000/21850/20700	to Low Voltage, 115/230
Line No. 2, High Voltage, 23000/21850/20700	to Low Voltage, 230/460
Line No. 3, High Voltage, 23000/21850/20700	to Low Voltage, 575

Line No. 1	Line No. 2	Line No. 3	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
204561	204572	204583	5	38	1360
204562	204573	204584	10	49	1580
204563	204574	204585	15	48	1630
204564	204575	204586	25	61	2110
204565	204576	204587	37.5	59	2150
204566	204577	204588	50	92	2870
204567	204578	204589	75	88	2990
204568	204579	204590	100	100	3220
204570	204581	204592	150	201	4890
204571	204582	204593	200	237	5610

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled

For Operation on 22000-volt Circuits

APPLICATION.—For operation on 22000-volt circuits and for supplying 2300 or 4000-volt distribution and motors.

SERVICE.—All sizes are suitable for outdoor and indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are not provided with these transformers.

Name Plate Voltage Rating
High Voltage, 22000/20900/19800
to Low Voltage, 2300/4000Y

Cat. No.	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
204594	5	38	1360
204595	10	49	1580
204596	15	48	1630
204597	25	61	2110
204598	37.5	59	2210
204599	50	92	2870
204600	75	88	2990
204601	100	100	3270
204603	150	178	4680
204604	200	218	5660

Type H Distribution Transformers
Single-phase, 60 Cycles, Self-cooled
For Operation on 33000-volt Circuits

APPLICATION.—For operation on 33000-volt circuits and for supplying service voltages 600 and below. Transformers of these name plate ratings are also designed for operation as follows:

High Voltage Rating	Low Voltage Rating		
	Line No. 1	Line No. 2	Line No. 3
33000/31360/29700	to 110/220	220/440	550

By connection of the low-voltage leads outside tank, transformers having low-voltage rating of 115/230 are arranged for series, multiple or three-wire service with the exception of sizes 150 and 200 which are suitable for series and three-wire service only. Transformers having low-voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—All sizes are suitable for outdoor and indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are not provided with these transformers.

Name Plate Voltage Rating	
Line No. 1, High Voltage	34500/32775/31050
to Low Voltage, 115/230	
Line No. 2, High Voltage	34500/32775/31050
to Low Voltage, 230/460	
Line No. 3, High Voltage	34500/32775/31050
to Low Voltage, 575	

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.	Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt. Incl. Oil, Lbs.
204605	204615	204625	10	49	1700
204606	204616	204626	15	48	1750
204607	204617	204627	25	60	2160
204608	204618	204628	37.5	58	2270
204609	204619	204629	50	106	3110
204610	204620	204630	75	102	3220
204611	204621	204631	100	99	3310
204613	204623	204633	150	201	5010
204614	204624	204634	200	237	5660

Type H Distribution Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 33000-volt Circuits

APPLICATION.—For operation on 33000-volt circuits and for supplying 2300 or 4000-volt distribution and motors.

SERVICE.—All sizes are suitable for outdoor and indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Suspension hooks are not provided with these transformers.

Name Plate Voltage Rating	
High Voltage	33000/31350/29700
to Low Voltage	2300, 4000Y

Cat. No.	Kv-a. Cont. 55° C Rise	Gals. Oil Req'd	Approx. Shipping Wt. Incl. Oil, Lbs.
204635	10	48	1690
204636	15	48	1750
204637	25	60	2160
204638	37.5	58	2210
204639	50	106	3110
204640	75	102	3220
204641	100	99	3310
204643	150	177	4800
204644	200	214	5560

Type H Distribution Transformers
Single-phase, 25 Cycles Self-cooled, 2300-volt Circuits

APPLICATION.—By connections of the low voltage leads outside the tank, transformers having low voltage rating of 115/230 are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200, which are suitable for series and three-wire service only.

SERVICE.—Suitable for indoor or outdoor installation.

FUSIBLE PRIMARY CUTOUTS.—Two cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive. When cutouts are desired for sizes 75 to 200 kv-a., inclusive, two Cat. No. 260773 should be ordered separately.

Name Plate Voltage Rating		Kv-a. Cont. Rating Rise 55° C.	Oil Req. Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High	Low			
2300 to 115/230	115/230 2300			
Cat. No.	Cat. No.			
36016	.....	1.5	3	260
31405	.....	3	8½	460
31407	.....	5	10	465
31408	.....	7.5	10	515
31409	33508	10	20	720
31410	33509	15	24	870
31412	33511	25	53	1470
198386	198387	37.5	48	1800
31415	33514	50	50	1830
78944	78946	75	108	2580
78945	78947	100	124	3150
172711	148115	150	240	4650
172712	148116	200	200	5150

Type H Distribution Transformers

Single-phase, 25 Cycles, Self-cooled
For Operation on 6600-volt Circuits

APPLICATION.—For operation on 6600-volt circuits and for supplying service voltages 600 and below.

Transformers of these name plate ratings are also designed for operation as follows:

HIGH VOLTAGE RATING	LOW VOLTAGE RATING		
	Line No. 1	Line No. 2	Line No.
6600/11430/Y6200/6000/5700	to 110/220	220/440	550
7200/12470/Y6875/6545/6220	" 120/240	240/480	600

By connection of the low voltage leads outside the tank, transformers having low voltage rating of 115/230 are arranged for series, multiple or three-wire service, with the exception of sizes 150 and 200, which are suitable for series and three-wire service only. Transformers having low voltage rating of 230/460 are suitable for series and multiple service only.

SERVICE.—Suitable for indoor or outdoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS.—Provided with sizes up to 25 kv-a., inclusive.

Transformer weights include suspension hooks up to 25 kv-a., inclusive.

Name Plate Voltage Rating	
Line No. 1, High Voltage	6900/11950Y/6585/6275/5960
To Low Voltage, 115/230	
Line No. 2, High Voltage	6900/11950Y/6585/6275/5960
To Low Voltage, 230/460	
Line No. 3, High Voltage	6900/11950Y/6585/6275/5960
To Low Voltage, 575	

Line No. 1 Cat. No.	Line No. 2 Cat. No.	Line No. 3 Cat. No.	Kv-a. Cont. Rating 55° C. Rise	Oil Req. Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
192498	192512	192592	1.5	5¾	345
192499	192513	192593	3	9	505
192500	192514	192594	5	17	565
192501	192515	192595	7.5	16¼	620
192502	192516	192596	10	26	815
192503	192517	192597	15	30	955
192504	192518	192598	25	58	1570
192505	192519	192599	37.5	61	2530
192506	192520	192600	50	66	2700
192507	192521	192601	75	106	2830
192508	192522	192602	100	163	3830
192510	192524	192604	150	202	5300
192511	192525	192605	200	240	6230

Type H Subway Transformers

Single-phase, 60 Cycles, Self-cooled
For Operation on 2200, 2300 and 2400-volt Circuits



Transformers for subway service must meet all the conditions imposed upon them by underground installation; they must be watertight since subways are not dry and transformers are often subjected to actual contact with water. Their dimensions must be as small as consistent to adapt them to the limited space available in manholes; they must have high efficiency and low losses because they are usually connected to the line continuously. The design must provide for low temperature rise as the radiation is slow, due to the poor circulation of the air in the manhole.

APPLICATION.—By connection of the low-voltage leads at the terminal board, transformers are arranged for series, multiple or three-wire service, with the exception of 75, 100, 150 and 200 kv-a. which are suitable for series, and for three-wire service only.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

It is recommended that subway transformers be protected with D & W oil fuse cutouts as follows: Sizes up to 50 kv-a. inclusive, No. 246103 (50 amp. capacity) or No. 246104 (100 amp. capacity). For sizes 75 and 100 kv-a. No. 246104 (100 amp. capacity standard service), No. 246107 (100 amp. capacity heavy service) or No. 246105 (200 amp. capacity). For sizes 150 and 200 kv-a., No. 246105 (200 amp. capacity standard service) or No. 246108 (200 amp. capacity heavy service).

Name Plate Voltage Rating		Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High 2200 to 2300 2400	Low 110/220 115/230 120 240			
Cat. No.	Cat. No.			
79569	79560	5	13	630
79570	79561	7.5	12½	660
79571	79562	10	11½	700
79572	79563	15	22¼	1170
79574	79565	25	36	1650
198406	198405	37.5	57½	2080
79577	79568	50	56	2210
78982	78980	75	62	2240
78983	78981	100	58	2460
157217	157214	150	68	2910
157218	157215	200	112	3810

Type H Subway Transformers

Single-phase, 40 Cycles, Self-cooled
For Operation on 2200 and 2300-volt Circuits

Name Plate Voltage Rating		Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High 2200 to 2300	Low 115/230 122/244			
Cat. No.	Cat. No.			
204149	205363	5	13	635
204150	205364	7.5	12½	660
204151	205365	10	11½	710
204152	205366	15	22¼	1190
204153	205367	25	36	1700
204154	205368	37.5	56½	2190
204155	205369	50	65	2440
204156	205370	75	62	2410
204157	205371	100	58	2640

Type HT Distribution Transformers

Three-phase, 60 Cycles, Self-cooled

APPLICATION.—Terminal board is provided on the low-voltage side for either series or multiple connection.

SERVICE.—All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Three cutouts Cat. No. 104227 are furnished with sizes up to 50 kv-a., inclusive, in the 2300-volt class.

SUSPENSION HOOKS.—Suspension hooks are provided with all sizes up to 50 kv-a., inclusive, below.

BRACKETS.—Brackets for supporting the high-voltage leads are regularly furnished with all sizes up to 50 kv-a., inclusive.

For Operation on 2200, 2300, 2400 or 4000-volt Circuits

Name Plate Voltage Rating		Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage 2200/3810 Y 2300/4000 Y 2400/4150 Y	Low Voltage 220/440 230/460 240/480			
Cat. No.				
217737	5	11	535	
217738	7.5	12	650	
217739	10	23	925	
217740	15	21	1030	
217741	25	43	1690	
217742	37.5	39	1840	
217743	50	50	2430	
217744	75	60	2830	
217745	100	53	2850	
217746	150	92	4080	
217747	200	152	4750	

For Operation on 4400, 4600, or 4800-volt Circuits

Name Plate Voltage Rating		Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage 4400 Y 4600 Y 4800 Y	Low Voltage 220/440 230/460 240/480			
Cat. No.				
217748	5	11	535	
217749	7.5	12	650	
217750	10	23	925	
217751	15	21	1030	
217752	25	43	1690	
217753	37.5	39	1840	
217754	50	50	2430	
217755	75	60	2840	
217756	100	53	2850	
217757	150	92	4080	
217758	200	152	4730	

For Operation on 6600-volt Circuits

Name Plate Voltage Rating		Kv-a. Cont. 55° C Rise	Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
High Voltage 6600Y/6270Y/5940Y 6860Y/6555Y/6210Y 7200Y/6840Y/6480Y	Low Voltage 220/440 230/460 240/480			
Cat. No.				
217759	10	26	965	
217760	15	30	1180	
217761	25	45	1720	
217762	37.5	40	1820	
217763	50	57	2270	
217764	75	90	3250	
217765	100	136	3950	
217766	150	140	4850	
217767	200	200	5500	

Type HT Distribution Transformers

Three-phase, 60 Cycles, Self-cooled

APPLICATION. — Terminal board is provided on the low-voltage side for either series or multiple connection.

SERVICE. — All sizes are suitable for outdoor or indoor installation.

FUSIBLE PRIMARY CUTOUTS.—Cutouts are not furnished with these transformers.

SUSPENSION HOOKS. — Suspension hooks are provided with all sizes up to 50 kv-a. inclusive, for voltage ratings 13800 and below.

BRACKETS. — Brackets for supporting the high-voltage leads are regularly furnished with all sizes up to 50 kv-a. inclusive, for voltages 13800 and below.

For Operation on 11000-volt Circuits
Name Plate Voltage Rating

Cat. No.	Name Plate Voltage Rating		Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
	High Voltage	Low Voltage		
	11000Y/9900Y	220/440		
	11500Y/10550Y	230/460		
	Kv-a. Cont. 55° C Rise			
217768	10	26	965	
217769	15	30	1180	
217770	25	45	1720	
217771	37.5	40	1820	
217772	50	57	2270	
217773	75	90	3250	
217774	100	136	3950	
217775	150	140	4850	
217776	200	200	5500	

For Operation on 13200-volt Circuits
Name Plate Voltage Rating

Cat. No.	Name Plate Voltage Rating		Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
	High Voltage	Low Voltage		
	13200Y/11880Y	220/440		
	13800Y/12420Y	230/460		
	Kv-a. Cont. 55° C Rise			
217943	10	32	1190	
217944	15	46	1660	
217945	25	44	1750	
217946	37.5	56	2050	
217947	50	53	2330	
217948	75	115	3550	
217949	100	123	3750	
217950	150	130	4830	
217951	200	185	5450	

For Operation on 22000-volt Circuits
Name Plate Voltage Rating

Cat. No.	Name Plate Voltage Rating		Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
	High Voltage	Low Voltage		
	22000Y/19800Y	220/440		
	23000Y/20700Y	230/460		
	Kv-a. Cont. 55° C Rise			
217777	15	...	...
217778	25	...	...
217779	37.5	...	...
217780	50	...	...
217781	75	...	...
217782	100	...	...
217783	150	...	...
217784	200	...	...

For Operation on 33000-volt Circuits
Name Plate Voltage Rating

Cat. No.	Name Plate Voltage Rating		Oil Req'd Gals.	Approx. Shipping Wt., Incl. Oil, Lbs.
	High Voltage	Low Voltage		
	33000Y/29700Y	220/440		
	34500Y/31050Y	230/460		
	Kv-a. Cont. 55° C Rise			
217787	37.5	...	...
217788	50	...	...
217789	75	...	...
217790	100	...	...
217791	150	...	...
217792	200	...	...

Insulator Type Primary Cutouts

Single Pole, 30 Amp., 2500 Volts



Cat. No.	Description	Price Each
104227	Insulator Type Primary Cutout Provided with Spring Catch Contact with Two Binding Screws	\$2.00
246477	Base for No. 104227	1.25
104577	Plug Only for No. 104227 . . . . .	.75
260276	Combination Safety Plug Puller and Switch Hook, Overall Length, 42 Inches	5.00

Fuse Links for No. 104227

Cat. No.	Amps.	Std. Pkg.	Price Each	Cat. No.	Amps.	Std. Pkg.	Price Each
259480	1	100	\$.20	259485	15	100	\$.20
259481	2	100	.20	259486	20	100	.20
259482	3	100	.20	259487	25	100	.20
259483	5	100	.20	259488	30	100	.20
259484	10	100	.20	.....	..	...	...

Expulsion Type Primary Cutouts

30 Amp. 7500 Volts



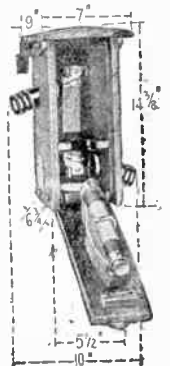
Cat. No.	Description	Price Each
270335	30-amp. 7500-volt Cutout Suitable for Either Right or Left-Hand Entrance, Complete with Link Holder Enclosed in Porcelain Box	\$8.50
270336	Link Holder Only for No. 270335	1.40

Fuse Links

Cat. No.	Amp.	Price Each	Cat. No.	Amp.	Price Each
210033	1	\$.20	210039	12	\$.20
210034	2	.20	210040	15	.20
210035	3	.20	210041	20	.20
210036	5	.20	210042	25	.20
210037	8	.20	210043	30	.20
210038	10	.20	.....	..	.....

100 Amp., 2500-7500 Volts

Cat. No.	Description	Price Each
260773	100-amp. 2500-7500 Volt Cutout Complete with Link Holder and Suitable for Either Right or Left Hand Entrance. Enclosed in Wooden Box	\$12.50
106902	Link Holder for No. 260773	2.75



Fuse Links

Cat. No.	Amp.	Price Each	Cat. No.	Amp.	Price Each
248529	5	\$.20	248537	50	\$.20
248531	10	.20	248538	60	.20
248532	15	.20	248539	70	.20
248533	20	.20	248540	75	.20
248534	20	.20	248541	80	.20
248535	30	.20	248542	90	.20
248536	40	.20	248543	100	.20

Standard package, 100.

D & W Oil Fuse Cutouts



Pole Type 50-200 Amperes

When ordering specify catalogue number and in addition, the type, rated ampere capacity and voltage.



Subway Type 50-200 Amperes

For example, if ordering two (2) Cat. No. 230014 Cutouts, the requisition should read: Cat. No. 230014—Type D-1C—50-ampere—2500-volt Standard Pole Type—D & W Oil Fuse Cutouts. Sufficient oil (No. 21) is shipped with the cutouts in all cases and it should not be specified as a separate item on the requisition.

Particular attention is directed to the fact that fuse links are not included with cutouts and must be ordered as a separate item. Ordinary fuse wire or fuse links for other kinds of cutouts will not operate satisfactorily and the special links designed for these cutouts should be used.

In ordering fuse links specify the catalogue number and in addition the ampere rating, type, and mention the ampere rating of the cutout for which they are intended, and line voltage on which the cutout is to be used. If possible, also mention the catalogue number of the cutout.

Supply parts should be positively identified on the requisition by description and the form letter of the cutout as well as the Cat. No. of the cutout.



Pole Type Heavy Service

Standard Pole Type

Cat. No.	Type	Volts	AMPERES		Net Wt., Lbs. with Oil	Price Each
			Rated Capacity	Interrupting		
230014	D-1C	2500	5 to 50	500	37	\$33.00
230000	D-2C	2500	10 " 100	1000	47	45.00
230001	D-3C	2500	10 " 200	2000	80	60.00

Standard Subway Type

246103	D-10B	2500	5 to 50	500	44	\$60.00
246104	D-11B	2500	10 " 100	1000	67	70.00
246105	D-12B	2500	10 " 200	2000	88	95.00

Heavy Service Pole Type

230006	D-8C	2500	10 to 100	2500	43	\$51.00
230007	D-4C	2500	10 " 200	5000	96	75.00
		5000	10 " 150	3750		
230008	D-5C	2500	100 to 300	7500	156	*
230009	D-6C	7500	10 " 150	3750	164	*

Heavy Service Subway Type

246107	D-21B	2500	10 to 100	2500	47	\$79.00
246108	D-22B	2500	10 " 200	5000	99	119.00
		5000	10 " 150	3750		

*Prices on application.

†2500-volt cutouts are suitable for operation on 4000 Y-connected circuits with dead grounded neutral.

In all cases two cutouts are required between lines.

Fuse Links for D & W Fuse Oil Cutouts Standard Type

For Use with Oil Fuse Cutouts

Rated Capacity of Links in Amps.	CATALOGUE NUMBERS OF CUTOUTS					
	*235587	230000	230001	230008	230009	230010
	230014	230002	230003	230004	For 2500 or 5000 Volts	230009
5	235587	230553	230555	230566	230581	230608
10	235675	230555	230555	230566	230581	230608
15	235676	230556	230556	230567	230582	230609
20	235677	230557	230557	230567	230582	230609
25	235678	230558	230558	230569	230584	230611
30	235678	230559	230559	230569	230584	230611
40	235678	230561	230561	230571	230586	230613
50	235678	230563	230563	230572	230587	230614
75	235678	230563	230563	230572	230587	230614
100	235678	230563	230563	230572	230587	230614
125	235678	230563	230563	230572	230587	230614
150	235678	230563	230563	230572	230587	230614
175	235678	230563	230563	230572	230587	230614
200	235678	230563	230563	230572	230587	230614
250	235678	230563	230563	230572	230587	230614
300	235678	230563	230563	230572	230587	230614

Weight Standard Package, Pounds

1/2	1/2	1	2 1/4	2 1/4	2 1/4
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Price, Standard Package of 10 Links

\$4.50	\$4.50	\$7.50	\$18.00	\$18.00	\$18.00
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Reactive Type

For Use with Oil Fuse Cutouts

Rated Capacity of Links in Amps.	CATALOGUE NUMBERS OF CUTOUTS					
	230000	230001	230007	**	230008	230009
	230006	230002	230003	230013	For 2500 or 5000 Volts Only	230010
10	230664	230704	235636	230681	235613	235613
15	230665	230705	235637	230682	235614	235614
25	230667	230707	235639	230684	235616	235616
40	230670	230710	235642	230687	235619	235619
50	230672	230712	235644	230689	235621	235621
75	230675	230715	235647	230692	235624	235624
100	230678	230718	235650	230695	235627	235627
125	230678	230721	235653	230698	235627	235627
150	230678	230724	235656	230701	235627	235627
175	230678	230727	235659	230704	235627	235627
200	230678	230730	235662	230707	235627	235627
250	230678	230733	235665	230710	235627	235627
300	230678	230736	235668	230713	235627	235627

Weight Standard Package, Pounds

2 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2
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Price, Standard Package of 10 Links

\$37.50	\$37.50	\$37.50	\$37.50	\$37.50	\$37.50
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*Cat. No. 235587 is now obsolete. The links listed are for the boxes which are already in service.

**Cat. No. 230008 when used on 5000-volt circuits will require special reactive type links. Full data on request.

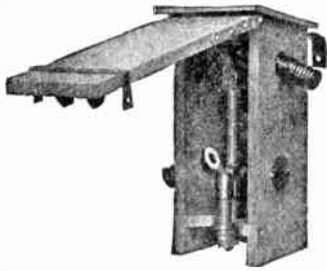
†The standard links for 150 amperes and below listed for these cutouts will operate satisfactorily on 5000 volts.

‡When Cat. Nos. 230007 and 230013 are used on 5000-volt circuits where reactive type fuse links are required, use links Cat. Nos. 235636 to 235656. Links Cat. Nos. 230704 to 230730 are only good for 2500-volt circuits.

§Not suitable for use in Cat. No. 230010.

Type OK Matthews Fuswitches and Disconnecting Switches

Designed to Give the Maximum of Protection for Transformers and for Sectionalizing of Lines, etc.



Matthews Fuswitch and Disconnecting Switch are exactly the same with the exception that the first has the patented double barreled vacuum cartridge, and the second has the metal switch blade. Either can be quickly and easily converted to the other by substituting the blade for the cartridge or vice versa.

They are both rated 7500 volts or less; the Type OK Fuswitch 100 amperes or less; the Type OK Disconnecting Switch 150 amperes or less.

The box is made of Tidewater Cypress soaked in linseed oil and protected inside and out with high voltage weather resisting paint. Roof is covered with sheet copper.

Four holes are provided for right or left-hand entrance. Fuse cartridge or blade is handled entirely by the Matthews Safety Fuse Puller. One of these furnished with each 2 switches. Can be inspected without disturbing service.

Type	Description	Ship. Wt., Lbs.	Price Each
OK	Fuswitch	18	\$19.50
OK	Disconnecting Switch	18	18.00
OK	Extra Cartridges	3	9.00
OK	" Blades	3	6.50
OK	" Bushings	1	1.20

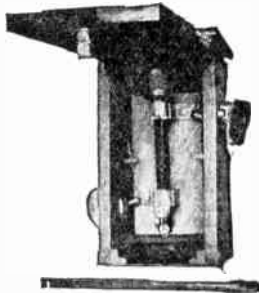
Extra fuses can be furnished in 3 to 100 amperes inclusive. All fuses 25 amperes or less will be furnished made of round lead with flat copper terminals. All fuses over 25 amperes will be furnished of flat zinc. Prices for extra fuses 40 cents each. One fuse will be sent with each fuse switch as specified and without extra charge.

Type CG Matthews Fuswitches

For 4400 Volts or Less, 60 Amperes or Less



Closed View



Open View

When wires become short-circuited, a Matthews Fuswitch protecting the wire is designed to open the circuit in trouble by the fuse melting from overload, killing the section short-circuited. Matthews Fuswitches combine in one device the fuse block and the primary line disconnecting switch.

Type CG has a composition top, which makes it absolutely impervious to weather conditions.

Type	Shipping Wt., Lbs.	PRICE		
		Less than 12	12 to 24	25 or More
CG	25	\$36.00	\$34.00	\$32.00

Extra fuse blades for the Type CG cost \$13.00 each.

The above prices include fuse cartridge, hangers, insulators and fuse wire for one charge. Specify amperes of fuse desired. Extra fuses for Type CG-3 to 60 amperes, 40 cents each. Lead fuses furnished for 25 amperes or less.

Type HQ Matthews Fuswitches and Disconnecting Switches

Designed to Give the Maximum of Protection for Transformers and for Sectionalizing of Lines, etc.



Matthews Fuswitch and Disconnecting Switch are exactly the same with the exception that the first has the patented double barreled vacuum cartridge, and the second has the metal switch blade. Either can be quickly and easily converted to the other by substituting the blade for the cartridge or vice versa.

They are both rated 7500 volts or less; the Type HQ Fuswitch 200 amperes or less; the Type

HQ Disconnecting Switch 250 amperes or less. The box is made of Tidewater Cypress soaked in linseed oil and protected inside and out with high voltage weather resisting paint. Roof is covered with sheet copper.

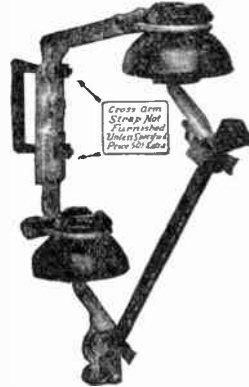
Four holes are provided for right or left-hand entrance. Fuse cartridge or blade is handled entirely by the Matthews Safety Fuse Puller. One of these furnished with each 2 switches. Can be inspected without disturbing service.

Type	Description	Ship. Wt., Lbs.	Price Each
HQ	Fuswitch	25	\$36.00
HQ	Disconnecting Switch	24	29.00
HQ	Extra Cartridges	3	13.50
HQ	" Blades	2	6.50
HQ	" Bushings	1	1.20

Extra fuses can be furnished in 3 to 200 amperes inclusive. All fuses 25 amperes or less will be furnished made of round lead with flat terminals. All fuses over 25 amperes will be furnished of flat zinc. Price for extra fuses 40 cents each. One fuse will be sent with each fuswitch as specified and without extra charge.

Open Type Matthews Fuswitches

Rating 15000 Volts or Less—100 Amperes or Less



Furnished with either 17500 or 25000-volt as specified. Frame certified galvanized malleable iron. Can be strapped or bolted to cross arm. Fuse cartridge 14 inches between contacts.

The inner tube is made out of horn fibre covered with an exterior of weatherproof tube.

The upper contact clip is covered with a rib that prevents the cartridge from falling out in case of a severe jar.

Description	Ship. Wt. Lbs.	Price Each
Fuswitch with 17000-volt Insulator	20	\$20.00
" " 25000 " "	24	25.00
Extra Cartridges	3	11.70
" Insulator Assemblies, Upper or Lower, 17500-volt	7	6.50
Extra Insulator Assemblies, Upper or Lower, 25000-volt	8	9.00
Extra Cross Arm Strapping, 4 1/4 or 4x5 as Specified	..	3.25
Matthews Safety Fuse Puller Tongs, 5 Feet Long	6	18.00

Extra fuses can be furnished in 3 to 100 amperes inclusive. All fuses 25 amperes or less will be furnished made of round lead with flat copper terminals. All fuses over 25 amperes will be furnished of flat zinc. Price for extra fuses 40 cents each. One fuse will be sent with each fuswitch as specified and without extra charge.

Transformer Specialties

Transformers for Special Purposes

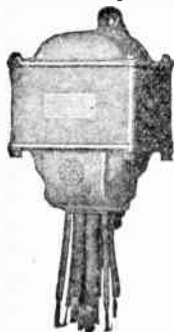
In addition to the standard Type M transformers, there also has been developed a uniform line of special parts for manufacturing any miniature air-cooled transformers ranging from 15 to 5000 watts inclusive, 60 cycles, and from 5 to 3000 watts inclusive, 25 cycles, at voltages of 550 and below. No oil is used for either cooling or insulating purposes.

Type M transformers present a good appearance wherever installed. The construction may be for indoor or outdoor service as desired. By substituting this transformer for batteries or magneto generators, no maintenance or replacement charges due to wear are incurred, less space is required and cleanliness and reliability are assured.

The following are a few representative applications: Electric welding, speed variation of motors, operating of small, low-voltage motors from higher voltage circuits, railway signal lighting two to three-phase transformation.

Sign Lighting Transformers

Primary—110-220 Volts; Secondary—11-22 Volts



These transformers are used in connection with the lighting of large or small advertising, municipal, civic, or other display signs. They are also used quite extensively for experimental purposes where a standard transformer is needed for producing heavy currents at low voltages.

Primary windings are arranged for series-multiple connection to operate either from 110 or 220-volt circuits. Secondary windings are similarly arranged to give full output at 11 or 22 volts and to permit of three-wire operation. Coils are enclosed in a strong, metal case which is provided with lugs for fastening to the wall, or to the back of the sign.

50 to 140 Cycles

Cat. No.	Cap. Watts	APPROX. DIMENS., IN.		APPROX. WT., LBS	
		Depth	Wall Space	Net	Shipping
76676	250	3 1/2	8 x 5	15	20
76678	500	4 1/2	9 x 5 1/2	20	30
146138	750	4 1/2	10 x 5 1/2	25	40
76680	1000	5	11 x 6 1/2	35	50
146139	1500	5	12 x 6 1/2	40	55
76683	2000	6	12 1/2 x 7 1/2	60	80

25 to 49 Cycles

Cat. No.	Cap. Watts	APPROX. DIMENS., IN.		APPROX. WT., LBS	
		Depth	Wall Space	Net	Shipping
173094	250	4 1/2	9 1/2 x 5 1/2	22	32
173095	500	5	11 1/2 x 6 1/2	35	50
173096	750	5	12 1/2 x 6 1/2	50	65
173097	1000	6	12 1/2 x 7 1/2	65	85
173098	1500	6	16 x 7 1/2	80	100
200404	2000	7 1/2	14 x 9 1/2	105	125

Type M Transformers

Specially Fitted for Conduit Wiring Installations

**Primary—440 Volts
Secondary—116 Volts
50 to 140 Cycles**



This design is particularly adapted to lighting oil well rigs, mine lighting, irrigation plants where conduit wiring is needed.

Cat. No.	Type	Cap. Watts	APPROX. DIMENS., IN.			APPROX. WT., LBS.	
			Depth	Wall Space	Over All Inc. Nipples	Net	Ship.
236154	M	100	4	7 1/2 x 5	9 x 5	13	15
236155	M	250	4	8 1/2 x 5	10 x 5	18	20
236156	M	500	4 1/2	9 1/2 x 5 1/2	11 x 5 1/2	30	35

Insulating Transformers

**Primary—110-220 Volts; Secondary—110-220 Volts
50 to 140 Cycles**



Insulating Transformers are arranged for 1:1 or 2:1 ratio and are manufactured chiefly for uses such as insulating lighting from power circuits; single wire lighting systems in mines; insulating telephone circuits (before rectification) from lighting circuits, etc., and for other transformations to which the rating is adapted. They are used as well for balancing three-wire, 110-220 volt circuits where auto transformers cannot be used. Weights include oil for the Type H sizes. Suitable for indoor or outdoor installation.

Type M, Air-cooled

Cat. No.	Kva.	APPROX. DIMENS., INCHES		APPROX. WT., LBS.	
		Depth	Wall Space	Net	Ship.
166688	1	5	11 x 6 1/2	35	45
166690	2	6	12 1/2 x 7 1/2	60	75
166692	3	6	14 1/2 x 7 1/2	80	100
189911	5	7 1/2	15 1/2 x 9 1/2	125	1145

Type H, Oil-cooled

177157	7.5	26	18 1/2 x 18	390	475
179474	10	28 1/2	18 1/2 x 21	460	560
179475	15	32	22 1/2 x 22	685	825
236300	25	42	24 x 24 1/2	995	1205

Type M, for Conduit Wiring Installations

Cat. No.	Kva.	APPROX. DIMENS., INCHES			APPROX. WT., LBS.	
		Depth	Wall Space	Over All Inc. Nipples	Net	Ship.
245327	1	5	10 x 6 1/2	11 1/2 x 6 1/2	35	45
245328	2	6	11 x 7 1/2	12 1/2 x 7 1/2	60	75
245329	3	6	13 x 7 1/2	14 1/2 x 7 1/2	80	100
245330	5	7 1/2	14 1/2 x 9 1/2	16 x 9 1/2	125	145

Auto Transformers, Single-phase

**Primary—220 Volts
Secondary—110 Volts, 2-wire
or 110-220 Volts, 3-wire**

The auto transformer is an economical substitute for the ordinary transformer, particularly when both voltages are low and a comparatively small change in voltage is desired.

The design is for single phase, two phase or open delta transformation. It is not suitable to transform power three to two phase from 220 volts to 110 volts. Type M, air-cooled; Type H, oil-cooled.



50 to 140 Cycles—Wall Type

Cat. No.	Type	Kv-a.	DIMENS., INCHES		Wall of Floor Space Inches	APPROX. WT., LBS.	
			Depth	Height		Net	Ship.
79883	M	1	4 1/2	..	9 x 5 1/2	20	30
79884	M	1.5	5	..	10 1/2 x 6 1/2	30	40
79885	M	2	5	..	11 x 6 1/2	35	45
79886	M	3	5	..	12 x 6 1/2	40	50
79887	M	4	6	..	12 1/2 x 7 1/2	50	60
79888	M	5	6	..	13 x 7 1/2	65	80
189909	M	7.5	7 1/2	..	14 x 9 1/2	110	130
189910	M	10	7 1/2	..	15 1/2 x 9 1/2	130	155

50 to 140 Cycles—Floor Type

79891	H	15	..	26	18 1/2 x 18	290	350
278520	H	25	..	31	21 1/2 x 21 3/4	355	425

25 to 49 Cycles—Wall Type

173085	M	1	5	..	10 1/2 x 6 1/2	35	45
173086	M	1.5	6	..	11 1/2 x 7 1/2	50	60
173087	M	2	6	..	12 1/2 x 7 1/2	60	70
173088	M	3	6	..	13 1/2 x 7 1/2	75	90
200402	M	4	7 1/2	..	14 x 9 1/2	110	130
200403	M	5	7 1/2	..	15 x 9 1/2	125	150

25 to 49 Cycles—Floor Type

173091	H	7.5	..	21 1/2	18 x 17	290	350
173092	H	10	..	26	18 1/2 x 18	395	480
173093	H	15	..	28 1/2	21 1/2 x 16 1/2	480	550
278519	H	25	..	35	21 1/2 x 16 1/2	480	575

Auto Transformers

For Conduit Wiring Installations

Primary—220 Volts
Secondary—110 Volts, 2-wire or 110-220 Volts 3-wire



When a comparatively small change in voltage is desired, or where both voltages are low, an auto transformer can be used as successfully as a transformer and its reduced capacity will mean a considerable saving.

The use of auto transformers for supplying lighting circuits from power circuits having potentials above 250 volts is not, however, considered good practice.

All sizes are suitable for outdoor installations.

Type M transformers are air-cooled.

50 to 140 Cycles

Cat. No.	Type	*Kva.	Depth	APPROX. DIMENS., IN.			APPROX. WT., LBS.	
				Wall Space	Over All Inc. Nipples	Net	Ship	
245345	M	1	4½	8 x 5½	9½ x 5½	20	30	
245346	M	1.5	5	9½ x 6½	11 x 6½	30	40	
245347	M	2	5	10 x 6½	11½ x 6½	35	45	
245348	M	3	5	11 x 6½	12½ x 6½	40	50	
245349	M	4	6	11 x 7½	12½ x 7½	50	60	
245350	M	5	6	11½ x 7½	13 x 7½	65	80	
245351	M	7.5	7½	13 x 9½	14½ x 9½	110	130	
245352	M	10	7½	14 x 9½	15½ x 9½	130	155	

25 to 49 Cycles

245339	M	1	5	9½ x 6½	11 x 6½	35	45
245340	M	1.5	6	10 x 7½	11½ x 7½	50	60
245341	M	2	6	11 x 7½	12½ x 7½	60	70
245342	M	3	6	12 x 7½	13½ x 7½	75	90
245343	M	4	7½	13 x 9½	13½ x 9½	110	130
245344	M	5	7½	13½ x 9½	15 x 9½	125	150

*Kva output at 110 volts, 2-wire or allowable unbalancing at 110-220 volts, 3-wire.

Type MTQ Auto Transformers

MTQ Auto Transformers are designed to transform power efficiently and inexpensively from three to two-phase, 4-wire, or the reverse, with outputs of 1 to 25 Kva.

The principal application of the MTQ Auto Transformer is to adapt polyphase motors to existing circuits. They are not suitable, however, for 3-wire, 2-phase service, or to operate motors with interconnected phases.

Suitable for indoor or outdoor installation.

In ordering MTQ Auto Transformers specify whether the two-phase circuit is 3 or 4-wire.

Primary—220 Volts, 2-phase
Secondary—220 Volts, 2-phase, 4-wire
50-140 Cycles, 3 to 2-phase



Cat. No.	Kva.	Depth	APPROX. DIMENS., IN.		APPROX. WT., LBS.	
			Wall Space	Over All Inc. Nipples	Net	Ship.
G223996	1	4	13½ x 4	14	15	25
G223997	3	4	16 x 5	16½	30	40
G223998	5	4½	16½ x 5½	17	45	55
G223999	7.5	5	18 x 6½	18½	55	70
G224000	10	5	20 x 6½	20½	75	90
G224001	15	6	19½ x 7½	20	95	115
G224002	20	6	21½ x 7½	21½	115	140
G224003	25	6	21 x 7½	23	135	160

Type MTQ, for Conduit Wiring Installation

Primary—220 Volts, 3-phase
Secondary—220 Volts, 2-phase, 4-wire
TP—140 Cycles, 3 to 2-phase

Cat. No.	Kva.	Depth	APPROX. DIMENS., IN.		APPROX. WT., LBS.	
			Wall Space	Over All Inc. Nipples	Net	Ship.
G245331	1	4	12½ x 4	14 x 4	15	25
G245332	3	4	15 x 5	16½ x 5	30	40
G245333	5	4½	15½ x 5½	17 x 5½	45	55
G245334	7.5	5	17 x 6½	18½ x 6½	55	70
G245335	10	5	19 x 6½	20½ x 6½	75	90
G245336	15	6	18 x 7½	19½ x 7½	95	115
G245337	20	6	20 x 7½	21½ x 7½	115	140
G245338	25	6	21½ x 7½	23 x 7½	135	160

Type MTQ Auto Transformers

MTQ Auto Transformers are designed to transform power efficiently and cheaply from three to two-phase, 3-wire, or the reverse, with outputs of 1 to 25 kva.

The principal application of the MTQ Auto Transformer is to adapt polyphase motors to existing circuits. They are not suitable for 4-wire, 2-phase service, or to operate motors with interconnected phases.

In ordering MTQ Auto Transformers specify whether the two-phase circuit is 3 or 4-wire, in that an auto transformer arranged for a 3-wire circuit is not applicable to a 4-wire circuit, or the reverse.



Primary—220 Volts, 3-phase
Secondary—220 Volts, 2-phase, 3-wire, 50-140 Cycles, 3 to 2-phase

Cat. No.	Kva.	Depth	APPROX. DIMENS., IN.		APPROX. WT., LBS.	
			Wall Space	Over All Inc. Nipples	Net	Ship.
246751	1	4	13½ x 5	14	25	35
246752	3	4½	15½ x 5½	16½	35	45
246753	5	5	19 x 6½	19½	65	75
246754	7.5	5	20½ x 6½	21	80	95
246755	10	6	19 x 7½	19½	95	115
246756	15	6	22 x 7½	22½	130	150
246757	20	6	25 x 7½	25½	160	180
246758	25	7½	22½ x 9½	23½	185	210

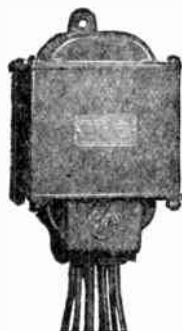
Type MTQ, for Conduit Wiring Installations

Primary—220 Volts, 3-phase
Secondary—220 Volts, 2-phase, 3-wire, 50-140 Cycles, 3 to 2-wire

Cat. No.	Kva.	Depth	APPROX. DIMENS., INCHES		APPROX. WT., LBS.	
			Wall Space	Over All Inc. Nipples	Net	Ship.
246759	1	4	12 x 5	13½ x 5	25	35
246760	3	4½	14½ x 5½	16 x 5½	35	45
246761	5	5	17½ x 6½	19 x 6½	65	75
246762	7.5	5	19 x 6½	20½ x 6½	80	95
246763	10	6	17½ x 7½	19 x 7½	95	115
246764	15	6	20½ x 7½	22 x 7½	130	150
246765	20	6	23½ x 7½	25 x 7½	160	180
246766	25	7½	21 x 9½	22½ x 9½	185	210

Type M Air-cooled Distribution Transformers

Single Phase
50 to 140 Cycles



To take care of indoor or outdoor installations particularly indoor where it is impractical to install the oil-cooled transformers, there has also been designed a special line of air-cooled distribution transformers, capacities 1 to 5 kv-a. inclusive. Primary voltage, 440 and 550; secondary voltage, 110 or 220 volts 2-wire or 220/110 volts 3-wire.

Primary 440 Volts—Secondary 110/220 Volts

Cat. No.	KV-A.	Depth	APPROX. DIMEN. INCHES		APPROX. WT., LBS.	
			Wall Space	Net	Ship.	
261225	1	5	12 x 6½	41	51	
261226	2	6	13 x 7½	67	82	
261227	3	6	15 x 7½	92	112	
261228	5	7½	16½ x 9½	145	165	

Primary 550 Volts—Secondary 110/220 Volts

Cat. No.	KV-A.	Depth	APPROX. DIMEN. INCHES		APPROX. WT., LBS.	
			Wall Space	Net	Ship.	
261233	1	5	12 x 6½	43	53	
261234	2	6	13½ x 7½	71	86	
261235	3	6	15½ x 7½	95	115	
261236	5	7½	17 x 9½	150	170	

Prices upon application.

**Type M Air-cooled
Distribution Transformers**

**Single Phase
For Conduit Wiring Installation**
50 to 140 Cycles

To take care of indoor or outdoor installations, particularly indoor where it is impractical to install the oil-cooled transformers, there has also been designed a special line of air-cooled distribution transformers, capacities 1 to 5 kv-a. inclusive. Primary voltage, 440 and 550; secondary voltage, 110 or 220 volts 2-wire or 220/110 volts 3-wire.

**Primary 440 Volts
Secondary 110/220 Volts**

Cat. No.	KV-A.	APPROX. DIMEN. INCHES	APPROX. WT. LBS.
		Depth Wall Space	Net Ship.
261229	1	5 { 12 x 6 1/2 *13 1/2 x 6 1/2	41 51
261230	2	6 { 13 x 7 1/2 *14 1/2 x 7 1/2	67 82
261231	3	6 { 15 x 7 1/2 *16 1/2 x 7 1/2	92 112
261232	5	7 1/2 { 16 1/2 x 9 1/2 *18 x 9 1/2	145 165

Primary 550 Volts—Secondary 110/220 Volts

261237	1	5 { 12 x 6 1/2 *13 1/2 x 6 1/2	43 53
261238	2	6 { 13 1/2 x 7 1/2 *15 x 7 1/2	71 86
261239	3	6 { 15 1/2 x 7 1/2 *17 x 7 1/2	95 115
261240	5	7 1/2 { 16 3/4 x 9 1/2 *18 1/2 x 9 1/2	150 170

*Over all dimensions including nipples. Prices upon application.

All-Nite-Lite



The All-Nite-Lite has been introduced to satisfy the demand for an electric illuminant to operate all night at a sufficiently low cost to be well within the means of all who use electricity.

It operates on any alternating current supply circuit within the voltage and frequency limits specified. Installation is made by simply screwing the All-Nite-Lite into a standard lamp socket.

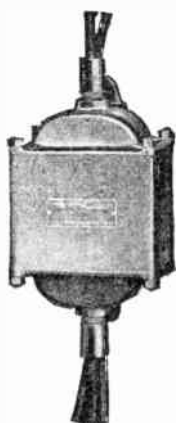
The complete All-Nite-Lite consists of a miniature transformer contained within an attractive brass shell, and a miniature Mazda lamp. The transformer is constructed with the primary and secondary coils liberally insulated and with a core built of the highest grade of transformer steel.

One of the principal applications for the All-Nite-Lite is illumination of the porch and house number. The porch of the average householder is usually in darkness and the house in obscurity. The All-Nite-Lite may be operated all night for less than \$1.50 a year or kept in the circuit continuously for \$3.00 a year.

If wired so that it cannot be turned off the householder is always assured of illumination on his porch without the necessity of turning switches.

Cat. No.	Primary Volts	Secondary Volts	Frequency	APPROX. WT. Net	Ship.
190896	100-125	6	50/140	7 oz.	*30 lbs.

*Shipping weight, standard package of 50.



**Pyrotip Electric Burners
For Lead Burning**



The Pyrotip Electric Burner, while designed especially for lead burning in the repair of starting and ignition batteries, may also be used for the repair of vehicle, truck and locomotive batteries and has various other uses about the garage. The equipment is portable, and complete weighs approximately 25 pounds.

May be connected to any alternating current lamp socket by means of the attaching cord, which is 10 ft. long. A plug connector is arranged for connecting and disconnecting the attaching cord when it is not convenient to use the socket switch. The secondary leads are flexible and made from heavy rubber-covered cables.

Cat. No.	Volts	Cycle	WEIGHT., POUNDS Net	Ship.
219926	110	25- 49	30	45
219927	110	50-140	25	40
219928	220	25- 49	30	45
219929	220	50-140	25	40

ELECTRODES.—Specify Cat. No. 219930—Carbon Electrode. Standard packages contain 100.

NOTE.—Equipment cannot be used on Direct Current Service. Prices furnished upon application.

**Pyrotip Electric Burners
For Heavy Service**



The large size Pyrotip is designed to take care of heavy work which, due to the large amount of energy required, cannot be accomplished by the smaller set. Other than being of greater capacity and necessarily larger throughout, it has the same operating characteristics as the set described in the preceding paragraphs.

Particularly adapted for cutting thin sheet steel, and repairing very heavy storage batteries. Portable, weighing approximately 45 lbs. and under normal operating conditions, draws about 800 watts. This depends somewhat on the depth that the carbon is inserted in the material being worked.

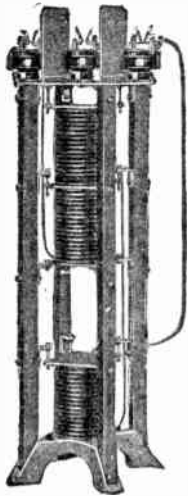
This size Pyrotip is too large to be connected to the ordinary 110-volt lighting socket, but it is equipped with a connecting cord and a separable plug which permits ready attachment to an outlet receptacle or an Edison base flush or surface type receptacle.

The secondary leads are of extra heavy construction and are detachable. Handle and carbon holder are of heavy design.

Cat. No.	Volts	Cycles	WEIGHT., POUNDS Net	Ship.
230466	110	50-140	45	60

NOTE.—This equipment cannot be used on Direct Current Service. Prices furnished upon application.

Type OF Oxide Film Lightning Arresters



The oxide film arrester consists essentially of a number of cells with a gap in series between line and ground. The cells are held together under slight pressure and are arranged in sections or stacks according to the voltage and kind of circuit. Each cell is made of 2 circular brass plates crimped firmly to the edges of an annular piece of porcelain. A powder, lead peroxide, which has low resistance, compactly fills the space between the plates. The inside of the metal plates is covered with a varnish film which is an insulator. The number of cells used in an arrester is such that the voltage per cell is approximately 300 volts.

When a lightning voltage sparks over the gaps it is impressed on the cells and breaks down the insulating coating on the metal plates. The breakdown occurs in the form of a minute puncture of the film coating. The metal plates are not punctured. As soon as the film gives way, a discharge current flows through the cells to ground, thus relieving the lightning pressure. The flow of current through the cells immediately causes a chemical change by heat, in the lead peroxide at the point of puncture. The lead peroxide is reduced to red lead and litharge which have a high resistance. Thus, following the lightning discharge, a high resistance amounting practically to insulation is automatically cut into the discharge path. This cuts off the flow of generator current that would otherwise follow the lightning discharge and the arcs in the gaps die out. If the potential should still, or again, be sufficiently high to break down the gaps, the operation is repeated at some other point on the surface of the varnished plates.

3-phase—Indoor Service

Cat. No.	**VOLTAGE RATING OF ARRESTER		Ship. Wt., Lbs.	*Price Each
	Min.	Max.		
1576267	300	1000	90	\$72.00
†1576274	1000	3000	70	74.00
2593102	1000	3000	250	192.00
2593103	3000	5000	300	264.00
2593104	5000	7500	400	350.00
2593105	7500	15000	1000	690.00
2593106	15000	25000	1600	1108.00
2593107	25000	37000	2300	1546.00
2593108	37000	50000	4100	2482.00
2593109	50000	73000	5500	3544.00

3-phase—Outdoor Service

1576267	300	1000	90	\$72.00
†2516513	1000	3000	150	86.00
1576236	1000	3000	590	458.00
1576237	3000	5000	650	538.00
1576238	5000	7500	710	612.00
2593111	7500	15000	1350	1032.00
2593112	15000	25000	2400	1466.00
2593113	25000	37000	2600	2130.00
2593114	37000	50000	5500	3314.00
2593115	50000	73000	7500	4616.00

Single-phase—Indoor Service

Not for use on single-phase circuits from quarter-phase 3-wire circuits. Use 2 on quarter-phase, 4-wire circuits.

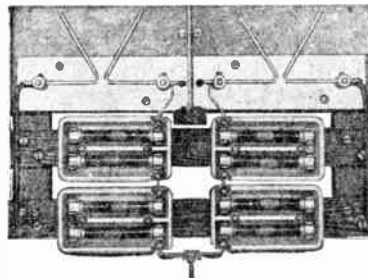
Cat. No.	**VOLTAGE RATING OF ARRESTER		Ship. Wt., Lbs.	*Price Each
	Min.	Max.		
1576223	1000	3000	190	\$130.00
1576224	3000	5000	270	180.00
1576225	5000	7500	360	240.00

*Prices do not include disconnecting switches. Some kind of disconnecting device must be installed with these arresters. †Single-pole, for 2300-volt delta or 4100-volt grounded Y circuits.

**Select arrester so that the line voltage will never exceed the maximum rating of the arrester under any normal operating condition. Arresters are suitable for altitudes up to 4000 feet.

Horn Lightning Arresters

For Series Lighting Circuits



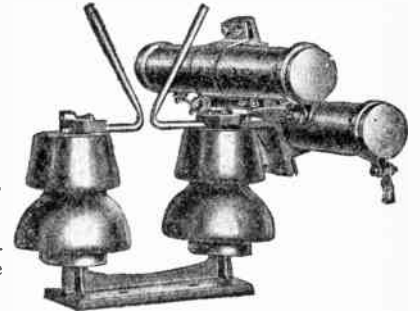
Horn Arrester for Indoor Service

Consist essentially of a horn gap in series with a resistance. The horn gaps and resistances of the indoor arresters are mounted on insulating supports, which, for the higher voltages, have asbestos barriers and backs.

The indoor arresters are double-pole.

The outdoor horn arresters consist of a horn gap, and resistance units enclosed in porcelain. Designed to be mounted on the tops of the poles and above the wires.

They are supplied in single-pole units only.



Horn Arrester for Outdoor Service

Indoor Type

Kw. Rating of C. C. Transformers (Secondary Amp. 6.6 and 7.5)	Lights Rating of Rectifier Set	C. C. TRANSFORMER OR RECTIFIER CIRCUITS ONE DOUBLE-POLE HORN ARRESTER REQUIRED FOR EACH SERIES CIRCUIT			*C. C. *transformer Circuits Only Single-pole Graded Shunt Resistance Multigap Arresters Cat. No.
		Cat. No.	Approx. Ship. Wt., Lbs.	Price Each	
1, 2, 3, 4, 5	12	47558	40	\$23.00	149736
7.5, 10, 15	25	47558	40	23.00	149752
20	..	47560	100	48.00	149752
25					
30	50	47560	100	48.00	.....
35					
40					
50	75	78744	180	70.00	.....
60					
70	100	78744	180	70.00	.....
80					

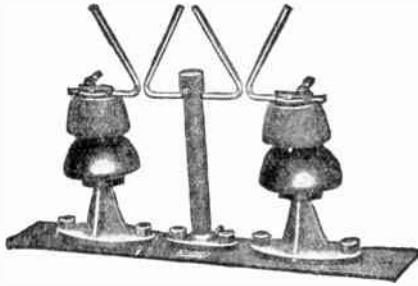
*These arresters also may be used.

Outdoor Type

Kw. Rating of C. C. Transformers (Secondary Amp. 6.6 and 7.5)	Lights Rating of Rectifier Set	C.C. TRANSFORMER OR RECTIFIER CIRCUITS TWO SINGLE-POLE HORN ARRESTERS REQUIRED FOR EACH SERIES CIRCUIT			*C. C. Transformer Circuits Only Single-pole Pellet Arresters Cat. No.
		Cat. No.	Approx. Ship. Wt., Lbs.	Price Each	
1, 2, 3, 4, 5	12	144117	45	\$25.00	178915
7.5, 10, 15	25	144117	45	25.00	2515514G1
20	50	144121	50	30.00	2515571G1
25					
30					
35	..	144121	50	30.00	2515571G2
40					
50	75	144123	60	43.00	2515571G3
60					
70	100	144123	60	43.00	2515571G4
80					

*These arresters also may be used.

Double-pole Horn Gaps



To prevent the full line potential being thrown on the telephone protective equipment in the case of a cross with the telephone line.

Price, No. 201112, for Outdoor Use, Wt., 70 Lbs. each \$28.00

Form A Compression Chamber Multigap Arresters

For Outdoor Service Only on A.C. Constant Potential Circuits

Up to 3000 Volts
Single Pole



Designed mainly for the protection of distribution transformers. Consists of a column of gaps and a series resistor mounted in a porcelain tube. The porcelain tube is sealed in a porcelain base and a cap is sealed on the tube.

Cat. No.	Circuit Voltage		No. REQ'D AT INSTALLATION		Std. Pkg.	Approx. Ship. Wt., Lbs.	Price Each
	Min.	Max.	Single-phase	3-phase			
79218	1000	3000	2	3	12	12	\$11.50

No. 270281 Line Connectors



Line Connector Attached to Pole

Line connector. Cat. No. 270281, has a current carrying capacity of 200 amperes.

The connector can be clamped on any wire from $\frac{3}{16}$ to $\frac{5}{8}$ inch in diameter.

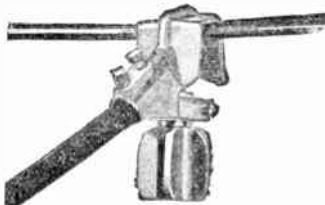
A hole $\frac{3}{16}$ inch in diameter is provided for soldering a lead to the connector.

This connector is suitable only where occasional disconnecting is required and where particularly quick disconnecting is not necessary.

Especially useful for making temporary connections in construction work.

The clamp is made of brass throughout with the exception of the spring, which is of phosphor bronze and the two set-screws, which are of zinc plated steel.

There is required to operate this device only a standard disconnecting switch hook.



Line Connector Attached to Line

Cat. No.	Standard Package	APPROXIMATE WEIGHT, POUNDS		Price Each
		Net	Shipping	
270281	12	2	3	\$9.00

Pellet Type Oxide Film Lighting Arresters

For the Protection of Distribution Transformers
Single-pole—Outdoor Service Only—4000-foot Altitude
For Delta or Ungrounded Y 3-phase Systems

Cat. No.	Circuit Voltage	No. OF ARRESTERS REQUIRED		Std. Pkg.	Approx. Ship. Wt., Lbs.	Price Each
		1 Ph.	3 Ph.			
*146187	0- 300	2	3	24	1	\$2.25
*178915	300- 1000	2	3	12	10	9.00
2515514G1	1000- 3000	2	3	12	13	11.50
2515571G1	3000- 5000	2	3	6	20	21.50
2515571G2	5000- 7500	2	3	6	27	30.00
2515571G3	7500-10500	2	3	3	49	41.50
2515571G4	10500-15000	2	3	3	55	50.00

*Compression chamber type.

For 3-phase Systems with Solidly Grounded Neutral

Cat. No.	Circuit Voltage	1 Ph.	3 Ph.	Std. Pkg.	Ship. Wt., Lbs.	Price Each
2515514G1	3000- 5000	††	3	12	13	\$11.50
2515571G1	5000- 7500	††	3	6	20	21.50
2515571G2	7500-10500	††	3	6	27	30.00
2515571G3	10500-15000	††	3	3	49	41.50
2515571G4	15000-18000	††	3	3	55	50.00



Cat. No.	Circuit Voltage	Std. Pkg.	Ship. Wt., Lbs.	Price Each
1559591G1	0-600	24	1.3	\$3.00

††Use one arrester on outside wire at single-phase installation between one outside wire and neutral. Use also on neutral wire No. 146187 arrester if voltage is not over 300 volts; if, on account of unbalancing, voltage is between 300 and 1000 volts use No. 178915. Use 2 arresters at a single-phase installation between outside wires.

For the protection of meters, trickle-charge rectifiers and similar devices connected to secondary circuits, compression chamber arrester Cat. No. 1559591G1 should be used.

Multigap Lightning Arresters



All arresters are single-pole.

Indoor Service

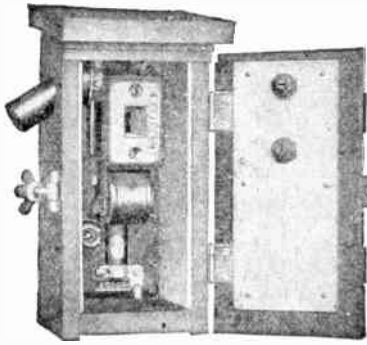
Cat. No.	Circuit Voltage	Std. Pkg.	Ship. Wt., Lbs.	Price Each
35082	0- 300	12	6	\$5.00
149736	300-1000	12	10	10.00
149752	1000-3000	12	10	11.50
149755	3000-4000	12	20	23.00
149752	*3000-4500	12	10	11.50

Outdoor Service

Cat. No.	Circuit Voltage	Std. Pkg.	Ship. Wt., Lbs.	Price Each
35082	0-300	12	6	\$5.00
149744	300-1000	12	20	16.00
149757	1000-3000	12	20	18.00
149760	3000-4000	12	45	30.00

*Applies only to 3-phase grounded neutral systems.

Magnetic Blow-out Lightning Arresters
For Electric Railway Circuits
MD-3, Direct Current



For Indoor Service

Std. Pkg., 12.
Ship. wt., 12 lbs.

Cat. No.	Circuit Voltage	Price Each
164403	0-350	\$11.00
164405	350-750	11.00

For Outdoor Service

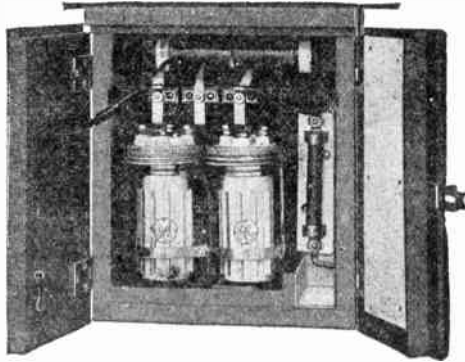
Std. Pkg., 12.
Ship. wt., 20 lbs.

164404	0-350	\$17.00
164406	350-750	17.00

Aluminum Lightning Arresters
Direct Current

D. C. Aluminum arresters should be installed on each car and at the stations and substations; on each feeder and each generator or synchronous converter.

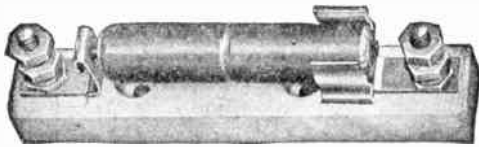
The arrester is suitable for either indoor or outdoor installations. Mounted in a wooden box.



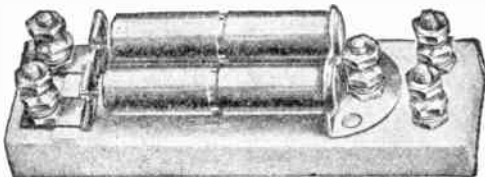
Cat. No.	Circuit Volts	Description	Std. Pkg.	Ship. Wt., Lbs.	Price Each
166296	325-650	Slanting Top	4	60	\$46.00
166298	325-650	Flat Top	4	60	46.00
166297	650-900	Slanting Top	4	115	70.00
166299	650-900	Flat Top	4	115	54.00

Prices on arresters for voltages higher than those listed quoted upon request.

Vacuum Tube Lightning Arresters
For Railway Signal Circuits



No. 148057

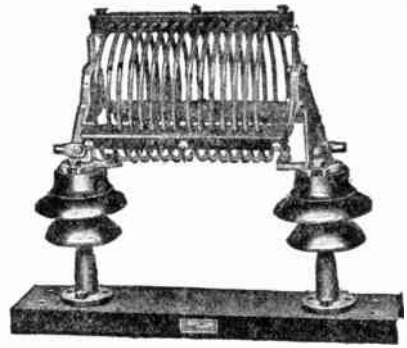


No. 1518810

Vacuum tube arrester has standard railway signal association binding posts. No. 1518810 has 5 terminals, for lines, ground and instruments. No. 1518809 has only 3 terminals, 2 for the lines and one for the ground. No. 144585 has 3 terminals for line, ground, and instrument, while No. 148057 has 2, one for line and one for ground.

Cat. No.	Description	Std. Pkg.	Wt., Lbs.	Price Each
1518810	5-terminal, Double-pole	24	70	\$7.00
1518809	3 " " "	24	70	6.00
144585	3 " Single " "	48	80	3.90
148057	2 " " "	48	70	3.35

Insulated Choke Coils



Choke coils are recommended for use with all high-voltage lightning arresters when used on overhead lines. They should not be installed with lightning arresters when used to protect cables over half a mile long, without careful consideration.

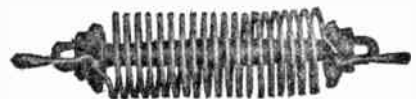
Indoor

Cat. No.	Maximum Volts	Maximum Amperes	Shipping Wt., Lbs.	Price Each
76339	4500	25	13	\$11.00
76340	4500	50	16	14.00
25401	7500	25	21	29.00
3416	7500	100	45	40.00
36882	7500	200	40	44.00
155959G1	15000	100	125	52.00
155959G3	15000	200	135	60.00
155959G5	15000	400	160	86.00
155959G2	25000	100	135	56.00
155959G4	25000	200	145	66.00
155959G6	25000	400	175	92.00

Outdoor or Indoor

1559598G1	15000	100	150	\$64.00
1559598G6	15000	200	160	72.00
1559598G11	15000	400	185	94.00
1559598G2	25000	100	160	66.00
1559598G7	25000	200	170	76.00
1559598G12	25000	400	195	102.00
1559598G3	37000	100	185	78.00
1559598G8	37000	200	195	88.00
1559598G13	37000	400	230	114.00
1559598G4	50000	100	235	104.00
1559598G9	50000	200	245	114.00
1559598G14	50000	400	275	140.00
1559598G5	73000	100	270	134.00
1559598G10	73000	200	280	144.00
1559598G15	73000	400	310	170.00

Line Suspension Choke Coils



May be used on any voltage.

Cat. No.	Maximum Amperes	Shipping Wt., Lbs.	Price Each
*79596	100	15	\$14.00
2515525G1	100	55	40.00
2515525G2	200	65	52.00
2515525G3	400	105	84.00

*For use at installations of not over 300 kv-a., maximum voltage, 73000.

Type LG-116 Disconnecting Switches

Single-pole, Single and Double Throw

Indoor Type—Unmounted

2500 or 3500 Volts

Type LG-116 switches are for disconnecting purposes only. They should not be opened under load.

All switches are given an insulations test at least equal to that prescribed in the Standardization Rules of the A. I. E. E. (2¼ rated x voltage + 2000 volts).

2500 or 3500-volt switches are for mounting directly on marble bases or on 1½ or 2-inch marble panels. Slate should not be used. Special LG-116 switches on marble bases for 3500 volts can be furnished. These switches parallel the 2500-volt line on bases except that special larger marble bases and special spacing are required.

Back connected switches, 1200 amperes and below, include 2 nuts and 1 terminal per stud.

Front connected switches, 1200 amperes, inclusive, are equipped with a complete set of terminals.

All switches 1600 amperes and above are laminated for bar connections. No terminals are included.

Do not fail to order one or more switch hooks with each equipment, unless previously ordered.

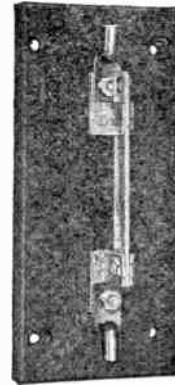
Cat. No.	Capacity Amperes	Throw	Shipping Wt., Lbs.	Price Each
1960351G1	300	Double	20	\$13.00
1960351G2	300	"	20	12.00
1918497G1	300	Single	20	9.00
1918498G1	300	"	15	8.00
1960350G1	300	"	15	9.00
1960350G2	300	"	15	9.00
1960351G3	600	Double	35	26.00
1960351G4	600	"	30	23.00
1918497G2	600	Single	25	19.00
1918498G2	600	"	25	16.00
1960350G3	600	"	25	17.00
1960350G4	600	"	25	17.00
1960351G5	800	Double	45	38.00
1960351G6	800	"	40	33.00
1918497G3	800	Single	35	27.00
1918498G3	800	"	30	22.00
1960350G5	800	"	35	25.00
1960350G6	800	"	35	25.00
1960351G7	1200	Double	70	62.00
1960351G8	1200	"	65	55.00
1918497G4	1200	Single	50	44.00
1918498G4	1200	"	45	37.00
1960350G7	1200	"	50	40.00
1960350G8	1200	"	50	40.00
1960349G1	1600	Double	85	90.00
1960349G2	1600	"	75	80.00
1918497G5	1600	Single	60	66.00
1959750G1	1600	"	50	56.00
1960348G1	1600	"	55	60.00
1960348G2	1600	"	55	60.00
1960349G3	2000	Double	90	118.00
1960349G4	2000	"	80	108.00
1918497G6	2000	Single	75	84.00
1959750G2	2000	"	65	74.00
1960348G3	2000	"	70	79.00
1960348G4	2000	"	70	79.00
1960349G5	3000	Double	130	157.00
1960349G6	3000	"	120	144.00
1918497G7	3000	Single	100	115.00
1959750G3	3000	"	90	102.00
1960348G5	3000	"	95	108.00
1960348G6	3000	"	95	108.00

Type LG-116 Disconnecting Switches

Single-pole, Single and Double Throw

Indoor Type—Mounted

2500 Volts

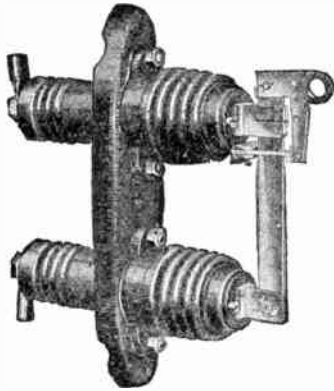


Special Type LG-116 switches paralleling the 2500-volt line can be supplied for 3500 volts. These switches are the same as 2500-volt switches except mounted on special marble bases with special wiring. Prices upon request.

Cat. No.	Capacity Amperes	Throw	Size, Base Inches	Ship. Wt., Lbs.	Price Each
1960061G1	300	Double	22x 6x1½	40	\$26.00
1960061G2	300	"	22x 6x1½	40	25.00
1960058G1	300	Single	15x 6x1½	35	19.00
1960058G2	300	"	15x 6x1½	30	18.00
1960058G3	300	"	15x 6x1½	35	19.00
1960058G4	300	"	15x 6x1½	35	19.00
1960061G3	600	Double	24x 8x1½	60	44.00
1960061G4	600	"	24x 8x1½	60	41.00
1960058G5	600	Single	15x 6x1½	45	29.00
1960058G6	600	"	18x 8x1½	50	28.00
1960058G7	600	"	18x 8x1½	50	29.00
1960058G8	600	"	18x 8x1½	50	29.00
1960061G5	800	Double	24x 8x1½	65	56.00
1969061G6	800	"	24x 8x1½	65	51.00
1960059G1	800	Single	18x 6x1½	50	38.00
1960059G2	800	"	18x 8x1½	55	34.00
1960059G3	800	"	18x 8x1½	55	37.00
1960059G4	800	"	18x 8x1½	55	37.00
1960061G7	1200	Double	28x10x2	115	86.00
1960061G8	1200	"	28x10x2	115	79.00
1960059G5	1200	Single	18x10x1½	85	58.00
1960059G6	1200	"	18x10x1½	80	51.00
1960059G7	1200	"	18x10x1½	80	54.00
1960059G8	1200	"	18x10x1½	80	54.00
1960062G1	1600	Double	28x10x2	135	114.00
1960062G2	1600	"	28x10x2	120	104.00
1960060G1	1600	Single	18x10x1½	100	80.00
1960060G2	1600	"	18x10x1½	85	70.00
1960060G3	1600	"	18x10x1½	90	74.00
1960060G4	1600	"	18x10x1½	90	74.00
1960062G3	2000	Double	28x12x2	140	148.00
1960062G4	2000	"	28x12x2	125	138.00
1960060G5	2000	Single	18x10x2	115	104.00
1960060G6	2000	"	18x12x2	100	95.00
1960060G7	2000	"	18x12x2	110	100.00
1960060G8	2000	"	18x12x2	110	100.00
1960062G5	3000	Double	28x12x2	180	187.00
1960062G6	3000	"	28x12x2	165	174.00
1960063G1	3000	Single	18x10x2	135	135.00
1960063G2	3000	"	18x12x2	120	123.00
1960063G3	3000	"	18x12x2	115	129.00
1960063G4	3000	"	18x12x2	115	129.00

Combination Safety Catches and Opening Devices

For Type LG-116 Disconnecting Switches



These combination safety catches and opening devices are for use on single-throw switches only. Prices on combinations for double-throw switches will be furnished upon application.

They must be used together in combination form and neither can be used separately.

Prices on combinations for double-throw switches may be had on application.

These devices permit of the release of the catch and the opening

of the switch with one operation of the switch hook.

Cat. No.	Volts	Cap. Amps.	Contact Connection	Approx. Wt., Lbs.	Ship. Price Each
1995990G8	2500	300	Front	3	\$3.50
1995990G9	2500	600	Back	3	4.00
1995990G10	2500	800	Front	4	7.00
1995990G11	2500	1200	Back	4	8.50
1995990G12	2500	1600	Front	5	13.50
1995990G13	2500	2000	Back	5	15.00
1995990G14	2500	3000	Front	6	16.50
1995990G15	25000	300	Back	3	4.00
1995990G16		300	Front	3	4.00
1995990G17		600	Back	3	4.50
1995990G18		600	Front	3	4.50
1995990G19		800	Back	4	7.00
1995990G20		800	Front	4	7.00
1995990G21		1200	Back	4	9.00

Switch Hooks

For Type LG-116 Disconnecting Switches

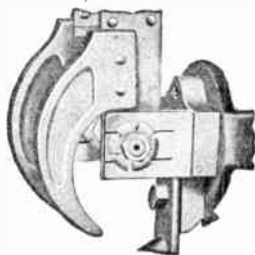
Cat. No.	Maximum Voltage	Length of Handle, Feet	Shipping Wt., Lbs.	Price Each
65849	15000	4	10	\$3.00
65850	25000	8	15	7.00

90 Degree Blade Stops

For Type LG-116 Disconnecting Switches

It is often desirable to provide stops for switches in order to prevent them from accidentally coming in contact with other apparatus, or to prevent the closing of a double-throw switch in the wrong throw.

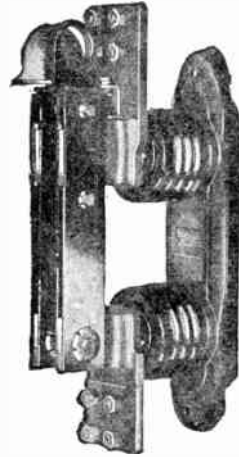
For use on all voltages, 2500 to 15000.



Cat. No.	Cap. Amps.	Shipping Wt., Lbs.	Price Each
1960395G1	300	1	\$4.00
1960395G2	600	1	4.00
1960395G3	800	1	4.00
1960395G4	1200	2	4.00
1960395G5	*1600	2	6.00
1960395G6	*2000	2	6.00
1960395G7	*3000	2	7.00

*Require 2 stops per switch.

Type LG-17B Disconnecting Switches
Indoor Type, Single-pole, Single and Double-throw
With Moderate Duty Insulators and Safety Catches Mounted on Oval Metal Bases for Flat Surface or 1 1/4-inch Pipe Mounting
15000 Volts



Back connected 1200-amp. and below, have round studs. 1200-amp. back connected, have 2 nuts per stud but no terminals. Adapter plate with 2 terminals and necessary bolts and nuts No. 2609820G1 must be ordered separately if desired. 800-amp. and below, back connected, have 2 nuts and one terminal per stud. Front connected 1200-amp. are complete with 4 hex. head bolts and nuts per clip block but no terminals. Adapter plate with 2 terminals and necessary bolts and nuts No. 262275G1 must be ordered separately if desired. 800-amp. and below, front connected are complete with set of terminals with bolts and nuts. 800-amp. have 4 bolts and nuts per terminal. 200, 400 and 600-amp. have one bolt and nut per terminal complete with a doweled

locking washer. Clip blocks in addition to hole for bolt have 4 small holes in which 2 dowels on locking fit. These projections go through 2 holes in terminal itself and then into 2 of the holes in clip block and prevent terminal from turning or twisting. Terminal can be mounted straight out or swung to either right or left.

When it is desired to mount Type LG-17B switches listed below on 1 1/4-inch pipe (not included), add for each switch two 1/2-inch half yokes with nut for clamping base to pipe.

Single-pole, Single-throw				Single-pole, Double-throw			
Front Connected Contact and Back Connected Hinge		Back Connected Contact and Front Connected Hinge		1 Front Connected Contact, Other Contact and Hinge Back Connected		2 Back Connected Contacts and Back Connected Hinge	
Cat. No.	Amp. Wt., Lbs.	Ship. Price Each	Cat. No.	Amp. Wt., Lbs.	Ship. Price Each	Cat. No.	Amp. Wt., Lbs.
2194152G1	200 38	\$30.00	2194170G1	800 75	\$62.00	2194153G1	200 58
2194158G1	400 48	38.00	2194177G1	1200 90	84.00	2194159G1	400 68
2194164G1	600 55	46.00				2194165G1	600 80
Back Connected Contact and Front Connected Hinge				2 Front Connected Contacts and Back Connected Hinge			
2194152G2	200 38	\$30.00	2194170G2	800 75	\$62.00	2194153G2	200 60
2194158G2	400 48	38.00	2194177G2	1200 90	84.00	2194159G2	400 75
2194164G2	600 55	46.00				2194165G2	600 85
Back Connected Contact and Back Connected Hinge				2 Front Connected Contacts and Front Connected Hinge			
2194152G3	200 40	\$34.00	2194170G3	800 80	\$73.00	2194153G3	200 55
2194158G3	400 50	43.00	2194177G3	1200 110	99.00	2194159G3	400 70
2194164G3	600 60	55.00				2194165G3	600 75
Front Connected Contact and Front Connected Hinge				2 Front Connected Contacts and Back Connected Hinge			
2194152G4	200 35	\$27.00	2194170G4	800 65	\$49.00	2194153G4	200 50
2194158G4	400 45	33.00	2194177G4	1200 70	69.00	2194159G4	400 65
2194164G4	600 50	38.00				2194165G4	600 70

Single-pole, Double-throw			
1 Front Connected Contact, Other Contact and Hinge Back Connected		2 Back Connected Contacts and Back Connected Hinge	
Cat. No.	Amp. Wt., Lbs.	Ship. Price Each	Cat. No.
2194153G1	200 58	\$46.00	2194171G1
2194159G1	400 68	60.00	2194178G1
2194165G1	600 80	68.00	
2 Back Connected Contacts and Back Connected Hinge			
2194153G2	200 60	\$49.00	2194171G2
2194159G2	400 75	67.00	2194178G2
2194165G2	600 85	76.00	
2 Front Connected Contacts and Back Connected Hinge			
2194153G3	200 55	\$39.00	2194171G3
2194159G3	400 70	53.00	2194179G1
2194165G3	600 75	61.00	
2 Front Connected Contacts and Front Connected Hinge			
2194153G4	200 50	\$35.00	2194171G4
2194159G4	400 65	46.00	2194179G2
2194165G4	600 70	53.00	

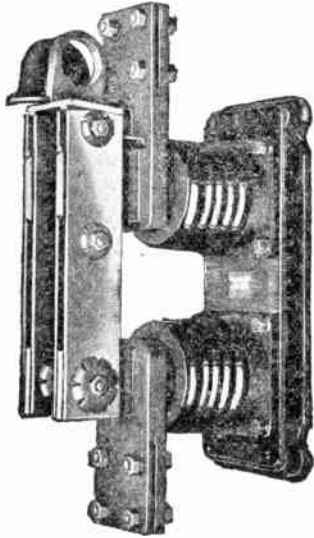
*Type and fittings for mounting on pipe not included. For No. 195406 half yoke with nut for pipe mounting, (2 required for each switch), add 12 cents each.

Terminals for 1200-ampere Switches

†Cat. No.	Cable Hole Inside	Bolt Hole, In.	Stud Connection, In.	Used on	Wt., Lbs. per 100	Price per 100
2672275G1	2-1.699	4 1/32	...	Front	1000	\$800.00
2609820G1	2-1.699	...	1 1/8	Back	1000	800.00

†Catalogue numbers include one adapter with 2 terminals and necessary bolts, nuts and washers.

Type LG-17C Disconnecting Switches
Indoor Type, Single-pole, Single and Double-throw



With Heavy Duty Insulators and Safety Catches Mounted on Rectangular Metal Bases for Flat Surface or 1/4-inch Pipe Mounting

15000 Volts

When it is desired to mount Type LG-17C switches listed below on 1/4-inch pipe (not included) add for each switch four 1/2-inch half yokes with nut for clamping base to pipe.

All switches below have laminated blocks and stud for bar connection. Round back connected studs are not available. Nuts and terminals not recommended on switches above 1200-ampere capacity.

Single-pole, Single-throw

Front Connected Contact and Back Connected Hinge

Cat. No.	Amp.	ARRANGEMENT OF Hinge	SLOTS Contact	Ship. Wt., Lbs.	Price Each
2194186G1	1600	Vert.	Hor.	155	\$110.00
2194186G4	1600	Hor.	"	155	110.00
2194192G1	2000	Vert.	"	185	134.00
2194192G4	2000	Hor.	"	185	134.00
2194198G1	3000	Vert.	"	205	193.00
2194198G4	3000	Hor.	"	205	193.00

Back Connected Contact and Front Connected Hinge

2194186G2	1600	Hor.	Vert.	155	\$110.00
2194186G3	1600	"	Hor.	155	110.00
2194192G2	2000	"	Vert.	185	134.00
2194192G3	2000	"	Hor.	185	134.00
2194198G2	3000	"	Vert.	205	193.00
2194198G3	3000	"	Hor.	205	193.00

Back Connected Contact and Back Connected Hinge

2194187G1	1600	Hor.	Hor.	165	\$133.00
2194187G2	1600	Vert.	Vert.	165	133.00
2194187G3	1600	Hor.	"	165	133.00
2194187G4	1600	Vert.	Hor.	165	133.00
2194193G1	2000	Hor.	"	220	160.00
2194193G2	2000	Vert.	Vert.	220	160.00
2194193G3	2000	Hor.	"	220	160.00
2194193G4	2000	Vert.	Hor.	220	160.00
2194199G1	3000	Hor.	"	230	234.00
2194199G2	3000	Vert.	Vert.	230	234.00
2194199G3	3000	Hor.	"	230	234.00
2194199G4	3000	Vert.	Hor.	230	234.00

Front Connected Contact and Front Connected Hinge

2194186G5	1600	Hor.	Hor.	140	\$87.00
2194192G5	2000	"	"	150	107.00
2194198G5	3000	"	"	175	152.00

Single-pole, Double-throw

1 Front Connected Contact, Other Contact and Hinge Back Connected

2194188G1	1600	Vert.	Both Hor.	215	\$165.00
2194194G1	2000	"	"	275	202.00
2194200G1	3000	"	Vert.	300	296.00

2 Back Connected Contacts and Back Connected Hinge

2194188G2	1600	Vert.	Both Hor.	225	\$184.00
2194194G2	2000	"	"	300	225.00
2194200G2	3000	"	"	325	328.00

2 Front Connected Contacts and Back Connected Hinge

2194188G3	1600	Vert.	Both Hor.	210	\$142.00
2194194G3	2000	"	"	325	171.00
2194200G3	3000	"	"	260	244.00

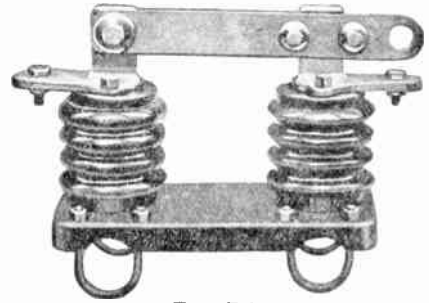
2 Front Connected Contacts and Front Connected Hinge

2194188G4	1600	Hor.	Both Hor.	190	\$123.00
2194194G4	2000	"	"	200	149.00
2194200G4	3000	"	"	225	213.00

*Pipe and fittings for mounting on pipe not included. For No. 195406 half yoke with nut for pipe mounting (4 required for each switch) add 12 cents each.

EEE Type Z Disconnecting Switches

Indoor Type—Flat or Pipe Mounting



Type Z-1

Interchangeable parts construction. Double blades insure large radiating area and consequent cool operation.

Solid copper clips eliminate riveted or sweated joints. Simple and positive locking device.

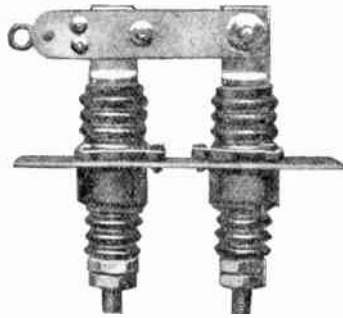
Type Z-1 Single-throw

Type Z-2 Double-throw

7500 Volts, 100-200 Amperes			7500 Volts, 200-300 Amperes			7500 Volts, 300-500 Amperes			15000 Volts, 300-500 Amperes			25000 Volts, 300-500 Amperes			7500 Volts, 600-800 Amperes			15000 Volts, 600-800 Amperes			25000 Volts, 600-800 Amperes			7500 Volts, 800-1000 Amperes			15000 Volts, 800-1000 Amperes			25000 Volts, 800-1000 Amperes			7500 Volts, 1200-1400 Amperes			15000 Volts, 1200-1400 Amperes			25000 Volts, 1200-1400 Amperes			7500 Volts, 1500-1600 Amperes			15000 Volts, 1500-1600 Amperes			25000 Volts, 1500-1600 Amperes																																																																																																																																															
Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each	Cat. Nos.	With Lock	Price Each																																																																																																																																																									
10102	\$17.40	10116	\$22.99	10202	\$18.31	10122	\$25.33	10400	\$19.16	10416	\$28.00	10401	25.00	10417	33.00	10402	\$21.00	10418	\$29.00	10403	27.00	10419	35.00	10404	\$24.00	10420	\$32.00	10405	30.00	10421	38.00	10432	\$26.00	10448	\$35.00	10433	32.00	10449	41.00	10434	\$27.00	10450	\$37.00	10435	33.00	10451	43.00	10436	\$31.00	10452	\$42.00	10437	37.00	10453	48.00	10464	\$33.00	10480	\$44.00	10465	39.00	10481	50.00	10466	\$35.00	10482	\$46.00	10467	41.00	10483	52.00	10468	\$39.00	10484	\$51.00	10469	45.00	10485	57.00	10496	\$50.00	10512	\$67.00	10497	57.00	10513	74.00	10498	\$52.00	10514	\$70.00	10499	59.00	10515	77.00	10500	\$55.00	10516	\$73.00	10501	62.00	10517	80.00	10528	\$57.00	10544	\$76.00	10529	64.00	10545	83.00	10530	\$60.00	10546	\$80.00	10531	67.00	10547	87.00	10532	\$64.00	10548	\$83.00	10533	71.00	10549	90.00

EEE Type W Disconnecting Switches

Indoor Type—Back Connected



Type W-5

Switches can be supplied for higher amperages and for either flat or pipe mounting.

Switches can be supplied for any combination of front or back connection.

**Type W-5
Single-throw**

**Type W-25
Double-throw**

7500 Volts, 100-200 Amperes

CAT. NOS.		Price Each	CAT. NOS.		Price Each
Without Lock	With Lock		Without Lock	With Lock	
11920	.....	\$29.00	11964	.....	\$41.00
7500 Volts, 200-300 Amperes					
11924	.....	\$31.00	11968	.....	\$44.50
7500 Volts, 300-500 Amperes					
11928	.....	\$34.00	11972	.....	\$48.00
.....	11929	38.00	.....	11973	52.00
15000 Volts, 300-500 Amperes					
12016	.....	\$38.00	12060	.....	\$55.00
.....	12017	41.50	.....	12061	59.00
25000 Volts, 300-500 Amperes					
12104	.....	\$42.50	12148	.....	\$62.00
.....	12105	46.50	.....	12149	66.00
7500 Volts, 600-800 Amperes					
11932	.....	\$46.00	11976	.....	\$63.50
.....	11933	51.00	.....	11977	68.00
15000 Volts, 600-800 Amperes					
12020	.....	\$50.50	12064	.....	\$70.00
.....	12021	55.00	.....	12065	74.50
25000 Volts, 600-800 Amperes					
12108	.....	\$56.00	12152	.....	\$77.50
.....	12109	61.00	.....	12153	82.00
7500 Volts, 800-1000 Amperes					
11936	.....	\$59.00	11980	.....	\$81.50
.....	11937	65.00	.....	11981	88.00
15000 Volts, 800-1000 Amperes					
12024	.....	\$63.50	12068	.....	\$88.50
.....	12025	70.00	.....	12069	95.00
25000 Volts, 800-1000 Amperes					
12112	.....	\$69.50	12156	.....	\$96.00
.....	12113	75.50	.....	12157	102.00
7500 Volts, 1200-1400 Amperes					
11940	.....	\$98.50	11984	.....	\$142.50
.....	11941	105.00	.....	11985	148.50
15000 Volts, 1200-1400 Amperes					
12028	.....	\$107.00	12072	.....	\$153.00
.....	12029	113.00	.....	12073	159.00
25000 Volts, 1200-1400 Amperes					
12116	.....	\$115.50	12160	.....	\$165.00
.....	12117	122.00	.....	12161	171.00
7500 Volts, 1500-1600 Amperes					
11944	.....	\$121.00	11988	.....	\$174.00
.....	11945	127.00	.....	11989	180.00
15000 Volts, 1500-1600 Amperes					
12032	.....	\$130.00	12076	.....	\$184.00
.....	12033	136.00	.....	12077	190.00
25000 Volts, 1500-1600 Amperes					
12120	.....	\$139.00	12164	.....	\$196.00
.....	12121	145.50	.....	12165	202.00

EEE Form A Insulating Supports

Indoor Service—Flat or Pipe Mounting

All Form A Supports are made in the interchangeable part construction.

Supports for other sizes of conductors, other arrangements of conductors, higher voltages or other styles of mounting can be supplied.

Type AF—Flat Mounting



Cat. No.	Voltage	Size Bar Inches	Price Each
20130	3500	2	\$6.10
20131	7500	2	6.25
20132	15000	2	6.65
20138	3500	3	6.30
20139	7500	3	6.45
20140	15000	3	6.85
20142	3500	4	6.90
20143	7500	4	7.05
20144	15000	4	7.45

Type AP—1/4-inch Pipe Mounting

Cat. No.	Voltage	Size Bar Inches	Price Each
20170	3500	2	\$6.25
20171	7500	2	6.40
20172	15000	2	6.80
20178	3500	3	6.45
20179	7500	3	6.60
20180	15000	3	7.00
20182	3500	4	7.05
20183	7500	4	7.20
20184	15000	4	7.60



Type TF—Flat Mounting



Cat. No.	Voltage	Size Bar Inches	Price Each
20290	3500	2	\$4.90
20291	7500	2	5.05
20292	15000	2	5.45
20298	3500	3	5.40
20299	7500	3	5.55
20300	15000	3	5.95
20302	3500	4	5.65
20303	7500	4	5.80
20304	15000	4	6.20

Type TP—1/4-inch Pipe Mounting

Cat. No.	Voltage	Size Bar Inches	Price Each
20330	3500	2	\$5.05
20331	7500	2	5.20
20332	15000	2	5.60
20338	3500	3	5.55
20339	7500	3	5.70
20340	15000	3	6.10
20342	3500	4	5.80
20343	7500	4	6.00
20344	15000	4	6.40



Type LF—Flat Mounting



Cat. No.	Voltage	Size Bar Inches	Price Each
20562	3500	0-3/4	\$5.25
20563	7500	0-3/4	5.45
20564	15000	0-3/4	5.85
20566	3500	3/4-1 1/4	5.75
20567	7500	3/4-1 1/4	5.90
20568	15000	3/4-1 1/4	6.35
20570	3500	1 1/4-1 3/4	7.50
20571	7500	1 1/4-1 3/4	7.70
20572	15000	1 1/4-1 3/4	8.10

Type LP—1/4-inch Pipe Mounting

Cat. No.	Voltage	Size Bar Inches	Price Each
20586	3500	0-3/4	\$5.45
20587	7500	0-3/4	5.60
20588	15000	0-3/4	6.00
20590	3500	3/4-1 1/4	5.90
20591	7500	3/4-1 1/4	6.10
20592	15000	3/4-1 1/4	6.50
20594	3500	1 1/4-1 3/4	7.65
20595	7500	1 1/4-1 3/4	7.85
20596	15000	1 1/4-1 3/4	8.25



EEE Form C Insulating Supports
Outdoor Service—Flat or Pipe Mounting



Type FP



Type FF

All Form C supports are made in the interchangeable part construction. They can therefore be made upright or underslung by interchanging position of bus clamp and mounting base.

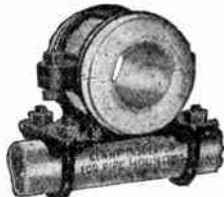
Supports for other sizes of conductors, other arrangements of conductors, higher voltages, or other styles of mounting can be supplied.

Diam. of Bus Inches	Voltage	Type FF—Flat Mounting, Upright		Type FP—1 1/4" Pipe Mounting, Underslung	
		Cat. No.	Price Each	Cat. No.	Price Each
0-3/8	4000	25412	\$4.66	25461	\$7.34
0-1/2	7500-15000	25416	7.62	25465	8.30
0-5/8	25000	25418	10.70	25467	11.36
0-3/4	35000	25420	12.34	25469	13.02
0-7/8	45000	25422	14.88	25471	15.56
0-1	66000	25424	40.48	25473	41.80
0-1 1/8	80000	25426	61.88	25475	63.20

EEE Clamp Insulator Supports



Flat Mounting



Pipe Mounting

Clamp insulator supports furnished with larger holes.

FLAT MOUNTING			1 1/4-IN. PIPE MOUNTING		
Cat. No.	Hole In.	Price Each	Cat. No.	Hole In.	Price Each
1401	5/16	\$1.48	1439	7/8	\$2.12
1403	3/8	1.36	1441	1 1/8	2.00
1404	1/2	1.48	1442	3/8	2.12
1405	5/8	1.36	1443	1/2	2.00
1406	7/8	1.48	1444	3/4	2.12
1407	1	1.36	1445	7/8	2.00
1408	1 1/8	1.86	1446	1	2.50
1409	1 1/4	1.72	1447	1 1/8	2.36
1410	1 1/2	1.86	1448	1 1/4	2.50
1411	1 3/4	1.72	1449	1 1/2	2.36
1412	1 7/8	1.86	1450	1 3/4	2.50
1413	2	1.72	1451	1 7/8	2.36
1414	2 1/8	1.86	1452	2	2.50
1415	2 1/4	1.72	1453	2 1/8	2.36
1416	2 3/8	2.64	1454	2 1/4	3.44
1417	2 1/2	2.52	1455	2 3/8	3.32
1418	2 5/8	2.64	1456	2 1/2	3.44
1419	2 3/4	2.52	1457	2 5/8	3.32
1420	2 7/8	2.64	1458	2 3/4	3.44
1421	3	2.52	1459	2 7/8	3.32
1422	3 1/8	3.74	1460	3	4.54
1423	3 1/4	3.54	1461	3 1/8	4.34
1424	3 1/2	3.74	1462	3 1/4	4.54
1425	3 3/4	3.54	1463	3 1/2	4.34
1426	4	3.54	1464	4	4.34

EEE Indoor Style Cable End Bells
Alternating or Direct Current



Cat. No. 105

This device which is sometimes called a pot head, is essential for the protection of lead covered power cables.

A completed end bell not only provides a perfect grounding device for the lead sheath of the cable, thereby removing static accumulation, but also seals the cable against moisture.

Specify, when ordering, voltage of circuit, number of conductors, gauge of cable, exact over all diameter of cable over lead sheath, type of joint (all bells are made to either screw on pipe or clamp, or wipe on cable) and if pipe joint, the size of pipe must be specified also.

Cat. No.	Type	No. of Conductors	Voltage	MAXIMUM OUT-SIDE DIAMETER CABLE, INCHES		Amt. Compound Required	Shipping Wt. Lbs.	PRICE, EACH	
				Wiped or Clamped Joint	Pipe Joint			With Compound	Without Compound
107	10-AF	2	4000	1 3/4	1 3/8	1/2	25	\$15.20	\$17.20
108	10-AF	3	4000	1 3/4	1 3/8	1/2	25	15.80	17.80
1002	10-BF	2	7500	2 3/4	2	3/4	35	19.80	22.80
1003	10-BF	3	7500	2 3/4	2	3/4	35	20.40	23.40
1004	10-BF	4	7500	2 3/4	2	3/4	35	21.00	24.00
101	10-F	2	7500	3 1/8	2 3/4	1	50	23.20	27.20
102	10-F	3	7500	3 1/8	2 3/4	1	50	25.00	29.00
103	10-F	4	7500	3 1/8	2 3/4	1	50	26.00	30.00
104	10-F	2	15000	3 1/8	2 3/4	1	50	28.50	32.50
105	10-F	3	15000	3 1/8	2 3/4	1	50	30.20	34.20
106	10-F	4	15000	3 1/8	2 3/4	1	50	32.00	36.00
822	82-F	2	7500	3 5/8	3	1	50	30.00	34.00
823	82-F	3	7500	3 5/8	3	1	50	31.80	35.80
824	82-F	4	7500	3 5/8	3	1	50	33.00	37.00
820	82-F	2	15000	3 5/8	3	1	50	32.00	36.00
821	82-F	3	15000	3 5/8	3	1	50	33.60	37.60
825	82-F	4	15000	3 5/8	3	1	50	35.40	39.40
811	81-F	2	7500	4 1/2	3 3/4	1	60	30.20	34.20
812	81-F	3	7500	4 1/2	3 3/4	1	60	32.00	36.00
815	81-F	4	7500	4 1/2	3 3/4	1	60	33.20	37.20
813	81-F	2	15000	4 1/2	3 3/4	1	60	33.60	37.60
814	81-F	3	15000	4 1/2	3 3/4	1	60	35.20	39.20
817	81-F	4	15000	4 1/2	3 3/4	1	60	37.00	41.00
140	14-F	2	15000	4 1/2	3 3/4	1 1/2	65	51.00	57.00
141	14-F	3	15000	4 1/2	3 3/4	1 1/2	65	53.00	59.00
145	14-F	2	35000	4 1/2	3 3/4	1 1/2	65	57.00	63.00
143	14-F	3	35000	4 1/2	3 3/4	1 1/2	65	59.00	65.00
500	50-AF	1	7500	1 3/8	1	1/8	10	13.16	13.66
501	50-AF	1	15000	1 3/8	1	1/8	10	14.46	14.96
502	50-AF	1	7500	2 1/4	2 1/4	1/4	20	25.00	26.00
503	50-AF	1	15000	2 3/4	2 3/4	1/4	20	26.30	27.30
504	50-AF	1	25000	2 3/4	2 1/4	1/4	20	27.60	28.60
*505	50-AF	1	3000	1 3/8	1	1/8	10	9.90	10.40
*506	50-AF	1	3000	2 3/4	2 1/4	1/4	20	14.60	15.60

Types 11-FL or 11-FR



Cat. No. 111, Type 11-FL Left Hand

Cat. No.	Type	No. of Conductors	Voltage	Wiped or Clamped Joint	Pipe Joint	Amt. Compound Required	Shipping Wt. Lbs.	Price Each
110	11	2	7500	3 1/4	2 3/4	1	45	\$27.20
111	11	3	7500	3 1/4	2 3/4	1	45	25.00
112	11	4	7500	3 1/4	2 3/4	1	45	26.80
113	11	2	15000	3 1/4	2 3/4	1	45	28.50
114	11	3	15000	3 1/4	2 3/4	1	45	30.20
115	11	4	15000	3 1/4	2 3/4	1	45	32.00



Cat. No. 111, Type 11-FR Right Hand

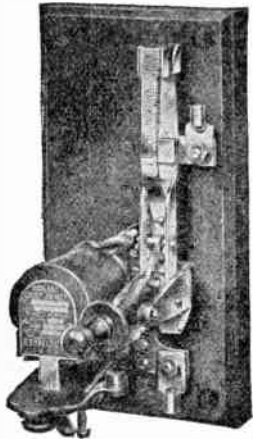
Cat. No.	Type	No. of Conductors	Voltage	Wiped or Clamped Joint	Pipe Joint	Amt. Compound Required	Shipping Wt. Lbs.	Price Each
150	15	2	7500	3 3/4	3 1/4	2	80	\$26.20
151	15	3	7500	3 3/4	3 1/4	2	80	28.00
152	15	4	7500	3 3/4	3 1/4	2	80	29.00
153	15	2	15000	3 3/4	3 1/4	2	80	31.40
154	15	3	15000	3 3/4	3 1/4	2	80	33.00
155	15	4	15000	3 3/4	3 1/4	2	80	34.30

Types 15-FL or 15-FR

Cat. No.	Type	No. of Conductors	Voltage	Wiped or Clamped Joint	Pipe Joint	Amt. Compound Required	Shipping Wt. Lbs.	Price Each
150	15	2	7500	3 3/4	3 1/4	2	80	\$26.20
151	15	3	7500	3 3/4	3 1/4	2	80	28.00
152	15	4	7500	3 3/4	3 1/4	2	80	29.00
153	15	2	15000	3 3/4	3 1/4	2	80	31.40
154	15	3	15000	3 3/4	3 1/4	2	80	33.00
155	15	4	15000	3 3/4	3 1/4	2	80	34.30

*Direct current only; all other bells may be used on either direct or alternating current.

Type CG Air Circuit Breakers



Type CG air circuit breakers are efficient and reliable and may be recommended for general industrial use except in steel mills or like installations where heavier breakers (Type CP) should be used. They should not be recommended for high grade switch-board service but are used effectively on small motor panels, mercury arc rectifier outfits, small battery charging panels and the like.

Type CG breakers are made in capacities from 3 to 300 amperes at 550 volts direct current, 600 volts alternating current, front and back connected.

The following forms are available:

Overload direct and alternating current.

Plain shunt trip, direct and alternating current.

Underload, direct current.

Plain under-voltage, direct and alternating current.

Reverse current (including under-voltage), direct current.

Attachments, under-voltage shunt trip and auxiliary switches.

By the use of the under-voltage attachment, circuit breakers may be arranged to operate on a drop in or failure of voltage; two or more circuit breakers may be electrically interlocked and by the use of a switch to short circuit the under-voltage device, circuit breakers may be tripped from one or more remote points. This device is also made use of when it is desired to open the breaker by the operation of a speed limit device or various types of relays.

The shunt trip is to provide for conditions under which the under-voltage device cannot be successfully applied. It trips the breaker when energized and should be allowed to remain in circuit only momentarily.

FRONT CONNECTED BREAKERS are mounted on 1 1/4-in. dull black marine finish slafe (D.B.M.F.) bases.

TRIPLE-POLE BREAKERS have "trip free" mechanism. They may be furnished for use on direct current. Order should read "Similar to Cat. No. (give Cat. No. of corresponding alternating current breaker) but calibrated for use on direct current." Prices are the same as listed for alternating current breakers.

All current-carrying parts are satin finished and all other metal parts have black marine finish.

Terminals

Front Connected Breakers

All front connected Type CG air circuit breakers are furnished with a complete set of nuts and terminals.

Back Connected Breakers

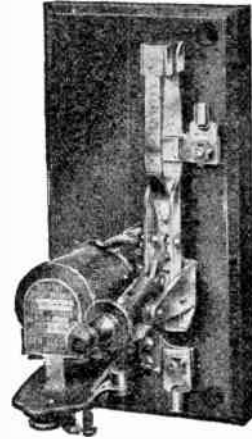
All back connected Type CG air circuit breakers are furnished with a complete set of nuts but will have only one stud of each pole equipped with a terminal.

Additional terminals if required should be ordered extra.

Features

- 1.—Recommended for general industrial applications, small panels for motor control, rectifier outfits, etc.
- 2.—Thoroughly reliable—will stand hard usage.
- 3.—Ample current-carrying capacity.
- 4.—Main contact brushes protected by carbon secondaries.
- 5.—End-on contact of brush laminations insures good contact.
- 6.—Small overall dimensions.
- 7.—Each breaker calibrated individually. Wide range of calibration clearly marked.
- 8.—Series coils made detachable. On 25 amperes and above, copper bar-wound coils replaces old wire-wound coils.
- 9.—Tested and approved by Fire Underwriters.
- 10.—Close easily; do not jar open.
- 11.—Double-pole breakers, each pole separate handle; triple-pole breakers, one handle for all poles and "trip free" feature.
- 12.—Superior finish, neat appearance.
- 13.—Large number of capacities and combinations covering practically every requirement.

Type CG Air Circuit Breakers



Direct Current, Overload
Single-pole, 550 Volts or Less

CATALOGUE NUMBERS Front Con- nected on Base	Back Connected for 1 1/2 or 2-in. Panel	Cap. Amps.	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
39899	39911	3	20	12	\$26.00
39903	39915	5	20	12	26.00
39907	39919	10	20	12	26.00
35483	35507	15	20	12	26.00
35487	35511	25	20	12	30.00
35491	35515	50	20	12	30.00
35495	35519	100	20	12	30.00
35499	35523	200	32	20	42.00
35503	35527	300	32	20	45.00

Double-pole, 550 Volts or Less

39900	39912	3	30	15	\$38.00
39904	39916	5	30	15	38.00
39908	39920	10	30	15	38.00
35484	35508	15	30	15	38.00
35488	35512	25	30	15	44.00
35492	35516	50	30	15	44.00
35496	35520	100	30	15	44.00
35500	35524	200	50	35	64.00
35504	35528	300	50	35	70.00

Approximate calibration is from 65 to 150 per cent of normal current.

Direct Current, *Plain Shunt Trip
Single-pole, 550 Volts or Less

CATALOGUE NUMBERS Front Con- nected on Base	Back Connected for 1 1/2 or 2-in. Panel	Cap. Amps.	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
110571	110583	100	20	12	\$30.00
110575	110587	200	32	20	42.00
110579	110591	300	32	20	45.00
†Double-pole, 550 Volts					
110572	110584	100	25	15	\$42.00
110576	110588	200	48	32	64.00
110580	110592	300	48	32	70.00

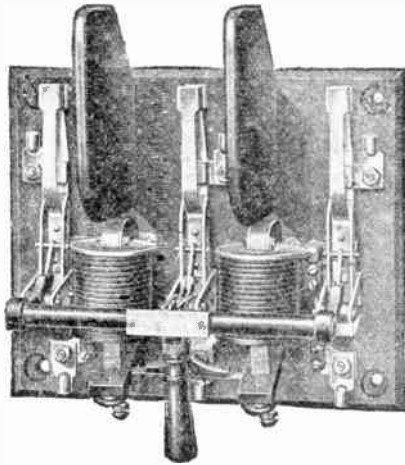
Capacities below 100 amperes, same price.

No overload coils on these breakers.

*Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be so arranged that the opening of the circuit breaker will disconnect the shunt trip circuit. If for any reason, however, the shunt trip has to be connected to the line side a circuit opening auxiliary switch should be mounted on the breaker to open the trip circuit.

†Double-pole plain shunt breakers trip both poles, same as overload breakers.

Type CG Air Circuit Breakers



Direct Current, Underload

Underload breakers are calibrated at the factory to trip on 20 per cent of the carrying capacity. They can be set to trip at any point as low as 10 per cent if so specified on the requisition.

Single-pole, 550 Volts or Less

Front Connected On Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
37493	37517	15	20	12	\$30.00
37497	37521	25	20	12	32.00
37501	37525	50	20	12	32.00
37505	37529	100	20	12	32.00
37509	37533	200	32	20	45.00
37513	37537	300	32	20	48.00

Double-pole, 550 Volts or Less

Front Connected On Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	On Base	For Panel	Price Each
37494	37518	15	30	15	\$44.00
37498	37522	25	30	15	47.00
37502	37526	50	30	15	47.00
37506	37530	100	30	15	47.00
37510	37534	200	50	35	68.00
37514	37538	300	50	35	75.00

Alternating Current, Overload

Single-pole, 600 Volts or Less

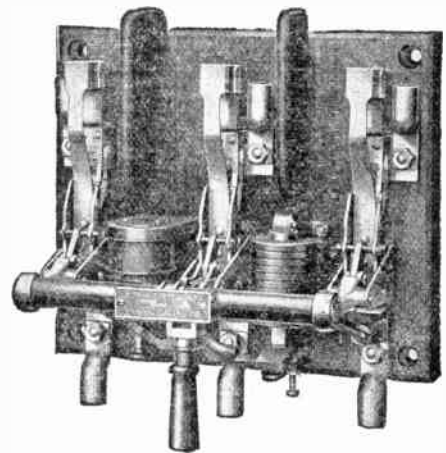
Front Connected On Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
43340	43352	3	20	12	\$31.00
43344	43356	5	20	12	31.00
43348	43360	10	20	12	31.00
38144	38168	15	20	12	31.00
38148	38172	25	20	12	36.00
38152	38176	50	20	12	36.00
38156	38180	100	20	12	36.00
38160	38184	200	32	20	50.00
38164	38188	300	32	20	54.00

Double-pole, 600 Volts or Less

Front Connected On Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	On Base	For Panel	Price Each
43341	43353	3	30	15	\$46.00
43345	43357	5	30	15	46.00
43349	43361	10	30	15	46.00
38145	38169	15	30	15	46.00
38149	38173	25	30	15	50.00
38153	38177	50	30	15	50.00
38157	38181	100	30	15	50.00
38161	38185	200	50	35	75.00
38165	38189	300	50	35	84.00

NOTE.—Approximate calibration is from 65 to 150 per cent of the normal capacity.

Type CG Air Circuit Breakers



Each breaker calibrated individually. Wide range of calibration. Close easily; do not jar open.

Double-pole breakers, each pole separate handle; triple-pole breakers, one handle for all poles and "trip free" feature.

Alternating Current, Overload

Triple-pole, 600 Volts, Two Overload Coils

Front Connected on Base	CATALOGUE NUMBERS Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
46268	46277	3	44	40	\$82.00
46269	46278	5	44	40	82.00
46270	46279	10	44	40	82.00
38190	38214	15	44	40	82.00
38191	38215	25	44	40	94.00
38192	38216	50	44	40	94.00
38193	38217	100	44	40	94.00
38194	38218	200	70	55	130.00
38195	38219	300	70	55	145.00

Triple-pole, 600 Volts One Overload and One Under-voltage Coil

Front Connected on Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	On Base	For Panel	Price Each
46274	46283	3	47	44	\$86.00
46275	46284	5	47	44	86.00
46276	46285	10	47	44	86.00
38202	38220	15	47	44	86.00
38203	38221	25	47	44	96.00
38204	38222	50	47	44	96.00
38205	38223	100	47	44	96.00
38206	38224	200	70	55	132.00
38207	38225	300	70	55	145.00

NOTE.—Approximate calibration is from 65 to 150 per cent of the normal capacity.

Alternating Current, Plain Shunt Trip

Capacities below 100 amperes same price. Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be so arranged that the opening of the circuit-breaker will disconnect the shunt trip circuit. If for any reason, however, the shunt trip has to be connected to the line side a circuit opening auxiliary switch should be mounted on the breaker to open the trip circuit.

Single-pole, 600 Volts or Less

Front Connected on Base	CATALOGUE NUMBERS Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	APPROXIMATE SHIPPING WT., LBS.		Price Each
			On Base	For Panel	
110547	110559	100	20	12	\$34.00
110551	110563	200	32	20	46.00
110555	110567	300	32	20	49.00

Double-pole, 600 Volts or Less

Front Connected on Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	On Base	For Panel	Price Each
110548	110560	100	25	15	\$48.00
110552	110564	200	48	32	70.00
110556	110568	300	48	32	76.00

Triple-pole, 600 Volts or Less

Front Connected on Base	Back Connected For 1 1/2 or 2-in. Panel	Cap. Amps	On Base	For Panel	Price Each
110593	110596	100	40	30	\$64.00
110594	110597	200	65	50	104.00
110595	110598	300	65	50	114.00

Undervoltage Attachments
For Type CG Circuit Breakers



By the use of under voltage release attachment, circuit breakers may be arranged to operate on a drop in or cessation of voltage, two or more circuit breakers may be electrically interlocked and by use of a switch to short-circuit under voltage release, circuit breakers may be tripped from one or more remote points.

For Direct Current

Cat. No.	Voltage of Circuit	Approx. Releasing Voltage	DESCRIPTION OF CIRCUIT BREAKER		Price Each
			Cap. Amps.	No. of Poles	
37539	125	60	3 to 100	Single and Double	\$11.00
37542	125	60	200 and 300	" " "	11.00
37540	250	125	3 to 100	" " "	13.00
37543	250	125	200 and 300	" " "	13.00
37541	500	250	3 to 100	" " "	16.00
37544	500	250	200 and 300	" " "	16.00

For Alternating Current

43378	125	60	3 to 100	Single and Double	\$12.00
43381	125	60	200 and 300	" " "	12.00
43379	250	125	3 to 100	" " "	14.00
43382	250	125	200 and 300	" " "	14.00
43380	600	300	3 to 100	" " "	17.00
43383	600	300	200 and 300	" " "	17.00

Shunt Trip Attachments
For Type CG Circuit Breakers

The shunt trip has been designed to provide for conditions under which the undervoltage attachment can not be successfully applied. It trips the breaker when energized, and should be allowed to remain in circuit only momentarily.

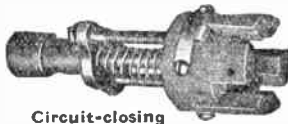


For Direct or Alternating Current

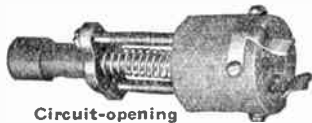
Cat. No.	Voltage of Circuit	DESCRIPTION OF CIRCUIT BREAKER		Price Each
		Cap. Amps.	No. of Poles	
37545	125-250-500	3 to 100	Single and Double	\$8.00
37546	125-250-500	200 and 300	" " "	8.00

Auxiliary Switches

For Type CG Circuit Breakers
For Direct or Alternating Current



Circuit-closing

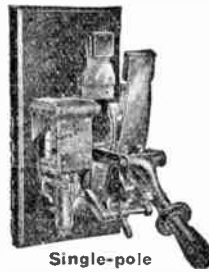


Circuit-opening

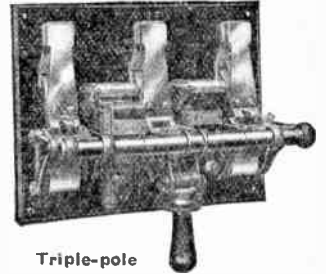
For Breakers 3 to 100 Amperes

For Mounting On	Circuit Cat. No.	Closing Price Each	COMBINED CIRCUIT OPENING AND CIRCUIT CLOSING			
			Circuit Cat. No.	Opening Price Each	Circuit Cat. No.	
1 1/4-inch Base	37553	\$6.00	37547	\$6.00	37559	\$7.00
1 1/2 " Panel	37554	6.00	37548	6.00	37560	7.00
2 " "	37555	6.00	37549	6.00	37561	7.00
For Breakers 200 and 300 Amperes						
1 1/4-inch Base	37556	\$6.00	37550	\$6.00	37562	\$7.00
1 1/2 " Panel	37557	6.00	37551	6.00	37563	7.00
2 " "	37558	6.00	37552	6.00	37564	7.00

Type CP Air Circuit Breakers
Alternating Current—Over Current (Overload)
Back Connected



Single-pole



Triple-pole

These breakers may be relied upon to open circuits under severe abnormal conditions. Either the breakers may have self-contained features which provide the particular protection desired, or various attachments or auxiliary devices may be added to give that protection.

They are recommended for use on railway, lighting and power switchboards, or for general industrial service. When used for industrial service, each breaker is usually on a base for separate mounting.

These breakers are simple in design and each part is properly proportioned for the work it has to perform, and at the same time all combine to form a symmetrical and attractive device.

CATALOGUE NUMBERS		Capac-ity Amps.	CALIBRATION		APPROX. SHIP. WT., LBS.		Price Each
On 1 1/4-inch Base	For 1 1/2 or 2-inch Panel		Min.	Max.	On Base	For Panel	
2195904G3	2195904G4	15	12	25	40	25	\$45.00
2195914G3	2195914G4	25	20	40	40	25	45.00
2195924G3	2195924G4	50	35	75	40	25	51.00
2195901G3	2195901G4	100	75	150	40	25	53.00
2195932G3	2195932G4	200	150	300	50	30	64.00
2195903G3	2195903G4	300	225	450	50	30	76.00
2195905G3	2195905G4	500	375	750	50	30	100.00
†2195906G3	2195906G4	600	450	900	50	30	119.00
†2195918G1	2195918G2	800	600	1200	50	40	138.00
†2195919G1	2195919G2	1200	900	1800	50	40	186.00
*Double-pole, 480 Volts or Less, One Overload Coils							
2195934G3	2195934G4	15	12	25	50	40	\$65.00
2195944G3	2195944G4	25	20	40	50	40	65.00
2195954G3	2195954G4	50	35	75	50	40	74.00
2196001G3	2196001G4	100	75	150	50	40	77.00
2195902G3	2195902G4	200	150	300	60	50	96.00
2195953G3	2195953G4	300	225	450	100	60	118.00
2195955G3	2195955G4	500	375	750	100	60	160.00
†2195966G3	2195966G4	600	450	900	100	60	190.00
†2195958G1	2195958G2	800	600	1200	140	130	207.00
†2195959G1	2195959G2	1200	900	1800	140	130	279.00
*Double-pole 480 Volts or Less, 2 Overload Coils							
2195964G3	2195964G4	15	12	25	60	50	\$90.00
2195974G3	2195974G4	25	20	40	60	50	90.00
2195984G3	2195984G4	50	35	75	60	50	102.00
2195991G3	2195991G4	100	75	150	60	50	106.00
2196002G3	2196002G4	200	150	300	70	60	128.00
2195983G3	2195983G4	300	225	450	110	85	152.00
2195985G3	2195985G4	500	375	750	110	85	200.00
†2195976G3	2195976G4	600	450	900	110	85	238.00
†2195938G1	2195938G2	800	600	1200	150	130	276.00
†2195939G1	2195939G2	1200	900	1800	150	130	372.00
Triple-pole, 650 Volts or Less, 2 Overload Coils							
2195994G1	2195994G2	15	12	25	80	60	\$119.00
2196004G1	2196004G2	25	20	40	80	60	119.00
2196014G1	2196014G2	50	35	75	80	60	135.00
2196021G1	2196021G2	100	75	150	80	60	140.00
2196012G1	2196012G2	200	150	300	90	80	173.00
2196013G1	2196013G2	300	225	450	150	90	209.00
2196015G1	2196015G2	500	375	750	150	90	305.00
†2196016G1	2196016G2	600	450	900	150	90	358.00
†2195968G1	2195968G2	800	600	1200	200	180	398.00
†2195969G1	2195969G2	1200	900	1800	200	180	652.00

*Double-pole, 650-volt breakers, prices upon application, stating requirements.

†Mounted on 1 1/2-inch base only.

Nuts and Terminals

All Type CP Air Circuit Breakers are furnished with a complete set of nuts (2 nuts per stud), but will have only one stud of each pole equipped with a terminal. Additional terminals, if required, should be ordered extra.

Type CP Air Circuit Breakers

Alternating Current—Plain Shunt Trip Back Connected

Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be so arranged that the opening of the circuit breaker will disconnect the shunt trip circuit. If, however, the shunt trip has to be connected to the line side, a circuit-opening auxiliary switch should be mounted on the circuit breaker to open the trip circuit.

CATALOGUE NUMBERS		Capacity Amps	APPROX. SHIP. WT., LBS.		Price Each
On 1½-inch Base	For 1½ or 2-inch Panel		On Base	For Panel	
2196041G3	2196041G4	100	40	25	\$51.00
2196042G3	2196042G4	200	50	30	61.00
2196043G3	2196043G4	300	50	30	72.00
2196045G3	2196045G4	500	50	30	94.00
†2196036G3	2196036G4	600	50	30	111.00
†2196058G3	2196058G4	800	50	40	128.00
†2196059G3	2196059G4	1200	50	40	172.00
*Single-pole, 650 Volts or Less					
*Double-pole, 480 Volts or Less					
2195911G3	2195911G4	100	50	40	\$75.00
2196022G3	2196022G4	200	50	40	90.00
2196023G3	2196023G4	300	100	60	110.00
2196035G3	2196035G4	500	100	60	149.00
†2196026G3	2196026G4	600	100	60	175.00
†2196068G3	2196068G4	800	140	130	191.00
†2196069G3	2196069G4	1200	140	130	257.00
*Triple-pole, 650 Volts or Less					
2196031G1	2196031G2	100	80	60	\$122.00
2196032G1	2196032G2	200	90	80	134.00
2196033G1	2196033G2	300	150	90	167.00
2196025G1	2196025G2	500	150	90	230.00
†2196046G1	2196046G2	600	150	90	274.00
†2196078G1	2196078G2	800	200	180	290.00
†2196079G1	2196079G2	1200	200	180	391.00

*The coil used with the shunt trip breakers listed above will operate on any voltage from 110-480 volts A. C. Breakers can be supplied with coils for 480-650 volts A. C. at above prices. Order should specify, similar to corresponding Cat. No., except for 480-650 volts A. C.

†Mounted on 1½-inch base, only.

Undervoltage Attachments

For Type CP Air Circuit Breakers Alternating Current and Direct Current

Releases at approximately 25 per cent of rated voltage on direct current; 50 per cent of rated voltage on alternating current.

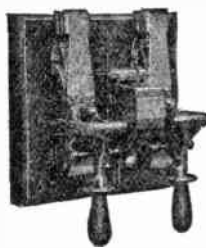
Approximate shipping weight, 15 pounds.

USED WITH CIRCUIT BREAKERS		A. C.		D. C.	
Capacity Amperes	No. of Poles	†Cat. No.	Price Each	†Cat. No.	Price Each
15- 600	1, 2 and 3	43362	\$16.00	1840072G1	\$14.00
800-1200	1 and 2 (2-coil)	43368	16.00	1840072G7	15.00
800-1200	2 (1-coil)	.....	.....	1840072G4	15.00
800-1200	2 and 3	43365	16.00	.....	.....
250 Volts					
15- 600	1, 2 and 3	43363	\$18.00	1840072G2	\$16.00
800-1200	1 and 2 (2-coil)	43369	18.00	1840072G8	17.00
800-1200	2 (1-coil)	.....	.....	1840072G5	17.00
800-1200	2 and 3	43366	18.00	.....	.....
*650 Volts					
15- 600	1, 2 and 3	43364	\$22.00	1840072G3	\$20.00
800-1200	1 and 2 (2-coil)	43370	22.00	1840072G9	21.00
800-1200	2 (1-coil)	.....	.....	1840072G6	21.00
800-1200	2 and 3	43367	22.00	.....	.....

*For use on alternating current only at 480 volts. Attachments with 650-volt, 480-volt rating adjusted to release at approximately 240 volts.

†Cat. No. of attachment and price include series resistance for under-voltage coil.

Type CP Air Circuit Breakers



Recommended for general switch-board work.

Close easily. Do not jar open. Main contact brushes protected by carbon and metal secondaries.

End on contact of brush laminations insures good contact—each lamination under equal pressure. Contact pressure adjustable.

Double-pole breakers, each pole separate handle; triple-pole breakers, one handle for all poles and trip free features.

All standard Type CP circuit breakers are made back-connected only for panel mounting. Where front-connected Type CP breakers are wanted it is recommended that standard back-connected breakers mounted on slate base to be installed on cleats or brackets to hold the base away from the wall far enough to clear the studs and connections. This method of mounting is decidedly superior to front-connected breakers especially for the larger capacities. A more substantial and secure connection can be made by clamping the terminals between nuts on a large stud than with bolted front-connected terminals. All cables are out of the way, both of the operating mechanism and of the arc from secondary carbons. This makes a neater appearance and a better installation.

The connections may be made to the breaker in the same way as would obtain if the breaker itself were front connected, and where cables are heavy the connections can be more easily made.

Direct Current—Over Current (Overload)—Back Connected

CATALOGUE NUMBERS		Cap. Amp.	CALIBRATION		SHIP. WT., LBS.	Price Each
On 1½-inch Base	For 1½ or 2-in. Panel		Min.	Max.		
2195904G1	2195904G2	15	12	25	40	25 \$41.00
2195914G1	2195914G2	25	20	40	40	25 41.00
2195924G1	2195924G2	50	35	75	40	25 46.00
2195901G1	2195901G2	100	75	150	40	25 48.00
2195932G1	2195932G2	200	150	300	50	30 58.00
2195903G1	2195903G2	300	225	450	50	30 69.00
2195905G1	2195905G2	500	375	750	50	30 91.00
2195906G1	2195906G2	600	450	900	50	30 108.00
2195908G1	2195908G2	800	600	1200	50	40 125.00
2195909G1	2195909G2	1200	900	1800	50	40 169.00

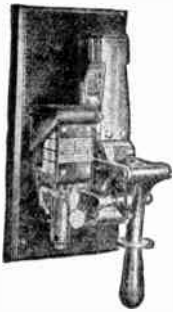
*Double-pole—250 Volts or Less (One Overload Coil)		Cap. Amp.	CALIBRATION		SHIP. WT., LBS.	Price Each
On 1½-inch Base	For 1½ or 2-in. Panel		Min.	Max.		
2195934G1	2195934G2	15	12	25	50	40 \$61.00
2195944G1	2195944G2	25	20	40	50	40 61.00
2195954G1	2195954G2	50	35	75	50	40 69.00
2196001G1	2196001G2	100	75	150	50	40 72.00
2195902G1	2195902G2	200	150	300	60	50 89.00
2195953G1	2195953G2	300	225	450	100	60 109.00
2195955G1	2195955G2	500	375	750	100	60 146.00
†2195966G1	2195966G2	600	450	900	100	60 172.00
†2195948G1	2195948G2	800	600	1200	140	130 188.00
†2195949G1	2195949G2	1200	900	1800	140	130 254.00

*Double-pole—250 Volts or Less (Double Coil)		Cap. Amp.	CALIBRATION		SHIP. WT., LBS.	Price Each
On 1½-inch Base	For 1½ or 2-in. Panel		Min.	Max.		
2195964G1	2195964G2	15	12	25	70	50 \$88.00
2195974G1	2195974G2	25	20	40	70	50 88.00
2195984G1	2195984G2	50	35	75	70	50 98.00
2195991G1	2195991G2	100	75	150	70	50 102.00
2196002G1	2196002G2	200	150	300	80	70 122.00
2195983G1	2195983G2	300	225	450	140	85 144.00
2195985G1	2195985G2	500	375	750	140	85 188.00
†2195976G1	2195976G2	600	450	900	140	85 222.00
†2195928G1	2195928G2	800	600	1200	200	180 256.00
†2195929G1	2195929G2	1200	900	1800	200	180 344.00

*Double-pole, 650-volt breakers, prices upon application, stating requirements.

†Mounted on 1½-inch base.

Type CP Air Circuit Breakers



Underload breakers differ from corresponding overload breakers only in the construction of the tripping details.

Pulling down the knob at bottom of calibrating tube sets the plunger against the action of a spring and allows the breaker to be closed.

Type CP Air Circuit Breakers



In general construction the reverse current breaker follows closely the design of the underload breaker, but with the addition of a small potential coil which is momentarily in circuit during the closing of the breaker; this coil energizes the trip magnet and holds the plunger against the action of a spring.

Direct Current—Under Current (Underload) Back Connected

Single-pole—650 Volts or Less

Table with 6 columns: CATALOGUE NUMBERS (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., SHIP. WT., LBS. (On Base / For Panel), Price Each.

Double-pole—250 Volts or Less

Table with 6 columns: CATALOGUE NUMBERS (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., SHIP. WT., LBS. (On Base / For Panel), Price Each.

*Direct Current—Over Current and Under Current (Overload and Underload)—Back Connected

Single-pole—650 Volts or Less

Table with 6 columns: CATALOGUE NUMBERS (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

Double-pole—250 Volts or Less

Table with 6 columns: CATALOGUE NUMBERS (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

*No relays used. Both underload and overload coils are combined with the breaker.

†Underload breakers are calibrated in the factory to trip at 20 per cent of the carrying capacity. They can be set to trip as low as 10 per cent if so specified on requisition.

‡Mounted on 1 1/2-inch base.

All Type CP air circuit breakers are furnished with a complete set of nuts (2 nuts per stud), but will have only one stud of each pole equipped with a terminal. Additional terminals extra.

Direct Current—Reverse Current—Back Connected

No overload coil; operates on reversal only.

Single-pole—650 Volts or Less

Table with 7 columns: CATALOGUE NUMBER (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

Double-pole—250 Volts or Less

Table with 7 columns: CATALOGUE NUMBER (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

*Over Current (Overload) and Reverse Current—Back Connected

Breakers have one overload coil and one (separate) reverse current coil, either of which actuate the tripping mechanism.

Single-pole—650 Volts or Less

Table with 7 columns: CATALOGUE NUMBER (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

Double-pole—250 Volts or Less

Table with 7 columns: CATALOGUE NUMBER (On 1 1/2-inch Base / For 1 1/2 or 2-in. Panel), Cap. Amp., CALIBRATION (Min. / Max.), SHIP. WT., LBS. (On Base / For Panel), Price Each.

*The standard calibration of reverse current trip is 10 to 20 per cent of rated ampere capacity on reversal. If any other range of calibration is desired it must be so specified on the requisition.

†The magnetizing coil used with the reverse current breakers listed above is for 125 volts direct current only, and cannot be used on any other voltage. Therefore the line voltage must be definitely specified in each case.

‡Mounted on 1 1/2-inch base.

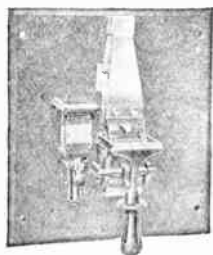
All Type CP air circuit breakers are furnished with a complete set of nuts (2 nuts per stud) but will have only one stud of each pole equipped with a terminal. Additional terminals extra.

Type CP Air Circuit Breakers

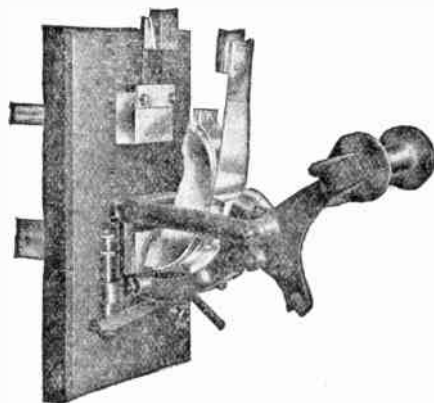
Type CK Air Circuit Breakers

Direct Current—Plain Shunt Trip—Back Connected

With Laminated Studs



Shunt trip coils are intended for momentary operation only and must not be left in circuit continuously after being energized. Connections should be arranged so that the opening of the circuit breaker will disconnect the shunt trip circuit. If, however, the shunt trip has to be connected to the line side, a circuit opening auxiliary switch should be mounted on the circuit breaker to open the trip circuit.



The Type CK 250-volt circuit breakers are recommended for service where large capacity breakers are required for lighting or power installations.

Terminals are not included with the circuit breaker as in many cases busbar connections are used.

Can be furnished from stock in wide range of capacities.

Are designed with ample conducting parts. Complete line of attachments. Require small amount of space on panel. Close easily. Very heavy and substantial secondaries. End on contact construction of main brush. Heavy brush pressure, high efficiency contact and means of adjusting pressure.

Wiping contact, both main brush and secondaries. Trip easily but cannot jar open. Handle and tripping button well insulated from live part of breaker.

Each breaker calibrated individually. Wide range of calibration.

Prices on solenoid, motor and pneumatically-operated circuit breakers on request.

Prices on double-pole, overload shunt trip and under-voltage breakers on request.

***Single-pole—650 Volts or Less**

CATALOGUE NUMBERS		Cap. Amps.	SHIP. WT., LBS.		Price Each
On 1 1/4-inch Base	For 1 1/2 or 2-inch Panel		On Base	For Panel	
2196041G1	2196041G2	100	40	25	\$48.00
2196042G1	2196042G2	200	50	30	58.00
2196043G1	2196043G2	300	50	30	69.00
2196045G1	2196045G2	500	50	30	91.00
†2196036G1	2196036G2	600	50	30	108.00
†2196058G1	2196058G2	800	50	40	125.00
†2196059G1	2196059G2	1200	50	40	169.00

***Double-pole—250 Volts or Less**

2195911G1	2195911G2	100	50	40	\$72.00
2196022G1	2196022G2	200	50	40	87.00
2196023G1	2196023G2	300	100	60	107.00
2196035G1	2196035G2	500	100	60	146.00
†2196026G1	2196026G2	600	100	60	172.00
†2196068G1	2196068G2	800	140	120	188.00
†2196069G1	2196069G2	1200	140	130	254.00

*The coil used with the shunt trip breaker will operate on any direct-current voltage (650 volts or less).

†Mounted on 1 1/2-inch base.

Auxiliary Switches

For Type CP Circuit Breakers

The circuit-closing auxiliary switch is arranged to make contact when the breaker opens and may be used for interlocking schemes or to indicate the opening of a breaker by means of an indicating lamp or bell alarm.

For Single, Double and Triple-pole, D. C. and A. C.

Capacity Breaker Amps.	FOR MOUNTING ON BASE 1 1/4-INCH THICK		FOR MOUNTING ON 1 1/2-INCH PANEL		FOR MOUNTING ON 2-INCH PANEL	
	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
15-200	1937635G35	\$8.00	1937635G36	\$8.00	1937635G37	\$8.00
300-500	1937635G38	8.00	1937635G39	8.00	1937635G40	8.00

For Single and Double-pole, 2-coil, A. C., Overload Only

800-1200	*1937635G43	\$8.00	1937635G43	\$8.00	1937635G44	\$8.00
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For Single or Double-pole, D. C.—Double or Triple-pole, A. C.

Also 600-ampere Single-pole A. C.

600-1200	*1937635G41	\$8.00	1937635G41	\$8.00	1937635G42	\$8.00
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*For mounting on 1/2-inch panel or base.

Shunt Trip Attachments

For Type CP Circuit Breakers

The shunt trip attachment causes the breaker to open when energized. The coil should be allowed to remain only momentarily in circuit; hence it should be so connected that the opening of the circuit breaker disconnects it from the circuit.

Alternating Current

Cat. No.	Voltage of Circuit	DESCRIPTION OF BREAKER		Price Each
		Capacity Amps	No. of Poles	
36267	650 or Less	15- 600	1, 2 and 3	\$10.00
43371	650 " "	800-1200	1	10.00
36268	650 " "	800-1200	2 and 3	10.00

Direct Current

36267	650 or Less	15- 600	1, 2 and 3	\$10.00
36269	650 " "	800-1200	1	10.00
36268	250 " "	800-1200	2	10.00

Approximate shipping weight, 10 pounds.

Direct Current—Overload—Back Connected

Single-pole, 250 Volts

CATALOGUE NUMBERS	Amps.	CALIBRATION		Approx. Shipping Wt., Lbs.	Price Each
		Min.	Max.		
1912301G1	1500	1000	3000	100	\$200.00
1912303G1	2000	1200	4000	100	260.00
1912305G1	3000	1500	6000	150	370.00
1912307G1	4000	2000	10000	200	484.00
1912309G1	6000	2000	15000	300	715.00

***Double-pole, 250 Volts**

1912301G2	1500	1000	3000	200	\$435.00
1912303G2	2000	1200	4000	200	555.00
1912305G2	3000	1500	6000	300	775.00
1912307G2	4000	2000	10000	400	1023.00
1912309G2	6000	2000	15000	600	1583.00

Alternating Current—Overload—Back Connected

Single-pole, 480 Volts

Cat. No. For 2-inch Panel	Amps.	CALIBRATION		Approx. Shipping Wt., Lbs.	Price Each
		Min.	Max.		
1912301G3	1500	1000	3000	100	\$260.00
1912303G3	2000	1200	4000	100	366.00
1912305G3	3000	1500	6000	150	467.00

***Double-pole, 480 Volts**

1912301G4	1500	1000	3000	260	\$555.00
1912303G4	2000	1200	4000	260	767.00
1912305G4	3000	1500	6000	340	1029.00
†	4000	2000	10000	440	.....

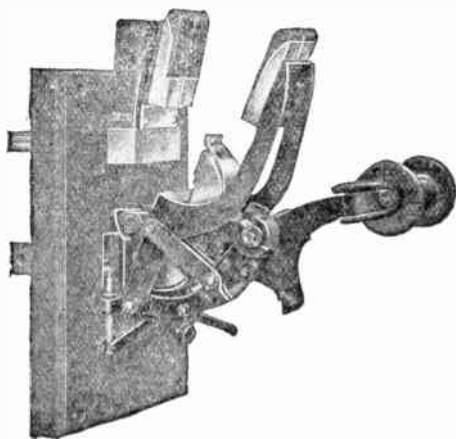
Always specify frequency when ordering alternating current breakers.

*Double-pole, two-coil breakers, consist of two single-pole overload breakers, mechanically interlocked.

†Prices on 4000, 6000, 8000 and 12000 amperes A.C. circuit breakers will be quoted on application.

Type CK-2 Air Circuit Breakers

With Laminated Studs



The Type CK-2 650-volt circuit breakers are recommended for any service, however severe, and are especially adapted to large railway installations of any character.

Terminals are not included with the circuit breaker as in many cases busbar connections are used. Where terminals are required, the size and quantity of cable connections vary so widely, depending on the length of run, the line drop allowed and other conditions, that it seems preferable to list them separately so that proper selection may be made to suit each case.

Range of calibration from at least 50 per cent below to 100 per cent above normal rating.

Large handles with guards afford protection to the operator. The frames as well as current carrying parts are alive. Spade handles are standard but straight handles can be furnished.

Especially heavy mechanism and a powerful toggle held by hardened steel catches secure the breakers in closed position and the breakers operate with minimum effort without auxiliary closing mechanism.

Direct Current—Overload—Back Connected
Single-pole, 650 Volts

CATALOGUE NUMBERS		Amps.	CALIBRATION		Approx. Shipping Wt., Lbs.	Price Each
For 2-inch Panel	For 2 1/2-inch Panel		Min.	Max.		
1912311G1	.....	1500	1000	3000	130	\$220.00
1912313G1	.....	2000	1200	4000	130	280.00
1912315G1	.....	3000	1500	6000	170	394.00
1912317G1	.....	4000	2000	10000	220	500.00
.....	1912319G1	6000	2000	15000	360	750.00
.....	1912321G1	8000	2000	20000	520	990.00
.....	1912323G1	10000	2000	25000	680	1230.00

***Double-pole 650 Volts**

1912311G2	.....	1500	1000	3000	260	\$475.00
1912313G2	.....	2000	1200	4000	260	605.00
1912315G2	.....	3000	1500	6000	340	823.00
1912317G2	.....	4000	2000	10000	440	1065.00
1912319G2	1912319G2	6000	2000	15000	720	1635.00

Alternating Current—Overload—Back Connected
Single-pole, 650 Volts

Cat. No. For 2-inch Panel	Amps.	CALIBRATION		Approx. Shipping Wt., Lbs.	Price Each
		Min.	Max.		
1912311G3	1500	1000	3000	130	\$277.00
1912313G3	2000	1200	4000	130	388.00
1912315G3	3000	1500	6000	170	493.00

Double-pole, 650 Volts

1912311G4	1500	1000	3000	260	\$589.00
1912313G4	2000	1200	4000	260	811.00
1912315G4	3000	1500	6000	340	1061.00
↑	4000	2000	10000	440	.....

Always specify frequency when ordering alternating current breakers.

*Double-pole, two-coil breaker, consists of two single-pole overload breakers mechanically interlocked.

†Prices on 4000, 8000 and 12000-ampere A.C. circuit breakers will be quoted upon application.

Under-voltage Attachments

For Types CK and CK2 Circuit Breakers



In general, D. C. under-voltage devices cause the opening of the air circuit breakers when the line voltage drops to approximately 25 per cent of the normal voltage. The coil is always in circuit and operates with the releasing of its armature.

Releases at approximately one-half rated voltage.

Cat. No. and price includes series resistance for under-voltage coil.

Only one attachment may be used with a single-pole or double-pole breaker. With a single-pole breaker the attachment is mounted on the right-hand side facing the panel; with a double-pole breaker it is mounted symmetrically between poles, and trips the left-hand breaker.

For Direct Current

For Use with Single or Double Pole, Type CK or CK2

110 to 125 Volts	220 to 250 Volts	550 to 650 Volts	Breakers	Approx. Ship. Wt., Lbs.
Cat. No.	Cat. No.	Cat. No.	Size Amps.	
2636281G1	2636281G2	2636281G3	1500	15
2636281G4	2636281G5	2636281G6	2000	15
2636281G7	2636281G8	2636281G9	3000	15
2636281G10	2636281G11	2636281G12	4000	15
2636281G13	2636281G14	2636281G15	6000	15
2636281G16	2636281G17	2636281G18	8000	15
2636281G19	2636281G20	2636281G21	10000	15

Prices of alternating current attachment on application.

Shunt Trip Attachments

For Types CK and CK2 Circuit Breakers



The shunt trip attachment causes the breaker to open when energized.

Attachment should be allowed to remain in circuit only momentarily.

For Direct Current—125, 250, or 650 Volts

For Use with Single or Double Pole			
Cat. No.	Cap. Amps.	Ship. Wt., Lbs.	Price Each
2636280G1	1500	15	\$21.00
2636280G2	2000	15	21.00
2636280G3	3000	15	21.00
2636280G4	4000	15	21.00
2636280G5	6000	15	\$21.00
2636280G6	8000	15	21.00
2636280G7	10000	15	21.00

Auxiliary Switches

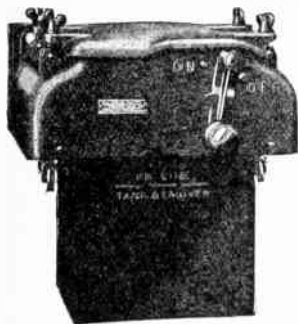
For Types CK and CK2 Circuit Breakers



D.C. or A.C.

Capacity Breakers Amperes	Thickness Panel In.	250 Volts For Type CK		650 Volts For Type CK2	
		Cat. No.	Price Each	Cat. No.	Price Each
1500	2	1937635G26	\$8.00	1937635G2	\$8.00
2000	2	1937635G28	8.00	1937635G4	8.00
3000	2	1937635G30	8.00	1937635G6	8.00
4000	2	1937635G31	8.00	1937635G7	8.00
6000	2	1937635G33	8.00	1937635G9	8.00
6000	2 1/2	1937635G34	8.00	1937635G10	8.00
8000	2 1/2	.....	.....	1937635G11	8.00
10000	2 1/2	.....	.....	1937635G12	8.00

Type FP7 Pole Line Oil Circuit Breakers



Pole line oil circuit breakers are usually less adequately protected by lightning arresters than station breakers, and the question of high-voltage strains must be more carefully considered. This is especially true on circuits of voltages of 15,000 volts and below where the line insulators will frequently stand high-voltage test of many times the normal voltage.

In no case should a breaker be selected for any given service having a lower test voltage than the actual arc over voltage (dry test) of the insulators used on the lines.

The Type FP-7 oil circuit breaker is adapted for use on alternating current series arc systems, for sectionalizing feeder systems, cutting out transformers, and all classes of service requiring a reliable outdoor switch to be operated under load. In many cases the use of one of these breakers in connection with pole type transformers will obviate the necessity for bringing high tension lines into a building.

All Type FP-7 oil circuit breakers are given a dielectric test considerably above that prescribed in standardization rules of the A.I.E.E. For the purpose of comparison with arc-over voltage on line insulators, minimum arc-over voltage for the Type FP-7 breakers is given below:

4500 Volt.....	18000 Volts Test
7500 ".....	25000 " "
15000 ".....	45000 " "

The breaker is enclosed in a substantial weatherproof case consisting of a cast iron frame, with a removable cover which is grooved on the under side to fit closely the edge of the frame and a readily detachable oil tank which fits around a flange on the bottom of the frame. The oil tank has an insulating lining and wooden barriers are provided between poles.

Lugs are provided on the frame for bolting the breaker directly to a flat surface, or supporting it by means of strap-iron hooks, for mounting on transmission pole cross arms in a manner similar to that usually employed for pole type transformers.

Porcelain bushings are provided for incoming and outgoing leads. They are protected from the elements by the overhanging switch frame.

Bushings will take cable up to 3/4 in. diameter for 100-amp. switches and up to 1 in. diameter for 200-amp. switches.

These circuit breakers are equipped with porcelain shields covering terminals and leads in top of breakers, thus greatly increasing the arc-over test.

Non-automatic, without Overload Release
4500-7500 and 15000 Volts
Single Pole, Single Throw

Cat. No.	Amp. Continuous Load at 30° Rise or Less	Volts	Gals. No. 6 Oil Req.	Approx. Shipping Wt., Lbs.	Price Each
150133	200	7500	2	175	\$57.00
150137	200	15000	3	250	104.00
Double Pole, Single Throw					
150127	100	4500	2	125	\$56.00
150134	200	7500	3	200	82.00
150138	200	15000	5	300	136.00
Triple Pole, Single Throw					
150128	100	4500	2	175	\$73.00
150135	200	7500	5	250	107.00
150139	200	15000	6	350	180.00
Four Pole, Single Throw					
150129	100	4500	3	225	\$89.00
150136	200	7500	6	275	133.00
150140	200	15000	9	400	222.00

Type FK20 Circuit Breakers

The Type FK-20 Oil Circuit Breakers are used especially for the protection of induction motors in industrial applications.

They are made single-throw only and are for mounting on wall, post or other flat surface. They may be mounted directly on machines by the use of brackets or suitable supports.

All breakers both automatic and non-automatic have toggle in mechanism so that overload or under-voltage features may be added as desired.

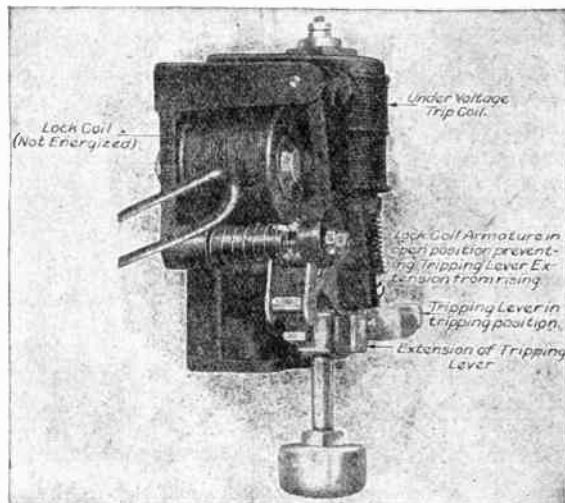
All Type FK-20 oil circuit breakers are provided with entrance holes in sides, back and underneath breaker frame for open or conduit connections. The breakers are shipped out with a set of porcelain entrance bushings for open wiring and in the automatic type the leads from the series trip coils are extended through two of the porcelain bushings. If conduit connections are used the porcelain bushings are discarded and the conduit brought directly to any of the entrance holes desired, the coil leads are pushed back into the breaker and connections made inside the frame. An approved form of making connections to this breaker is by means of conduit boxes.

NOTE.—FK-20 oil circuit breakers are not recommended for use out of doors, or indoors when directly connected to incoming lines where they will be subjected to surges or other voltage disturbances unless protected by lightning arresters or other surge protective devices.

While the FK-20 oil circuit breaker is totally enclosed for the purpose of rendering it dustproof it is not waterproof and should not be used out of doors unless protected.

The dashpots may be adjusted for a time delay from one (1) second to about one (1) minute. The standard setting recommended is for a time delay of ten (10) seconds at double the normal full load current of the motor. This gives a time delay of about one-half (1/2) minute at 25 per cent overload, and correspondingly less at greater overloads, which affords ample protection against overload, yet prevents the breakers from opening on starting currents.

Magnetic Lock



Breakers may be equipped with a magnetic locking device to lock the oil circuit breaker in the open position. The magnetic lock consists of a magnet with a hinged armature which is attached to the under-voltage trip. The armature is designed so as to interfere with an extension on the under-voltage tripping lever and prevents the under-voltage from being set as long as the coil on the magnetic lock is de-energized.

When the locking coil is energized, its armature moves out of interference and the under-voltage trip may be set. In other words, the breaker is locked out with magnetic coil de-energized; unlocked with coil energized.

The magnetic lock coil should be connected on the line side of the breaker or to some separate source.

The under-voltage coil should be connected on the motor side of the breaker, so that it will become de-energized when the breaker is opened. The under-voltage in the open position permits the armature of the magnetic lock to spring out, thereby again preventing the under-voltage being set, unless the magnetic lock is first energized.

Type FK-20 Oil Circuit Breakers

Non-automatic, without
Overload Release
2500 Volts or Less

The non-automatic breakers listed have the tripping toggle so that undervoltage or automatic features can be added at any time.

Triple-pole, Single-throw

Cat. No.	*Amps. Cap.	Capacity Gal.	Approx. Ship. Wt. Lbs.	Price Each
167368	60	2	130	\$45.00
167369	200	2	135	54.00
167370	300	4	185	94.00
Four-pole, Single-throw				
167371	60	3	170	\$83.00
167372	200	3	180	94.00

Automatic, with Double Series I. T. L.
Overload Trip

Triple-pole, Single-throw—2500 Volts or Less

Cat. No.	*Breaker	AMPERES, CAPACITY Series Coils	Capacity Gal.	Approx. Ship. Wt., Lbs.	Price Each
167373	60	2	2	145	\$65.00
167374	60	3	2	145	65.00
167375	60	4	2	145	65.00
167376	60	6	2	145	65.00
167377	60	8	2	145	65.00
167378	60	10	2	145	65.00
167379	60	12	2	145	65.00
167380	60	16	2	145	65.00
167381	60	20	2	145	65.00
167382	60	25	2	145	65.00
167383	60	30	2	145	65.00
167384	60	40	2	145	65.00
167385	60	50	2	145	65.00
167386	60	60	2	145	65.00
167387	200	70	2	150	74.00
167388	200	80	2	150	74.00
167389	200	100	2	150	74.00
167390	200	125	2	150	74.00
167391	200	145	2	150	74.00
167392	200	160	2	150	74.00
167393	200	170	2	150	74.00
167394	200	200	2	150	74.00
167395	300	225	4	200	113.00
167396	300	250	4	200	113.00
167397	300	275	4	200	113.00
167398	300	300	4	200	113.00

Four-pole, Single-throw—2500 Volts or Less

Cat. No.	*Breaker	AMPERES, CAPACITY Series Coils	Capacity Gal.	Approx. Ship. Wt., Lbs.	Price Each
167399	60	2	3	185	\$102.00
167400	60	3	3	185	102.00
167401	60	4	3	185	102.00
167402	60	6	3	185	102.00
167403	60	8	3	185	102.06
167404	60	10	3	185	102.00
167405	60	12	3	185	102.00
167406	60	16	3	185	102.00
167407	60	20	3	185	102.00
167408	60	25	3	185	102.00
167409	60	30	3	185	102.00
167410	60	40	3	185	102.00
167411	60	50	3	185	102.00
167412	60	60	3	185	102.00
167413	200	70	3	195	113.00
167414	200	80	3	195	113.00
167415	200	100	3	195	113.00
167416	200	125	3	195	113.00
167417	200	145	3	195	113.00
167418	200	160	3	195	113.00
167419	200	170	3	195	113.00
167420	200	200	3	195	113.00

*Load which the breaker will carry continuously at 30 degrees C. rise or less.

†Series coils will carry 25 per cent overload for 2 hours at 45 degrees C. rise or less.

The calibration of series coils is from normal, as listed, to two times, i.e., 2 to 4, 3 to 6, 60 to 120, etc.

Type FK-20 Oil Circuit Breakers

2500 Volts or Less

Undervoltage Attachments*

All undervoltage attachments listed below include coil W. S. F. 92660 and are common for all breakers listed. The undervoltage mechanism and transformer, where required, is mounted within the breaker frame, and when properly adjusted the oil breaker cannot be closed until undervoltage plunger is lifted by hand to its upper position, when it will hold in if full potential is upon the line.

The undervoltage attachment should be connected across one phase on the load side, if possible, with proper transformer and tap in circuit. No resistances required.

Cat. No.	CIRCUIT Volts	Cycles	Includes Transformer Mfrs. No.	Approx. Net Wt., Lbs. Extra†	Price Each
167421	110	60	None	3	\$10.00
167422	110	25-40	191392	6	17.00
	220	25-40-60			
	440	25-40-60			
	550	25-40-60			
167423	2200	60	191393	8	19.00
167424	2200	25-40	191394	9	21.00

*Release at approximately one-half rated voltage.

†Add 5 pounds for boxing if shipped separate from breaker.

‡Auto-transformer with taps tagged to indicate proper connections for various voltages and cycles.

Gaskets

Order breakers Same as Cat. No. (give Cat. No. of standard breaker), except that it is to be equipped with felt gaskets.

Breakers ordered with gaskets will be furnished with gaskets between cover and frame and between frame and oil vessel.

Standard Type FK-20 oil circuit breakers, as regularly furnished, are sufficiently dustproof for use in cotton mills and for like service. When, however, these breakers are to be installed in cement or flour mills where the dust is very fine the standard breakers are not tight enough to exclude the dust from the top of the breaker or the oil vessel. In these cases breakers provided with felt gaskets should always be recommended.

Price, for 60-200 Ampere Breaker, 2 and 3-pole... each \$4.75
 " " 300 " " 2 " 3 " " " 4.75
 " " 60-200 " " 4-pole..... " 4.75

Oil Circuit Breaker Covers
For Mounting Ammeters

These covers replace the covers ordinarily furnished with the FK-20 breakers and provide a suitable mounting for a Type R-6 ammeter. The rear half of the cover completely houses the ammeter studs and all connections and is removable to permit of easy access to breaker and connections. The front part of cover which supports the ammeter is provided with bushings to take any standard R-6 ammeter within the range of capacities required.

*Cat. No.	Amperes	For Breaker Poles	Mounts R-6 Ammeter Amps.	Approx. Ship. Wt. Lbs. Extra	Price Each
167425	60-200	2 and 3	4-300	50	\$18.00
167426	300	2 " 3	4-400	60	20.00
167427	60-200	4	4-300	60	20.00

*Ammeters and current transformers, where required, are not included. Order separately.

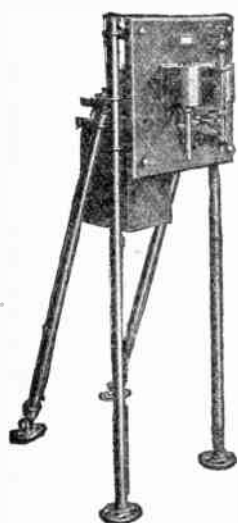
NOTE.—Series ammeters, R-6, used with Type FK-20 breakers are recommended only for use on circuits 650 volts or less. For voltages above 650 volts, secondary ammeters, 5 amperes with suitable current transformers, should be used. The current transformers are mounted separately, outside of breaker. Secondary ammeters will be calibrated in primary current, if so ordered, without extra charge. Ratio of current transformer with which it is to be used must be specified.

SELECTION OF AMMETERS.—Ammeters for use with induction motors having standard A guarantee (25 per cent overload for 2 hours) should be selected to have full scale deflection equal to or greater than 150 per cent of the normal full load running current.

ORDERING.—In ordering Type FK-20 breakers with cover for ammeter mounting five Cat. No. of breaker (non-automatic or automatic); Cat. No. of undervoltage if required; Cat. No. of special cover as above; also Cat. No. of ammeter and of current transformer if required. The omission of the standard cover will be taken care of without special notice.

Type FK13 Oil Circuit Breakers

With Operating Lever For Mounting on 1½ or 2-inch Panels



The Type FK-13 oil circuit breakers are of the single tank type, all poles in one oil tank with insulating barriers between phases.

CONTACTS.—The Type FK-13 breakers have wedge contact blades and flared contact fingers. Any arcing, when the breaker is opened, takes place between the flared ends of the contact fingers and the upper edge of the contact blade, thus insuring a long life to the contact surfaces.

MANUAL OPERATION.—Type FK-13 oil circuit breakers are listed single or double throw for manual operation as follows:

For mounting directly on back of panel.

For mounting on panel frame 5 inches back of panel.

For mounting on pipe framework remote from panel.

As these breakers are furnished with 45-degree operating levers

they are listed non-automatic and automatic with one, two or three-trip coils.

SERIES TRIP.—For circuits above 750 volts the use of transformer trip coil circuit breakers is recommended.

The manufacturer does not recommend the installation of apparatus on the panel or switchboard when that apparatus is subjected to a pressure in excess of 2500 volts. For such installation, remote control apparatus is recommended.

Non-automatic—Without Overload Release

200 Amperes, 3300 Volts

Double Pole

Cat. No.	Throw	Mounting	Location of Circuit Breaker	Approx. Shipping Wt., Lbs.	Price Each
129704	Single	Panel	On Panel	80	\$69.00
129707	Double	"	"	130	116.00
129734	Single	Panel Pipe	"	90	75.00
129737	Double	"	{ Pipe 5-in. Back of Panel	140	124.00
129764	Single	{ For Remote	{ On Pipe	150	94.00
129767	Double	{ Control	{ Framework	230	168.00

Triple Pole

129705	Single	Panel	On Panel	80	\$81.00
129708	Double	"	"	140	136.00
129735	Single	Panel Pipe	"	90	87.00
129738	Double	"	{ Pipe 5-in. Back of Panel	150	144.00
129765	Single	{ For Remote	{ On Pipe	150	106.00
129768	Double	{ Control	{ Framework	230	188.00

Four Pole

129706	Single	Panel	On Panel	100	\$97.00
129709	Double	"	"	170	164.00
129736	Single	Panel Pipe	"	110	103.00
129739	Double	"	{ Pipe 5-in. Back of Panel	180	172.00
129766	Single	{ For Remote	{ On Pipe	170	122.00
129769	Double	{ Control	{ Framework	260	216.00

Automatic—With Series Overload Trip

For Use Only on 750 Volts or Less

Double Pole with One Coil

Cat. No.	Throw	Mounting	Location of Circuit Breaker	Approx. Shipping Wt., Lbs.	Price Each
129728	Single	Panel	On Panel	100	\$89.00
129730	Single	Panel	On Panel	120	\$124.00
129731	Single	Panel	On Panel	140	\$140.00

Type FK13 Oil Circuit Breakers

With Operating Lever for Mounting on 1½ or 2-inch Panel

Automatic—One Coil for Use with Current Transformers

200 Amperes, 3300 Volts
Double Pole

Current transformers are not included in price. They must be ordered separately.

Cat. No.	No. of Current Transformers Used	Throw	Mounting	Location of Circuit Breaker	Approx. Shipping Wt., Lbs.	Price Each
173653	*1	Single	Panel	On Panel	90	\$84.00
173658	*1	Double	"	"	150	126.00
173675	*1	Single	Pipe Panel	"	100	90.00
173680	*1	Double	"	{ Pipe, 5 in. Back of Panel	160	137.00
173697	*1	Single	{ For Remote	{ On Pipe	160	109.00
173702	*1	Double	{ Control	{ Framework	240	181.00

Triple Pole with Two Coils

173655	†2(3)	Single	Panel	On Panel	90	\$96.00
173660	†2(3)	Double	"	"	150	146.00
173677	†2(3)	Single	Pipe Panel	"	100	102.00
173682	†2(3)	Double	"	{ Pipe, 5 in. Back of Panel	160	157.00
173699	†2(3)	{ Single	{ For Remote	{ On Pipe	160	121.00
173704	†2(3)	{ Double	{ Control	{ Framework	201	201.00

Automatic—Two Coils for Use with Current Transformers

Triple Pole

Cat. No.	No. of Current Transformers Used	Throw	Mounting	Location of Circuit Breaker	Approx. Shipping Wt., Lbs.	Price Each
173663	*2	Single	Panel	On Panel	100	\$111.00
173667	*2	Double	"	"	160	161.00
173685	*2	Single	Panel Pipe	"	110	118.00
173689	*2	Double	"	{ Pipe, 5 in. Back of Panel	170	171.00
173707	†2	Single	{ For Remote	{ On Pipe	170	137.00
173711	†2	Double	{ Control	{ Framework	250	215.00

Four Pole

173665	*2	Single	Panel	On Panel	120	\$127.00
173669	*2	Double	"	"	190	189.00
173687	*2	Single	Panel Pipe	"	130	134.00
173691	*2	Double	"	{ Pipe, 5 in. Back of Panel	200	199.00
173709	†2	Single	{ For Remote	{ On Pipe	190	153.00
173713	†2	Double	{ Control	{ Framework	280	243.00

Automatic—Three Coils for Use with Current Transformers

Triple Pole

Current transformers not included in price. They must be ordered separately.

Cat. No.	No. of Current Transformers Used	Throw	Mounting	Location of Circuit Breaker	Approx. Shipping Wt., Lbs.	Price Each
173671	*3	Single	Panel	On Panel	110	\$133.00
173673	*3	Double	"	"	170	179.00
173693	*3	Single	Panel Pipe	"	120	140.00
173695	*3	Double	"	{ Pipe, 5 in. Back of Panel	180	189.00
173715	*3	Single	{ For Remote	{ On Pipe	180	159.00
173717	*3	Double	{ Control	{ Framework	200	233.00

Four Pole

173672	*3	Single	Panel	On Panel	130	\$149.00
173674	*3	Double	"	"	200	207.00
173694	*3	Single	Panel Pipe	"	140	156.00
173696	*3	Double	"	{ Pipe, 5 in. Back of Panel	210	217.00
173715	*3	Single	{ For Remote	{ On Pipe	260	175.00
173718	*3	Double	{ Control	{ Framework	290	261.00

*Operating lever equipped with 4-amp. trip coil WSF 321496. With or without circuit-opening relay.

†Operating lever equipped with 125-volt direct current trip coil WSF 90094. For use only with circuit-closing overload relay or similar device. With or without circuit-opening relay.

Under-voltage Attachments

For Type FK13 Oil Circuit Breakers

A complete line of hinged armature under-voltage attachments for pressures up to and including 550 volts. Above 550 volts, use 110-volt attachment in connection with suitable voltage transformer.

Where no overload features are required, the under-voltage attachment may be used with a special, plain, under-voltage operating lever provided with a tripping toggle for the under-voltage attachment, but, otherwise similar to the non-automatic lever.

Double-throw circuit breakers are usually automatic and would use standard under-voltage attachments as listed. Plain under-voltage, double-throw circuit breakers will require special consideration. Prices on request.

Plain Under-voltage Operating Levers

Addition to Prices of Single-throw Breakers

For Circuit Breaker Mounted on Panel	For Circuit Breaker Mounted on Panel Pipes	For Circuit Breaker Mounted on Remote Control
\$9.00	\$9.00	\$9.00

Hinged Armature Under-voltage Attachments

Under-voltage release operates at approximately one-half normal voltage.

Plain Under-voltage Operating Lever

Single Throw

Plain under-voltage operating lever not made for double-throw. Use automatic breaker with under-voltage attachment.

CAT. No.		INCLUDES SERIES RESISTANCE FOR UNDER-VOLTAGE COIL		Volts	Cycles	Approx. Shipping Wt., Lbs.	Price Each
Left-hand	Right-hand						
2602719G 1	2602718G 1	110	25	10	\$28.00		
2602719G 2	2602718G 2	110	40	12	30.00		
2602719G 3	2602718G 3	110	50	12	30.00		
2602719G 4	2602718G 4	110	60	10	28.00		
2602719G 5	2602718G 5	220	25	12	30.00		
2602719G 6	2602718G 6	220	40, 50	12	30.00		
2602719G 7	2602718G 7	220	60	12	30.00		
2602719G 8	2602718G 8	440	25, 40, 50	12	30.00		
2602719G 9	2602718G 9	440	60	12	30.00		
2602719G10	2602718G10	550	25, 40, 50, 60	12	30.00		

One-coil Operating Lever

Single Throw

2602719G11	2602718G11	110	25	10	\$28.00
2602719G12	2602718G12	110	40	12	30.00
2602719G13	2602718G13	110	50	12	30.00
2602719G14	2602718G14	110	60	10	28.00
2602719G15	2602718G15	220	25	12	30.00
2602719G16	2602718G16	220	40, 50	12	30.00
2602719G17	2602718G17	220	60	12	30.00
2602719G18	2602718G18	440	25, 40, 50	12	30.00
2602719G19	2602718G19	440	60	12	30.00
2602719G20	2602718G20	550	25, 40, 50, 60	12	30.00

Double Throw

2602716G 1	2602717G 1	110	25	10	\$28.00
2602716G 2	2602717G 2	110	40	12	30.00
2602716G 3	2602717G 3	110	50	12	30.00
2602716G 4	2602717G 4	110	60	10	28.00
2602716G 5	2602717G 5	220	25	12	30.00
2602716G 6	2602717G 6	220	40, 50	12	30.00
2602716G 7	2602717G 7	220	60	12	30.00
2602716G 8	2602717G 8	440	25, 40, 50	12	30.00
2602716G 9	2602717G 9	440	60	12	30.00
2602716G10	2602717G10	550	25, 40, 50, 60	15	30.00

Under-voltage Attachments

For Type FK13 Oil Circuit Breakers

Continued

Two-coil Operating Lever

Single Throw

CAT. No.		INCLUDES SERIES RESISTANCE FOR UNDER-VOLTAGE COIL		Volts	Cycles	Approx. Ship. Wt., Lbs.	Price Each
Left-hand	Right-hand						
2602719G21	2602718G21	110	25	10	\$28.00		
2602719G22	2602718G22	110	40	12	30.00		
2602719G23	2602718G23	110	50	12	30.00		
2602719G24	2602718G24	110	60	10	28.00		
2602719G25	2602718G25	220	25	12	30.00		
2602719G26	2602718G26	220	40, 50	12	30.00		
2602719G27	2602718G27	220	60	12	30.00		
2602719G28	2602718G28	440	25, 40, 50	12	30.00		
2602719G29	2602718G29	440	60	12	30.00		
2602719G30	2602718G30	550	25, 40, 50, 60	15	30.00		

Two Coils Between Levers

Double Throw

2602716G11	2602717G11	110	25	10	\$28.00
2602716G12	2602717G12	110	40	12	30.00
2602716G13	2602717G13	110	50	12	30.00
2602716G14	2602717G14	110	60	10	28.00
2602716G15	2602717G15	220	25	12	30.00
2602716G16	2602717G16	220	40, 50	12	30.00
2602716G17	2602717G17	220	60	12	30.00
2602716G18	2602717G18	440	25, 40, 50	12	30.00
2602716G19	2602717G19	440	60	12	30.00
2602716G20	2602717G20	550	25, 40, 50, 60	15	30.00

One Coil to the Right and One Coil Between Levers

Double Throw

2602716G21	2602717G21	110	25	10	\$28.00
2602716G22	2602717G22	110	40	12	30.00
2602716G23	2602717G23	110	50	12	30.00
2602716G24	2602717G24	110	60	10	28.00
2602716G25	2602717G25	220	25	12	30.00
2602716G26	2602717G26	220	40, 50	12	30.00
2602716G27	2602717G27	220	60	12	30.00
2602716G28	2602717G28	440	25, 40, 50	12	30.00
2602716G29	2602717G29	440	60	12	30.00
2602716G30	2602717G30	550	25, 40, 50, 60	15	30.00

Three-coil Operating Lever

Single Throw

2602719G31	2602718G31	110	25	10	\$28.00
2602719G32	2602718G32	110	40	12	30.00
2602719G33	2602718G33	110	50	12	30.00
2602719G34	2602718G34	110	60	10	28.00
2602719G35	2602718G35	220	25	12	30.00
2602719G36	2602718G36	220	40, 50	12	30.00
2602719G37	2602718G37	220	60	12	30.00
2602719G38	2602718G38	440	25, 40, 50	12	30.00
2602719G39	2602718G39	440	60	12	30.00
2602719G40	2602718G40	550	25, 40, 50, 60	15	30.00

Double Throw

2602716G31	2602717G31	110	25	10	\$28.00
2602716G32	2602717G32	110	40	12	30.00
2602716G33	2602717G33	110	50	12	30.00
2602716G34	2602717G34	110	60	10	28.00
2602716G35	2602717G35	220	25	12	30.00
2602716G36	2602717G36	220	40, 50	12	30.00
2602716G37	2602717G37	220	60	12	30.00
2602716G38	2602717G38	440	25, 40, 50	12	30.00
2602716G39	2602717G39	440	60	12	30.00
2602716G40	2602717G40	550	25, 40, 50, 60	15	30.00

Auxiliary Switches

For Type FK13 Oil Circuit Breakers

For Use With Type FK13 Oil Circuit Breakers Mounted on Back of 1 or 2-inch Panel or on Panel Pipes 5 Inches Back of Panel

Cat. No.	Function	Approx. Shipping Wt. Lbs.	Price Each
134598	Circuit-Opening	5	\$12.00
134599	" Closing	5	12.00
134600	" Opening and Closing	8	23.00

For Use With Remote Control Type FK13 Circuit Breakers Mounted on Flat Surface or Pipe Framework

134601	Circuit-Opening	\$12.00
134602	" Closing	12.00
134603	" Opening and Closing	23.00

Drilling for attaching the auxiliary switch must be done by the customer except when the auxiliary switch is ordered with the oil circuit breaker and mounted at the factory.

Bell Alarm Switches

For Type FK13 Oil Circuit Breakers

Operates Only When the Oil Circuit Breaker Opens Automatically

Price, No. 139335, Wt. 1 Lb. each \$3.00

For Circuit Breakers Mounted on Panel Pipes or Remote Control

Price, No. 139336, Wt. 1 Lb. each \$3.00

Tank Lifters

Simple and practical tank lifting devices can be furnished for Type FK13 oil circuit breakers to facilitate handling the heavier oil tanks used on double-throw breakers. For single-throw breakers the weight of the oil tank is hardly sufficient to warrant the use of a tank lifter.

Description of breakers must be given.

Circuit Breaker Rating

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
169569	200	3300	40	\$54.00

Natural Black Slate Panels

For Type FK13 Oil Circuit Breakers

These small panels for mounting individual Type FK13 oil circuit breakers are made of natural black slate, 1½ inches thick and mounted on 48-inch pipe supports with floor braces. Panels will be drilled only for oil circuit breakers, lever mechanism and under-voltage attachment if the latter is required.

Oil circuit breakers will not be assembled on the panel at the factory and the equipment will be shipped knocked down, panel and breaker in separate cases.

In ordering, specify catalogue number of panel and also catalogue number of oil circuit breaker and under-voltage attachment (if latter is desired) for which the panel is to be drilled.

For Single-throw Circuit Breakers

Cat. No.	Description	No. of Trip Coils	Approx. Shipping Wt. Lbs.	DIMENSIONS, INCHES			*Price Each
				Height	Width	Thickness	
1842931G1	Non-Automatic	0	100	16	20	1½	\$34.00
1842932G1	Automatic	1	100	16	20	1½	34.00
1842933G1	"	2	100	16	20	1½	34.00

For Double-throw Circuit Breakers

1842934G1	Non-Automatic	0	130	16	24	1½	\$38.00
1842935G1	Automatic	1	130	16	24	1½	38.00
1842936G1	" (two Coil Transformer trip)	2	130	16	24	1½	38.00
1842937G1	Automatic (two coil Series Trip)	2	130	16	24	1½	38.00

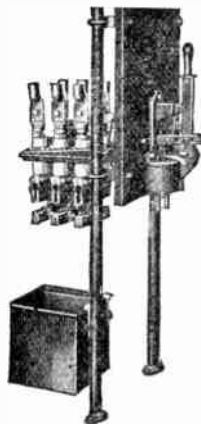
*Add \$2.00 if panel is to be drilled for under-voltage attachment.

Type FK5 Oil Circuit Breakers

For Switchboard Service

600, 4500 and 7500 Volts

Manually-operated Non-automatic



The Type FK-5 Oil Circuit Breaker is in extensive use for circuits up to 7500 volts, where a reliable breaker of moderate capacity is required. It is constructed from the best materials and the workmanship is of the highest character, in short, essentials for long service are found in this breaker.

The operating lever now being used adds its advantages to those already possessed by the breaker. Uniformity in the application and appearance of these operating levers; sensitiveness of the tripping toggle; and the improvement in manual operation—these are a few of the advantages obtained.

RATINGS.—The ratings of the breakers are based on the maximum current the breakers will carry continuously without overheating. Therefore, equipment should be selected that has a capacity at least equal to the maximum rating or to the one- or two-hour overload rating of the circuit.

Single, triple and four-pole single-throw breakers can be obtained in all capacities.

The breakers are made in the following capacities:

Volts	Amps.	Poles	Throws
600	300	2, 3 or 4-pole	Single- or Double-throw
600	500	2, 3 or 4-pole	" " " "
600	800	2, 3 or 4-pole	Single-throw Only
4500	200	2, 3 or 4-pole	Single or Double-throw
7500	300	2, 3 or 4-pole	" " " "
7500	300	1-pole	Single-throw Only
7500	500	2, 3 or 4-pole	Single or Double-throw
7500	500	1-pole	Single-throw Only

OPERATING MECHANISMS.—The following are obtainable: MANUALLY-OPERATED LEVERS.—Non-automatic levers for all breakers.

Automatic levers with one, two, or three-coil secondary overload trip.

TRIP COILS.—For tripping automatically, alternating current trip coils connected directly or by means of relays to the secondaries of current transformers may be used, or coils separately energized from a reliable source of under-voltage alternating or direct current. When separately energized coils are used, circuit-closing relays consisting of one, two or three units are energized from the secondaries or current transformers with their contacts controlling the tripping circuit.

SECONDARY TRIP COILS.—Five ampere coils, for use with current transformers. Coils calibrated at 5, 7 and 9 amperes.

Four ampere coils, calibrated at 4 amperes, for use with current transformers and circuit-opening relays.

Potential coils from 12 to 250 volts, direct current and from 110 to 440 volts, alternating current, for use with circuit-closing relays or other contact-making devices.

SOLENOID MECHANISM.—Solenoid operation can be furnished for 4500 and 7500-volt breakers. (Two breakers may be electrically interlocked to effect double-throw.) Standard solenoid coils are wound for 125, 250 and 600-volt direct current only.

Overload protection for solenoid-operated breakers is obtained by the use of separate current transformers and circuit-closing overload relays.

When breakers are solenoid-operated the same number of current transformers are used as for manually-operated breakers, but one, two or three single-unit circuit-closing alternating current relays are used to connect the low-voltage tripping current to the trip coil of the direct current solenoid.

Type FK5 Oil Circuit Breakers

For Switchboard Service
600, 4500 and 7500 Volts

Non-automatic—Manually Operated
Operating Lever for Mounting on 1½ or 2-inch Panel
Panel Mounting
Breaker for Mounting Directly on Back of Panel
Double-pole—Single Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105819G1	300	600	160	\$99.00
2105819G7	500	600	170	116.00
2105819G13	800	600	190	156.00
2105820G1	200	*4500	160	87.00
2105820G7	300	*7500	170	103.00
2105820G13	500	*7500	190	121.00
Triple-pole—Single Throw				
2105819G2	300	600	170	116.00
2105819G8	500	600	190	143.00
2105819G14	800	600	200	203.00
2105820G2	200	*4500	170	100.00
2105820G8	300	*7500	190	121.00
2105820G14	500	*7500	200	149.00
Four-pole—Single Throw				
2105819G3	300	600	230	144.00
2105819G9	500	600	250	178.00
2105819G15	800	600	260	260.00
2105820G3	200	*4500	230	119.00
2105820G9	300	*7500	250	150.00
2105820G15	500	*7500	260	186.00

Panel Frame Mounting

Breaker for Mounting on Panel Frame 5 Inches
Back of Panel
Double-pole—Single Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105821G1	300	600	180	\$111.00
2105821G7	500	600	190	128.00
2105821G13	800	600	210	168.00
2105822G1	200	*4500	180	99.00
2105822G7	300	*7500	190	115.00
2105822G13	500	*7500	210	133.00
Triple-pole—Single Throw				
2105821G2	300	600	190	128.00
2105821G8	500	600	210	155.00
2105821G14	800	600	220	215.00
2105822G2	200	*4500	190	112.00
2105822G8	300	*7500	210	133.00
2105822G14	500	*7500	220	161.00
Four-pole—Single Throw				
2105821G3	300	600	250	156.00
2105821G9	500	600	270	190.00
2105821G15	800	600	280	272.00
2105822G3	200	*4500	250	131.00
2105822G9	300	*7500	270	162.00
2105822G15	500	*7500	280	198.00

**With Remote Control Lever for Mounting on
1½ or 2-inch Panel**

For Mounting on Pipe Framework
Double-pole—Single Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105823G1	300	600	230	\$145.00
2105823G7	500	600	270	162.00
2105823G13	800	600	280	202.00
2105824G1	200	4500	230	133.00
2105824G7	300	7500	270	149.00
2105824G13	500	7500	280	167.00
Triple-pole—Single Throw				
2105823G2	300	600	240	162.00
2105823G8	500	600	290	189.00
2105823G14	800	600	400	248.00
2105824G2	200	4500	240	146.00
2105824G8	300	7500	290	167.00
2105824G14	500	7500	400	195.00
Four-pole—Single Throw				
2105823G3	300	600	270	190.00
2105823G9	500	600	330	224.00
2105823G15	800	600	340	305.00
2105824G3	200	4500	270	165.00
2105824G9	300	7500	330	196.00
2105824G15	500	7500	340	232.00

*The manufacturer does not recommend installation of apparatus on panel or switchboard when apparatus is subjected to pressure in excess of 2500 volts.

Type FK5 Oil Circuit Breakers

For Switchboard Service
600, 4500 and 7500 Volts

Non-automatic—Manually Operated
Operating Lever for Mounting on 1½ or 2-inch Panel
Panel Mounting
Breaker for Mounting Directly on Back of Panel
Double-pole—Double Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105819G4	300	600	260	\$178.00
2105819G10	500	600	290	206.00
2105820G4	200	*4500	250	163.00
2105820G10	300	*7500	260	185.00
2105820G16	500	*7500	290	214.00
Triple-pole—Double Throw				
2105819G5	300	600	280	211.00
2105819G11	500	600	310	255.00
2105820G5	200	*4500	270	185.00
2105820G11	300	*7500	280	219.00
2105820G17	500	*7500	310	265.00
Four-pole—Double Throw				
2105819G6	300	600	350	253.00
2105819G12	500	600	410	309.00
2105820G6	200	*4500	330	221.00
2105820G12	300	*7500	350	263.00
2105820G18	500	*7500	410	323.00

Panel Frame Mounting

Breaker for Mounting on Panel Frame 5 Inches
Back of Panel

For Mounting on Pipe Framework
Double-pole—Double Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105821G4	300	600	280	\$196.00
2105821G10	500	600	310	224.00
2105822G4	200	*4500	270	181.00
2105822G10	300	*7500	280	203.00
2105822G16	500	*7500	310	232.00
Triple-pole—Double Throw				
2105821G5	300	600	300	229.00
2105821G11	500	600	330	273.00
2105822G5	200	*4500	290	203.00
2105822G11	300	*7500	300	237.00
2105822G17	200	*7500	330	283.00
Four-pole—Double Throw				
2105821G6	300	600	370	271.00
2105821G12	500	600	420	327.00
2105822G6	200	*4500	350	239.00
2105822G12	300	*7500	370	281.00
2105822G18	500	*7500	420	341.00

**With Remote Control Lever for Mounting on
1½ or 2-inch Panel**

For Mounting on Pipe Framework
Double-pole—Double Throw

Cat. No.	Amperes	Volts	Shipping Wt. Lbs.	Price Each
2105823G4	300	600	330	\$264.00
2105823G10	500	600	380	292.00
2105824G4	200	4500	330	249.00
2105824G10	300	7500	380	271.00
2105824G16	500	7500	390	300.00
Triple-pole—Double Throw				
2105823G5	300	600	340	297.00
2105823G11	500	600	390	341.00
2105824G5	200	4500	340	271.00
2105824G11	300	7500	390	305.00
2105824G17	500	7500	400	351.00
Four-pole—Double Throw				
2105823G6	300	600	390	339.00
2105823G12	500	600	470	395.00
2105824G6	200	4500	390	307.00
2105824G11	300	7500	470	349.00
2105824G17	500	7500	480	409.00

*The manufacturer does not recommend the installation of apparatus on the panel or switchboard when that apparatus is subjected to pressure in excess of 2500 volts. For such installation remote control apparatus is recommended.

Automatic Trip Attachments

*Cat. No.	No. of Coils	RATING IN VOLTS		Approx. Ship. Wt., Lbs.	†Price Each
		D.C.	A.C.		
1912361G1	1	12	...	5	\$9.00
1912361G2	1	24 to 30	...	5	9.00
1912361G3	1	110 " 125	...	5	9.00
1912361G4	1	220 " 250	...	5	9.00
1912361G5	1	.....	440	5	9.00
1912361G6	1	.....	220	5	9.00
1912361G7	1	.....	110	5	9.00

*Cat. No.	No. of Coils	Rating in Amp. A.C.	Approx. Ship. Wt., Lbs.	†Price Each
1912361G1	1	5	5	\$9.00
1912362G2	1	4	5	9.00
1912362G3	2	5	10	16.00
1912362G4	2	4	10	16.00
1912362G5	3	5	15	23.00
1912362G6	3	4	15	23.00
1912362G7	1	3	5	9.00
1912362G8	2	3	10	16.00
1912362G9	3	3	15	23.00

*When shipped separately, these attachments are assembled with supporting plates and bolts.

†Current transformers not included. Class PP.

Under-voltage Attachments

For Use with Manually Operated Type FK5 Oil Circuit Breakers

Hinged armature under-voltage attachments are listed for pressures up to and including 550 volts. Above 550 volts, use 110-volt attachment in connection with suitable voltage transformer.

The under-voltage attachment is mounted at the left (right-hand not furnished for use with Type HA2 lever) of a single-throw lever mechanism or between the levers of a double-throw mechanism. In the latter case, it acts on the tripping toggle of the right-hand lever, the action being transmitted to the left-hand lever by the cross trip.

Operates at Approximately One-half Normal Pressure

For use with manually operated oil circuit breakers of 800 amperes or less, 25 to 60 cycles.

Cat. No.	Cycles	Volts	Shipping Wt., Lbs.	Price Each
2602714G1	25	110	10	\$28.00
2602714G5	25	220	12	30.00
2602714G8	25	440	12	30.00
2602714G10	25	550	15	30.00
2602714G2	40	110	12	30.00
2602714G6	40	220	12	30.00
2602714G8	40	440	12	30.00
2602714G10	40	550	15	30.00
2602714G3	50	110	12	30.00
2602714G6	50	220	12	30.00
2602714G8	50	440	12	30.00
2602714G10	50	550	15	30.00
2602714G4	60	110	10	28.00
2602714G7	60	220	12	30.00
2602714G9	60	440	12	30.00
2602714G10	60	550	15	30.00

Auxiliary Switches

Auxiliary switches for signaling, electrical interlock or control of auxiliary apparatus are frequently required.

For manually-operated Type FK5 oil circuit breaker mounted directly on back of panel or on panel frame 5 inches back, finger-type auxiliary switches are used.

For manually-operated Type FK5 oil circuit breakers mounted remote from panel, rotary type auxiliary switches are used and mounted on the horizontal hanger which is drilled for such accessories at the factory.

For Breakers Mounted on Back of Panel

Cat. No.	Description	Shipping Wt., Lbs.	Price Each
134586	Circuit-Opening	5	\$13.00
134587	" Closing	5	13.00
134588	" Opening and Closing	8	24.00

For Breakers Mounted on Panel Frame 5 Inches Back

134589	Circuit-Opening	5	\$13.00
134590	" Closing	5	13.00
134591	" Opening and Closing	8	24.00

For Breakers Mounted Remote from Panel

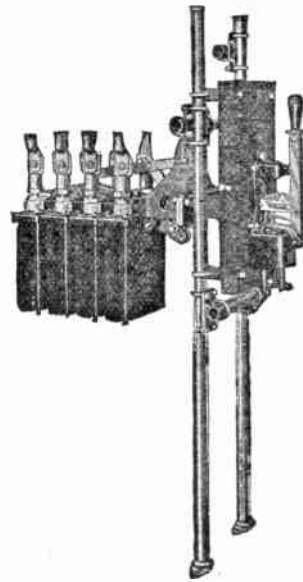
Cat. No.	No. of Stages	Shipping Wt., Lbs.	Price Each	Cat. No.	No. of Stages	Shipping Wt., Lbs.	Price Each
1918240G1	1	9	\$15.00	1918240G4	4	12	\$30.00
1918240G2	2	10	20.00	1918240G5	5	13	35.00
1918240G3	3	11	25.00	1918240G6	6	14	40.00

Type FK35 and FK35Y Oil Circuit Breakers

For Switchboard Service

600 and 7500 Volts

Manually Operated—Non-automatic



Types FK35 and FK35Y oil circuit breakers are recommended for use up to 7500 volts on systems where thoroughly reliable breakers of moderate capacity are required.

These breakers are of standard unit construction, each unit consisting of oil tank, cover, insulator studs and contacts, blade and rod. Thus, a single, double, triple or four-pole breaker is made up respectively of one, two, three or four standard units plus frame, breaker mechanism and either manual or solenoid operating mechanism.

Each standard unit is suspended from the frame of the oil circuit breaker by attaching the oil tank cover to the under surface of the frame. Each oil tank is held in position by hook bolts.

The FK35Y oil circuit breakers are similar to the Type FK35 breakers, except that they have removable arcing tips and the operating rods and the blades are slightly different. The interrupting capacities are the same.

DISTINCTIVE FEATURES.—Breakers adapted to either vertical or horizontal operation by making one member of breaker mechanism a bell crank.

Interchangeability of breaker units of like rating.

Each phase in separate tank.

Bell alarm auxiliary switch included with all operating levers.

The manufacturer does not recommend the installation of apparatus on the panel or switchboard when that apparatus is subjected to a pressure in excess of 2500 volts.

For Mounting Directly on Back of Panel

Double-pole—Single Throw

Cat. No.	Type	Amperes	Volts	Shipping Wt., Lbs.	Price Each
1945973G1	FK35	400	600	150	\$112.00
1945973G4	FK35	600	600	170	124.00
1945973G7	FK35	800	600	180	155.00
1945973G10	FK35	400	7500	160	117.00
1945973G13	FK35	600	7500	180	133.00
1945977G1	FK35Y	400	600	160	126.00
1945977G4	FK35Y	600	600	180	152.00
1945977G7	FK35Y	800	600	190	175.00
1945977G10	FK35Y	400	7500	170	131.00
1945977G13	FK35Y	600	7500	190	155.00

Triple-pole—Single Throw

1945973G2	FK35	400	600	185	\$137.00
1945973G5	FK35	600	600	210	159.00
1945973G8	FK35	800	600	220	203.00
1945973G11	FK35	400	7500	190	148.00
1945973G14	FK35	600	7500	220	169.00
1945977G2	FK35Y	400	600	195	165.00
1945977G5	FK35Y	600	600	220	198.00
1945977G8	FK35Y	800	600	230	235.00
1945977G11	FK35Y	400	7500	200	168.00
1945977G14	FK35Y	600	7500	230	203.00

Four-pole—Single Throw

1945973G3	FK35	400	600	250	\$167.00
1945973G6	FK35	600	600	270	195.00
1945973G9	FK35	800	600	290	254.00
1945973G12	FK35	400	7500	260	175.00
1945973G15	FK35	600	7500	280	210.00
1945977G3	FK35Y	400	600	260	203.00
1945977G6	FK35Y	600	600	280	247.00
1945977G9	FK35Y	800	600	300	294.00
1945977G12	FK35Y	400	7500	270	207.00
1945977G15	FK35Y	600	7500	290	254.00

Type FK35 and FK35Y Oil Circuit Breakers

For Switchboard Service
600 and 7500 Volts

Manually Operated—Non-automatic
for Mounting on Panel Frame
5 Inches Back of Panel

Double-pole—Single Throw

Cap. Amp.	Volts	TYPE FK35			TYPE FK35Y		
		Cat. No.	Shipp. Wt., Lbs.	Price Each	Cat. No.	Shipp. Wt., Lbs.	Price Each
400	600	1945972G1	160	\$118.00	1945976G1	170	\$132.00
600	600	1945972G4	170	130.00	1945976G4	180	158.00
800	600	1945972G7	180	161.00	1945976G7	190	181.00
400	7500	1945972G10	170	123.00	1945976G10	180	137.00
600	7500	1945972G13	180	139.00	1945976G13	190	161.00

Triple-pole—Single Throw

400	600	1945972G2	200	\$143.00	1945976G2	210	\$171.00
600	600	1945972G5	220	165.00	1945976G5	230	204.00
800	600	1945972G8	230	209.00	1945976G8	240	241.00
400	7500	1945972G11	210	154.00	1945976G11	220	174.00
600	7500	1945972G14	230	175.00	1945976G14	240	209.00

Four-pole—Single Throw

400	600	1945972G3	260	\$173.00	1945976G3	270	\$209.00
600	600	1945972G6	280	201.00	1945976G6	290	253.00
800	600	1945972G9	300	260.00	1945976G9	310	300.00
400	7500	1945972G12	280	181.00	1945976G12	290	213.00
600	7500	1945972G15	300	216.00	1945976G15	310	260.00

For Mounting Remote from Panel

For Mounting on Pipe Framework
Double-pole—Single Throw

Cap. Amp.	Volts	TYPE FK35			TYPE FK35Y		
		Cat. No.	Shipp. Wt., Lbs.	Price Each	Cat. No.	Shipp. Wt., Lbs.	Price Each
400	600	1945975G1	230	\$147.00	1945988G1	240	\$161.00
600	600	1945975G4	250	159.00	1945988G4	260	187.00
800	600	1945975G7	260	190.00	1945988G7	270	210.00
400	7500	1945975G10	240	152.00	1945988G10	250	166.00
600	7500	1945975G13	260	168.00	1945988G13	270	190.00

Triple-pole—Single Throw

400	600	1945975G2	265	\$172.00	1945988G2	275	\$200.00
600	600	1945975G5	290	194.00	1945988G5	300	233.00
800	600	1945975G8	300	238.00	1945988G8	310	270.00
400	7500	1945975G11	270	183.00	1945988G11	280	203.00
600	7500	1945975G14	300	204.00	1945988G14	310	238.00

Four-pole—Single Throw

400	600	1945975G3	330	\$202.00	1945988G3	340	\$238.00
600	600	1945975G6	350	230.00	1945988G6	360	282.00
800	600	1945975G9	370	289.00	1945988G9	380	329.00
400	7500	1945975G12	310	210.00	1945988G12	350	242.00
600	7500	1945975G15	360	245.00	1945988G15	370	289.00

For Mounting on Flat Surface

Double-pole—Single Throw

Cap. Amp.	Volts	TYPE FK35			TYPE FK35Y		
		Cat. No.	Shipp. Wt., Lbs.	Price Each	Cat. No.	Shipp. Wt., Lbs.	Price Each
400	7500	1945974G1	240	\$152.00	1945987G1	250	\$166.00
600	7500	1945974G4	260	168.00	1945987G4	270	190.00

Triple-pole—Single Throw

400	7500	1945974G2	270	\$183.00	1945987G2	280	\$203.00
600	7500	1945974G5	300	204.00	1945987G5	310	238.00

Four-pole—Single Throw

400	7500	1945974G3	340	\$210.00	1945987G3	350	\$242.00
600	7500	1945974G6	360	245.00	1945987G6	370	289.00

For Mounting in Masonry Cell

Double-pole—Single Throw

Cap. Amp.	Volts	TYPE FK35			TYPE FK35Y		
		Cat. No.	Shipp. Wt., Lbs.	Price Each	Cat. No.	Shipp. Wt., Lbs.	Price Each
400	7500	1945974G7	240	\$152.00	1945987G7	250	\$166.00
600	7500	1945974G10	260	168.00	1945987G10	270	190.00

Triple-pole—Single Throw

400	7500	1945974G8	270	\$183.00	1945987G8	280	\$203.00
600	7500	1945974G11	300	204.00	1945987G11	310	238.00

Four-pole—Single Throw

400	7500	1945974G9	340	\$210.00	1945987G9	350	\$242.00
600	7500	1945974G12	360	245.00	1945987G12	370	289.00

The manufacturer does not recommend the installation of apparatus on the panel or switchboard when that apparatus is subjected to a pressure in excess of 2500 volts. For such installation remote control apparatus is recommended.

Attachments for Types FK35 and FK35Y Oil Circuit Breakers

Automatic Trip Attachments

When shipped separate these attachments are assembled with supporting plates and bolts.
Current transformers not included.

Cat. No.	No. of Coils	Rating in Volts	Shipping Wt., Lbs.	Price Each
1912361G1	1	12, D.C.	5	\$9.00
1912361G2	1	24-30, D.C.	5	9.00
1912361G3	1	110-125, D.C.	5	9.00
1912361G4	1	220-250, D.C.	5	9.00
1912361G5	1	440, A.C.	5	9.00
1912361G6	1	220, A.C.	5	9.00
1912361G7	1	110, A.C.	5	9.00

Cat. No.	No. of Coils	Rating in Amp. A. C.	Shipping Wt., Lbs.	Price Each
1912362G1	1	5	5	\$9.00
1912362G2	1	4	5	9.00
1912362G3	2	5	10	16.00
1912362G4	2	4	10	16.00
1912362G5	3	5	15	23.00
1912362G6	3	4	15	23.00
1912362G7	1	3	5	9.00
1912362G8	2	3	10	16.00
1912362G9	3	3	15	23.00

Under-voltage Attachments

Hinged armature under-voltage attachments are listed above for pressures up to and including 550 volts. Above 550 volts use 110-volt attachments in connection with suitable voltage transformer.

As all Types FK35 and FK35Y operating levers have a toggle and trip lever, the hinged armature under-voltage attachment is always applicable.

Cat. No.	Cycles	Volts	Shipping Wt., Lbs.	Price Each
2602714G1	25	110	10	\$28.00
2602714G5	25	220	12	30.00
2602714G8	25	440	12	30.00
2602714G10	25	550	15	30.00
2602714G2	40	110	12	30.00
2602714G6	40	220	12	30.00
2602714G8	40	440	12	30.00
2602714G10	40	550	15	30.00
2602714G3	50	110	12	30.00
2602714G6	50	220	12	30.00
2602714G8	50	440	12	30.00
2602714G10	50	550	15	30.00
2602714G4	60	110	10	28.00
2602714G7	60	220	12	30.00
2602714G9	60	440	12	30.00
2602714G10	60	550	15	30.00

Double-throw Attachments

Mechanical interlocks are available as attachments to combine for double-throw non-automatic operation.

1.—Any two panel or panel frame mounting, or remote control Types FK35 or FK35Y breakers.

2.—Any Type FK35 or FK35Y breaker with any Type FK32A or FK32B breaker.

For panel or panel frame mounting the interlock is attached to the breaker frame, proper holes for same being provided on the breakers.

For remote control mounting the interlock is attached to the hangers on back of panel, proper holes for same being provided on the hangers.

In ordering specify breakers to be interlocked, form of mounting and distance between centers of operating levers 8, 9, 11, 12, 13 or 16 inches.

Price, Mechanical Interlock.....each \$6.00

Cross Trip—Automatic Operation

Where operating levers for breakers interlocked for double-throw are equipped with automatic trip attachment in one operating lever only, a cross trip is required between the two levers to trip on both throws.

Where two sets of current transformers are used with automatic trip attachments in both operating levers, or where one set of current transformers is used with automatic trip attachments in both operating levers with trip coils in series in each phase, the cross trip is not required.

In ordering specify distance between centers of operating levers, 8, 9, 11, 12, 13 or 16 inches.

Price, Cross Trip.....each \$1.00

Type Y-298A Tripping Current Transformers

For Oil Circuit Breakers

25-125 Cycles, 15000 Volts or Less

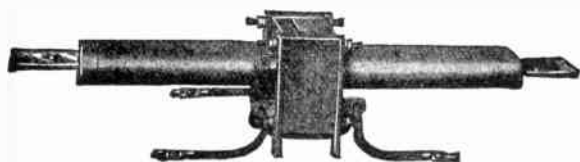


400 Amperes and Below

These transformers are for tripping oil circuit breakers. They may be used with any of the standard 4- and 5-ampere trip coils. They are listed in capacities from 5 to 800 amperes at 15000 volts or less.

In general their use is limited to tripping duty only, either directly or in connection with relays, but where high accuracy is not essential a secondary ammeter may be used.

As these transformers are small and inexpensive they may be used very conveniently in installations where series trip has heretofore been recommended.



500 to 800 Amperes

The smaller capacities from 5 to 400 amperes inclusive are equipped with cast metal bases with two-bolt holes, allowing them to be bolted to flat surfaces or pipe supports.

The larger capacities from 500 to 800 amperes inclusive are of the bus type and are supported by the buses or the stud of the oil circuit breaker, no bases being required due to the light weight of these transformers.

Cat. No.	Primary Capacity In Amperes	Ratio	Shipping Weight Pounds	Price Each
216838	5	1-1	44	\$59.00
216839	10	2-1	44	59.00
216840	12.5	2.5-1	44	59.00
216841	15	3-1	44	59.00
216842	20	4-1	44	59.00
216843	25	5-1	41	59.00
216844	30	6-1	44	59.00
216845	40	8-1	44	59.00
216846	50	10-1	44	59.00
216847	60	12-1	44	59.00
216848	80	16-1	44	59.00
216849	100	20-1	44	59.00
216850	125	25-1	41	60.00
216851	150	30-1	44	60.00
216852	200	40-1	44	61.00
216853	250	50-1	44	61.00
216854	300	60-1	44	61.00
216855	350	70-1	44	62.00
246264	400	80-1	44	62.00
246265	500	100-1	44	62.00
246266	600	120-1	44	62.00
246267	800	160-1	44	63.00

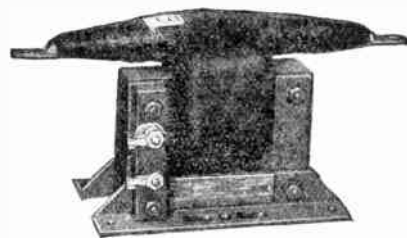
All transformers are provided with an additional turn on secondary for ammeters only.

These transformers are tested at 5000 volts between primary and all other parts, and at 2500 volts between secondary and ground.

Type Y-285-D Tripping Current Transformers

For Oil Circuit Breakers

25-125 Cycles, 4500 Volts or Less



5 to 300-ampere Transformer

These transformers are for tripping oil circuit breakers. They may be used with any of the standard 4 and 5 ampere trip coils. They are listed in capacities from 5 to 800 amperes at 4500 volts or less.

In general, their use is limited to tripping duty only, either directly or in connection with relays, but where high accuracy is not essential a secondary ammeter may also be used.

As these transformers are small and inexpensive they may be used very conveniently in installations where series trip has heretofore been recommended.

They are equipped with feet, allowing them to be bolted to flat surfaces or pipe supports.

They have fixed secondary terminals, subtractive polarity and a uniform distance of 12 inches between centers of primary terminals for all capacities.

Type Y-285-D

*Cat. No.	Primary Capacity in Amperes	Ratio	Approx. Shipping Weight Pounds	Price Each
3106901	5	1-1	27	\$19.00
3106902	10	2-1	27	19.00
3106904	15	3-1	27	19.00
3106905	20	4-1	27	19.00
3106906	25	5-1	27	19.00
3106907	30	6-1	27	19.00
3106908	40	8-1	27	19.00
3106909	50	10-1	27	19.00
3106910	60	12-1	27	19.00
3106911	80	16-1	27	19.00
3106912	100	20-1	27	19.00
3106913	125	25-1	27	20.00
3106914	150	30-1	27	20.00
3106915	200	40-1	27	21.00
3106916	250	50-1	27	22.00
3106917	300	60-1	27	23.00
3106918	400	80-1	30	23.00
3106919	500	100-1	30	23.00
3106920	600	120-1	30	23.00
3106921	800	160-1	30	23.00

*Primary terminals are not included.

These transformers are tested at 15000 volts between primary and all other parts, and at 2500 volts between secondary and ground.

Types PQ, PQ2 and PQ3 Overload Relays

For Use with Current Transformers Having
5-ampere Secondaries

For Mounting on 1/2 or 2-inch Panels

Alternating Current—Single Pole—40-60 Cycles



Fig. 1
**PQ Instantaneous
Circuit-closing**



Fig. 2
**PQ Inverse Time-
limit
Circuit-closing**



Fig. 3
**PQ3 Inverse Time-
limit
Circuit-opening**

The relays are for use only on 5-ampere secondaries of current transformers. The standard winding has a continuous rating of 5 amperes and is calibrated to operate at 5, 8, 12 and 15 amperes. The volt-ampere burden, 22.5 volt amperes, is sufficiently low to permit using these relays on the same current transformers with meters and other instruments without affecting the accuracy of the instruments.

All time Type PQ relays are regularly equipped with needle valve only. The quick return valve and the quick exhaust valve are not regularly furnished but can be furnished as a separate item. The bellows support has a tapped hole for receiving these valves. This hole is closed by a removable plug which is regularly furnished with the relay.

The standard unit Types PQ, PQ2 and PQ3 overcurrent relays are all of the same general construction, the only difference being in the respective contact elements. All parts are interchangeable, thereby permitting changing any relay to secure the desired contact characteristics by simply adding the necessary parts and omitting those not required. This rule does not apply to the Type PQ2, two-circuit, 3-contact, circuit-closing relay. The Type PQ2 relay is provided with instantaneous closing contacts only.

The 3-spring-finger type of contact cannot always be relied upon to retain their proper alignment with the result that when the plunger operates slowly, as in the case when employing the air bellows, all 3 contacts may be engaged simultaneously. This condition would cause arcing and the subsequent destruction of the contact tips. The relays are dust-proof both with respect to the contact parts and the calibrating parts. A dustproof cover encloses the contacts, and a shutter encloses the calibrating parts after adjustments have been made. The coil can be replaced without disturbing the upper part of the relay.

These relays can be provided with alternating current or direct current potential coils.

Price, Needle Valves per pole, each \$.50
" Quick Return Valves " " " .75
" Exhaust Valves " " " 1.50

Instantaneous Overload

CONTACTS

DESCRIPTION

Cat. No.	Type	Circuits	Function	Normal Position	Wt. Lbs.	Price Each
199735	PQ	1	Closing	Open	10	\$21.00
199736	PQ2	2	"	"	10	26.00
199737	PQ3	1	Opening	Closed	10	22.00
Inverse Time—Overload						
199738	PQ	1	Closing	Open	12	\$25.00
199739	PQ3	1	Opening	Closed	12	26.00
Definite Time—Overload						
199740	PQ	1	Closing	Open	12	\$25.00
199741	PQ3	1	Opening	Closed	12	26.00

*Current transformers not included.

Type HG-101 D-C Auxiliary Relays

Single-pole—2 Coils Operating in Series
24-600 Volts Direct Current

For Mounting on Front or Back of 1/2 or 2-inch Panel
or on 1/4-inch Vertical Panel Pipes



Cover Removed



Removable Cover

The Type HG-101 Auxiliary relay, is made in single-pole units with one-circuit, circuit-closing contacts only. It is provided with 2 coils connected in series, both of which act on the armature. This arrangement results in a more positive operation of the armature, also a positive alignment of contact surfaces and their maintenance in this position while the coils are energized.

Application

The Type HG-101 relay is for use in a general way where it is desired that some means be provided to relieve a protective relay from breaking too large a current on its contacts. By this method the coil of the auxiliary relay and the contacts of the protective relay are connected in series.

The application of the Type HG-101 relay is not confined to individual operating. The relays may be operated in series, thereby providing simultaneous control of more than one circuit. Series operation can be obtained down to a minimum of 32 volts, direct current, although the maximum number of relays which will satisfactorily operate in series is governed by the applied voltage. This number varies from a maximum of 2 relays on 32 volts direct current, to a maximum of 4 on 125, 250 and 600 volts direct current.

No resistor is required for relays operating for a period of 15 seconds on voltages up to and including 125 volts direct current, or operating continuously alone on 24 volts direct current, 2 in series on 32 volts direct current, 2 or 3 in series on 48 volts direct current. All other permissible methods of application will require an external series resistor.

Service is fixed by number of relays operating in series, and resistor used.

Contacts

The contacts of the Type HG-101 relay are silver against silver, and will carry 12 amperes continuously or 30 amperes for a period of one minute.

Contacts will control either alternating or direct current.

*Cat. No.	Operating Voltage D. C.	Maximum Continuous Cap. of Each Coil (Amperes)	RELAY ONLY Approximate Shipping Wt., Lbs.	Each Price Class PP
2676923G4	24-50	0.13	2	\$9.00
2676923G4	600 (15 Seconds)	0.20	2	9.00
2676923G3	600 (Continuous)	0.13	2	9.00

*Resistor not included.

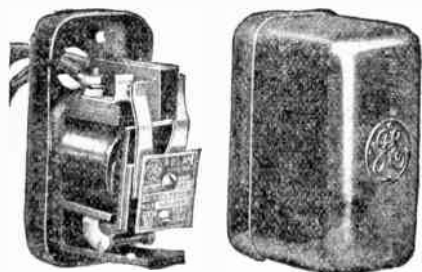
Operating Data and Resistors

For Type HG-101 relays.

Operating Voltage D.C.	No. of Relays in Series	15-SECOND SERVICE			CONTINUOUS SERVICE		
		Resistor Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP	Resistor Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP
24	1	None	..	..	None	..	..
32	1	"	..	..	1954114	2	\$3.00
32	2	"	..	..	None	..	..
48	1	"	..	..	1916291	2	3.00
48	2	"	..	..	None	..	..
48	3	"	..	..	"	..	..
125	1	"	..	..	1950267	2	3.00
125	2	"	..	..	1954192	2	3.00
125	3	"	..	..	1693067	2	3.00
125	4	"	..	..	1954225	2	3.00
250	1	1954192	2	\$3.00	1891078	2	3.00
250	2	1954192	2	3.00	1916296	2	3.00
250	3	1954192	2	3.00	1916296	2	3.00
250	4	1954192	2	3.00	1954193	2	3.00
600	1	1954168	5	7.00	1954172	5	7.00
600	2	1954168	5	7.00	1954172	5	7.00
600	3	1954168	5	7.00	1954171	5	7.00
600	4	1954168	5	7.00	1954171	5	7.00

Type HG-2 A.C. Auxiliary Relays

Single-pole, One-circuit, Circuit-closing Contacts
25 to 60 Cycles Alternating Current
For Mounting on Front or Back of 1/2 or 2-inch Panel



Without Cover

With Cover

Has only one operating coil.

If used with potential transformer the 110-volt relay with its resistor will impose a burden of 22-volt amperes.

(On account of the high impedance of the operating coil

these relays should not be connected to operate with their coils in series. Multiple connection is recommended in all instances. Can be used generally on alternating current circuits of from 110 to 550 volts where the contacts of a protective relay are not of sufficient carrying or interrupting capacity, or when its service is to be supplemented to control more than one circuit. The contacts will carry 5 amperes continuously and 15 amperes for a period of one minute. They will interrupt current at the various voltages indicated. Contacts control either alternating or direct current.

Service, 15 seconds or continuous.

Cat. No. (Resistor Included)	*Voltage A.C.	Maximum Continuous Cap. of Coil, Amp.	APPROX. SHIP. WT., LBS.		Price Each Class PP
			Relay	Resistor	
2841462G1	110	0.2	2	2	\$21.00
2841462G2	220	0.2	2	2	21.00
2841462G3	440	0.2	2	3	23.00
2841462G4	550	0.2	2	3	23.00

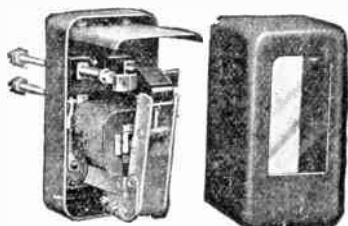
*Refer to general office all inquiries concerning relays for use on voltages below 110; state also frequency (cycles).

Type HG-7 A.C. Auxiliary Relays

Single-pole, One-circuit, Circuit-closing Contacts
25 and 60 Cycles Alternating Currents
For Mounting on Front of 1/2 or 2-inch Panel

Intended to perform proportionally heavier duty.

When used with potential transformers the 110-volt relay imposes a burden of 21 volt-amperes at 25 cycles, 30 volt-amperes at 60 cycles.



Without Cover

With Cover

This relay is of the hinged armature type and its action in opening is supplemented by a compression spring after the coil is de-energized. The front cover is provided with a glass window. The winding of this relay will ordinarily withstand low voltage alternating currents continuously applied without any external resistance. There are rare instances where a resistor is used when it is necessary at times that the relay be short circuited but the resistor in this instance will stand full voltage for only one minute.

Particularly adaptable where generous contact capacity and quick action are desired. Contacts will carry 15 amperes continuously and 50 amperes for a period of one minute. Will interrupt current at the various voltages. Contacts control either alternating or direct current.

Service, 15 seconds or continuous. External series resistance is not required.

Cat. No.	Operating Voltage A.C.	Frequency (Cycles)	Current Taken At Repeated Frequency Amperes	Approximate Shipping Wt., Lbs.	Price Each Class PP
263362G1	110	25	0.2	7	\$32.00
263362G3	110	60	0.35	7	32.00
263362G2	220	25	0.1	7	32.00
263362G4	220	60	0.2	7	32.00

Types PB-53 and PB-54 Solenoid Control Relays

With Blowout Coil
Totally Enclosed, Single-pole, One-circuit
Circuit-closing Contacts
48 to 600 Volts, Direct Current

For Mounting on 3/4 or 1 1/4-inch Vertical or Horizontal Pipe



Types PB-53 and PB-54 Relay with Cover

Type PB-53 Relay Cover Removed

Type PB-54 Relay Cover Removed

The types PB-53 and PB-54 solenoid control relays are made in single-pole units only. They are provided with a blowout coil and a metal cover. The blowout coil reduces the arc and the burning of contact tips. The metal cover encloses all live parts thereby providing full safety features.

Contacts

Contacts are of copper against copper and will make and break the current given in the following table:

Voltage of Circuit	CONTACTS WILL CARRY AMPERES	
	Continuous	5 Seconds
125	50	200
250	50	100
600	20	40

Type PB-53 (Instantaneous)

In the Type PB-53 relay the plunger is normally down and the contacts in the open position. When energized the plunger closes the contacts through a bell crank arrangement.

Type PB-54 (Hesitating)

In general the Type PB-54 relay operates the same as the PB-53 except that the contacts are closed through a toggle mechanism actuated by the plunger.

The hesitating feature is obtained by the inductive effect of a heavy copper short-circuited winding located in the spool which delays the drop of the plunger approximately one second after the coil is de-energized.

Mounting

The relays are provided with supports for mounting on 3/4-inch or 1 1/4-inch vertical or horizontal pipe. When it is desired to mount the relay on front or back of panel the pipe fitting can be removed and the relay secured by 2 screws through holes provided for this purpose in back of frame.

Type PB-53 (Instantaneous)

Voltage of D.C. Control Circuit	FOR MOUNTING ON 3/4-INCH VERTICAL OR HORIZONTAL PIPE			FOR MOUNTING ON 1 1/4-INCH VERTICAL OR HORIZONTAL PIPE		
	*Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP	*Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP
48	2182135G4	15	\$30.00	2182135G1	15	\$30.00
125 or 250	2182135G5	15	28.00	2182135G2	15	28.00
600	2182135G6	15	31.00	2182135G3	15	31.00

Type PB-54 (Hesitating)

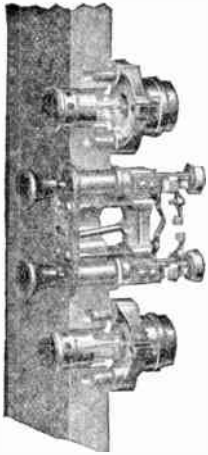
Voltage of D.C. Control Circuit	FOR MOUNTING ON 3/4-INCH VERTICAL OR HORIZONTAL PIPE			FOR MOUNTING ON 1 1/4-INCH VERTICAL OR HORIZONTAL PIPE		
	*Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP	*Cat. No.	Approx. Ship. Wt., Lbs.	Price Each Class PP
48	2182135G10	15	\$40.00	2182135G7	15	\$40.00
125 or 250	2182135G11	15	39.00	2182135G8	15	39.00
600	2182135G12	15	41.00	2182135G9	15	41.00

*Catalogue number includes relay complete with support for mounting on either vertical or horizontal pipe.

Twin Pull Button Control Switches

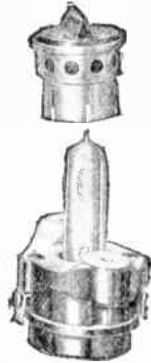
For Controlling Motor and Solenoid Operated Switches, Circuit Breakers, etc.

Single-pole—Double Throw
125 to 600 Volts



Mechanical indicator shows which throw was last operated; Mazda lamps, with red and green lenses for indicating, show whether switch or breaker is closed or open.

These switches are equipped with sliding contacts which will handle 10 amperes at 125 volts, 3 1/2 amperes at 250 volts and 1/2 an ampere at 600 volts.



Lamp Receptacle and Lens

S-P. D-T. Twin Pull Button Control Switch with Indicating Lamps and Receptacles

Cat. No. For 1 1/2 or 2-in. Panel	Cat. No. Lamps Receptacles Lenses	INCLUDES Resistances for Lamp Circuits	Voltage or Control Circuit	Shp. Wt. Lbs.	Price Each
*1959119G1	Without	None	125 to 600	5	\$12.00
*1959119G2	With	None	125	8	18.00
*1959119G3	With	195-4175†	250	10	22.00
*1959119G4	With	195-4179†	600	10	26.00

*Switch only, no provision for lamps, no lamps, receptacles or lenses included.

†Each Cat. No. includes one control switch; two receptacles, Cat. No. 40431 each complete with a Cat. No. 36099 glass tube fuse; one ruby lens and holder, Cat. No. 36795; one green lens and holder, Cat. No. 36796; and two Type E Mazda (T7 Bulb) candelabra lamps and screws for fastening receptacles and switch in position. The 250 and 600-volt, Cat. Nos. 1959119G3 and 1959119G4, also include for lamp circuits, one resistance in two divisions electrically separate, Cat. Nos. 1954175 and 1954179 respectively. No base or connection included.

‡For 2-inch panel mounting, the spacer shipped with the switch is not used. These switches can not be mounted on thicker panels.

†Resistances, Cat. Nos. 1954175 and 1954179, are for use only with Mazda candelabra lamps.

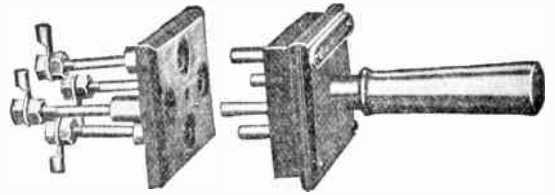
Indicating Lamps and Lenses for Control Switches

Cat. Nos. 234284, 234285, 234286 and 234484 are complete with porcelain receptacle No. 40431, with expansion bolts, terminals, glass tube fuse No. 36099, Type E Mazda Candelabra lamp and lens with holder.

Cat. No.	Description	Price Each
234284	Complete with Ruby Lens and Holder	\$3.50
234285	" " Green " " "	3.50
234286	" " White " " "	3.50
234484	" " Blue " " "	3.50
40431	Porcelain Receptacle Complete with Fuse	.60
36795	Ruby Lens and Holder, Complete	1.00
36796	Green " " " " "	1.00
114219	White " " " " "	1.00
234485	Blue " " " " "	1.00
1954175	Resistance 250 Volts (for Use with Mazda Candelabra Lamps)	5.00
1954179	Resistance 600 Volts (for Use with Mazda Candelabra Lamps)	9.00
36099	Glass Tube Fuse	*.05

*Net.

Potential and Synchronizing Plug Switches



The standard synchronizing receptacle and plug are shown in the accompanying illustrations.

Potential Plug Switches

Potential plug switches are used to connect a voltmeter to any one of a number of generator, battery or feeder circuits, or to any phase of a polyphase circuit.

Synchronizing Plug Switches

Synchronizing plug switches are used for connecting a synchronism indicator or synchronizing lamps to the generator being synchronized.

Plug switches intended to perform different functions or for use upon different voltages are so designed as to prevent the closing of the circuits by any but the appropriate plugs. This desirable feature is secured by varying the distance between centers of poles.

Two plugs are used for the synchronizing connections shown. One is inserted in the receptacle of the machine which is running and the other in the receptacle of the machine which is starting.

These plugs are marked in such a way as to insure their proper insertion into the receptacles, so as to give the correct indication.

Connections between the points of the plug are laid in grooves so that they will not become disarranged or damaged. The plug is provided with a shield which prevents the operator from accidentally touching the live parts of the switch. On the outside of this shield are white enameled lines indicating the internal connections.

The plug has a polished black finish; live parts are of brass.

Plug Holders

Plug holders can be furnished to provide means for holding the plug switches when not in use and to prevent them from becoming lost.

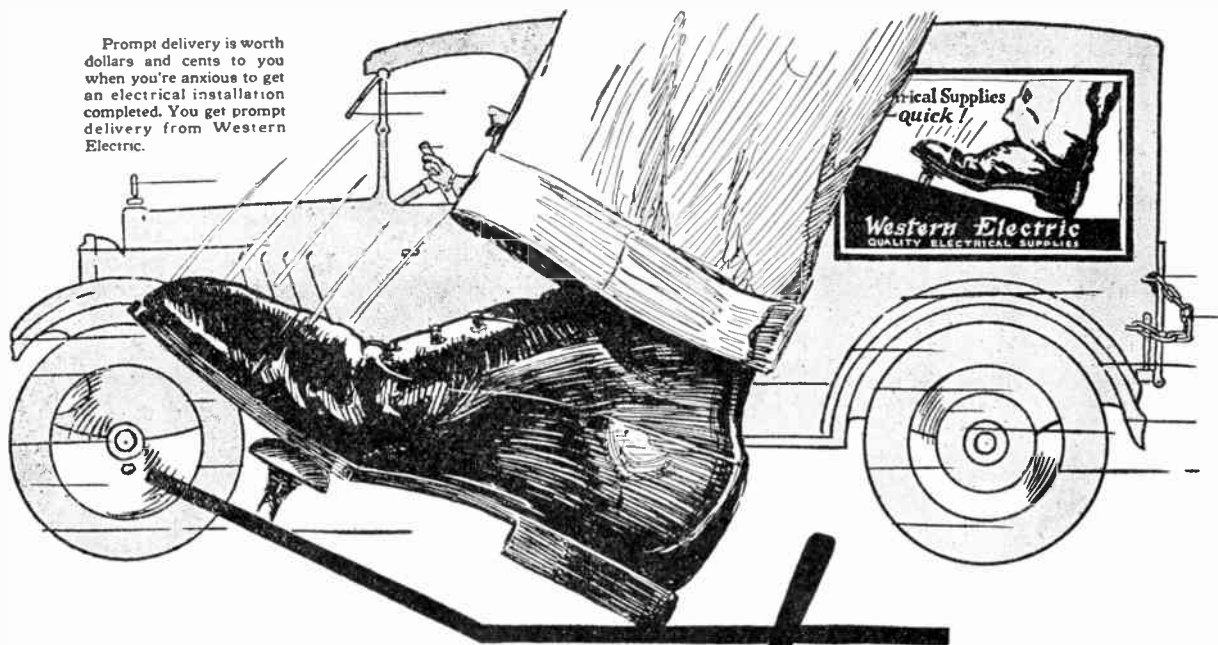
Receptacles

Cat. No.	No. of Points	Description	Shipping Wt. Lbs.	Price Each
29656	2	125-250-Volt, D-C. Potential	1	\$1.75
13285	2	600-Volt, D-C. Potential	1	1.75
13288	4	125-250-Volt, D-C. Potential	1	2.50
29658	4	600-Volt, D-C. Potential or Synchronizing	1	2.75
13289	4	Synchronizing	1	2.75
29657	4	A-C. Potential	1	2.50
29659	6	A-C. " " "	2	3.50
60429	6	A-C. Synchronizing	2	3.50
29660	8	A-C. Potential	2	4.25

Plug

Cat. No.	No. of Points	Description	Shipping Wt. Lbs.	Price Each
29652	2	125-250-Volt, D-C. Potential	1	\$3.25
13265	2	600-Volt, D-C. Potential	1	3.25
37644	2	A-C. Potential	1	3.25
13269	4	125-250-volt, D.C. Potential	1	4.00
29653	4	600-volt, D. C. Potential	1	4.25
29655	4	A-C. Potential	1	4.25
27369	4	Synchronizing "Machine Running"	1	4.50
27368	4	" " Starting	1	4.50
29654	4	" " Running	1	4.75
173427	6	" " " "	2	5.25
173426	6	" " Starting	2	5.25
173425	6	" " Running	2	5.25
173424	6	" " Starting	2	5.25
234489	6	" " " "	2	5.25

Prompt delivery is worth dollars and cents to you when you're anxious to get an electrical installation completed. You get prompt delivery from Western Electric.



Electrical supplies *Quick!*

STEP on the gas. Zip and away! That's the habit at Western Electric.

When an electrical contractor or a purchasing agent wants a coil of wire or a motor and wants it right away — he can get it right away if we're in on the order.

Ample stocks of all electrical supplies and ample facilities for moving those stocks fast make such service possible.

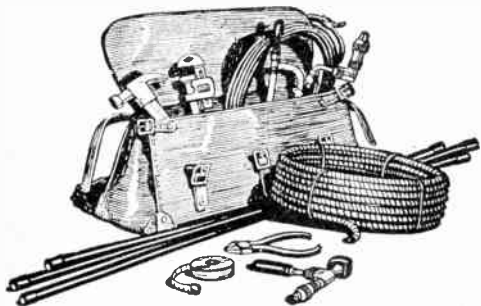
Quality service plus quality supplies

But just as important as speed is the quality of the goods delivered.

In electrical supplies, as in all other manufactured products, the quality of the finished article rests on two things. Quality of raw materials used and honesty of workmanship.

To buy Western Electric supplies is to buy the kinds that will prove themselves on these points by lasting years of service.

That's the real test. And you can bank on it.



The full tool kit ranks next to the full dinner pail in its importance to the electrical contractor. Western Electric fills kits with quality tools and supplies.

Western Electric

QUALITY ELECTRICAL SUPPLIES
WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Bryant Wiring Devices

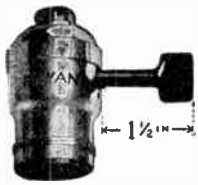
Changes in Standard Package Quantities Since This Catalogue Was Printed

Cat. No.	Page No.	New Std. Pkg.	Cat. No.	Page No.	New Std. Pkg.	Cat. No.	Page No.	New Std. Pkg.	Cat. No.	Page No.	New Std. Pkg.	Cat. No.	Page No.	New Std. Pkg.
AA	{249-255, 261-268}	250	AN	{251, 257, 263, 268}	25	BA-34	253	100	DF-11	254	100	27	{261-266, 268}	20
AA-10	249-270	250	AN-10	251	25	BA-35	253	100	DF-12	254	100	28	{261-266, 268}	20
AA-11	249	250	AN-11	251	25	BB-10	253	100	DF-13	254	100	34	{247, 249, 254, 267}	250
AA-12	249	250	AN-12	251	25	BB-11	253	100	DF-34	254	100	50	{261-266, 268}	20
AA-13	249-270	250	AN-13	251	25	BB-12	253	100	S8717	281	100	51	{261-266, 268}	20
AA-19	255	20	AN-15	251	25	BB-13	253	100	ST717	281	100	55	262-267	20
AA-20	261	20	AN-31	257	25	BB-34	253	100	SU717	281	100	80	272, 273	250
AA-21	261	20	AN-32	257	25	BC-10	253	100	SV717	281	100	81	{247, 272, 273}	250
AA-27	261	20	AN-33	257	25	BC-11	253	100	SW717	281	100	82	272, 273	250
						BC-12	253	100	WA	272-273	250	83	272, 273	250
						BC-13	253	100	WA-80	272	250	90	272, 273	20
AA-28	261	20	AN-34	251	25	BC-34	253	100	WA-81	272	250	91	272, 273	20
AA-34	249	250	AN-35	251	25	BC-50	265	20	WA-82	272	250	95	272, 273	250
AA-50	261	20		{251, 257, 263, 268}	25	BC-51	265	20	WA-83	272	250	297	314	100
AA-51	261	20	AP		25	BC-55	265	20	WA-90	272	20	298	314	100
AB-10	249	100	AP-10	251	25	BH	{252-258, 264-269}	100	WA-91	272	20	299	314	100
AB-11	249	100	AP-11	251	25	BH-10	252	100	WA-95	272	250	565	314	100
AB-12	249	100	AP-12	251	25	BH-11	252	100	WB-80	272	100	717	281	100
AB-13	249	100	AP-13	251	25	BH-12	252	100	WB-81	272	100	965	314	100
AB-34	249	100	AP-15	251	25				WB-82	272	100	1499	314	100
AC	{249-255, 261-268}	100	AP-31	257	25	BH-13	252	100	WB-83	272	100	1501	314	100
AC-10	249	100	AP-32	257	25	BH-34	252	100	WB-95	272	100	1502	314	100
AC-11	249	100				BL-15	252	100	WC	272-273	100	1503	314	100
AC-12	249	100	AP-33	257	25	BL-35	252	100	WC-80	272	100	1710	314	100
AC-13	249	100	AP-34	257	25	BK-15	252	100	WC-81	272	100	1999	314, 316	100
AC-15	249	100	AR-10	251	50	BK-35	252	100	WC-82	272	100	2000	356	100
AC-34	249	100	AR-11	251	50	BM-15	252	100	WC-83	272	100	2035	356	100
AD-10	249	50	AR-12	251	50	BM-35	252	100	WC-95	272	100	2047	356	100
AD-11	249	50	AR-13	251	50	BW-10	253	100	WE-80	272	50	2220	356	100
AD-12	249	50	AR-34	251	50	BW-11	253	100	WE-81	272	50	4021	287	5
AD-13	249	50	AT	{250, 256, 262, 268}	250				WE-82	272	50	4022	287	5
						BW-12	253	100	WE-83	272	50	4073	287	5
AD-34	249	50	AT-10	250	250	BW-13	253	100	WE-85	272	50	4201	248	250
AE-10	249	100	AT-11	250	250	BW-34	253	100	WG-80	272	50	4202	248	250
AE-11	249	100	AT-12	250	250	BY-15	254	100	WG-81	272	50	4203	248	250
AE-12	249	100	AT-13	250	250	BY-19	260	20	WG-82	272	50	4206	248	100
AE-13	249	100	AT-34	250	250	BY-20	266	20	WG-83	272	50	4207	248	100
AE-15	249	100	AU	{250, 256, 262, 268}	250	BY-21	266	20	WG-85	272	50	4208	248	100
AE-34	249	100	AU-10	250	250	BY-25	266	20	WG-85	272	50	4211	248	250
AE-35	249	100	AU-11	250	250	BY-35	254	100	WG-95	272	50	4212	248	250
AF-10	249	50	AU-12	250	250	BY-50	266	20	WM-85	272	100	4213	248	250
AF-11	249	50	AU-13	250	250				WP	272-273	25	7401	248	250
AF-12	249	50	AU-34	250	250	BY-51	266	20	WP-80	272	25		{282, 296, 306}	250
AF-13	249	50	AW	{253, 259, 265, 269}	100	BY-55	266	20	WP-81	272	25	9171	271	250
AF-15	249	50	AW-10	253	100	CB-19	256	20	WP-82	272	25	9386	271	250
AF-34	249	50	AW-11	253	100	CB-20	262	20	WP-83	272	25	9392	271	250
AF-35	249	50	AW-12	253	100	CB-21	262	20	WT	273	250	50740	271	250
AG	{250, 256, 262, 268}	50	AW-13	253	100	CB-27	262	20	WT-80	272	250	50741	271	250
AG-10	250	50	AW-34	253	100	CB-28	262	20	WT-81	272	250	50760	271	100
AG-11	250	50	AX	{254, 260, 266, 269}	100	CB-31	256	20				50768	271	100
AG-12	250	50				CB-32	256	20						
AG-13	250	50	AX-10	254	100	CB-33	256	20	WT-82	272	250			
AG-34	250	50	AX-11	254	100	CB-50	262	20	WT-83	272	250			
AG-35	250	50	AX-12	254	100	CB-51	262	20	WT-90	272	20			
AH-10	250	50	AX-13	254	100	CX-10	251	100	WT-91	272	20			
AH-11	250	50	AX-34	254	100	CX-11	251	100	WT-95	272	250			
AH-12	250	50				CX-12	251	100	10	{249, 253, 267}	250			
AH-13	250	50	AY	{254, 260, 266, 269}	100	CX-13	251	100	11	{249-254, 267}	250			
AH-34	250	50	AY-10	254	100	CX-19	257	20	12	{249-254, 267}	250			
AK-10	250	100				CX-20	263	20	13	{249-254, 267}	250			
AK-11	250	100	AY-11	254	100	CX-21	263	20	19	{255-257, 259, 260, 267}	250			
AK-12	250	100	AY-12	254	100	CX-27	263	20	20	{261-266, 268}	20			
AK-13	250	100	AY-13	254	100				21	{261-266, 268}	20			
AK-34	250	100	AY-34	254	100				25	261-267	20			
AM	{251, 257, 263, 268}	50	AZ-10	253	100	CX-28	263	20						
AM-10	251	50	AZ-11	253	100	CX-34	251	100						
AM-11	251	50	AZ-12	253	100	CX-35	251	100						
AM-12	251	50	AZ-13	253	100	CX-50	263	20						
AM-13	251	50	AZ-34	253	100	CX-51	263	20						
AM-34	251	50	BA-12	253	100	DE-10	254	100						
			BA-15	253	100	DE-11	254	100						
						DE-12	254	100						
						DE-13	254	100						
						DE-34	254	100						
						DF-10	254	100						

Hubbell Wiring Devices
Changes in Standard Package Quantities

11	290	250
13	290	100
14	290	250
41	292	250
59	291	250
61	289	250
62	289	250
71	291	250
72	291	250
73	292	250
3664	291	250
3667	291	250
3756	291	250
3822	291	250
3899	291	250
3950	291	250

Bryant Wiring Devices with Extra Long Keys



The medium base key sockets and similar size socket devices have keys 1 inch long, but can have longer keys on special order, which must specify the distance desired between the outside of the shell and the end of the key. Otherwise, if extra long keys are ordered 1 1/2-inch keys will be supplied. The lengths which can be supplied are 1 1/4, 1 1/2, 2 and 2 1/2 inches.

For sockets and other devices with keys longer than 1 inch, add to the price of standard device 5 cents.

Standard package quantity, 100 of one length. No assortment permitted.

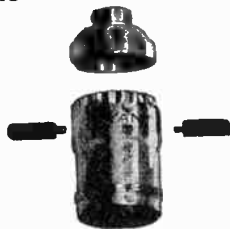
The keys of the candelabra and miniature base devices are 3/8 inch long and this is the only length that can be furnished.

Bryant Wiring Devices with Removable Push-buttons

Nos. 34, 77, 81 and 4181 socket bodies can be supplied, on special order, with removable buttons 2 1/4 inches long over all; the standard length is 1 3/4 inches.

For devices with removable buttons add 7 cents to price of standard device.

Standard package quantity, 100. No assortment permitted.

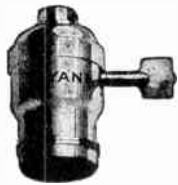


Devices with Wooden Push-buttons

Nos. 34, *77 and 81 can be supplied with enameled wood buttons, which resist heat, at an addition to price of \$10.00 per 1000 sockets. Minimum quantity, 1000 sockets, one catalogue number, one shipment.

*No. 77 is not National Electrical Code Standard.

Bryant Wiring Devices with Metal Keys



Any Bryant key socket listed in this catalogue can be supplied with a metal key as shown in the adjoining illustration. The key can be detached for finishing. Unless otherwise specified it will be finished the same as the socket. The standard length measures 1 inch from the shell to the end of the key. Other lengths which can be furnished are 1 1/4, 1 1/2, 2 and 2 1/2 inches.

For sockets with 1-inch metal keys, add 10 cents to price of standard socket. For sockets with keys longer than 1 inch, add 15 cents to price of standard socket. Standard package quantity, 100 of one length. No assortment permitted

Bryant Wiring Devices for Special Metal Keys

Any Bryant key socket listed in this catalogue can be supplied with insulated threaded mandrel to receive a special key furnished by the fixture manufacturer. The unthreaded portion is 1/4 inch in diameter. The threaded portion will take a key tapped for No. 6 screw, 32 threads per inch. Add 7 cents to price of standard socket.

Standard package quantity, 100. No assortment permitted.



**Bryant Wiring Devices with Art Keys
Brush Brass Color**

Key socket bodies and their combinations will, when specified, be furnished with brush brass colored composition keys. The color is permanent because it is moulded into the composition. When Art Keys are desired, specify Art Key, after the catalogue number. The price, schedule, standard package quantity and carton are the same as for sockets with regular keys. Key socket bodies of the same Cat. No. with Art Keys and regular keys may be assorted in unbroken cartons to make up a standard package quantity.

Bryant Pull Devices with Extension Chain Guides



Pull devices installed in husks or socket covers require extension chain guides to carry the chain through the cover. These chain guides are not in any way part of the device shell but are attached to the device mechanism. The extension piece, which is 3/2 inch in diameter, can be unscrewed for installation through the hole in the husk and for refinishing. The male threaded portion of the chain guide, which is attached to the device, extends less than 1/8 inch outside of the device shell, making it possible to insert the device in any husk, even though it follows the outline of the device shell closely. This male threaded portion of the chain guide is not interchangeable on New Wrinkle and Wrinklet sockets, but the extension pieces are interchangeable and can be used on any Bryant New Wrinkle and Wrinklet socket which is properly equipped with its own male threaded portion of the chain guide.

Extension chain guides are made only in the following regular lengths: 3/8, 1/2, 5/8, 3/4, 1, 1 1/4, 1 1/2, 1 3/4 and 2 inches. Add 10 cents to price of standard device.

Standard package quantity, 50 of one length or 100 of assorted lengths. No assortment with devices having regular chain guides permissible.

Bryant Pull Devices with Chain of Special Length

The regular length of chain on all pull devices, except as otherwise noted, is 3 inches. Devices with chains shorter than regular will be sold at the same price as regular.

For devices with chains longer than regular, add 10 cents per foot of extra chain per device.

For special, except silver and gold, finishes on chains longer than 1 foot, add 2 cents per foot of extra chain per device.

For silver finish, add 10 cents. Price of gold finish on application.

The standard quantity package will be the same as for standard length. Devices of the same catalogue number with standard and special length chains may be assorted in unbroken cartons to make up the standard package quantity.



Bryant Pull Devices with Linen Cord



Some pull devices are regularly fitted with a short chain, 10 ft. of linen cord, small size, and a small composition ball. Sockets and other devices which are regularly fitted with 8 inches of chain and a brass ball will, on special order, be furnished with a short chain, 3 feet of linen cord and composition ball at the regular price.

For cords longer than 3 feet, add 1 cent per foot to price.

The standard package quantity will be the same as the regular article. Devices with linen cords may be assorted in unbroken cartons with similar devices with chains of various lengths to make up the standard package quantity.

Connection between chain and cord is made by means of a No. 810 splicing link.

Bryant Sockets and Receptacles for Gas-filled Lamps

All mogul base sockets are regularly waxed with a compound which will not soften under heat. When medium base sockets are to be used with gas-filled lamps, they should be similarly treated. For medium base devices, add 3 cents to price. Standard package quantity will be the same as the regular article. Regular and specially waxed sockets of same catalogue number may be assorted to make up the standard package quantity.

Bryant Sockets and Receptacles with Lamp Grips



Most mogul base devices and most medium base devices listed in this catalogue can be equipped with a lamp grip, as illustrated, which effectually prevents the lamp from unscrewing.

For devices with lamp grips add 5 cents per outlet to the price.

The standard package quantity will be the same as the regular article.

Devices of the same catalogue number without and with lamp grip may be assorted in unbroken cartons to make up the standard package quantity.

Bryant Sockets and Receptacles with Left-hand Screw Shell Medium Base Only

For special conditions many of medium base sockets or cut-out bases listed in this catalogue can be fitted with left-hand screw shells, designed to receive lamps similarly equipped.

For medium base devices with left-hand screw shells, add 3 cents to the price for each left-hand screw shell.

The standard package quantity will be the same as the regular article.

Devices of the same catalogue number with left-hand and right-hand screw shells may be assorted in unbroken cartons to make up the standard package quantity.

Bryant Socket Caps with Side Entrance Bushings Medium Base Size Only

The caps of most medium base brass shell sockets can be furnished with an insulated bushing as illustrated. The purpose of this construction is to provide a passage for the conductors when the support for the socket is a rod instead of a pipe or tube; or when for any other reason it is impossible or undesirable to pass the conductors through the regular bushing of the socket cap.

No. CX cap is such a cap, being an AA cap with side entrance bushing.

For socket caps fitted with insulated side bushing, add 2 cents to price.

The standard package quantity will be the same as the regular article. Caps of the same catalogue number with and without the insulated side bushing may be assorted in unbroken cartons to make up the standard package quantity.



Bryant Unassembled Sockets



Cap



Cap Lining



Shell



Interior and Lining

Sockets, when so specified, will be shipped unassembled. By this is meant that the caps will be packed in one set of cartons, the shells in another set, the cap linings in another set. This should not be confused with sockets shipped knocked-down, which describes the shell, lining and interior complete as one unit, and the cap with its lining complete as another unit. It is advantageous to purchase sockets unassembled only when the purchaser does his own refinishing, in which case orders should specify, polished but not lacquered.

Bryant Brylock Lock Attachments



No. AA-15 with Brylock Attachment Showing Construction

In public places where the theft of lamps presents a problem, the use of Bryant sockets equipped with the Brylock attachment will stop further loss.

The Brylock attachment consists of a pointed and hardened steel screw supported by a threaded sleeve. The sleeve is fastened into the socket in such a position that when the pointed screw is turned by the special Brylock key it is forced to pierce the metal of the lamp base and effectually prevents the lamp from being turned.

Thus the lamp cannot be removed without the use of the special Brylock key.

Brylock keys are not supplied with Brylock equipped sockets but must be ordered separately.

The cost of a Bryant socket or receptacle with Brylock attachment is 27 cents per attachment more than the cost of the same device without the locking feature. Devices of the same catalogue number with and without the Brylock attachment may be assorted in unbroken cartons to make a standard package, which will be the same as for the standard device. A standard package of Brylock devices is 100 identical Brylock devices, carton 25; except when the standard package of a regular device is less than 100, under which condition the regular standard package and carton quantities apply to the device when equipped with the Brylock attachment.

Cat. No.	*Old Cat. No.	Schedule	Price Each with Brylock	Cat. No.	*Old Cat. No.	Schedule	Price Each with Brylock
10	40	B	\$.53	4104	**4223	B	\$1.57
11	41	B	.53	4105	**.....	B	1.62
12	42	B	.56	4116	.....	B	1.07
13	43	B	.50	4201	.....	B	.60
15	45	B	.75	4202	.....	B	.63
16	..	B	1.35	4203	.....	B	.57
17	..	B	1.35	4204	.....	B	.82
34	44	B	.53	4205	.....	B	.93
35	..	B	.86	4206	.....	B	.66
80	86	B	.53	4207	.....	B	.69
81	87	B	.53	4208	.....	B	.63
82	..	B	.56	4209	.....	B	.88
83	88	B	.50	4210	.....	B	.99
85	89	B	.75	4211	.....	B	.60
95	..	B	.50	4212	.....	B	.63
674	..	H	2.27	4213	.....	B	.57
675	..	H	2.42	4214	.....	B	.82
684	..	H	1.37	4215	.....	B	.93
685	..	H	1.44	4237	.....	B	1.07
710	..	B	.89	7000	WA-86	B	.60
4005	..	B	1.54	7006	WA-89	B	.82
4006	..	B	1.60	7009	WA-88	B	.57
4039	..	B	1.89	7401	.....	B	.60
4040	..	B	1.89	35000	.....	B	.87
4043	..	B	.62	35001	.....	B	.93
4044	..	B	.68	35024	.....	B	.97
4051	..	B	1.54	46750	.....	B	1.19
4052	..	B	1.60	46751	.....	B	1.24
4053	..	B	1.54	50717	4236	B	.52
4054	..	B	1.60	59480	AA-40	B	.60
4061	..	B	1.54	59482	AA-43	B	.57
4068	..	B	1.02	60018	4218	B	.71
4100	**4222	B	.87	60019	4219	B	.68
4101	**.....	B	.92	60020	4220	B	.87
4102	**4221	B	.72	65250	AA-45	B	.82
4103	**.....	B	.77	.....	.....	..	....

*Formerly listed as a separate Brylock device under the old catalogue number given.
























































**When equipped with Brylock attachment a Uno shade holder cannot be used.

Bryant Keys for Brylock Sockets
























































Cat. No.	Carton	Wt., Lbs. per Carton	Price Each
631	10	1/2	\$.35



Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AA ¼" Female Cap</p>  <p>\$0.10-B -500 Carton 25</p>	<p>No. AB ¼" Female Cap</p>  <p>\$0.16-B -100 Carton 25</p>	<p>No. AC ¾" Female Cap</p>  <p>\$0.16-B -250 Carton 25</p>	<p>No. AD ½" Female Cap</p>  <p>\$0.19-B -50 Carton 25</p>	<p>No. AE ¼" Male Cap</p>  <p>\$0.10-B -100 Carton 25</p>	<p>No. AF ¾" Male Cap</p>  <p>\$0.16-B -50 Carton 25</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts</p>  <p>\$0.23-B -500 Carton 25</p>	<p>No. AA-13</p>  <p>\$0.33-B -500 Carton 25</p>	<p>No. AB-13</p>  <p>\$0.39-B -250 Carton 25</p>	<p>No. AC-13</p>  <p>\$0.39-B -250 Carton 25</p>	<p>No. AD-13</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AE-13</p>  <p>\$0.33-B -500 Carton 25</p>	<p>No. AF-13</p>  <p>\$0.39-B -250 Carton 25</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AA-10</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AB-10</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AC-10</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AD-10</p>  <p>\$0.45-B -250 Carton 25</p>	<p>No. AE-10</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AF-10</p>  <p>\$0.42-B -250 Carton 25</p>
<p>No. 11 D. P. Key Socket Body 750 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AA-11</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AB-11</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AC-11</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AD-11</p>  <p>\$0.45-B -250 Carton 25</p>	<p>No. AE-11</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AF-11</p>  <p>\$0.42-B -250 Carton 25</p>
<p>No. 12 S. P. H. C. Key Socket Body 660 Watts 250 Volts</p>  <p>\$0.29-B -500 Carton 25</p>	<p>No. AA-12</p>  <p>\$0.39-B -500 Carton 25</p>	<p>No. AB-12</p>  <p>\$0.45-B -250 Carton 25</p>	<p>No. AC-12</p>  <p>\$0.45-B -250 Carton 25</p>	<p>No. AD-12</p>  <p>\$0.48-B -250 Carton 25</p>	<p>No. AE-12</p>  <p>\$0.39-B -500 Carton 25</p>	<p>No. AF-12</p>  <p>\$0.45-B -250 Carton 25</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AA-34</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AB-34</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AC-34</p>  <p>\$0.42-B -250 Carton 25</p>	<p>No. AD-34</p>  <p>\$0.45-B -250 Carton 25</p>	<p>No. AE-34</p>  <p>\$0.36-B -500 Carton 25</p>	<p>No. AF-34</p>  <p>\$0.42-B -250 Carton 25</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts</p>  <p>\$0.40-B -250 Carton 25</p>	<p>No. AA-15</p>  <p>\$0.50-B -250 Carton 25</p>	<p>No. AB-15</p>  <p>\$0.56-B -100 Carton 25</p>	<p>No. AC-15</p>  <p>\$0.56-B -250 Carton 25</p>	<p>No. AD-15</p>  <p>\$0.59-B -50 Carton 25</p>	<p>No. AE-15</p>  <p>\$0.50-B -250 Carton 25</p>	<p>No. AF-15</p>  <p>\$0.56-B -100 Carton 25</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts</p>  <p>\$0.59-B -250 Carton 25</p>	<p>No. AA-35</p>  <p>\$0.69-B -250 Carton 25</p>	<p>No. AB-35</p>  <p>\$0.75-B -100 Carton 25</p>	<p>No. AC-35</p>  <p>\$0.75-B -100 Carton 25</p>	<p>No. AD-35</p>  <p>\$0.78-B -50 Carton 25</p>	<p>No. AE-35</p>  <p>\$0.69-B -250 Carton 25</p>	<p>No. AF-35</p>  <p>\$0.75-B -100 Carton 25</p>










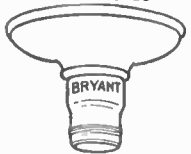





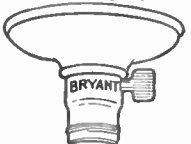




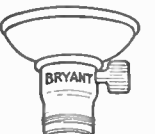
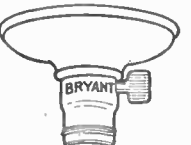
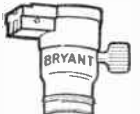



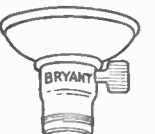
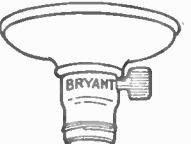




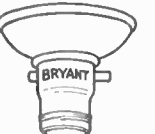
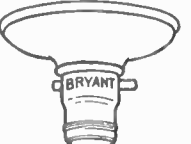





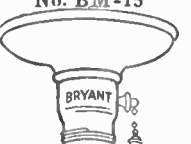





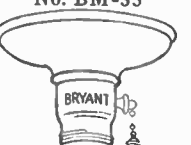

Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AG 3/8" Male Cap  \$0.16-B -100 Carton 25</p>	<p>No. AH 1/2" Male Cap  \$0.22-B -50 Carton 25</p>	<p>No. AT Pendent Cap 1 13/32" Hole  \$0.10-B -500 Carton 25</p>	<p>No. AU Strain Relief Cap 1 13/32" Hole  \$0.10-B -500 Carton 25</p>	<p>No. CB Strain Relief Cap 1/2" Hole  \$0.10-B -100 Carton 25</p>	<p>No. AK 1/2" Female Fixture Cap  \$0.20-B -100 Carton 25</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts  \$0.23-B -500 Carton 25</p>	<p>No. AG-13  \$0.39-B -250 Carton 25</p>	<p>No. AH-13  \$0.45-B -250 Carton 25</p>	<p>No. AT-13  \$0.33-B -500 Carton 25</p>	<p>No. AU-13  \$0.33-B -500 Carton 25</p>	<p>No. CB-13  \$0.33-B -100 Carton 25</p>	<p>No. AK-13  \$0.43-B -250 Carton 25</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts  \$0.26-B -500 Carton 25</p>	<p>No. AG-10  \$0.42-B -250 Carton 25</p>	<p>No. AH-10  \$0.48-B -250 Carton 25</p>	<p>No. AT-10  \$0.36-B -500 Carton 25</p>	<p>No. AU-10  \$0.36-B -500 Carton 25</p>	<p>No. CB-10  \$0.36-B -100 Carton 25</p>	<p>No. AK-10  \$0.46-B -250 Carton 25</p>
<p>No. 11 D. P. Key Socket Body 250 Watts 250 Volts  \$0.26-B -500 Carton 25</p>	<p>No. AG-11  \$0.42-B -250 Carton 25</p>	<p>No. AH-11  \$0.48-B -250 Carton 25</p>	<p>No. AT-11  \$0.36-B -500 Carton 25</p>	<p>No. AU-11  \$0.36-B -500 Carton 25</p>	<p>No. CB-11  \$0.36-B -100 Carton 25</p>	<p>No. AK-11  \$0.46-B -250 Carton 25</p>
<p>No. 12 S. P. H. C. Key Socket Body 660 Watts 250 Volts  \$0.29-B -500 Carton 25</p>	<p>No. AG-12  \$0.45-B -250 Carton 25</p>	<p>No. AH-12  \$0.51-B -250 Carton 25</p>	<p>No. AT-12  \$0.39-B -500 Carton 25</p>	<p>No. AU-12  \$0.39-B -500 Carton 25</p>	<p>No. CB-12  \$0.39-B -100 Carton 25</p>	<p>No. AK-12  \$0.49-B -250 Carton 25</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts  \$0.26-B -500 Carton 25</p>	<p>No. AG-34  \$0.42-B -250 Carton 25</p>	<p>No. AH-34  \$0.48-B -250 Carton 25</p>	<p>No. AT-34  \$0.36-B -500 Carton 25</p>	<p>No. AU-34  \$0.36-B -500 Carton 25</p>	<p>No. CB-34  \$0.36-B -100 Carton 25</p>	<p>No. AK-34  \$0.46-B -250 Carton 25</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts  \$0.40-B -250 Carton 25</p>	<p>No. AG-15  \$0.56-B -100 Carton 25</p>	<p>No. AH-15  \$0.62-B -50 Carton 25</p>	<p>No. AT-15  \$0.50-B -250 Carton 25</p>	<p>No. AU-15  \$0.50-B -250 Carton 25</p>	<p>No. CB-15  \$0.50-B -100 Carton 25</p>	<p>No. AK-15  \$0.60-B -100 Carton 25</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts  \$0.59-B -250 Carton 25</p>	<p>No. AG-35  \$0.75-B -100 Carton 25</p>	<p>No. AH-35  \$0.81-B -50 Carton 25</p>	<p>No. AT-35  \$0.69-B -250 Carton 25</p>	<p>No. AU-35  \$0.69-B -250 Carton 25</p>	<p>No. CB-35  \$0.69-B -100 Carton 25</p>	<p>No. AK-35  \$0.79-B -100 Carton 25</p>

Bryant New Wrinkle Line

<p>'National' Electrical Code Standard. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. CX 1/4" Female Cap with side entrance bushing</p>  <p>\$0.12-B - 100 Carton 25</p>	<p>No. AM 1/4" Female Angle Cap</p>  <p>\$0.21-B - 100 Carton 25</p>	<p>No. AN 1/4" Female Angle Cap</p>  <p>\$0.25-B - 50 Carton 25</p>	<p>No. AP 3/8" Female Angle Cap</p>  <p>\$0.24-B - 50 Carton 25</p>	<p>No. AR 1/8" Female Angle Fixture Cap</p>  <p>\$0.27-B - 50 Carton 25</p>	<p>No. AV Attachment Plug Cap</p>  <p>\$0.27-B - 50 Carton 10</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts</p>  <p>\$0.23-B - 500 Carton 25</p>	<p>No. CX-13</p>  <p>\$0.35-B - 250 Carton 25</p>	<p>No. AM-13</p>  <p>\$0.44-B - 100 Carton 25</p>	<p>No. AN-13</p>  <p>\$0.48-B - 100 Carton 25</p>	<p>No. AP-13</p>  <p>\$0.47-B - 100 Carton 25</p>	<p>No. AR-13</p>  <p>\$0.50-B - 100 Carton 25</p>	<p>No. AV-13</p>  <p>\$0.50-B - 50 Carton 10</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B - 500 Carton 25</p>	<p>No. CX-10</p>  <p>\$0.38-B - 250 Carton 25</p>	<p>No. AM-10</p>  <p>\$0.47-B - 100 Carton 25</p>	<p>No. AN-10</p>  <p>\$0.51-B - 100 Carton 25</p>	<p>No. AP-10</p>  <p>\$0.50-B - 100 Carton 25</p>	<p>No. AR-10</p>  <p>\$0.53-B - 100 Carton 25</p>	<p>No. AV-10</p>  <p>\$0.53-B - 50 Carton 10</p>
<p>No. 11 D. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B - 500 Carton 25</p>	<p>No. CX-11</p>  <p>\$0.38-B - 250 Carton 25</p>	<p>No. AM-11</p>  <p>\$0.47-B - 100 Carton 25</p>	<p>No. AN-11</p>  <p>\$0.51-B - 100 Carton 25</p>	<p>No. AP-11</p>  <p>\$0.50-B - 100 Carton 25</p>	<p>No. AR-11</p>  <p>\$0.53-B - 100 Carton 25</p>	<p>No. AV-11</p>  <p>\$0.53-B - 50 Carton 10</p>
<p>No. 12 S. P. H. C. Key Socket Body 660 Watts 250 Volts</p>  <p>\$0.29-B - 500 Carton 25</p>	<p>No. CX-12</p>  <p>\$0.41-B - 250 Carton 25</p>	<p>No. AM-12</p>  <p>\$0.50-B - 100 Carton 25</p>	<p>No. AN-12</p>  <p>\$0.54-B - 100 Carton 25</p>	<p>No. AP-12</p>  <p>\$0.53-B - 100 Carton 25</p>	<p>No. AR-12</p>  <p>\$0.56-B - 100 Carton 25</p>	<p>No. AV-12</p>  <p>\$0.56-B - 50 Carton 10</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts</p>  <p>\$0.26-B - 500 Carton 25</p>	<p>No. CX-34</p>  <p>\$0.38-B - 250 Carton 25</p>	<p>No. AM-34</p>  <p>\$0.47-B - 100 Carton 25</p>	<p>No. AN-34</p>  <p>\$0.51-B - 100 Carton 25</p>	<p>No. AP-34</p>  <p>\$0.50-B - 100 Carton 25</p>	<p>No. AR-34</p>  <p>\$0.53-B - 100 Carton 25</p>	<p>No. AV-34</p>  <p>\$0.53-B - 50 Carton 10</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts</p>  <p>\$0.40-B - 250 Carton 25</p>	<p>No. CX-15</p>  <p>\$0.52-B - 100 Carton 25</p>	<p>No. AM-15</p>  <p>\$0.61-B - 50 Carton 25</p>	<p>No. AN-15</p>  <p>\$0.65-B - 50 Carton 25</p>	<p>No. AP-15</p>  <p>\$0.64-B - 50 Carton 25</p>	<p>No. AR-15</p>  <p>\$0.67-B - 50 Carton 25</p>	<p>No. AV-15</p>  <p>\$0.67-B - 50 Carton 10</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts</p>  <p>\$0.59-B - 250 Carton 25</p>	<p>No. CX-35</p>  <p>\$0.71-B - 100 Carton 25</p>	<p>No. AM-35</p>  <p>\$0.80-B - 50 Carton 25</p>	<p>No. AN-35</p>  <p>\$0.84-B - 50 Carton 25</p>	<p>No. AP-35</p>  <p>\$0.83-B - 50 Carton 25</p>	<p>No. AR-35</p>  <p>\$0.86-B - 50 Carton 25</p>	<p>No. AV-35</p>  <p>\$0.86-B - 50 Carton 10</p>









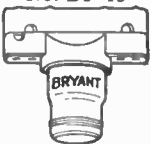











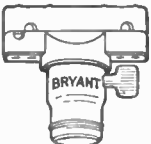











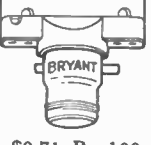





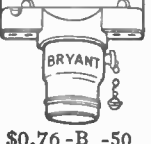
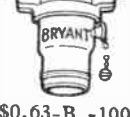




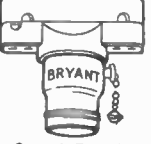


Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. BH Small Covered Base</p>  <p>\$0.28-B -250 Carton 10</p>	<p>No. BK Large Covered Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BL 3 1/4" Box Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BM 4" Box Base</p>  <p>\$0.67-B -100 Carton 5</p>	<p>No. BZ Canopy Tap Base</p>  <p>\$0.22-B -20 Carton 10</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts</p>  <p>\$0.23-B -500 Carton 25</p>	<p>No. BH-13</p>  <p>\$0.51-B -250 Carton 10</p>	<p>No. BK-13</p>  <p>\$0.60-B -100 Carton 10</p>	<p>No. BL-13</p>  <p>\$0.60-B -100 Carton 5</p>	<p>No. BM-13</p>  <p>\$0.90-B -100 Carton 1</p>	<p>No. BZ-13</p>  <p>\$0.45-B -20 Carton 10</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. BH-10</p>  <p>\$0.54-B -250 Carton 10</p>	<p>No. BK-10</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BL-10</p>  <p>\$0.63-B -100 Carton 5</p>	<p>No. BM-10</p>  <p>\$0.93-B -100 Carton 1</p>	<p>No. BZ-10</p>  <p>\$0.48-B -20 Carton 10</p>
<p>No. 11 D. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. BH-11</p>  <p>\$0.54-B -250 Carton 10</p>	<p>No. BK-11</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BL-11</p>  <p>\$0.63-B -100 Carton 5</p>	<p>No. BM-11</p>  <p>\$0.93-B -100 Carton 1</p>	<p>No. BZ-11</p>  <p>\$0.48-B -20 Carton 10</p>
<p>No. 12 S P H. C. Key Socket Body 660 Watts 250 Volts</p>  <p>\$0.29-B -500 Carton 25</p>	<p>No. BH-12</p>  <p>\$0.57-B -250 Carton 10</p>	<p>No. BK-12</p>  <p>\$0.66-B -100 Carton 10</p>	<p>No. BL-12</p>  <p>\$0.66-B -100 Carton 5</p>	<p>No. BM-12</p>  <p>\$0.96-B -100 Carton 1</p>	<p>No. BZ-12</p>  <p>\$0.51-B -20 Carton 10</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. BH-34</p>  <p>\$0.54-B -250 Carton 10</p>	<p>No. BK-34</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BL-34</p>  <p>\$0.63-B -100 Carton 5</p>	<p>No. BM-34</p>  <p>\$0.93-B -100 Carton 1</p>	<p>No. BZ-34</p>  <p>\$0.48-B -20 Carton 10</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts</p>  <p>\$0.40-B -250 Carton 25</p>	<p>No. BH-15</p>  <p>\$0.68-B -100 Carton 10</p>	<p>No. BK-15</p>  <p>\$0.77-B -50 Carton 10</p>	<p>No. BL-15</p>  <p>\$0.77-B -50 Carton 5</p>	<p>No. BM-15</p>  <p>\$1.07-B -50 Carton 1</p>	<p>No. BZ-15</p>  <p>\$0.62-B -20 Carton 10</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts</p>  <p>\$0.59-B -250 Carton 25</p>	<p>No. BH-35</p>  <p>\$0.87-B -100 Carton 10</p>	<p>No. BK-35</p>  <p>\$0.96-B -50 Carton 10</p>	<p>No. BL-35</p>  <p>\$0.96-B -50 Carton 5</p>	<p>No. BM-35</p>  <p>\$1.26-B -50 Carton 1</p>	<p>No. BZ-35</p>  <p>\$0.81-B -20 Carton 10</p>
























































Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AZ Large Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BA Angle Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. AW Cleat Base</p>  <p>\$0.23-B -250 Carton 10</p>	<p>No. BB Wood Molding Base</p>  <p>\$0.18-B -100 Carton 10</p>	<p>No. BW Base for 1/2" and 3/4" Taplets</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BC Base for 1/2" Obround Conduits</p>  <p>\$0.23-B -100 Carton 10</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts</p>  <p>\$0.23-B -500 Carton 25</p>	<p>No. AZ-13</p>  <p>\$0.46-B -250 Carton 10</p>	<p>No. BA-13</p>  <p>\$0.46-B -100 Carton 10</p>	<p>No. AW-13</p>  <p>\$0.46-B -250 Carton 10</p>	<p>No. BB-13</p>  <p>\$0.41-B -250 Carton 10</p>	<p>No. BW-13</p>  <p>\$0.46-B -250 Carton 10</p>	<p>No. BC-13</p>  <p>\$0.46-B -250 Carton 10</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AZ-10</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BA-10</p>  <p>\$0.49-B -100 Carton 10</p>	<p>No. AW-10</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BB-10</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. BW-10</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BC-10</p>  <p>\$0.49-B -250 Carton 10</p>
<p>No. 11 D. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AZ-11</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BA-11</p>  <p>\$0.49-B -100 Carton 10</p>	<p>No. AW-11</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BB-11</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. BW-11</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BC-11</p>  <p>\$0.49-B -250 Carton 10</p>
<p>No. 12 S. P. H. C. Key Socket Body 660 Watts 250 Volts</p>  <p>\$0.29-B -500 Carton 25</p>	<p>No. AZ-12</p>  <p>\$0.52-B -250 Carton 10</p>	<p>No. BA-12</p>  <p>\$0.52-B -50 Carton 10</p>	<p>No. AW-12</p>  <p>\$0.52-B -250 Carton 10</p>	<p>No. BB-12</p>  <p>\$0.47-B -250 Carton 10</p>	<p>No. BW-12</p>  <p>\$0.52-B -250 Carton 10</p>	<p>No. BC-12</p>  <p>\$0.52-B -250 Carton 10</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AZ-34</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BA-34</p>  <p>\$0.49-B -50 Carton 10</p>	<p>No. AW-34</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BB-34</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. BW-34</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. BC-34</p>  <p>\$0.49-B -250 Carton 10</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts</p>  <p>\$0.40-B -250 Carton 25</p>	<p>No. AZ-15</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BA-15</p>  <p>\$0.63-B -50 Carton 10</p>	<p>No. AW-15</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BB-15</p>  <p>\$0.58-B -100 Carton 10</p>	<p>No. BW-15</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. BC-15</p>  <p>\$0.63-B -100 Carton 10</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts</p>  <p>\$0.59-B -250 Carton 25</p>	<p>No. AZ-35</p>  <p>\$0.82-B -100 Carton 10</p>	<p>No. BA-35</p>  <p>\$0.82-B -50 Carton 10</p>	<p>No. AW-35</p>  <p>\$0.82-B -100 Carton 10</p>	<p>No. BB-35</p>  <p>\$0.77-B -100 Carton 10</p>	<p>No. BW-35</p>  <p>\$0.82-B -100 Carton 10</p>	<p>No. BC-35</p>  <p>\$0.82-B -100 Carton 10</p>

Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AX Slotted Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. AY Small Concealed Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. BY Cleat base with Covered Terminals</p>  <p>\$0.36-B-100 Carton 5</p>	<p>No. DE Base for Types 4400, 4500, 4600 and 4700 Adaptorsboxes</p>  <p>\$0.23-B-100 Carton 10</p>	<p>No. DF Base for 1/2" Rectangular Units</p>  <p>\$0.23-B-100 Carton 10</p>
<p>No. 13 Keyless Socket Body 660 Watts 250 Volts</p>  <p>\$0.23-B -500 Carton 25</p>	<p>No. AX-13</p>  <p>\$0.41-B -250 Carton 10</p>	<p>No. AY-13</p>  <p>\$0.41-B -250 Carton 10</p>	<p>No. BY-13</p>  <p>\$0.59-B -100 Carton 5</p>	<p>No. DE-13</p>  <p>\$0.46-B -250 Carton 10</p>	<p>No. DF-13</p>  <p>\$0.46-B -250 Carton 10</p>
<p>No. 10 S. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AX-10</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. AY-10</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. BY-10</p>  <p>\$0.62-B -100 Carton 5</p>	<p>No. DE-10</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. DF-10</p>  <p>\$0.49-B -250 Carton 10</p>
<p>No. 11 D. P. Key Socket Body 250 Watts 250 Volts</p>  <p>\$0.26-B -500 Carton 25</p>	<p>No. AX-11</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. AY-11</p>  <p>\$0.44-B -250 Carton 10</p>	<p>No. BY-11</p>  <p>\$0.62-B -100 Carton 5</p>	<p>No. DE-11</p>  <p>\$0.49-B -250 Carton 10</p>	<p>No. DF-11</p>  <p>\$0.49-B -250 Carton 10</p>
<p>No. 12 S. P. H. C. Key Socket Body 660 Watts 250 Volts</p>  <p>\$0.29-B -500 Carton 25</p>	<p>No. AX-12</p>  <p>\$0.47-B -250 Carton 10</p>	<p>No. AY-12</p>  <p>\$0.47-B -250 Carton 10</p>	<p>No. BY-12</p>  <p>\$0.65-B -100 Carton 5</p>	<p>No. DE-12</p>  <p>\$0.52-B -250 Carton 10</p>	<p>No. DF-12</p>  <p>\$0.52-B -250 Carton 10</p>
<p>No. 34 S. P. Push Button Socket Body 660 Watts 250 Volts</p>  <p>\$0.35-B -500 Carton 25</p>	<p>No. AX-34</p>  <p>\$0.53-B -250 Carton 10</p>	<p>No. AY-34</p>  <p>\$0.53-B -250 Carton 10</p>	<p>No. BY-34</p>  <p>\$0.71-B -100 Carton 5</p>	<p>No. DE-34</p>  <p>\$0.58-B -250 Carton 10</p>	<p>No. DF-34</p>  <p>\$0.58-B -250 Carton 10</p>
<p>No. 15 S. P. Pull Socket Body 250 Watts 250 Volts</p>  <p>\$0.40-B -250 Carton 25</p>	<p>No. AX-15</p>  <p>\$0.58-B -100 Carton 10</p>	<p>No. AY-15</p>  <p>\$0.58-B -100 Carton 10</p>	<p>No. BY-15</p>  <p>\$0.76-B -50 Carton 5</p>	<p>No. DE-15</p>  <p>\$0.63-B -100 Carton 10</p>	<p>No. DF-15</p>  <p>\$0.63-B -100 Carton 10</p>
<p>No. 35 S. P. Pull Socket Body 660 Watts 250 Volts</p>  <p>\$0.59-B -250 Carton 25</p>	<p>No. AX-35</p>  <p>\$0.77-B -100 Carton 10</p>	<p>No. AY-35</p>  <p>\$0.77-B -100 Carton 10</p>	<p>No. BY-35</p>  <p>\$0.95-B -50 Carton 5</p>	<p>No. DE-35</p>  <p>\$0.82-B -100 Carton 10</p>	<p>No. DF-35</p>  <p>\$0.82-B -100 Carton 10</p>
























































Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AA ¼" Female Cap</p>  <p>\$0.10-B -50 Carton 25</p>	<p>No. AB ¼" Female Cap</p>  <p>\$0.16-B -100 Carton 25</p>	<p>No. AC ¾" Female Cap</p>  <p>\$0.16-B -250 Carton 25</p>	<p>No. AD ¾" Female Cap</p>  <p>\$0.19-B -50 Carton 25</p>	<p>No. AE ¾" Male Cap</p>  <p>\$0.10-B -100 Carton 25</p>	<p>No. AF ¾" Male Cap</p>  <p>\$0.16-B -50 Carton 25</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. AA-32</p>  <p>\$0.53-B -50 Carton 10</p>	<p>No. AB-32</p>  <p>\$0.59-B -50 Carton 10</p>	<p>No. AC-32</p>  <p>\$0.59-B-50 Carton 10</p>	<p>No. AD-32</p>  <p>\$0.62-B -50 Carton 10</p>	<p>No. AE-32</p>  <p>\$0.53-B -50 Carton 10</p>	<p>No. AF-32</p>  <p>\$0.59-B -50 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body, with Spartan Outlet. Each Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50. Carton 10</p>	<p>No. AA-31</p>  <p>\$0.56-B -50 Carton 10</p>	<p>No. AB-31</p>  <p>\$0.62-B -50 Carton 10</p>	<p>No. AC-31</p>  <p>\$0.62-B-50 Carton 10</p>	<p>No. AD-31</p>  <p>\$0.65-B -50 Carton 10</p>	<p>No. AE-31</p>  <p>\$0.56-B -50 Carton 10</p>	<p>No. AF-31</p>  <p>\$0.62-B -50 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. AA-33</p>  <p>\$0.83-B -50 Carton 10</p>	<p>No. AB-33</p>  <p>\$0.89-B -50 Carton 10</p>	<p>No. AC-33</p>  <p>\$0.89-B-50 Carton 10</p>	<p>No. AD-33</p>  <p>\$0.92-B -50 Carton 10</p>	<p>No. AE-33</p>  <p>\$0.83-B -50 Carton 10</p>	<p>No. AF-33</p>  <p>\$0.89-B -50 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AA-16</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AB-16</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AC-16</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AD-16</p>  <p>\$1.27-B -20 Carton 10</p>	<p>No. AE-16</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AF-16</p>  <p>\$1.24-B -20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watts 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AA-17</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AB-17</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AC-17</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AD-17</p>  <p>\$1.27-B -20 Carton 10</p>	<p>No. AE-17</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AF-17</p>  <p>\$1.24-B -20 Carton 10</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. AA-29</p>  <p>\$0.40-R -20 Carton 10</p>	<p>No. AB-29</p>  <p>\$0.46-R -20 Carton 10</p>	<p>No. AC-29</p>  <p>\$0.46-R -20 Carton 10</p>	<p>No. AD-29</p>  <p>\$0.49-R -20 Carton 10</p>	<p>No. AE-29</p>  <p>\$0.40-R -20 Carton 10</p>	<p>No. AF-29</p>  <p>\$0.46-R -20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp. 125 Volts 1 Amp. 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. AA-19</p>  <p>\$0.63-H -50 Carton 10</p>	<p>No. AB-19</p>  <p>\$0.69-H -20 Carton 10</p>	<p>No. AC-19</p>  <p>\$0.69-H -20 Carton 10</p>	<p>No. AD-19</p>  <p>\$0.72-H -20 Carton 10</p>	<p>No. AE-19</p>  <p>\$0.63-H -20 Carton 10</p>	<p>No. AF-19</p>  <p>\$0.69-H -20 Carton 10</p>

★Both outlets operate On and Off simultaneously.
























































†Side outlet On all the time; bottom outlet On and Off.

Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AG 3/4" Male Cap</p>  <p>\$0.16-B -100 Carton 25</p>	<p>No. AH 3/4" Male Cap</p>  <p>\$0.22-B -50 Carton 25</p>	<p>No. AT Pendant Cap[†] 43/42-in. Hole</p>  <p>\$0.10-B -500 Carton 25</p>	<p>No. AU Strain Relief Cap 13/32" Hole.</p>  <p>\$0.10-B -500 Carton 25</p>	<p>No. CB Strain Relief Cap 3/4" Hole.</p>  <p>\$0.10-B -100 Carton 25</p>	<p>No. AK 3/4" Female Fixture Cap</p>  <p>\$0.20-B -100 Carton 25</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. AG-32</p>  <p>\$0.59-B -50 Carton 10</p>	<p>No. AH-32</p>  <p>\$0.65-B -50 Carton 10</p>	<p>No. AT-32</p>  <p>\$0.53-B -50 Carton 10</p>	<p>No. AU-32</p>  <p>\$0.53-B -50 Carton 10</p>	<p>No. CB-32</p>  <p>\$0.53-B -100 Carton 10</p>	<p>No. AK-32</p>  <p>\$0.63-B -50 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body with Spartan Outlet. Each Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50 Carton 10</p>	<p>No. AG-31</p>  <p>\$0.62-B -50 Carton 10</p>	<p>No. AH-31</p>  <p>\$0.68-B -50 Carton 10</p>	<p>No. AT-31</p>  <p>\$0.56-B -50 Carton 10</p>	<p>No. AU-31</p>  <p>\$0.56-B -50 Carton 10</p>	<p>No. CB-31</p>  <p>\$0.56-B -100 Carton 10</p>	<p>No. AK-31</p>  <p>\$0.66-B -50 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. AG-33</p>  <p>\$0.89-B -50 Carton 10</p>	<p>No. AH-33</p>  <p>\$0.95-B -50 Carton 10</p>	<p>No. AT-33</p>  <p>\$0.83-B -50 Carton 10</p>	<p>No. AU-33</p>  <p>\$0.83-B -50 Carton 10</p>	<p>No. CB-33</p>  <p>\$0.83-B -100 Carton 10</p>	<p>No. AK-33</p>  <p>\$0.93-B -50 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AG-16</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AH-16</p>  <p>\$1.30-B -20 Carton 10</p>	<p>No. AT-16</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AU-16</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. CB-16</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AK-16</p>  <p>\$1.28-B -20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watt 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AG-17</p>  <p>\$1.24-B -20 Carton 10</p>	<p>No. AH-17</p>  <p>\$1.30-B -20 Carton 10</p>	<p>No. AT-17</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AU-17</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. CB-17</p>  <p>\$1.18-B -20 Carton 10</p>	<p>No. AK-17</p>  <p>\$1.28-B -20 Carton 10</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. AG-29</p>  <p>\$0.46-R -20 Carton 10</p>	<p>No. AH-29</p>  <p>\$0.52-R -20 Carton 10</p>	<p>No. AT-29</p>  <p>\$0.40-R -20 Carton 10</p>	<p>No. AU-29</p>  <p>\$0.40-R -20 Carton 10</p>	<p>No. CB-29</p>  <p>\$0.40-R -20 Carton 10</p>	<p>No. AK-29</p>  <p>\$0.50-R -20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. AG-19</p>  <p>\$0.69-H -20 Carton 10</p>	<p>No. AH-19</p>  <p>\$0.75-H -20 Carton 10</p>	<p>No. AT-19</p>  <p>\$0.63-H -20 Carton 10</p>	<p>No. AU-19</p>  <p>\$0.63-H -20 Carton 10</p>	<p>No. CB-19</p>  <p>\$0.63-H -50 Carton 10</p>	<p>No. AK-19</p>  <p>\$0.73-H -20 Carton 10</p>










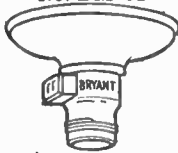



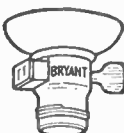





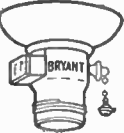
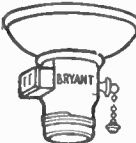
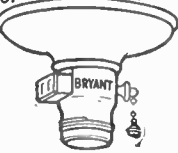




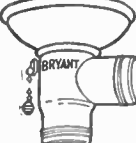



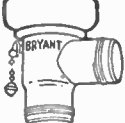
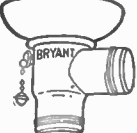
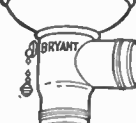














★ Both outlets operate On and Off simultaneously; † Side outlet On all the time; bottom outlet On and Off.

Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16 For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. CX 1/4" Female Cap with side entrance bushing</p>  <p>\$0.12-B -100 Carton 25</p>	<p>No. AM 1/4" Female Angle Cap</p>  <p>\$0.21-B -100 Carton 25</p>	<p>No. AN 1/4" Female Angle Cap</p>  <p>\$0.25-B -50 Carton 25</p>	<p>No. AP 3/8" Female Angle Cap</p>  <p>\$0.24-B -50 Carton 25</p>	<p>No. AR 1/4" Female Angle Fixture Cap</p>  <p>\$0.27-B -50 Carton 25</p>	<p>No. AV Attachment Plug Cap</p>  <p>\$0.27-B -50 Carton 10</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. CX-32</p>  <p>\$0.55-B-50 Carton 10</p>	<p>No. AM-32</p>  <p>\$0.64-B -50 Carton 10</p>	<p>No. AN-32</p>  <p>\$0.68-B -50 Carton 10</p>	<p>No. AP-32</p>  <p>\$0.67-B -50 Carton 10</p>	<p>No. AR-32</p>  <p>\$0.70-B -50 Carton 10</p>	<p>No. AV-32</p>  <p>\$0.70-B -50 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body with Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50 Carton 10</p>	<p>No. CX-31</p>  <p>\$0.58-B-50 Carton 10</p>	<p>No. AM-31</p>  <p>\$0.67-B -50 Carton 10</p>	<p>No. AN-31</p>  <p>\$0.71-B -50 Carton 10</p>	<p>No. AP-31</p>  <p>\$0.70-B -50 Carton 10</p>	<p>No. AR-31</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. AV-31</p>  <p>\$0.73-B -50 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. CX-33</p>  <p>\$0.85-B-50 Carton 10</p>	<p>No. AM-33</p>  <p>\$0.94-B -50 Carton 10</p>	<p>No. AN-33</p>  <p>\$0.98-B -50 Carton 10</p>	<p>No. AP-33</p>  <p>\$0.97-B -50 Carton 10</p>	<p>No. AR-33</p>  <p>\$1.00-B -50 Carton 10</p>	<p>No. AV-33</p>  <p>\$1.00-B -50 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. CX-16</p>  <p>\$1.20-B-20 Carton 10</p>	<p>No. AM-16</p>  <p>\$1.29-B -20 Carton 10</p>	<p>No. AN-16</p>  <p>\$1.33-B -20 Carton 10</p>	<p>No. AP-16</p>  <p>\$1.32-B -20 Carton 10</p>	<p>No. AR-16</p>  <p>\$1.35-B -20 Carton 10</p>	<p>No. AV-16</p>  <p>\$1.35-B -20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watts 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. CX-17</p>  <p>\$1.20-B-20 Carton 10</p>	<p>No. AM-17</p>  <p>\$1.29-B -20 Carton 10</p>	<p>No. AN-17</p>  <p>\$1.33-B -20 Carton 10</p>	<p>No. AP-17</p>  <p>\$1.32-B -20 Carton 10</p>	<p>No. AR-17</p>  <p>\$1.35-B -20 Carton 10</p>	<p>No. AV-17</p>  <p>\$1.35-B -20 Carton 1</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. CX-29</p>  <p>\$0.42-R-20 Carton 10</p>	<p>No. AM-29</p>  <p>\$0.51-R -20 Carton 10</p>	<p>No. AN-29</p>  <p>\$0.55-R -20 Carton 10</p>	<p>No. AP-29</p>  <p>\$0.54-R -20 Carton 10</p>	<p>No. AR-29</p>  <p>\$0.57-R -20 Carton 10</p>	<p>No. AV-29</p>  <p>\$0.57-R -20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp. 125 Volts 1 Amp. 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. CX-19</p>  <p>\$0.65-H-20 Carton 10</p>	<p>No. AM-19</p>  <p>\$0.74-H -20 Carton 10</p>	<p>No. AN-19</p>  <p>\$0.78-H -20 Carton 10</p>	<p>No. AP-19</p>  <p>\$0.77-H -20 Carton 10</p>	<p>No. AR-19</p>  <p>\$0.80-H -20 Carton 10</p>	<p>No. AV-19</p>  <p>\$0.80-H -20 Carton 10</p>

*Both outlets operate On and Off simultaneously †Side outlet On all the time; bottom outlet On and Off



















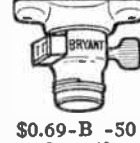









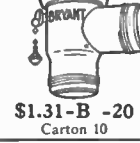


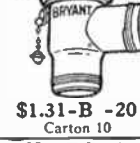
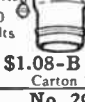


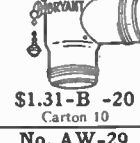


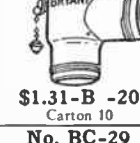



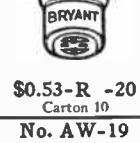

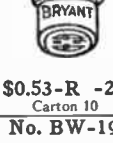
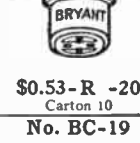


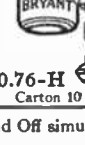

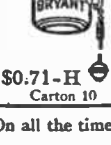

Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. BH Small Covered Base;</p>  <p>\$0.28-B -250 Carton 10</p>	<p>No. BK Large Covered Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BL 3 1/4" Box Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BM 4" Box Base</p>  <p>\$0.67-B -100 Carton 5</p>	<p>No. BZ Canopy Tap Base</p>  <p>\$0.22-B -20 Carton 10</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. BH-32</p>  <p>\$0.71-B -50 Carton 10</p>	<p>No. BK-32</p>  <p>\$0.80-B -50 Carton 10</p>	<p>No. BL-32</p>  <p>\$0.80-B -50 Carton 5</p>	<p>No. BM-32</p>  <p>\$1.10-B -50 Carton 1</p>	<p>No. BZ-32</p>  <p>\$0.65-B -20 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body, with Spartan Outlet. Each. Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50 Carton 10</p>	<p>No. BH-31</p>  <p>\$0.74-B -50 Carton 10</p>	<p>No. BK-31</p>  <p>\$0.83-B -50 Carton 10</p>	<p>No. BL-31</p>  <p>\$0.83-B -50 Carton 5</p>	<p>No. BM-31</p>  <p>\$1.13-B -50 Carton 1</p>	<p>No. BZ-31</p>  <p>\$0.68-B -20 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. BH-33</p>  <p>\$1.01-B -50 Carton 10</p>	<p>No. BK-33</p>  <p>\$1.10-B -50 Carton 10</p>	<p>No. BL-33</p>  <p>\$1.10-B -50 Carton 5</p>	<p>No. BM-33</p>  <p>\$1.40-B -50 Carton 1</p>	<p>No. BZ-33</p>  <p>\$0.95-B -20 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. BH-16</p>  <p>\$1.36-B -20 Carton 10</p>	<p>No. BK-16</p>  <p>\$1.45-B -20 Carton 10</p>	<p>No. BL-16</p>  <p>\$1.45-B -20 Carton 5</p>	<p>No. BM-16</p>  <p>\$1.75-B -20 Carton 1</p>	<p>No. BZ-16</p>  <p>\$1.30-B -20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watts 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. BH-17</p>  <p>\$1.36-B -20 Carton 10</p>	<p>No. BK-17</p>  <p>\$1.45-B -20 Carton 10</p>	<p>No. BL-17</p>  <p>\$1.45-B -20 Carton 5</p>	<p>No. BM-17</p>  <p>\$1.75-B -20 Carton 1</p>	<p>No. BZ-17</p>  <p>\$1.30-B -20 Carton 10</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. BH-29</p>  <p>\$0.58-R -20 Carton 10</p>	<p>No. BK-29</p>  <p>\$0.67-R -20 Carton 10</p>	<p>No. BL-29</p>  <p>\$0.67-R -20 Carton 5</p>	<p>No. BM-29</p>  <p>\$0.97-R -20 Carton 1</p>	<p>No. BZ-29</p>  <p>\$0.52-R -20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. BH-19</p>  <p>\$0.81-H -20 Carton 10</p>	<p>No. BK-19</p>  <p>\$0.90-H -20 Carton 10</p>	<p>No. BL-19</p>  <p>\$0.90-H -20 Carton 5</p>	<p>No. BM-19</p>  <p>\$1.20-H -20 Carton 1</p>	<p>No. BZ-19</p>  <p>\$0.75-H -20 Carton 10</p>

★ Both outlets operate On and Off simultaneously

† Side outlet On all the time; bottom outlet On and Off









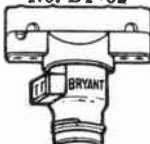





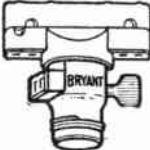
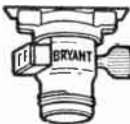




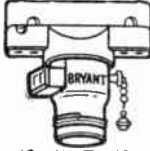



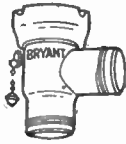

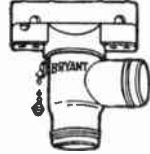





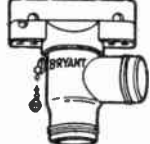














Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AZ Large Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BA Angle Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. AW Cleat Base</p>  <p>\$0.23-B -250 Carton 10</p>	<p>No. BB Wood Molding Base</p>  <p>\$0.18-B -100 Carton 10</p>	<p>No. BW Base for 1/4" and 3/8" Taplets</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BC Base for 1/4" Obround Condulets</p>  <p>\$0.23-B -100 Carton 10</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. AZ-32</p>  <p>\$0.66-B -50 Carton 10</p>	<p>No. BA-32</p>  <p>\$0.66-B -50 Carton 10</p>	<p>No. AW-32</p>  <p>\$0.66-B -50 Carton 10</p>	<p>No. BB-32</p>  <p>\$0.61-B -50 Carton 10</p>	<p>No. BW-32</p>  <p>\$0.66-B -50 Carton 10</p>	<p>No. BC-32</p>  <p>\$0.66-B -50 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body, with Spartan Outlet. Each Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50 Carton 10</p>	<p>No. AZ-31</p>  <p>\$0.69-B -50 Carton 10</p>	<p>No. BA-31</p>  <p>\$0.69-B -50 Carton 10</p>	<p>No. AW-31</p>  <p>\$0.69-B -50 Carton 10</p>	<p>No. BB-31</p>  <p>\$0.64-B -50 Carton 10</p>	<p>No. BW-31</p>  <p>\$0.69-B -50 Carton 10</p>	<p>No. BC-31</p>  <p>\$0.69-B -50 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body with Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. AZ-33</p>  <p>\$0.96-B -50 Carton 10</p>	<p>No. BA-33</p>  <p>\$0.96-B -50 Carton 10</p>	<p>No. AW-33</p>  <p>\$0.96-B -50 Carton 10</p>	<p>No. BB-33</p>  <p>\$0.91-B -50 Carton 10</p>	<p>No. BW-33</p>  <p>\$0.96-B -50 Carton 10</p>	<p>No. BC-33</p>  <p>\$0.96-B -50 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AZ-16</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BA-16</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. AW-16</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BB-16</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. BW-16</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BC-16</p>  <p>\$1.31-B -20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watts 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AZ-17</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BA-17</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. AW-17</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BB-17</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. BW-17</p>  <p>\$1.31-B -20 Carton 10</p>	<p>No. BC-17</p>  <p>\$1.31-B -20 Carton 10</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. AZ-29</p>  <p>\$0.53-R -20 Carton 10</p>	<p>No. BA-29</p>  <p>\$0.53-R -20 Carton 10</p>	<p>No. AW-29</p>  <p>\$0.53-R -20 Carton 10</p>	<p>No. BB-29</p>  <p>\$0.48-R -20 Carton 10</p>	<p>No. BW-29</p>  <p>\$0.53-R -20 Carton 10</p>	<p>No. BC-29</p>  <p>\$0.53-R -20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. AZ-19</p>  <p>\$0.76-H -20 Carton 10</p>	<p>No. BA-19</p>  <p>\$0.76-H -20 Carton 10</p>	<p>No. AW-19</p>  <p>\$0.76-H -20 Carton 10</p>	<p>No. BB-19</p>  <p>\$0.71-H -20 Carton 10</p>	<p>No. BW-19</p>  <p>\$0.76-H -20 Carton 10</p>	<p>No. BC-19</p>  <p>\$0.76-H -20 Carton 10</p>

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† Side outlet On all the time; bottom outlet On and Off.




























Bryant New Wrinkle Line

<p>National Electrical Code Standard except No. 16. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AX Slotted Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. AY Small Concealed Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. BY Cleat base with Covered Terminals</p>  <p>\$0.36-B-100 Carton 5</p>	<p>No. DE Base for Types 4400, 4500, 4600 and 4700 Adaptboxes</p>  <p>\$0.23-B-100 Carton 10</p>	<p>No. DF Base for 1/2" Rectangular Units</p>  <p>\$0.23-B-100 Carton 10</p>
<p>No. 32 Keyless Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.43-B -50 Carton 10</p>	<p>No. AX-32</p>  <p>\$0.61-B -50 Carton 10</p>	<p>No. AY-32</p>  <p>\$0.61-B -50 Carton 10</p>	<p>No. BY-32</p>  <p>\$0.79-B-50 Carton 5</p>	<p>No. DE-32</p>  <p>\$0.66-B-50 Carton 10</p>	<p>No. DF-32</p>  <p>\$0.66-B-50 Carton 10</p>
<p>No. 31 S. P. Q. T. Key Socket Body, with Spartan Outlet. Each Outlet 660 Watts 250 Volts</p>  <p>\$0.46-B -50 Carton 10</p>	<p>No. AX-31</p>  <p>\$0.64-B -50 Carton 10</p>	<p>No. AY-31</p>  <p>\$0.64-B -50 Carton 10</p>	<p>No. BY-31</p>  <p>\$0.82-B-50 Carton 5</p>	<p>No. DE-31</p>  <p>\$0.69-B-50 Carton 10</p>	<p>No. DF-31</p>  <p>\$0.69-B-50 Carton 10</p>
<p>No. 33 S. P. Pull Socket Body With Spartan Outlet Each Outlet 660 Watts 250 Volts</p>  <p>\$0.73-B -50 Carton 10</p>	<p>No. AX-33</p>  <p>\$0.91-B -50 Carton 10</p>	<p>No. AY-33</p>  <p>\$0.91-B -50 Carton 10</p>	<p>No. BY-33</p>  <p>\$1.09-B-50 Carton 5</p>	<p>No. DE-33</p>  <p>\$0.96-B-50 Carton 10</p>	<p>No. DF-33</p>  <p>\$0.96-B-50 Carton 10</p>
<p>No. 16 Twin Pull Socket Body Each Outlet 250 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AX-16</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. AY-16</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. BY-16</p>  <p>\$1.44-B-20 Carton 5</p>	<p>No. DE-16</p>  <p>\$1.31-B-20 Carton 10</p>	<p>No. DF-16</p>  <p>\$1.31-B-20 Carton 10</p>
<p>No. 17 Twin Pull Socket Body Bottom Outlet 250 Watts 250 Volts Side Outlet 660 Watts 250 Volts</p>  <p>\$1.08-B -20 Carton 10</p>	<p>No. AX-17</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. AY-17</p>  <p>\$1.26-B -20 Carton 10</p>	<p>No. BY-17</p>  <p>\$1.44-B-20 Carton 5</p>	<p>No. DE-17</p>  <p>\$1.31-B-20 Carton 10</p>	<p>No. DF-17</p>  <p>\$1.31-B-20 Carton 10</p>
<p>No. 29 Spartan Plug Receptacle Body 10 Amp. 250 Volts</p>  <p>\$0.30-R -20 Carton 10</p>	<p>No. AX-29</p>  <p>\$0.48-R -20 Carton 10</p>	<p>No. AY-29</p>  <p>\$0.48-R -20 Carton 10</p>	<p>No. BY-29</p>  <p>\$0.66-R -20 Carton 10</p>	<p>No. DE-29</p>  <p>\$0.53-R-20 Carton 10</p>	<p>No. DF-29</p>  <p>\$0.53-R-20 Carton 10</p>
<p>No. 19 S. P. Pull Wall Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts</p>  <p>\$0.53-H -50 Carton 10</p>	<p>No. AX-19</p>  <p>\$0.71-H -20 Carton 10</p>	<p>No. AY-19</p>  <p>\$0.71-H -20 Carton 10</p>	<p>No. BY-19</p>  <p>\$0.89-H-50 Carton 5</p>	<p>No. DE-19</p>  <p>\$0.76-H-20 Carton 10</p>	<p>No. DF-19</p>  <p>\$0.76-H-20 Carton 10</p>




























★Both outlets operate On and Off simultaneously

†Side outlet On all the time; bottom outlet On and Off.




























Bryant New Wrinkle Line

<p>National Electrical Code Standard. For more complete listings of Bodies and Caps, including ratings; see other pages.</p>	<p>No. AA 1/4" Female Cap</p>  <p>\$0.10-B -50 Carton 25</p>	<p>No. AB 1/4" Female Cap</p>  <p>\$0.16-B -100 Carton 25</p>	<p>No. AC 1/4" Female Cap</p>  <p>\$0.16-B -250 Carton 25</p>	<p>No. AD 1/2" Female Cap</p>  <p>\$0.19-B -50 Carton 25</p>	<p>No. AE 1/2" Male Cap</p>  <p>\$0.10-B -100 Carton 25</p>	<p>No. AF 1/2" Male Cap</p>  <p>\$0.16-B -50 Carton 25</p>
<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p>	<p>No. AA-25 \$0.63-H -20 Carton 10</p>  <p>No. AA-55 \$0.69-H -20 Carton 10</p>	<p>No. AB-25 \$0.69-H -20 Carton 10</p>  <p>No. AB-55 \$0.75-H -20 Carton 10</p>	<p>No. AC-25 \$0.69-H -20 Carton 10</p>  <p>No. AC-55 \$0.75-H -20 Carton 10</p>	<p>No. AD-25 \$0.72-H -20 Carton 10</p>  <p>No. AD-55 \$0.78-H -20 Carton 10</p>	<p>No. AE-25 \$0.63-H -20 Carton 10</p>  <p>No. AE-55 \$0.69-H -20 Carton 10</p>	<p>No. AF-25 \$0.69-H -20 Carton 10</p>  <p>No. AF-55 \$0.75-H -20 Carton 10</p>
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> <p>No. 27 Electrolux Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.83-H -50 Carton 10</p>	<p>No. AA-20 \$0.63-H -100 Carton 10</p>  <p>No. AA-50 \$0.69-H -100 Carton 10</p> <p>No. AA-27 \$0.93-H -50 Carton 10</p>	<p>No. AB-20 \$0.69-H -20 Carton 10</p>  <p>No. AB-50 \$0.75-H -20 Carton 10</p> <p>No. AB-27 \$0.99-H -20 Carton 10</p>	<p>No. AC-20 \$0.69-H -20 Carton 10</p>  <p>No. AC-50 \$0.75-H -20 Carton 10</p> <p>No. AC-27 \$0.99-H -20 Carton 10</p>	<p>No. AD-20 \$0.72-H -20 Carton 10</p>  <p>No. AD-50 \$0.78-H -20 Carton 10</p> <p>No. AD-27 \$1.02-H -20 Carton 10</p>	<p>No. AE-20 \$0.63-H -20 Carton 10</p>  <p>No. AE-50 \$0.69-H -20 Carton 10</p> <p>No. AE-27 \$0.93-H -20 Carton 10</p>	<p>No. AF-20 \$0.69-H -20 Carton 10</p>  <p>No. AF-50 \$0.75-H -20 Carton 10</p> <p>No. AF-27 \$0.99-H -20 Carton 10</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.68-H -50 Carton 10</p>  <p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> <p>No. 28 Electrolux Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p>	<p>No. AA-21 \$0.78-H -50 Carton 10</p>  <p>No. AA-51 \$0.84-H -50 Carton 10</p> <p>No. AA-28 \$1.08-H -50 Carton 10</p>	<p>No. AB-21 \$0.84-H -20 Carton 10</p>  <p>No. AB-51 \$0.90-H -20 Carton 10</p> <p>No. AB-28 \$1.14-H -20 Carton 10</p>	<p>No. AC-21 \$0.84-H -20 Carton 10</p>  <p>No. AC-51 \$0.90-H -20 Carton 10</p> <p>No. AC-28 \$1.14-H -20 Carton 10</p>	<p>No. AD-21 \$0.87-H -20 Carton 10</p>  <p>No. AD-51 \$0.93-H -20 Carton 10</p> <p>No. AD-28 \$1.17-H -20 Carton 10</p>	<p>No. AE-21 \$0.78-H -20 Carton 10</p>  <p>No. AE-51 \$0.84-H -20 Carton 10</p> <p>No. AE-28 \$1.08-H -20 Carton 10</p>	<p>No. AF-21 \$0.84-H -20 Carton 10</p>  <p>No. AF-51 \$0.90-H -20 Carton 10</p> <p>No. AF-28 \$1.14-H -20 Carton 10</p>

Bryant New Wrinkle Line







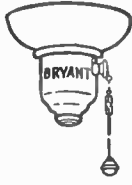


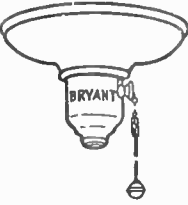





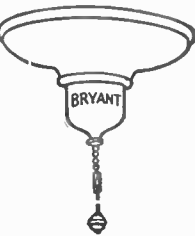



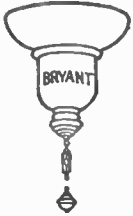

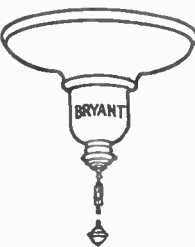

<p>National Electrical Code Standard. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AG 3/8" Male Cap'  \$0.16-B -100 Carton 25</p>	<p>No. AH 1/2" Male Cap  \$0.22-B -50 Carton 25</p>	<p>No. AT Pendent Cap 13/32-in. Hole.  \$0.10-B -500 Carton 25</p>	<p>No. AU Strain Relief Cap 13/32-in. Hole  \$0.10-B -500 Carton 25</p>	<p>No. CB Strain Relief Cap 1/2" Hole  \$0.10-B -100 Carton 25</p>	<p>No. AK 3/8" Female Fixture Cap  \$0.20-B -100 Carton 25</p>
<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10 </p> <p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p>	<p>No. AG-25 \$0.69-H -20 Carton 10 </p> <p>No. AG-55 \$0.75-H -20 Carton 10</p>	<p>No. AH-25 \$0.75-H -20 Carton 10 </p> <p>No. AH-55 \$0.81-H -20 Carton 10</p>	<p>No. AT-25 \$0.63-H -20 Carton 10 </p> <p>No. AT-55 \$0.69-H -20 Carton 10</p>	<p>No. AU-25 \$0.63-H -20 Carton 10 </p> <p>No. AU-55 \$0.69-H -20 Carton 10</p>	<p>No. CB-25 \$0.63-H -20 Carton 10 </p> <p>No. CB-55 \$0.69-H -20 Carton 10</p>	<p>No. AK-25 \$0.73-H -20 Carton 10 </p> <p>No. AK-55 \$0.79-H -20 Carton 10</p>
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10 </p> <p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> <p>No. 27 Electrolier Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 230 Volts \$0.83-H -50 Carton 10</p>	<p>No. AG-20 \$0.69-H -20 Carton 10 </p> <p>No. AG-50 \$0.75-H -20 Carton 10</p> <p>No. AG-27 \$0.99-H -20 Carton 10</p>	<p>No. AH-20 \$0.75-H -20 Carton 10 </p> <p>No. AH-50 \$0.81-H -20 Carton 10</p> <p>No. AH-27 \$1.05-H -20 Carton 10</p>	<p>No. AT-20 \$0.63-H -20 Carton 10 </p> <p>No. AT-50 \$0.69-H -20 Carton 10</p> <p>No. AT-27 \$0.93-H -20 Carton 10</p>	<p>No. AU-20 \$0.63-H -20 Carton 10 </p> <p>No. AU-50 \$0.69-H -20 Carton 10</p> <p>No. AU-27 \$0.93-H -20 Carton 10</p>	<p>No. CB-20 \$0.63-H -50 Carton 10 </p> <p>No. CB-50 \$0.69-H -50 Carton 10</p> <p>No. CB-27 \$0.93-H -50 Carton 10</p>	<p>No. AK-20 \$0.73-H -20 Carton 10 </p> <p>No. AK-50 \$0.79-H -20 Carton 10</p> <p>No. AK-27 \$1.03-H -20 Carton 10</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.68-H -50 Carton 10 </p> <p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> <p>No. 28 Electrolier Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p>	<p>No. AG-21 \$0.84-H -20 Carton 10 </p> <p>No. AG-51 \$0.90-H -20 Carton 10</p> <p>No. AG-28 \$1.14-H -20 Carton 10</p>	<p>No. AH-21 \$0.90-H -20 Carton 10 </p> <p>No. AH-51 \$0.96-H -20 Carton 10</p> <p>No. AH-28 \$1.20-H -20 Carton 10</p>	<p>No. AT-21 \$0.78-H -20 Carton 10 </p> <p>No. AT-51 \$0.84-H -20 Carton 10</p> <p>No. AT-28 \$1.08-H -20 Carton 10</p>	<p>No. AU-21 \$0.78-H -20 Carton 10 </p> <p>No. AU-51 \$0.84-H -20 Carton 10</p> <p>No. AU-28 \$1.08-H -20 Carton 10</p>	<p>No. CB-21 \$0.78-H -50 Carton 10 </p> <p>No. CB-51 \$0.84-H -50 Carton 10</p> <p>No. CB-28 \$1.08-H -50 Carton 10</p>	<p>No. AK-21 \$0.88-H -20 Carton 10 </p> <p>No. AK-51 \$0.94-H -20 Carton 10</p> <p>No. AK-28 \$1.18-H -20 Carton 10</p>

Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. CX 1/4" Female Cap with side entrance bushing</p>  <p>\$0.12-B -100 Carton 25</p>	<p>No. AM 1/4" Female Angle Cap</p>  <p>\$0.21-B -100 Carton 25</p>	<p>No. AN 1/4" Female Angle Cap</p>  <p>\$0.25-B -50 Carton 25</p>	<p>No. AP 3/8" Female Angle Cap</p>  <p>\$0.24-B -50 Carton 25</p>	<p>No. AR 3/8" Female Angle Fixture Cap</p>  <p>\$0.27-B -50 Carton 25</p>	<p>No. AV Attachment, Plug Cap</p>  <p>\$0.27-B -50 Carton 10</p>
<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p>	<p>No. CX-25 \$0.65-H-20 Carton 10</p>  <p>No. CX-55 \$0.71-H-20 Carton 10</p>	<p>No. AM-25 \$0.74-H -20 Carton 10</p>  <p>No. AM-55 \$0.80-H -20 Carton 10</p>	<p>No. AN-25 \$0.78-H -20 Carton 10</p>  <p>No. AN-55 \$0.84-H -20 Carton 10</p>	<p>No. AP-25 \$0.77-H -20 Carton 10</p>  <p>No. AP-55 \$0.83-H -20 Carton 10</p>	<p>No. AR-25 \$0.80-H -20 Carton 10</p>  <p>No. AR-55 \$0.86-H -20 Carton 10</p>	<p>No. AV-25 \$0.80-H -20 Carton 10</p>  <p>No. AV-55 \$0.86-H -20 Carton 10</p>
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> <p>No. 27 Electroliner Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.83-H -50 Carton 10</p>	<p>No. CX-20 \$0.65-H-20 Carton 10</p>  <p>No. CX-50 \$0.71-H-20 Carton 10</p> <p>No. CX-27 \$0.95-H-50 Carton 10</p>	<p>No. AM-20 \$0.74-H -20 Carton 10</p>  <p>No. AM-50 \$0.80-H -20 Carton 10</p> <p>No. AM-27 \$1.04-H -20 Carton 10</p>	<p>No. AN-20 \$0.78-H -20 Carton 10</p>  <p>No. AN-50 \$0.84-H -20 Carton 10</p> <p>No. AN-27 \$1.08-H -20 Carton 10</p>	<p>No. AP-20 \$0.77-H -20 Carton 10</p>  <p>No. AP-50 \$0.83-H -20 Carton 10</p> <p>No. AP-27 \$1.07-H -20 Carton 10</p>	<p>No. AR-20 \$0.80-H -20 Carton 10</p>  <p>No. AR-50 \$0.86-H -20 Carton 10</p> <p>No. AR-27 \$1.10-H -20 Carton 10</p>	<p>No. AV-20 \$0.80-H -20 Carton 10</p>  <p>No. AV-50 \$0.86-H -20 Carton 10</p> <p style="text-align: center;">★</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.74-H -50 Carton 10</p>  <p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> <p>No. 28 Electroliner Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p>	<p>No. CX-21 \$0.80-H-20 Carton 10</p>  <p>No. CX-51 \$0.86-H-20 Carton 10</p> <p>No. CX-28 \$1.10-H-50 Carton 10</p>	<p>No. AM-21 \$0.89-H -20 Carton 10</p>  <p>No. AM-51 \$0.95-H -20 Carton 10</p> <p>No. AM-28 \$1.19-H -20 Carton 10</p>	<p>No. AN-21 \$0.93-H -20 Carton 10</p>  <p>No. AN-51 \$0.99-H -20 Carton 10</p> <p>No. AN-28 \$1.23-H -20 Carton 10</p>	<p>No. AP-21 \$0.92-H -20 Carton 10</p>  <p>No. AP-51 \$0.98-H -20 Carton 10</p> <p>No. AP-28 \$1.22-H -20 Carton 10</p>	<p>No. AR-21 \$0.95-H -20 Carton 10</p>  <p>No. AR-51 \$1.01-H -20 Carton 10</p> <p>No. AR-28 \$1.25-H -20 Carton 10</p>	<p>No. AV-21 \$0.95-H -20 Carton 10</p>  <p>No. AV-51 \$1.01-H -20 Carton 10</p> <p style="text-align: center;">★</p>













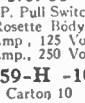
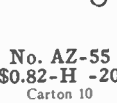
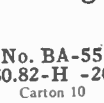
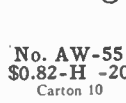
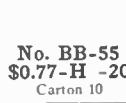
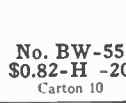
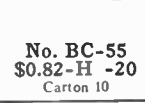







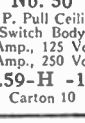
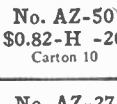
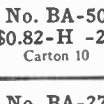
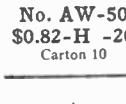
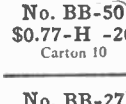
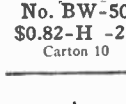
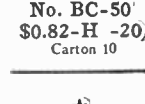
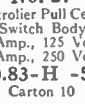
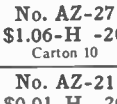
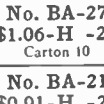
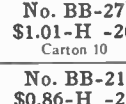






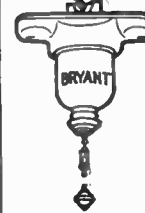
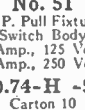
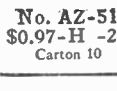
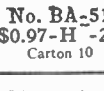
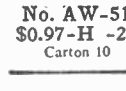
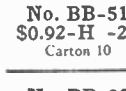

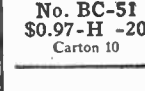
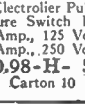
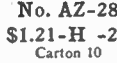
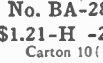

★ It is impractical to combine No. 27 or 28 Body with this Cap.

Bryant New Wrinkle Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. BH Small Covered Base</p>  <p>\$0.28-B -250 Carton 10</p>	<p>No. BK Large Covered Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BL 3/4" Box Base</p>  <p>\$0.37-B -100 Carton 10</p>	<p>No. BM 4" Box Base</p>  <p>\$0.67-B -100 Carton 5</p>	<p>No. BZ Canopy Tap Base</p>  <p>\$0.22-B -20 Carton 10</p>
<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p>	<p>No. BH-25 \$0.81-H -20 Carton 10</p>  <p>No. BH-55 \$0.87-H -20 Carton 10</p>	<p>No. BK-25 \$0.90-H -20 Carton 10</p>  <p>No. BK-55 \$0.96-H -20 Carton 10</p>	<p>No. BL-25 \$0.90-H -20 Carton 5</p>  <p>No. BL-55 \$0.96-H -20 Carton 5</p>	<p>No. BM-25 \$1.20-H -20 Carton 1</p>  <p>No. BM-55 \$1.26-H -20 Carton 1</p>	<p>No. BZ-25 \$0.75-H -20 Carton 10</p>  <p>No. BZ-55 \$0.81-H -20 Carton 10</p>
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> <p>No. 27 Electroliner Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.83-H -50 Carton 10</p>	<p>No. BH-20 \$0.81-H -20 Carton 10</p>  <p>No. BH-50 \$0.87-H -20 Carton 10</p> <p>No. BH-27 \$1.11-H -20 Carton 10</p>	<p>No. BK-20 \$0.90-H -20 Carton 10</p>  <p>No. BK-50 \$0.96-H -20 Carton 10</p> <p>No. BK-27 \$1.20-H -20 Carton 10</p>	<p>No. BL-20 \$0.90-H -20 Carton 5</p>  <p>No. BL-50 \$0.96-H -20 Carton 5</p> <p>No. BL-27 \$1.20-H -20 Carton 5</p>	<p>No. BM-20 \$1.20-H -20 Carton 1</p>  <p>No. BM-50 \$1.26-H -20 Carton 1</p> <p style="text-align: center;">★</p>	<p>No. BZ-20 \$0.75-H -20 Carton 10</p>  <p>No. BZ-50 \$0.81-H -20 Carton 10</p> <p>No. BZ-27 \$1.05-H -20 Carton 10</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.68-H -50 Carton 10</p>  <p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> <p>No. 28 Electroliner Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p>	<p>No. BH-21 \$0.96-H -20 Carton 10</p>  <p>No. BH-51 \$1.02-H -20 Carton 10</p> <p>No. BH-28 \$1.26-H -20 Carton 10</p>	<p>No. BK-21 \$1.05-H -20 Carton 10</p>  <p>No. BK-51 \$1.35-H -20 Carton 10</p> <p>No. BK-28 \$1.26-H -20 Carton 10</p>	<p>No. BL-21 \$1.05-H -20 Carton 5</p>  <p>No. BL-51 \$1.11-H -20 Carton 5</p> <p>No. BL-28 \$1.35-H -20 Carton 5</p>	<p>No. BM-21 \$1.35-H -20 Carton 1</p>  <p>No. BM-51 \$1.41-H -20 Carton 1</p> <p style="text-align: center;">★</p>	<p>No. BZ-21 \$0.90-H -20 Carton 10</p>  <p>No. BZ-51 \$0.96-H -20 Carton 10</p> <p>No. BZ-28 \$1.20-H -20 Carton 10</p>









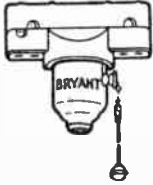
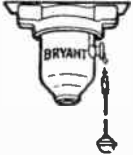













★ It is impractical to combine No. 27 or 28 Body with this Base.

Bryant New Wrinkle Line

<p>National Electrical Code Standard. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AZ Large Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BA Angle Concealed Base</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. AW Cleat Base</p>  <p>\$0.23-B -250 Carton 10</p>	<p>No. BB Wood Molding Base</p>  <p>\$0.18-B -100 Carton 10</p>	<p>No. BW Base for 1/2" and 3/4" Taplets.</p>  <p>\$0.23-B -100 Carton 10</p>	<p>No. BC Base for 1/2" Obround Condulets</p>  <p>\$0.23-B -100 Carton 10</p>
	<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p> 	<p>No. AZ-25 \$0.76-H -20 Carton 10</p> 	<p>No. BA-25 \$0.76-H -20 Carton 10</p> 	<p>No. AW-25 \$0.76-H -20 Carton 10</p> 	<p>No. BB-25 \$0.71-H -20 Carton 10</p> 	<p>No. BW-25 \$0.76-H -20 Carton 10</p> 
<p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> 	<p>No. AZ-55 \$0.82-H -20 Carton 10</p> 	<p>No. BA-55 \$0.82-H -20 Carton 10</p> 	<p>No. AW-55 \$0.82-H -20 Carton 10</p> 	<p>No. BB-55 \$0.77-H -20 Carton 10</p> 	<p>No. BW-55 \$0.82-H -20 Carton 10</p> 	<p>No. BC-55 \$0.82-H -20 Carton 10</p> 
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p> 	<p>No. AZ-20 \$0.76-H -20 Carton 10</p> 	<p>No. BA-20 \$0.76-H -20 Carton 10</p> 	<p>No. AW-20 \$0.76-H -20 Carton 10</p> 	<p>No. BB-20 \$0.71-H -20 Carton 10</p> 	<p>No. BW-20 \$0.76-H -20 Carton 10</p> 	<p>No. BC-20 \$0.76-H -20 Carton 10</p> 
<p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> 	<p>No. AZ-50 \$0.82-H -20 Carton 10</p> 	<p>No. BA-50 \$0.82-H -20 Carton 10</p> 	<p>No. AW-50 \$0.82-H -20 Carton 10</p> 	<p>No. BB-50 \$0.77-H -20 Carton 10</p> 	<p>No. BW-50 \$0.82-H -20 Carton 10</p> 	<p>No. BC-50 \$0.82-H -20 Carton 10</p> 
<p>No. 27 Electrolier Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.83-H -50 Carton 10</p> 	<p>No. AZ-27 \$1.06-H -20 Carton 10</p> 	<p>No. BA-27 \$1.06-H -20 Carton 10</p> 	<p>★</p>	<p>No. BB-27 \$1.01-H -20 Carton 10</p> 	<p>★</p>	<p>★</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.68-H -50 Carton 10</p> 	<p>No. AZ-21 \$0.91-H -20 Carton 10</p> 	<p>No. BA-21 \$0.91-H -20 Carton 10</p> 	<p>No. AW-21 \$0.91-H -20 Carton 10</p> 	<p>No. BB-21 \$0.86-H -20 Carton 10</p> 	<p>No. BW-21 \$0.91-H -20 Carton 10</p> 	<p>No. BC-21 \$0.91-H -20 Carton 10</p> 
<p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> 	<p>No. AZ-51 \$0.97-H -20 Carton 10</p> 	<p>No. BA-51 \$0.97-H -20 Carton 10</p> 	<p>No. AW-51 \$0.97-H -20 Carton 10</p> 	<p>No. BB-51 \$0.92-H -20 Carton 10</p> 	<p>No. BW-51 \$0.97-H -20 Carton 10</p> 	<p>No. BC-51 \$0.97-H -20 Carton 10</p> 
<p>No. 28 Electrolier Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p> 	<p>No. AZ-28 \$1.21-H -20 Carton 10</p> 	<p>No. BA-28 \$1.21-H -20 Carton 10</p> 	<p>★</p>	<p>No. BB-28 \$1.16-H -20 Carton 10</p> 	<p>★</p>	<p>★</p>

★ It is impractical to combine No. 27 or 28 Body with this Base.

Bryant New Wrinkle Line

<p>National Electrical Code Standard. For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. AX Slotted Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. AY Small Cocealed Base</p>  <p>\$0.18-B -250 Carton 10</p>	<p>No. BY Cleat base with Covered Terminals</p>  <p>\$0.36-B-100 Carton 5</p>	<p>No. DE Base for Types 4400, 4500, 4600 and 4700 Adaptors</p>  <p>\$0.23-B-100 Carton 10</p>	<p>No. DF Base for 1/4" Rectangular Units</p>  <p>\$0.23-B-100 Carton 10</p>
<p>No. 25 S. P. Pull Switch Rosette Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 55 S. P. Pull Switch Rosette Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p>	<p>No. AX-25 \$0.71-H -20 Carton 10</p>  <p>No. AX-55 \$0.77-H -20 Carton 10</p>	<p>No. AY-25 \$0.71-H -20 Carton 10</p>  <p>No. AY-55 \$0.77-H -20 Carton 10</p>	<p>No. BY-25 \$0.89-H-50 Carton 5</p>  <p>No. BY-55 \$0.95-H-50 Carton 5</p>	<p>No. DE-25 \$0.76-H-20 Carton 10</p>  <p>No. DE-55 \$0.82-H-20 Carton 10</p>	<p>No. DF-25 \$0.76-H-20 Carton 10</p>  <p>No. DF-55 \$0.82-H-20 Carton 10</p>
<p>No. 20 S. P. Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.53-H -100 Carton 10</p>  <p>No. 50 S. P. Pull Ceiling Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.59-H -100 Carton 10</p> <p>No. 27 Electroliner Pull Ceiling Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.83-H -50 Carton 10</p>	<p>No. AX-20 \$0.71-H -20 Carton 10</p>  <p>No. AX-50 \$0.77-H -20 Carton 10</p> <p>No. AX-27 \$1.01-H -20 Carton 10</p>	<p>No. AY-20 \$0.71-H -20 Carton 10</p>  <p>No. AY-50 \$0.77-H -20 Carton 10</p> <p>No. AY-27 \$1.01-H -20 Carton 10</p>	<p>No. BY-20 \$0.89-H-50 Carton 5</p>  <p>No. BY-50 \$0.95-H-50 Carton 5</p> <p style="text-align: center;">★</p>	<p>No. DE-20 \$0.76-H-20 Carton 10</p>  <p>No. DE-50 \$0.82-H-20 Carton 10</p> <p>No. DE-27 \$1.06-H-20 Carton 10</p>	<p>No. DF-20 \$0.76-H-20 Carton 10</p>  <p>No. DF-50 \$0.82-H-20 Carton 10</p> <p>No. DF-27 \$1.06-H-20 Carton 10</p>
<p>No. 21 S. P. Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.68-H -50 Carton 10</p>  <p>No. 51 S. P. Pull Fixture Switch Body 6 Amp., 125 Volts 3 Amp., 250 Volts \$0.74-H -50 Carton 10</p> <p>No. 28 Electroliner Pull Fixture Switch Body 3 Amp., 125 Volts 1 Amp., 250 Volts \$0.98-H -50 Carton 10</p>	<p>No. AX-21 \$0.86-H -20 Carton 10</p>  <p>No. AX-51 \$0.92-H -20 Carton 10</p> <p>No. AX-28 \$1.16-H -20 Carton 10</p>	<p>No. AY-21 \$0.86-H -20 Carton 10</p>  <p>No. AY-51 \$0.92-H -20 Carton 10</p> <p>No. AY-28 \$1.16-H -20 Carton 10</p>	<p>No. BY-21 \$1.04-H-50 Carton 5</p>  <p>No. BY-51 \$1.10-H-50 Carton 5</p> <p style="text-align: center;">★</p>	<p>No. DE-21 \$0.91-H-20 Carton 10</p>  <p>No. DE-51 \$0.97-H-20 Carton 10</p> <p>No. DE-28 \$1.21-H-20 Carton 10</p>	<p>No. DF-21 \$0.91-H-20 Carton 10</p>  <p>No. DF-51 \$0.97-H-20 Carton 10</p> <p>No. DF-28 \$1.21-H-20 Carton 10</p>

★ It is impractical to combine No. 27 or 28 Body with this Base.

No. 13 Bryant New Wrinkle Keyless Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
13	B	25	500	85	\$.23

No. 10 Bryant New Wrinkle Single-pole Key Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
10	B	25	500	100	\$.26

No. 11 Bryant New Wrinkle Double-pole Key Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
11	B	25	500	100	\$.26

No. 12 Bryant New Wrinkle Single-pole High Capacity Key Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
12	B	25	500	103	\$.29

No. 34 Bryant New Wrinkle Single-pole Push Button Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
34	B	25	500	92	\$.26

No. 15 Bryant New Wrinkle Single-pole Pull Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
15	B	25	250	54	\$.40

No. 35 Bryant New Wrinkle Single-pole High Capacity Pull Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
35	B	25	250	55	\$.59

No. 32 Bryant New Wrinkle Keyless Socket Bodies

Each Outlet 660 Watts, 250 Volts
With Spartan Plug Outlet



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
32	B	10	50	13	\$.43

No. 31 Bryant New Wrinkle Single-pole High Capacity Key Socket Bodies

With Spartan Plug Outlet
Each Outlet 660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
31	B	10	50	12	\$.46

No. 33 Bryant New Wrinkle Single-pole Pull Socket Bodies

With Spartan Plug Outlet
Each Outlet 660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
33	B	10	50	13	\$.73

No. 16 Bryant New Wrinkle Single-pole Twin Pull Socket Bodies

Each Outlet 250 Watts, 250 Volts
Both outlets operate on and off simultaneously.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
16	B	10	20	9	\$1.08

No. 17 Bryant New Wrinkle Single-pole Twin Pull Socket Bodies

Side Outlet, 660 Watts, 250 Volts
Bottom Outlet, 250 Watts, 250 Volts
Side outlet on all the time, bottom outlet on and off.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
17	B	10	20	9	\$1.08

No. 25 Bryant New Wrinkle Single-pole Pull Socket Rosette Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Cord hole in composition basing, $\frac{1}{2}$ inch.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
25	H	10	100	28	\$.53

No. 55 Bryant New Wrinkle Single-pole Pull Switch Rosette Bodies

6 Amperes, 125 Volts
3 Amperes, 250 Volts

Cord hold in composition bushing, $\frac{1}{2}$ inch.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
55	H	10	100	28	\$.59

No. 19 Bryant New Wrinkle Single-pole Pull Wall Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
19	H	10	50	11	\$.53

No. 29 Bryant New Wrinkle Spartan Plug Receptacle Bodies

10 Amperes, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
29	R	10	20	3	\$.30

Bryant New Wrinkle Pull Ceiling Switch Bodies

Equipped with short No. 6 chain, 10 feet of small linen cord and small composition ball. Standard finish, brush brass. Special finishes at an increased price.



No. 20 Single-pole
3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
20	H	10	100	26	\$.53

No. 27 Electrolier
3 Amperes, 125 Volts; 1 Ampere, 250 Volts
Operating 1, 2, 1 and 2 off.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
27	H	10	50	12	\$.83

No. 50 Single-pole
6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
50	H	10	100	26	\$.59

Bryant New Wrinkle Pull Fixture Switch Bodies

Equipped with short No. 6 chain, 10 feet of small linen cord and small composition ball. Standard finish, brush brass. Special finishes at an increased price.

No. 21 Single-pole
3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
21	H	10	50	13	\$.68

No. 28 Electrolier
3 Amperes, 125 Volts; 1 Ampere, 250 Volts
Operating 1, 2, 1 and 2, off.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
28	H	10	50	14	\$.98

No. 51 Single-pole
6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
51	H	10	50	13	\$.74



Nos. AA and AB Bryant New Wrinkle Caps

1/8-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AA	B	25	500	30	\$.10

1/4-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AB	B	25	100	7	\$.16

Nos. AC and AD Bryant New Wrinkle Caps

3/8-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AC	B	25	250	19	\$.16

1/2-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AD	B	25	50	5	\$.19

Nos. AE and AF Bryant New Wrinkle Caps

1/8-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AE	B	25	100	5	\$.10

1/4-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AF	B	25	50	3	\$.16

Nos. AG and AH Bryant New Wrinkle Caps

3/8-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AG	B	25	100	6	\$.16

1/2-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AH	B	25	50	7	\$.22



No. AU Bryant New Wrinkle Strain Relief Pendent Caps

With porcelain bushing. 1 1/2-inch hole.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AU	B	25	500	29	\$.10



No. AK Bryant New Wrinkle Fixture Caps

1/8-inch 3-step Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AK	B	25	100	8	\$.20

No. AT Bryant New Wrinkle Pendent Caps

With composition bushing. Holes, 1 1/2 inch in diameter.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AT	B	25	500	22	\$.10



No. CX Bryant New Wrinkle Caps

1/8-inch Female

With side entrance with composition bushing. Dimension of cord hole, 5/16 x 3/16-inch.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CX	B	25	100	6	\$.12



Nos. AM and AN Bryant New Wrinkle Caps

1/8-inch Female Angle

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AM	B	25	100	8	\$.21

1/4-inch Female Angle

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AN	B	25	50	5	\$.25



No. AP Bryant New Wrinkle Caps

3/8-inch Angle—Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AP	B	25	50	5	\$.24



No. AR Bryant New Wrinkle Fixture Caps

1/8-inch 3-step Female Angle

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AR	B	25	50	6	\$.27



No. AV Bryant New Wrinkle Caps

Attachment Plug

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AV	B	10	50	9	\$.27



No. BH Bryant New Wrinkle Small Covered Bases



Outside diameter of base $2\frac{1}{4}$ inches. Screw spacings $1\frac{1}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BH	B	10	250	53	\$.28

No. AZ Bryant New Wrinkle Porcelain Large Concealed Bases



Outside diameter of base, $2\frac{3}{4}$ inches. Screw spacings $2\frac{1}{4}$ inches. Fits Type 500 Adaptiboxes, Types GN, HM, and W Octagonal Unilets, etc.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AZ	B	10	100	40	\$.23

No. BK Bryant New Wrinkle Large Brass Covered Bases



Outside diameter of base $3\frac{1}{8}$ inches. Screw spacings 2 inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BK	B	10	100	41	\$.37

No. BA Bryant New Wrinkle Porcelain Angle Concealed Bases



Screw spacings, $1\frac{1}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BA	B	10	100	30	\$.23

No. BL Bryant New Wrinkle Box Bases

Outside diameter of base $3\frac{5}{8}$ inches. Screw spacings 2 and $2\frac{3}{4}$ inches.

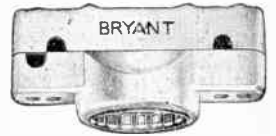
Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BL	B	10	100	57	\$.37



No. BY Bryant New Wrinkle Porcelain Cleat Bases

With Covered Terminals Supporting screw spacings, $\frac{7}{16} \times 3\frac{1}{2}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BY	B	5	100	60	\$.36



No. BM Bryant New Wrinkle 4-inch Box Bases

Outside diameter of base $4\frac{1}{2}$ inches. Screw spacings $2\frac{3}{4}$ and $3\frac{1}{2}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BM	B	5	190	105	\$.67



No. AW Bryant New Wrinkle Porcelain Cleat Bases

Screw spacings $2\frac{5}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AW	B	10	250	85	\$.23

No. BZ Bryant New Wrinkle Canopy Tap Bases



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BZ	B	10	20	6	\$.22

No. BB Bryant New Wrinkle Porcelain Bases

For $\frac{1}{2}$ and $\frac{3}{4}$ -inch Pipe Taplets and for wood molding and V. V. Fittings Covers Nos. 43SS, 44SS and 45SS by means of which it can be attached to all $\frac{1}{2}$, $\frac{3}{4}$, and 1-inch V. V. Fittings Types 1, 3, 4 and T. Screw spacings, $2\frac{3}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BB	B	10	100	25	\$.18



No. AX Bryant New Wrinkle Porcelain Slotted Bases



Outside diameter of base, $2\frac{1}{8}$ inches. Screw spacings, $1\frac{1}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AX	B	10	250	53	\$.18

No. BW Bryant New Wrinkle Porcelain Bases

For $\frac{1}{2}$ and $\frac{3}{4}$ -inch Pipe Taplets and for V. V. Fittings Covers Nos. 43SS, 44SS and 45SS by means of which it can be attached to all $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch V. V. Fittings Types 1, 3, 4 and T. Screw spacings, $2\frac{5}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BW	B	10	100	34	\$.23



No. AY Bryant New Wrinkle Porcelain Small Concealed Bases

Outside diameter of base $2\frac{1}{16}$ inches. Screw spacings, $1\frac{1}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AY	B	10	250	55	\$.18



No. BC Bryant New Wrinkle Porcelain Bases

For $\frac{1}{2}$ -inch Obround Condulets and $\frac{1}{2}$ -inch Types L, LFB and L 45 V. V. Fittings. Screw spacings, $2\frac{3}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BC	B	10	100	39	\$.23



No. DE Bryant New Wrinkle Porcelain Bases

For Types 4400, 4500, 4600 and 4700 Adaptiboxes. Screw spacings, $3\frac{3}{8}$ and $3\frac{1}{2}$ inches.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DE	B	10	100	35	\$.23

No. DF Bryant New Wrinkle Porcelain Bases



For $\frac{1}{2}$ -inch Rectangular Unilets. Supporting screw spacings, $1\frac{1}{2}$ and $2\frac{7}{8}$ inches.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DF	B	10	100	35	\$.23

Bryant Surface and Outlet Box Keyless Receptacles

Schedule B—660 Watts, 250 Volts For $3\frac{1}{4}$ -inch Outlet Boxes



Approved for use on ceilings containing metal lathing and upon metal surfaces.

Diameter of base, $3\frac{5}{8}$ inches. Height, $1\frac{1}{2}$ inches. Supporting screw spacings, $2\frac{3}{4}$ inches. Standard finish, brush brass. Machine screws for mounting furnished.

No. 4103 is regularly fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, $4\frac{1}{2}$ cents per foot each conductor. Brylock attachment, 27 cents.

No. 4103 is regularly fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, $4\frac{1}{2}$ cents per foot each conductor. Brylock attachment, 27 cents.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4102	With Binding Screws	1	100	71	\$.45
4103	" Wire Leads	1	100	75	.50

Bryant Surface and Outlet Box Keyless Receptacles

Schedule B—660 Watts, 250 Volts For $3\frac{1}{4}$ -inch and 4-inch Outlet Boxes

Approved for use on walls or ceilings containing metal lathing and upon metal surfaces.

Diameter of base, $4\frac{5}{8}$ inches. Height, $1\frac{1}{2}$ inches. Supporting screw spacings, $2\frac{3}{4}$ and $3\frac{1}{2}$ inches.

Standard finish, brush brass. Machine screws furnished.

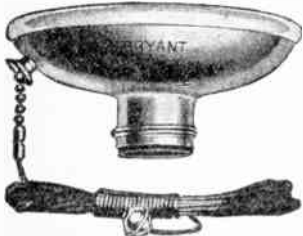
No. 4101 is regularly fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, $4\frac{1}{2}$ cents per foot each conductor. Brylock attachment, 27 cents each.



Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4100	With Binding Screws	1	100	102	\$.60
4101	" Wire Leads	1	100	107	.65

Bryant Surface and Outlet Box Single-pole Pull Receptacles

Schedule B—250 Watts, 250 Volts For $3\frac{1}{4}$ -inch and 4-inch Outlet Boxes



Approved for use with metal lathing and on metal surfaces. Diameter of base, $4\frac{3}{8}$ inches. Height, 2 inches. Screw spacings, $2\frac{3}{4}$ and $3\frac{1}{2}$ inches.

No. 4105 has 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, $4\frac{1}{2}$ cents per foot each conductor. Brylock feature, 27 cents extra. Undark pendant, 28 cents.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4104	With Binding Screws	1	50	69	\$ 1.30
4105	" Wire Leads	1	50	75	1.35

Bryant Assembled Sockets

The following sockets are carried in stock assembled, i.e., the socket body is partially inserted in the cap, but the latching operation is not completed, so that the sockets are easily taken apart for wiring. Each complete socket is separately wrapped in tissue paper. This method of packing sockets is especially advantageous to fixture manufacturers who have frequent use for other than $\frac{1}{8}$ -inch caps. For the average socket user, requiring a considerable variety of bodies, caps and bases, the "knocked-down" method of shipping sockets is decidedly more convenient.

Other combinations of sockets than those listed below will be shipped assembled, when so specified, without extra charge, but such orders will be subject to the delays which are usual in connection with goods that are not carried in stock.

New Wrinkle Sockets



No. AA-10 Key Socket

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AA-10	Key, with $\frac{1}{8}$ -in. Cap.	B	25	500	127	\$.36
AA-13	Keyless, with $\frac{1}{8}$ -in. Cap.	B	25	500	112	.33
AA-15	Pull, with $\frac{1}{8}$ -in. Cap	B	25	250	65	.50

Wrinklet Sockets

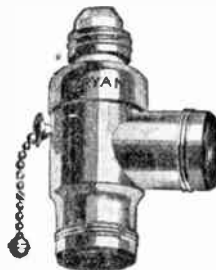
Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WA-80	Key, with $\frac{1}{8}$ -in. Cap.	B	25	500	98	\$.36
WA-81	Push, with $\frac{1}{8}$ -in. Cap.	B	25	500	97	.36
WA-83	Keyless, with $\frac{1}{8}$ -in. Cap.	B	25	500	96	.33
WA-95	Short Keyless with $\frac{1}{8}$ -in. Cap.	B	25	500	78	.33
WA-85	Pull, with $\frac{1}{8}$ -in. Cap.	B	25	250	55	.50



No. WA-85 Pull Socket

No. AV-17 Bryant Dubl-Duty Sockets

250 Volts, 250 Watts



each. Small Undark luminous pendant, 25 cents. Lamp grip, 5 cents per outlet.

This socket provides two Edison screw base outlets where formerly there was but one. Bottom outlet is controlled by pull chain; side outlet is always on; side outlet is above shade; when bottom outlet is used for a lamp, the lamp maintains its original position.

Any standard shade holder can be used, including Uno.

Standard finish brush brass. Standard chain furnished, 8 inches of No. 6. Brylock attachment, add 27 cents.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AV-17	B	1	20	11	\$ 1.35

Bryant Sockets with Covered Base for Concealed Work

250 Volts



Outside diameter of base of No. 60018 is $2\frac{3}{8}$ inches, height $2\frac{1}{4}$ inches. Holes for supporting screws are spaced $1\frac{5}{8}$ inches on centers.

Outside diameter of base of No. 60020 is $3\frac{1}{8}$ inches, height $2\frac{1}{4}$ inches. Holes for supporting screws are spaced $1\frac{5}{8}$ and 2 inches on centers.

With Small Base

Cat. No.	Watts	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60018	250	Key	B	10	250	95	\$.44
60019	660	Keyless	B	10	250	91	.41

With Large Base

Cat. No.	Watts	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60020	660	Keyless	B	10	100	60	\$.60

**Bryant Parts of Brass Shell Sockets
Receptacles and Socket Type Devices**

Medium, Candelabra and Miniature Base

Description	Sched- ule	Std. Pkg.	Price Each	Add for Special Finish
Shells, All Kinds, without Linings, except Shells for Lock Sockets.	B	250	\$.10	†
Caps, 1/8-inch without Linings.	B	250	.09 1/2	†
" 1/4 " " " "	B	250	.15 1/2	†
" 3/8 " " " "	B	250	.15 1/2	†
" 1/2 " " " "	B	100	.18 1/2	†
" Pendant " " " or Bushings	B	250	.09 1/2	†
" " " " " " "	B	250	.08 1/2	†
Linings, Shell, All Kinds.	B	250	.03	
Cap, " Sizes and Kinds.	B	250	.00 1/2	
Interiors, Key, S. P. and D. P., (250 W.)	B	250	.20	
" " H. C. (660 Watts).	B	250	.23	
" " S. P. Cand. and Min.	B	250	.28	
" Bayonet Base, Push, with Non-removable Buttons.	B	250	.29	
Interiors, New Wrinkle and Wrinklet Push with Non-removable Buttons.	B	250	.20	
Interiors, Keyless, Medium Base.	B	250	.17	
" Pull, Medium Base, 250 Watts, with Chain Guide, Chain and Pendant Ball.	B	250	.34	**
Interiors, Pull, Medium Base, 250 Watts, without Chain Guide, Chain or Pendant Ball.	B	250	.28	**
Interiors, Pull, Medium Base, 250 Watts, without Chain Guide, Chain or Pendant Ball.	B	250	.25	
Interiors, Pull, Medium Base, 660 Watts, with Chain Guide, Chain and Pendant Ball.	B	250	.53	**
Interiors, Pull, Medium Base, 660 Watts, with Chain Guide but without Chain or Pendant Ball.	B	250	.40	**
Interiors, Pull, Medium Base, 660 Watts, without Chain Guide, Chain or Pendant Ball.	B	250	.36	
Interiors, Pull, 75 Watts, with Chain Guide but without Chain or Pendant Ball, Candelabra and Miniature Base	B	250	.64	**
Screw Shells, Standard, Medium.	B	250	.03 1/2	
" Candelabra and Miniature	B	250	.02	

Miscellaneous Parts

1-inch Metal Key.	B	100	\$.05	\$.05
1 1/4, 1 1/2, 2 or 2 1/2-inch Metal Keys.	B	100	.10	.05
Chain for Medium Base Pull Devices (per Foot).	H	1000 Ft.	.05	**
Chain for Candelabra and Miniature Base Pull Devices (per Foot).	H	500 "	.05	**
Chain for Med. Base Pull Devices Cut to Lengths Less than 100 Ft. (Price is per Inch).	H	250	.008 1/2	.004 1/2
Chain for Candelabra and Miniature Base Pull Devices Cut in Lgths. Less Than 100 Ft. (Price is per Inch).	H	100	.038 1/2	.004 1/2
Standard Chain Guide for All Pull Devices.	H	250	.05	**
Extension Chain Guide.	H	*50	.15	**
8-inch Pull Chain with Pendant Ball, Brush Brass Finish.	H	250	.13	**
1 1/2-inch No. 3 Pull Chains, No. 516 Pendant Ball and No. 510 Splicing Link, Brush Brass Finish.	H	250	.14	
8-inch Pull Chain with Insulating Link and Pendant Ball, Brush Brass.	H	250	.21	**
Short Chain with 3 feet of Small Size Linen Cord and Composition Ball.	H	250	.13	**
Small Composition Pendant Ball for Brass Shell Pull Devices.	H	250	.06	
Large Composition Pendant Ball for Wall and Ceiling Pull Switches.	H	250	.06	
Small Size Black Linen Cord for Brass Shell Pull Devices (per Foot).	H	100 Ft.	.01	
Large Size Black Linen Cord for Wall and Ceiling Pull Switches (per Foot).	H	100 "	.02	

Mogul Base

Shells, without Linings.	B	50	\$.55	†
Caps, " " " " "	B	50	.75	†
Linings, Shell.	B	50	.10	
" Cap.	B	50	.03	
Interiors.	B	50	.37	
Screw Shells.	B	50	.12	

The standard finish on all metal parts is brush brass.

†Double the prices for bodies and caps for special finishes.

‡Regular prices for bodies and caps for special finishes, shown on another page.

**For special finishes, except silver and gold, on socket pull chains, add to list price 2 cents each. For silver finishes add to list 10 cents; gold finishes upon application. 50 of one length or 100 assorted lengths.

††Polished or dull nickel can be furnished at no extra charge. For other finishes except silver or gold add to list 2 cents. For silver finishes add 10 cents to list. Gold finish prices upon application.

Bryant Bayonet Shell Sockets

250 Volts



The caps and shells of bayonet shell sockets fasten together with a bayonet lock which is secured by two screws. The standard finish is brush brass, which will be shipped when the finish is not specified.

With 1/8-inch Cap

Cat. No.	Watts	Description	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
9386	250	Key	B	25	500	120	\$.33
9392	660	Keyless	B	25	500	120	.30
35000	250	Pull	B	25	250	65	.60

With 3/8-inch Cap

50760	250	Key	B	25	250	65	\$.39
50768	660	Keyless	B	25	250	62	.36
35001	250	Pull	B	25	100	28	.66

For Base for Concealed Work

9184	250	Key	B	10	250	89	\$.44
9185	660	Keyless	B	10	250	83	.41

Outside diameter of base is 2 1/8 inches, height 2 7/8 inches. Holes for supporting screws are spaced 1 3/8 inches on centers.

No. 50717 Bryant Pony Wall Sockets with Base for Concealed Work

250 Volts

Cat. No.	Watts	Description	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
50717	660	Keyless	B	10	250	64	\$.25



Outside diameter of base is 2 inches, height 2 inches. Holes for supporting screws are spaced 1 1/4 inches on centers.

No. 4117 Bryant Switchboard Sockets

250 Volts

The shell of this socket is made of highly polished black composition and is threaded on the inside to engage with the outside of the lamp screw shell. The mounting studs are 3/8 inch in diameter and are spaced 3/8 inch on centers, one of them being in the center of the socket.

Outside diameter of shell is 2 1/8 inches. Height 1 1/8 inches. Length of studs, 2 1/2 inches.



Cat. No.	Watts	Description	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4117	660	Keyless	B	10	100	28	\$.40

**Bryant Removable Ring Sockets
With 1/8-inch Cap**

Schedule B

250 Volts



Cat. No.	Watts	Description	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
50740	250	Key	25	500	125	\$.35
50741	660	Keyless	25	500	110	.32
35037	250	*Pull	25	250	70	.65

*With white porcelain rings.

No. 50746 Bryant Removable Ring Sockets

With Small Covered Base for Concealed Work

Schedule B

















































































250 Volts



Outside diameter base, 2 inches; height 1 3/4 inches; screw spacings, 1 1/4 inches.

Cat. No.	Watts	Description	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
50746	660	Keyless	10	250	60	\$.41

The Bryant Wrinklet Line

<p>National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.</p>	<p>No. WA 1/8-in. Female Cap</p>  <p>\$0.10-B-500 Carton 25</p>	<p>No. WB 1/4-in. Female Cap</p>  <p>\$0.16-B-100 Carton 25</p>	<p>No. WC 3/8-in. Female Cap</p>  <p>\$0.16-B-250 Carton 25</p>	<p>No. WE 1/2-in. Male Cap</p>  <p>\$0.10-B-50 Carton 25</p>	<p>No. WG 3/4-in. Male Cap</p>  <p>\$0.16-B-50 Carton 25</p>	<p>No. WT Pendent Cap 1 13/32-in. Hole</p>  <p>\$0.10-B-500 Carton 25</p>	<p>No. WM 1/2-in. Female Angle Cap</p>  <p>\$0.21-B-100 Carton 25</p>	<p>No. WP 3/4-in. Female Angle Cap</p>  <p>\$0.24-B-50 Carton 25</p>	
	<p>No. 83 Keyless Socket Body 660 Watts, 250 Volts</p>  <p>\$0.23-B-500 Carton 25</p>	<p>No. WA-83</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WB-83</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WC-83</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WE-83</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WG-83</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WT-83</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WM-83</p>  <p>\$0.44-B-100 Carton 25</p>	<p>No. WP-83</p>  <p>\$0.47-B-100 Carton 25</p>
	<p>No. 95 Short Keyless Socket Body 660 Watts, 250 Volts</p>  <p>\$0.23-B-500 Carton 25</p>	<p>No. WA-95</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WB-95</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WC-95</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WE-95</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WG-95</p>  <p>\$0.39-B-250 Carton 25</p>	<p>No. WT-95</p>  <p>\$0.33-B-500 Carton 25</p>	<p>No. WM-95</p>  <p>\$0.44-B-100 Carton 25</p>	<p>No. WP-95</p>  <p>\$0.47-B-100 Carton 25</p>
	<p>No. 80 S. P. Key Socket Body 250 Watts, 250 Volts</p>  <p>\$0.26-B-500 Carton 25</p>	<p>No. WA-80</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WB-80</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WC-80</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WE-80</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WG-80</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WT-80</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WM-80</p>  <p>\$0.47-B-100 Carton 25</p>	<p>No. WP-80</p>  <p>\$0.50-B-100 Carton 25</p>
	<p>No. 82 S. P. H. C. Key Socket Body 660 Watts, 250 Volts</p>  <p>\$0.29-B-500 Carton 25</p>	<p>No. WA-82</p>  <p>\$0.39-B-500 Carton 25</p>	<p>No. WB-82</p>  <p>\$0.45-B-250 Carton 25</p>	<p>No. WC-82</p>  <p>\$0.45-B-250 Carton 25</p>	<p>No. WE-82</p>  <p>\$0.39-B-500 Carton 25</p>	<p>No. WG-82</p>  <p>\$0.45-B-250 Carton 25</p>	<p>No. WT-82</p>  <p>\$0.39-B-500 Carton 25</p>	<p>No. WM-82</p>  <p>\$0.50-B-100 Carton 25</p>	<p>No. WP-82</p>  <p>\$0.53-B-100 Carton 25</p>
	<p>No. 81 S. P. Push Socket Body 660 Watts, 250 Volts</p>  <p>\$0.26-B-500 Carton 25</p>	<p>No. WA-81</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WB-81</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WC-81</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WE-81</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WG-81</p>  <p>\$0.42-B-250 Carton 25</p>	<p>No. WT-81</p>  <p>\$0.36-B-500 Carton 25</p>	<p>No. WM-81</p>  <p>\$0.47-B-100 Carton 25</p>	<p>No. WP-81</p>  <p>\$0.50-B-100 Carton 25</p>
	<p>No. 85 S. P. Pull Socket Body 250 Watts, 250 Volts</p>  <p>\$0.40-B-250 Carton 25</p>	<p>No. WA-85</p>  <p>\$0.50-B-250 Carton 25</p>	<p>No. WB-85</p>  <p>\$0.56-B-100 Carton 25</p>	<p>No. WC-85</p>  <p>\$0.56-B-100 Carton 25</p>	<p>No. WE-85</p>  <p>\$0.50-B-250 Carton 25</p>	<p>No. WG-85</p>  <p>\$0.56-B-100 Carton 25</p>	<p>No. WT-85</p>  <p>\$0.50-B-250 Carton 25</p>	<p>No. WM-85</p>  <p>\$0.61-B-50 Carton 25</p>	<p>No. WP-85</p>  <p>\$0.64-B-50 Carton 25</p>
	<p>No. 90 S. P. Pull Switch Body 3 Amperes, 125 Volts 1 Ampere, 250 Volts</p>  <p>\$0.53-H-50 Carton 10</p>	<p>No. WA-90</p>  <p>\$0.63-H-50 Carton 10</p>	<p>No. WB-90</p>  <p>\$0.69-H-20 Carton 10</p>	<p>No. WC-90</p>  <p>\$0.69-H-20 Carton 10</p>	<p>No. WE-90</p>  <p>\$0.63-H-20 Carton 10</p>	<p>No. WG-90</p>  <p>\$0.69-H-20 Carton 10</p>	<p>No. WT-90</p>  <p>\$0.63-H-50 Carton 10</p>	<p>No. WM-90</p>  <p>\$0.74-H-20 Carton 10</p>	<p>No. WP-90</p>  <p>\$0.77-H-20 Carton 10</p>
	<p>No. 91 S. P. Pull Switch Body Amperes, 125 Volts 1 Ampere, 250 Volts</p>  <p>\$0.68 H-50 Carton 10</p>	<p>No. WA-91</p>  <p>\$0.78-H-50 Carton 10</p>	<p>No. WB-91</p>  <p>\$0.84-H-20 Carton 10</p>	<p>No. WC-91</p>  <p>\$0.84-H-20 Carton 10</p>	<p>No. WE-91</p>  <p>\$0.78-H-20 Carton 10</p>	<p>No. WG-91</p>  <p>\$0.84-H-20 Carton 10</p>	<p>No. WT-91</p>  <p>\$0.78-H-50 Carton 10</p>	<p>No. WM-91</p>  <p>\$0.89-H-20 Carton 10</p>	<p>No. WP-91</p>  <p>\$0.92-H-20 Carton 10</p>

No. 83 Bryant Wrinklet Keyless Socket Bodies

660 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
83	B	25	500	75	\$.23



No. WA Bryant Wrinklet Caps

1/8-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WA	B	25	500	27	\$.10



No. 95 Bryant Wrinklet Short Keyless Socket Bodies

660 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
95	B	25	500	55	\$.23



No. WB Bryant Wrinklet Caps

1/4-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WB	B	25	100	7	\$.16



No. 81 Bryant Wrinklet Single-pole Push Socket Bodies

660 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
81	B	25	500	78	\$.26



No. WC Bryant Wrinklet Caps

3/8-inch Female

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WC	B	25	250	17	\$.16



No. 85 Bryant Wrinklet Single-pole Pull Socket Bodies

250 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
85	B	25	250	46	\$.40



No. WE Bryant Wrinklet Caps

1/8-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WE	B	25	50	4	\$.10



No. 80 Bryant Wrinklet Single-pole Key Socket Bodies

250 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
80	B	25	500	79	\$.26



No. WG Bryant Wrinklet Caps

3/8-inch Male

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WG	B	25	50	4	\$.16



No. 82 Bryant Wrinklet Single-pole High Capacity Key Socket Bodies

660 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
82	B	25	500	79	\$.29



No. WM Bryant Wrinklet Caps

1/8-inch Female Angle

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WM	B	25	100	7	\$.21



Bryant Wrinklet Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Schedule H

No. 90 Single-pole Pull Switch Bodies

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
90	10	50	10	\$.53



No. 91 Single-pole Pull Fixture Switch Bodies

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
91	10	50	12	\$.68



No. WP Bryant Wrinklet Caps

3/8-inch Female Angle

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WP	B	25	50	5	\$.24



No. WT Bryant Wrinklet Caps

Pendent, 1 3/32-inch Hole

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WT	B	25	500	20	\$.10



No. 90 Pull Switch

No. 91 Pull Fixture Switch

Bryant Titan Sockets

Schedule B—250 Volts



In these sockets the connection between shell and cap is effected by means of a threaded ring which engages with a corresponding thread in the shell, providing an exceptionally rugged and secure fastening.

The standard finish, brush brass.

With 1/8-inch Cap

Cat. No.	Watts	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4201	250	Key, Single-pole	25	500	130	\$.36
4262	660	" High Capacity	25	500	130	.39
4203	660	Keyless	25	500	120	.33
4204	250	Pull, Single-pole	25	250	70	.50
4205	660	" High Capacity	25	250	75	.69

With 3/8-inch Cap

4206	250	Key, Single-pole	25	250	70	\$.42
4207	660	" High Capacity	25	250	70	.45
4208	660	Keyless	25	250	65	.39
4209	250	Pull, Single-pole	25	100	30	.56
4210	660	" High Capacity	25	100	30	.75

With Pendant Cap

4211	250	Key, Single-pole	25	500	125	\$.36
4212	660	" High Capacity	25	500	125	.39
4213	660	Keyless	25	500	110	.33
4214	250	Pull, Single Pull	25	250	65	.50
4215	660	" High Capacity	25	250	65	.69



Bryant Single-pole Pull Sockets

With Bottom Chain Guide

Schedule B
250 Watts, 250 Volts

These sockets are especially adapted for indirect lighting fixtures and wall brackets.

Standard finish, brush brass.

Standard equipment, 8 inches of No. 6 chain.

Brylock attachment, 27 cents extra.

Undark luminous pendant, permanently attached, 25 cents extra.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4068	1/8-inch Nozzle	10	50	22	\$.75
4237	" "	10	50	22	.80
4116	3-step Nozzle	10	50	25	.80

Bryant Electrolier Sockets

Schedule B—660 Watts, 250 Volts

The shell screws into the cap to form the mechanical connection between the two.

Standard finish is brush brass.

Carton, 50 and 10 respectively.

Cat. No.	Description	Std. Pkg.	Wt., Lbs.	Price Each
66237	Keyless, 1/8-inch Cap	250	47	\$.40
50766	" 3/8 " "	100	18	.46



Bryant Porcelain Lined Aluminum Shell Keyless Sockets

Schedule B—660 Watts, 600 Volts

These sockets are extremely rugged in construction, and are suitable for outdoor use as well as for many classes of indoor use.

The two parts of the socket are held together by two screws, accessible in the lamp receiving end of the socket.

Diameter is 1 3/8 inches. Length, 2 5/8 inches.



Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4106	3/8-inch Female Cap	10	50	25	\$.50
4107	1/2 " " "	10	50	25	.50

Bryant Keyless Angle Sockets

Schedule B

660 Watts, 250 Volts

Especially adapted for show-case and trough reflector lighting. Side bushing. Standard finish, brush brass.

Cat. No.	Side Bushing, In.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4043	1/8	25	100	26	\$.35
4044	3/8	25	100	27	.41



Bryant Porcelain Lined Metal Shell Sockets

With Shade-holder Threads

Schedule B
660 Watts, 600 Volts

Threaded to receive a special line of shade-holders. A strong, weatherproof and convenient method of attachment.

Copper shell sockets have standard gilding metal screw shells, but all other metal parts are of bronze, so that the sockets are non-corrosive.



No. 3706 Unassembled

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
3706	Alum. 3/8-in. Fem. Cap.	10	50	25	\$.50
3707	" 1/2 " " "	10	50	25	.50
3708	Aluminum Cord Grip Cap	10	50	25	.50
3726	Cop. 3/8-in. Fem. Cap.	10	50	36	.50
3727	" 1/2 " " "	10	50	36	.50
3728	Copper Cord Grip Cap.	10	50	37	.50

Bryant Single-pole Plug-in Pull Sockets

Schedule B

250 Volts



Inserting this socket in a key or keyless socket provides the convenience of control of a pull socket. Standard finish, brush brass.

Cat. No.	Over All Lgth., In.	Watts	Size Chain	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
35024	3 1/2	250	No. 6	10	100	43	\$.70
65024	2 3/8	660	" 3	10	10	4	.70

No. 4061 Bryant Twin Keyless Attachment Plug Sockets

Schedule B
660 Watts Combined Load on Both Outlets

Length of sockets, 2 1/8 inches.

With Edison Plug

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4061	10	10	5	\$.100



Bryant Twin Keyless Sockets

Each Outlet, 660 Watts, 250 Volts

Length of socket, 2 1/8 inches.

With 1/8-inch Cap

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
46750	B	10	10	3	\$.65

With 3/8-inch Cap

46751	B	10	10	3	\$.70
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No. 4040 Bryant Twin Pull Attachment Plug Sockets

250 Volts

Multiple Connections

660 Watts Combined Load on Both Outlets but Load on Pull Outlet Must Not Exceed 250 Watts

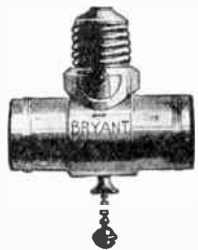
With Edison Plug

One outlet controlled. Other outlet connected permanently.

Can be furnished with permanently attached Undark luminous pendant at an addition to price of 25 cents.

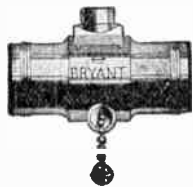
Brylock feature, 27 cents additional.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4040	B	5	10	5	\$1.35



Nos. 4051-4052 Bryant Twin Pull Sockets

250 Watts Combined Load on Both Outlets, 250 Volts



Both outlets are controlled simultaneously.

Standard finish, brush brass. Standard length of chain, 8 inches of size No. 6 chain.

Can be equipped with Brylock attachment at an addition to price of 27 cents for each outlet.

For permanently attached small Undark luminous pendant add 25 cents to price.

With 1/8-inch Cap

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4051	B	10	10	4	\$1.00

With 3/8-inch Cap

4052	B	10	10	4	\$1.06
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Nos. 4005-4006 Bryant Twin Pull Sockets

Each Outlet, 250 Watts, 250 Volts

First pull: Outlet No. 1 alone. Second pull: Both outlets in multiple. Third pull: Outlet No. 1 off; outlet No. 2 on. Fourth pull: Both outlets off.

Standard finish, brush brass. Standard length of chain, 8 inches of size No. 6 chain.

Can be equipped with Brylock attachment at an addition to price of 27 cents for each outlet.

For permanently attached small Undark luminous pendant add 25 cents to price.



With 1/8-inch Cap

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4005	B	10	10	4	\$1.00

With 3/8-inch Cap

4006	B	10	10	4	\$1.06
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Nos. 4053-4054 Bryant Twin Pull Sockets

250 Volts—Pull Outlet, 250 Watts; Keyless Outlet, 660 Watts



One outlet is controlled. Other outlet is connected permanently.

Standard finish, brush brass. Standard length of chain, 8 inches of size No. 6 chain.

Can be equipped with Brylock attachment at an addition to price of 27 cents for each outlet.

For permanently attached small Undark luminous pendant, add 25 cents.

With 1/8-inch Cap

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4053	B	10	10	4	\$1.00

With 3/8-inch Cap

4054	B	10	10	4	\$1.06
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No. 4039 Twin Pull Attachment Plug Sockets

Each Outlet, 250 Watts, Multiple Connections, 250 Volts With Edison Plug



First pull:—Outlet No. 1 alone. Second pull:—Both outlets in multiple. Third pull:—Outlet No. 1 off; outlet No. 2 stays on. Fourth pull:—Both outlets off.

This device is recommended for charging radio batteries. A light can be placed in one outlet, and the charging rectifier connected to the other. A pull on the chain connects or disconnects either or both as desired.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4039	B	5	10	5	\$1.35

No. 4567 Bryant High-heat Composition Keyless Sockets

Schedule B—660 Watts, 250 Volts

With 3/8-inch Female Bushing



This socket is intended for use in unit lighting fixtures with Type C gas filled lamps.

The body is of high-heat composition in two parts held together with a threaded brass ring.

Equipped regularly with lamp grip.

Diameter of body, 1 1/2-inch.

Diameter of brass ring, 1 3/8 inches.

Length over all, 2 1/2 inches.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4567	Medium with 3/8-inch Female Bushing	10	100	34	\$.42

Bryant Bayonet Ediswan Medium Base Socket Bodies

Schedule B

With Shade-holder Ring

250 Volts

New Wrinkle Key Socket Body



Cat. No.	Watts	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60	250	25	500	135	\$.43

Wrinklet Push Button Socket Body

77	660	25	500	100	.52
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No. 60 body will fit any New Wrinkle cap or base.

No. 77 body will fit any Wrinklet cap or base.

To obtain the list price of a complete socket add the list of body and cap.

No. 540 Bryant Single-pole Pull Candle Sockets

Schedule B

Composition, with Paper Jacket and Female Thread Bushing



The bushing of this socket is threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads to the inch. Standard chain is No. 3 and extends 5 inches below composition. Standard finish of chain is brush brass, but nickel or silvered finish will be furnished without extra charge. For any other special finish, see another page.

Outside diameter, 3/8 inch. Length over all, 2 5/8 inches. Regularly supplied with a paper insulating jacket which covers the mechanism and screw shell; outside diameter of jacket is 7/8 inch.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
540	Candelabra	25	50	5	\$.75

No. 560 Bryant Single-pole Turn Candle Sockets

Schedule B

75 Watts, 125 Volts

Composition, with Paper Jacket and Female Thread Bushing

A regular No. 540 socket equipped with an operating hand which fits into an ornamental cup supplied by the fixture manufacturer. It is operated by turning the cup at the base of the candle. Complete ready to wire, but a nipple between the socket and operating band must be supplied by manufacturer.

Bushing threaded for 1/8-inch iron pipe, .405-inch outside diameter, 27 threads per inch. Outside diameter, 3/8-inch; length, 2 5/8 inches. Outside diameter of paper insulating jacket, 7/8-inch.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
560	Candelabra	20	20	6	\$1.50
...	Operating Bands only	20	20		.75



No. 4004 Bryant Candle Sockets

Porcelain, Keyless, with Paper Jacket

660 Watts, 250 Volts



The bushing of this socket is threaded for $\frac{1}{8}$ -inch iron pipe, .405-inch outside diameter, 27 threads per inch.

The outside diameter of the paper jacket is $1\frac{3}{16}$ inches. Length of socket, $1\frac{7}{8}$ inches. Length over all, $2\frac{3}{16}$ inches.



No. 4004 Old Style

No. 4004 is easy to install. The fixture wires are passed up through the center of the socket while the socket is being screwed onto the fixture pipe. When the socket is adjusted, the wires are pulled out and are then fastened under the binding screws.

No. 4004 Old Style is similar to No. 4004, except that it has a short bushing without hickey, and there is no hole in the center of the socket through which the wires can be passed when installing the socket. It must be used in connection with threaded $\frac{1}{8}$ -inch pipe (.405-inch outside diameter, 27 threads per inch) which has openings cut in it through which to pull the fixture wires.

The outside diameter of the paper jacket is $1\frac{3}{16}$ inches. Length of socket, $1\frac{7}{8}$ inches. Length over all, $2\frac{3}{16}$ inches.

When this socket is desired, No. 4004 Old Style should be specified. Price, Schedule, Standard Package Quantity, Carton Quantity and Rating are the same as No. 4004.

Cat. No.	Description	Sched. ulc	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4004	Medium Female Thread Hickey. B	B	25	250	31	\$.16

Bryant Single-pole Pull Candle Sockets

Schedule B

250 Watts, 250 Volts

Composition, with Paper Jacket and Female Hickey or Bushing



No. 4230



No. 4120



No. 4154 With Paper Jacket Off

Bushings of these sockets are threaded for $\frac{1}{8}$ -inch iron pipe, .405-inch outside diameter, 27 threads per inch. The mechanism of each socket is covered with a paper jacket $1\frac{3}{16}$ -inch outside diameter.

The standard chain is No. 3 size and extends 5 inches below composition. Standard finish of chain is brush brass, but polished or dull nickel finish will be furnished without extra charge. For permanently attached small Undark luminous pendant, add 25 cents to price.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4120	Medium, $3\frac{3}{16}$ Inches Long	10	100	20	\$.75
4230	" $3\frac{7}{8}$ " "	10	100	20	.75
4153	" 4 " "	10	100	24	.75
4154	" $4\frac{1}{2}$ " "	10	100	24	.75
4155	" 5 " "	10	100	24	.75

No. 4163 Bryant Keyless Candle Socket Bodies

660 Watts, 250 Volts—Medium Base Schedule B



No. 4163



Body



Jacket

Porcelain base, white paper jacket, no hickey. Dimensions: diameter of base, $1\frac{3}{32}$ inches; length of body only, $1\frac{9}{16}$ inches; diameter over paper jacket, $1\frac{3}{8}$ inches; length of paper jacket, $1\frac{25}{32}$ inches.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4163	Body Only with Jacket	25	250	27	\$.12

Bryant Steel Hickeys

Schedule B



No. 4164



No. 4165



No. 4166

Designed to support No. 4163 keyless socket. Complete with fibre stop washer. Bottom of hickey is tapped for $\frac{1}{8}$ -inch pipe, .405 inch outside diameter, 27 threads per inch. Brass-plated to prevent rusting. May be assorted in unbroken cartons to make a standard package.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4164	Short, $1\frac{1}{32}$ Inch Long	25	250	10	\$.04
4165	Long, $1\frac{1}{2}$ Inches Long	25	250	12	.04
4166	Adjustable from $2\frac{3}{32}$ to $3\frac{23}{32}$ In.	25	250	15	.05

Bryant Keyless Candle Sockets

660 Watts, 250 Volts—Medium Base Schedule B



No. 4167



No. 4168



No. 4169

Porcelain base, white paper jacket, detachable hickey for $\frac{1}{8}$ -inch pipe.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4167	Short, $2\frac{1}{8}$ Inches Long	25	250	31	\$.16
4168	Long, $2\frac{3}{8}$ " "	25	250	32	.16
4169	Adjustable from 4 to $5\frac{1}{2}$ Inches	25	250	35	.17

No. 4170 Bryant Steel Adjustable Adapter Hickeys

Schedule B

$\frac{1}{8}$ -inch female bushing at lower end, $\frac{1}{8}$ -inch male stud at upper end. Brass-plated.

By screwing the stud of this hickey into the bushing of a Bryant No. 4004, 4230, 4153, 4154 or 4155 socket or similar sockets of other manufacture, the socket is extended $1\frac{5}{32}$ inches and made adjustable up to $2\frac{23}{32}$ inches more than its own length.

This device will be found convenient when extra long candle slips are called for.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
4170	Adjustable from $1\frac{5}{32}$ to $2\frac{23}{32}$ Inches	10	100	18	\$.10



Bryant Sockets for Flat Pans

Schedule B
660 Watts, 250 Volts

These sockets are made by soldering 8-inch leads of stranded rubber-covered wire to the terminals of regular No. 95 Wrinklet sockets and covering the tops with wax to hold the bodies in the shells. Used in ceiling pan fixtures by making round holes $1\frac{1}{4}$ inches in diameter in the pans and soldering around the holes on the upper side of the pans Bryant No. 549 Uro fixture rings, after which the wires are connected.

Wrinklet caps cannot be used on these sockets. Standard finish, brass polished but not lacquered. Longer leads can be supplied at an advance in price of $4\frac{1}{2}$ cents per foot each conductor. Wire lengths cannot be assorted to make up a standard package.



Cat. No.	Leads Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
95014	With No. 14 Wire	25	250	45		\$.34
95016	" " 16 "	25	250	42		.30
95018	" " 18 "	25	250	40		.28

Bryant Pull Socket Balls, and Insulating and Splicing Links



No. 512 or No. 516
Shown Unassembled

No. 513

No. 510 or No. 811
No. 810 is Similar

In those pull devices having a combination chain and cord, No. 810 splicing link is used to join the two.

The standard finish is brush brass, which will be supplied when no other finish is specified. All other finishes will be special, for which add 2 cents each to prices for both balls and links, except for silver and gold. For silver finishes add 10 cents list. Gold finish prices upon application.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
512	H	Snap Lock Ball with Sleeve for Medium Base Pull Devices	250	250	1		\$.06
516	H	Snap Lock Ball with Sleeve for Candelabra and Miniature Base Pull Devices	50	50	$\frac{1}{4}$		.06
510	H	Splicing Link for No. 6 Chain	200	200	$\frac{1}{2}$		.021 $\frac{1}{2}$
513	H	Insulating Link for No. 3 or No. 6 Chain	100	100	$\frac{1}{2}$		.08
810	H	Splicing Link to Connect No. 6 Chain to Small Linen Pull Cord	200	200	$\frac{1}{4}$		.021 $\frac{1}{2}$
811	H	Splicing Link for No. 3 Chain	200	200	$\frac{1}{2}$		.021 $\frac{1}{2}$

No. NW Bryant New Wrinkle and Wrinklet Socket Cap Wrenches



For use in fastening caps to fixtures when the caps are enclosed in husks.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
NW	H	1	1	$\frac{1}{2}$		\$.50

Bryant Porcelain Receptacles for Metal Signs

Schedule II
75 Watts, 125 Volts

Miniature

Cat. No.	Hole Req'd In.	Depth In.	Screw Spacings In.	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
387	$\frac{3}{32}$	$\frac{3}{16}$	$1\frac{1}{16}$	100	8			\$.18
388	$\frac{3}{4}$	1	$1\frac{3}{16}$	100	10			.18



No. 388

Candelabra

Bryant Porcelain Receptacles for Metal Signs

75 Watts, 125 Volts
With Removable Ring

Hole required, $\frac{3}{4}$ inch diameter. Diameter, $1\frac{3}{16}$ inches. Thickness of ring, $\frac{1}{4}$ inch. Depth: No. 389, $\frac{5}{8}$ inch; No. 390, $\frac{7}{8}$ inch.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
389	Miniature	H	25	100	9		\$.20
390	Candelabra	H	25	100	11		.20



No. 390

Bryant Single-pole Key Sockets

75 Watts, 125 Volts

New Wrinkle Style Shell Fastening
 $\frac{1}{8}$ -inch Cap



No. 434

Standard finish, brush brass. Can be furnished with metal key or to take metal key.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
433	Miniature	H	25	100	12		\$.39
434	Candelabra	H	25	100	12		.39

Bryant Single-pole Pull Sockets

75 Watts, 125 Volts

New Wrinkle Style Shell Fastening
 $\frac{1}{8}$ -inch Cap

Standard length chain, 4 inches. Extension chain guides and Undark luminous pendants furnished, extra.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
385	Miniature	H	10	50	6		\$.84
386	Candelabra	H	10	50	6		.84



No. 386

Bryant Miniature and Candelabra Keyless Sockets

75 Watts, 125 Volts

Threaded Shell Fastening $\frac{1}{8}$ -inch Cap



Cat. No.	Style	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
320	Miniature	H	50	100	8		\$.32
321	Candelabra	H	50	100	8		.32

Bryant Porcelain Decorative Sockets

75 Watts, 125 Volts

Green glazed finish. Fitted with five inches of No. 18 B. & S. Green Braid, Stranded Rubber Covered Wire. Longer wires, \$.09 per foot, extra.

Cat. No.	Style	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
322	Miniature	H	25	100	6		\$.16
323	Candelabra	H	25	100	6		.16



Bryant Porcelain Base Cleat Receptacles

75 Watts, 125 Volts

Outside diameter of base, $1\frac{3}{8}$ inches. Thickness of base, $\frac{1}{2}$ inch. Height, $1\frac{3}{32}$ inches. Supporting screw spacings, $1\frac{1}{16}$ inches.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
366	Miniature	H	25	100	12		\$.12
367	Candelabra	H	25	100	13		.12



No. 367

Bryant Porcelain Base Cleat Receptacles

Schedule II

75 Watts, 125 Volts

Cat. No.	Description	BASE, IN. O. D.	Thick-ness	Ht. In.	Screw Spacings In.	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
9445	Miniature	$1\frac{3}{16}$	$\frac{3}{32}$	$2\frac{1}{32}$	$\frac{5}{16}$	25	200	11		\$.09
9446	Candelabra	$1\frac{1}{2}$	$\frac{5}{16}$	$\frac{1}{8}$	$1\frac{1}{16}$	25	200	14		.09



No. 9445

No. 325 Bryant Candelabra Cleat Receptacles

75 Watts, 125 Volts

Oblong Porcelain Base

Base, $1\frac{9}{16} \times 1$ inch. Thickness of base, $\frac{1}{2}$ inch. Height, $1\frac{1}{16}$ inches. Supporting screw spacings, $1\frac{3}{32}$ by $\frac{1}{16}$ inch.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
325	H	25	100	12		\$.10



No. 25705 Bryant Candelabra Receptacles for Wooden Signs















































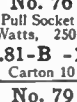
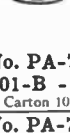
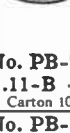
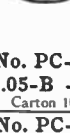
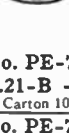
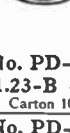
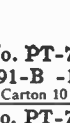
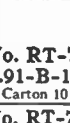








75 Watts, 125 Volts

Hole required, $\frac{5}{8}$ inch diameter. Thickness back, $\frac{5}{8}$ inch. Diameter back, $1\frac{3}{8}$ inches. Length neck, $\frac{7}{8}$ inch. Screw holes spaced $1\frac{5}{8}$ inches on centers.

































































Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
25705	H	10	100	14		\$.24



The Bryant Interchangeable Porcelain Line

National Electrical Code Standard For more complete listings of Bodies and Caps, including ratings, see other pages.	No. PA 1/2-in. Female Brass Cap  \$0.20-B -100 Carton 10	No. PB 1/2-in. Female Brass Cap  \$0.30-B -100 Carton 10	No. PC 3/4-in. Female Brass Cap  \$0.24-B -100 Carton 10	No. PE 3/4-in. Female Aluminum Cap  \$0.40-B -100 Carton 10	No. PD 1/2-in. Female Aluminum Cap  \$0.42-B -100 Carton 10	No. PT Pendant Cap 1 1/32-in. Cord Hole  \$0.10-B -250 Carton 10	No. RT Pendant Cap 1/2-in. Cord Hole  \$0.10-B-250 Carton 10
	No. 73 Keyless Socket Body 660 Watts, 250 Volts  \$0.23-B -250 Carton 10	No. PA-73  \$0.43-B -100 Carton 10	No. PB-73  \$0.53-B -100 Carton 10	No. PC-73  \$0.47-B -100 Carton 10	No. PE-73  \$0.63-B -100 Carton 10	No. PD-73  \$0.65-B -100 Carton 10	No. PT-73  \$0.33-B -250 Carton 10
No. 70 S. P. Key Socket Body 250 Watts, 250 Volts  \$0.26-B -250 Carton 10	No. PA-70  \$0.46-B -100 Carton 10	No. PB-70  \$0.56-B -100 Carton 10	No. PC-70  \$0.50-B -100 Carton 10	No. PE-70  \$0.66-B -100 Carton 10	No. PD-70  \$0.68-B -100 Carton 10	No. PT-70  \$0.36-B -250 Carton 10	No. RT-70  \$0.36-B-250 Carton 10
No. 72 S. P. Key Socket Body 660 Watts, 250 Volts  \$0.29-B -250 Carton 10	No. PA-72  \$0.49-B -100 Carton 10	No. PB-72  \$0.59-B -100 Carton 10	No. PC-72  \$0.53-B -100 Carton 10	No. PE-72  \$0.69-B -100 Carton 10	No. PD-72  \$0.71-B 100 Carton 10	No. PT-72  \$0.39-B -250 Carton 10	No. RT-72  \$0.39-B-250 Carton 10
No. 71 S. P. Push Socket Body 660 Watts, 250 Volts  \$0.29-B -100 Carton 10	No. PA-71  \$0.49-B -100 Carton 10	No. PB-71  \$0.59-B -100 Carton 10	No. PC-71  \$0.53-B -100 Carton 10	No. PE-71  \$0.69-B -100 Carton 10	No. PD-71  \$0.71-B -100 Carton 10	No. PT-71  \$0.39-B -100 Carton 10	No. RT-71  \$0.39-B-100 Carton 10
No. 75 S. P. Pull Socket Body 250 Watts, 250 Volts \$0.59-B -100 Carton 10 	No. PA-75  \$0.79-B -100 Carton 10	No. PB-75  \$0.89-B -50 Carton 10	No. PC-75  \$0.83-B -100 Carton 10	No. PE-75  \$0.99-B -50 Carton 10	No. PD-75  \$1.01-B -50 Carton 10	No. PT-75  \$0.69-B -100 Carton 10	No. RT-75  \$0.69-B-100 Carton 10
No. 76 S. P. Pull Socket Body 660 Watts, 250 Volts \$0.81-B -100 Carton 10 	No. PA-76  \$1.01-B -100 Carton 10	No. PB-76  \$1.11-B -50 Carton 10	No. PC-76  \$1.05-B -100 Carton 10	No. PE-76  \$1.21-B -50 Carton 10	No. PD-76  \$1.23-B -50 Carton 10	No. PT-76  \$0.91-B -100 Carton 10	No. RT-76  \$0.91-B-100 Carton 10
No. 79 "Spartan" Receptacle Body 10 Amperes, 250 Volts  \$0.15-R -50 Carton 10	No. PA-79  \$0.35-R -50 Carton 10	No. PB-79  \$0.45-R -50 Carton 10	No. PC-79  \$0.39-R -50 Carton 10	No. PE-79  \$0.55-R -20 Carton 10	No. PD-79  \$0.57-R -20 Carton 10	No. PT-79  \$0.25-R -50 Carton 10	No. RT-79  \$0.25-R-50 Carton 10

The Bryant Interchangeable Porcelain Line

<p>No. PP 3/8-in. Female Brass Angle Cap</p>  <p>\$0.50-B-100 Carton 10</p>	<p>No. PF 3/8-in. Female Aluminum Angle Cap</p>  <p>\$0.65-B-100 Carton 10</p>	<p>No. RW 1/2-in. Female Aluminum Angle Cap</p>  <p>\$0.75-B-100 Carton 10</p>	<p>No. PW Cleat Base</p>  <p>\$0.14-B-100 Carton 10</p>	<p>No. PZ Concealed Base</p>  <p>\$0.15-B-100 Carton 10</p>	<p>No. RB Wood Molding Base</p>  <p>\$0.15-B-100 Carton 10</p>	<p>No. RL 3/4-in. Box Base</p>  <p>\$0.30-B-100 Carton 10</p>	<p>No. RM 4-in. Box Base</p>  <p>\$0.40-B-100 Carton 5</p>
<p>No. PP-73</p>  <p>\$0.73-B-100 Carton 10</p>	<p>No. PF-73</p>  <p>\$0.88-B-100 Carton 10</p>	<p>No. RW-73</p>  <p>\$0.98-B-100 Carton 10</p>	<p>No. PW-73</p>  <p>\$0.37-B-100 Carton 10</p>	<p>No. PZ-73</p>  <p>\$0.38-B-100 Carton 10</p>	<p>No. RB-73</p>  <p>\$0.38-B-100 Carton 10</p>	<p>No. RL-73</p>  <p>\$0.53-B-100 Carton 10</p>	<p>No. RM-73</p>  <p>\$0.63-B-100 Carton 1</p>
<p>No. PP-70</p>  <p>\$0.76-B-100 Carton 10</p>	<p>No. PF-70</p>  <p>\$0.91-B-100 Carton 10</p>	<p>No. RW-70</p>  <p>\$1.01-B-100 Carton 10</p>	<p>No. PW-70</p>  <p>\$0.40-B-100 Carton 10</p>	<p>No. PZ-70</p>  <p>\$0.41-B-100 Carton 10</p>	<p>No. RB-70</p>  <p>\$0.41-B-100 Carton 10</p>	<p>No. RL-70</p>  <p>\$0.56-B-100 Carton 10</p>	<p>No. RM-70</p>  <p>\$0.66-B-100 Carton 1</p>
<p>No. PP-72</p>  <p>\$0.79-B-100 Carton 10</p>	<p>No. PF-72</p>  <p>\$0.94-B-100 Carton 10</p>	<p>No. RW-72</p>  <p>\$1.04-B-100 Carton 10</p>	<p>No. PW-72</p>  <p>\$0.43-B-100 Carton 10</p>	<p>No. PZ-72</p>  <p>\$0.44-B-100 Carton 10</p>	<p>No. RB-72</p>  <p>\$0.44-B-100 Carton 10</p>	<p>No. RL-72</p>  <p>\$0.59-B-100 Carton 10</p>	<p>No. RM-72</p>  <p>\$0.69-B-100 Carton 1</p>
<p>No. PP-71</p>  <p>\$0.79-B-100 Carton 10</p>	<p>No. PF-71</p>  <p>\$0.94-B-100 Carton 10</p>	<p>No. RW-71</p>  <p>\$1.04-B-100 Carton 10</p>	<p>No. PW-71</p>  <p>\$0.43-B-100 Carton 10</p>	<p>No. PZ-71</p>  <p>\$0.44-B-100 Carton 10</p>	<p>No. RB-71</p>  <p>\$0.44-B-100 Carton 10</p>	<p>No. RL-71</p>  <p>\$0.59-B-100 Carton 10</p>	<p>No. RM-71</p>  <p>\$0.69-B-100 Carton 1</p>
<p>No. PP-75</p>  <p>\$1.09-B-50 Carton 10</p>	<p>No. PF-75</p>  <p>\$1.24-B-50 Carton 10</p>	<p>No. RW-75</p>  <p>\$1.34-B-50 Carton 10</p>	<p>No. PW-75</p>  <p>\$0.73-B-50 Carton 10</p>	<p>No. PZ-75</p>  <p>\$0.74-B-50 Carton 10</p>	<p>No. RB-75</p>  <p>\$0.74-B-50 Carton 10</p>	<p>No. RL-75</p>  <p>\$0.89-B-50 Carton 10</p>	<p>No. RM-75</p>  <p>\$0.99-B-50 Carton 1</p>
<p>No. PP-76</p>  <p>\$1.31-B-50 Carton 10</p>	<p>No. PF-76</p>  <p>\$1.46-B-50 Carton 10</p>	<p>No. RW-76</p>  <p>\$1.56-B-50 Carton 10</p>	<p>No. PW-76</p>  <p>\$0.95-B-50 Carton 10</p>	<p>No. PZ-76</p>  <p>\$0.96-B-50 Carton 10</p>	<p>No. RB-76</p>  <p>\$0.96-B-50 Carton 10</p>	<p>No. RL-76</p>  <p>\$1.11-B-50 Carton 10</p>	<p>No. RM-76</p>  <p>\$1.21-B-50 Carton 1</p>
<p>No. PP-79</p>  <p>\$0.65-R-20 Carton 10</p>	<p>No. PF-79</p>  <p>\$0.80-R-20 Carton 10</p>	<p>No. RW-79</p>  <p>\$0.90-R-20 Carton 10</p>	<p>No. PW-79</p>  <p>\$0.29-R-20 Carton 10</p>	<p>No. PZ-79</p>  <p>\$0.30-R-20 Carton 10</p>	<p>No. RB-79</p>  <p>\$0.30-R-20 Carton 10</p>	<p>No. RL-79</p>  <p>\$0.45-R-20 Carton 10</p>	<p>No. RM-79</p>  <p>\$0.55-R-20 Carton 1</p>

No. 70 Bryant Single-pole Porcelain Key Socket Bodies



Schedule B
250 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached to this device.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
70	10	250	79	\$.26

No. 72 Bryant Single-pole Porcelain Key Socket Bodies



Schedule B
660 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached to this device.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
72	10	250	79	\$.29

No. 73 Bryant Porcelain Keyless Socket Bodies

Schedule B
660 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached to this device.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
73	10	250	53	\$.23



No. 71 Bryant Porcelain Push Button Socket Bodies

Schedule B
660 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached to this device.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
71	10	100	39	\$.29



No. 75 Bryant Single-pole Porcelain Pull Socket Bodies

Schedule B
250 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached. Standard finish, brush brass. For special finishes add 2 cents.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
75	10	100	41	\$.59



No. 76 Bryant Single-pole Porcelain Pull Socket Bodies

Schedule B
660 Watts, 250 Volts

Emergency and Weatherproof shade-holders may be attached. Standard finish, brush brass. For special finishes add 2 cents.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
76	10	100	43	\$.81



No. 79 Bryant Porcelain Spartan Receptacle Bodies

Schedule R
10 Amperes, 250 Volts

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
79	10	50	9	\$.15



No. PT Bryant Porcelain Pendant Caps

Schedule B

Cord hole, $\frac{3}{8}$ -inch.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PT	10	250	31	\$.10



No. RT Bryant Porcelain Pendant Caps

Schedule B

Cord hole, $\frac{1}{2}$ inch.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RT	10	250	39	\$.10



No. PA Bryant Porcelain Caps

$\frac{1}{8}$ -inch Female Brass

Schedule B

Standard finish, brush brass.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PA	10	100	17	\$.20



No. PB Bryant Porcelain Caps

$\frac{1}{4}$ -inch Female Brass

Schedule B

Standard finish, brush brass.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PB	10	100	17	\$.30



No. PC Bryant Porcelain Caps

Schedule B

$\frac{3}{8}$ -inch Female Brass

Standard finish, brush brass.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PC	10	100	17	\$.24



No. PE Bryant Porcelain Caps

Schedule B

$\frac{3}{8}$ -inch Female Aluminum

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PE	10	100	17	\$.40



No. PD Bryant Porcelain Caps

Schedule B

$\frac{1}{2}$ -inch Female Aluminum

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PD	10	100	17	\$.42



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PD	10	100	17	\$.27

*Standard finish, brush brass.

No. PP Bryant Porcelain Angle Caps

Schedule B

$\frac{3}{8}$ -inch Female Brass

Standard finish, brush brass.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PP	10	100	27	\$.50



No. PF Bryant Porcelain Angle Caps

Schedule B



3/8-inch Female Aluminum

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PF	10	100	20	\$.65

No. RW Bryant Porcelain Angle Caps

Schedule B

1/2-inch Female Aluminum

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RW	10	100	22	\$.75
RW	10	100	22	\$.60



No. 78 Bryant Spartan Current Taps

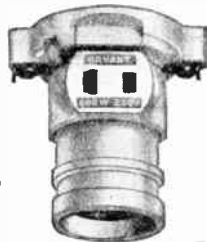
Schedule H

660 Watts, 250 Volts



No. 78

Can be inserted between the cap or base and the body of any porcelain socket combination of the Bryant Interchangeable Porcelain Line and will take any of the Spartan caps of the Bryant Spartan Line.



Inserted Between No. PW Base and No. 73 Socket

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
78	10	50	12	\$.20

No. PW Bryant Porcelain Cleat Bases

Schedule B

Diameter of base, 2 1/4 inches. Diameter over lugs, 2 5/8 inches. Supporting screw spacings, 1 5/8 inch.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PW	10	100	28	\$.14

No. PZ Bryant Porcelain Concealed Bases

Schedule B

Outside diameter 2 3/4 inches. Screw spacings 1 1/8 and 2 5/8 inches. Base fits Type No. 500 Adaptibox.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PZ	10	100	46	\$.15

No. RL Bryant Porcelain Bases For 3/4-inch Boxes

Schedule B

Outside diameter 3 5/8 inches. Screw spacings 2 3/4 inches. Suitable machine screws for mounting furnished.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RL	10	100	54	\$.30

No. RM Bryant Porcelain Bases For 3/4-inch and 4-inch Boxes

Schedule B

For 3/4-inch and 4-inch Boxes

Outside diameter, 4 1/8 inches. Supporting screw spacings, 2 3/4 and 3 1/2 inches. Screws for mounting furnished.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RM	5	100	83	\$.40

No. SS Bryant K-W Cleat Bases

Stamped Lugs

Diameter, 2 3/8 inches; over lugs, 3 1/2 inches. Screw spacings, 1 5/8 inches.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SS	H	10	100	45	\$.13

No. ST Bryant K-W Cleat Bases

Cast Lugs

Diameter, 2 3/8 inches; over lugs, 3 1/2 inches. Screw spacings, 1 5/8 inches.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ST	H	10	100	45	\$.13

No. SU Bryant K-W Concealed Bases

Outside diameter of base, 2 5/8 inches. Screw spacings, 1 5/8 inches.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SU	H	10	100	40	\$.13

No. SV Bryant K-W Wood Molding Bases

Base measures 2 5/8 x 2 1/4 inches. Screw spacings, 1 5/8 inches.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SV	II	10	100	40	\$.13

No. SW Bryant K-W Combination Bases

Diameter, 2 5/8 inches. Screw spacings, 1 5/8 inches.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SW	H	10	100	45	\$.13

No. 717 Bryant K-W Pendent Rosette Caps

Fusible

2 Amperes, 125 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
717	H	10	250	68	\$.13



No. 710 Bryant K-W Key Socket Bodies

Fusible

250 Watts, 125 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
710	B	10	100	45	\$.62



No. 718 Bryant K-W Bracket Rosette Caps

Fusible

Bushing tapped for 1/8-inch pipe. Standard finish, brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
718	H	10	100	30	\$.23



No. 4235 Bryant Medium Base Reflector

Sockets
Schedule B
660 Watts, 250 Volts



No. 4235 Front View



No. 4235 Back View

A single piece of ruggedly designed porcelain. The conductors pass through separate holes in the porcelain to the binding screw terminals which are located in shallow recesses at the lamp end of the socket. This construction greatly simplifies both the installation of the socket in the reflector and the connecting of the conductors. The terminal binding screws are extra heavy and long and are staked to prevent being backed out too far.

There are four mounting surfaces or levels accomplished by steps of 1/4 inch each, so that it is possible to hold the lamp at four different positions or focuses with reference to the particular style of reflector used.

This socket can be installed with ease in any type of metal reflector regardless of whether the reflector and its holder are made in one piece or separate pieces; it is suitable for use with metal caps tapped to fit either 3/8-inch or 1/2-inch pipe.

No caps are furnished with these sockets. Reflector manufacturers will supply whatever kind of support is best suited to their particular style of reflectors or holders.

The supporting means of the socket may be so arranged in the reflector that the holding screws, as well as the binding screws, are accessible from the lamp end of the socket.

Socket is 2 3/4 inches in diameter by 1 9/16 inches deep. Holes for supporting screws are 3/16 inch in diameter and are spaced 1 3/4 inches on centers.

Lamp grip, 5 cents extra.

Cat. No.	Car-ton	Std. Pkg	Wt., Lbs. Std. Pkg.	Price Each
4235	10	100	18	\$.30

No. 9402 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts



Diameter of main base is 2 1/2 inches; diameter over lugs is 2 7/8 inches. Height 1 3/4 inches. Holes for supporting screws spaced 2 5/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9402	B	10	25C	105	\$.17

No. 4013 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

With Groove for Shade Holder

Diameter main base, 2 1/2 inches; over lugs, 2 7/8 inches. Height, 1 3/4 inches. Screw holes spaced 2 5/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4013	B	10	250	100	\$.22



No. 9403 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

Brass Shell for Uno and Other Holders.

Diameter of main base, 2 1/2 inches; over lugs, 2 7/8 inches. Height, 1 5/8 inches. Screw holes spaced 2 5/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9403	B	10	250	91	\$.27



No. 28795 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

Diameter of base is 2 3/8 inches. Height 1 3/4 inches. Holes for supporting screws are spaced 1 7/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
28795	B	10	250	93	\$.18



No. 50715 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts



Diameter of main base, 1 7/8 inches; diameter over lugs is 2 7/8 inches. Height 1 3/4 inches. Holes for supporting screws are spaced 1 3/4 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
50715	B	10	250	78	\$.12

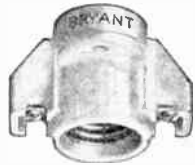
No. 59275 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

For Damp Places

Diameter over lugs is 2 3/4 inches. Height 1 3/4 inches. Holes for supporting screws are spaced 2 inches on centers. Raises wires 1 inch.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
59275	B	10	250	110	\$.25



No. 9171 Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

Diameter of base is 1 5/8 inches. Height 1 1/2 inches.

Supported by one screw in center.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9171	B	10	500	134	\$.12



No. 4229 Bryant Porcelain Receptacles

660 Watts, 250 Volts

With Combination Base for Cleat or Concealed Wiring

Diameter of base is 2 1/8 inches. Height, 1 7/8 inches. Holes for supporting screws are elongated to provide 1 3/8 to 1 5/8 in. on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4229	B	10	250	102	\$.25



Bryant Porcelain Cleat Receptacles

660 Watts, 250 Volts

Length, 3 5/8 in. Width, 1 in. Height, 2 1/4 in. Supporting screw spacings, 7/8 by 3 1/2 inch.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
58301	B	5	250	159	\$.28
*58300	B	5	250	172	\$.33

*With shade-holder groove.



Bryant Porcelain Concealed Receptacles

660 Watts, 250 Volts

Outside diam. of base, 2 3/8 in. Height, 1 5/8 in. Supporting screw spacings, 1 3/8 inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4000	B	10	250	101	\$.25
*4001	B	10	250	103	\$.30

*With shade-holder groove.



No. 4002 Bryant Porcelain Concealed Receptacles

660 Watts, 250 Volts

Brass Ring for Uno and Other Holders

Outside diameter base, 2 5/8 inches. Height, 1 5/8 inches. Screw holes spaced 1 5/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4002	B	10	250	100	\$.35



No. 50744 Bryant Porcelain Receptacles

660 Watts, 250 Volts

With Removable Ring

Outside diameter of base is 2 1/2 inches. Height, 1 7/8 inches. Holes for supporting screws are spaced 1 1/4 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
50744	B	10	100	50	\$.30



No. 9401 Bryant Porcelain Receptacles

660 Watts, 250 Volts

With Single-pole Link Fuse

Outside diameter of base is 2 1/8 inches. Height, 1 9/16 inches. Holes for supporting screws are spaced 1 1/8 inches on centers. Slotted base.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
9401	B	10	100	57	\$.40

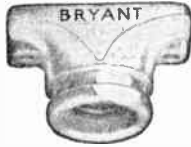


Bryant Porcelain Wood Molding Receptacles

660 Watts, 250 Volts

Length, 2 3/8 in. Width, 1 1/8 in. Height, 1 1/8 in. Screw spacings, 2 3/8 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4024	B	10	250	80	\$.30
*4026	B	10	250	90	.35



*With shade-holder groove.

No. 4025 Bryant Porcelain Wood Molding Receptacles

660 Watts, 250 Volts

With brass ring for Uno and other standard shadeholders. Length, 2 7/8 in. Width, 1 5/8 in. Height, 1 1/8 in. Screw holes spaced, 2 3/8 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4025	B	10	250	75	\$.40



No. 42453 Bryant Porcelain Wood Molding Receptacles

660 Watts, 250 Volts

Length is 2 5/8 inches. Width, 2 1/8 inches. Height, 1 3/4 inches. Holes for supporting screws are spaced 1 1/8 inches on centers.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
42453	B	10	250	128	\$.25



Bryant Porcelain Receptacles for Outlet Boxes and Metal Signs

Schedule B

660 Watts, 250 Volts

Deep Receptacles with Shallow (7/16-inch) Ring

The hole required for receptacles is 1 1/2 inches in diameter. Diameter of receptacles, 1 3/4 inches. Diameter of rings, 1 1/2 inches.

No. 4099 is provided with a porcelain button which covers the live terminals and takes the place of the usual waxing. The button is readily screwed into place without the aid of tools.

No. 4036 is provided with loop terminals to which wires may be hooked and soldered, after which the live metal parts must be covered with insulating wax.

No. 4035 is fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads can be furnished at an additional cost per conductor of 4 1/2 cents per foot.

No. 4035 can be fitted with 6-inch leads of No. 14 B. & S. slow-burning wire at an extra cost of 9 cents per socket. Longer leads, 9 cents per foot each conductor.



No. 61988



No. 4099 with Button in Place

With Binding Screws

Cat. No.	Separation Inches	Depth of Back, In.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
61988	1 3/2	1 1/4	10	250	87	\$.20

With Binding Screws Covered

4099	1	1 1/8	10	250	111	\$.25
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With Loop Terminals

4036	1 3/2	1 3/2	10	250	75	\$.20
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With 6-inch Wires

4035	1 3/2	1 3/2	10	250	87	\$.28
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Shallow Rings Only

.....	25	250	28	\$.06
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Bryant Porcelain Receptacles for Outlet Boxes and Metal Signs

Schedule B

660 Watts, 250 Volts

Shallow Receptacles with Deep (9/16-inch) Ring

The hole required for receptacles is 1 1/2 inches in diameter. Diameter of receptacles is 1 3/4 inches. Diameter of rings is 1 1/2 inches.

No. 4109 is provided with a porcelain button which covers the live terminals and takes the place of the usual waxing.

No. 4132 is provided with loop terminals to which wires may be hooked and soldered and live metal parts covered with insulating wax.

No. 4003 is fitted with 6-inch leads of No. 14 B. & S. rubber-covered wire. Longer leads at an additional price of 4 1/2 cents per foot each conductor.

No. 4003 can be fitted with 6-inch leads, No. 14 B. & S. slow-burning wire at an additional cost of 3 cents per socket. Longer leads, 9 cents per foot each conductor.



No. 59108



No. 4132



No. 4109 with Button Unscrewed

With Binding Screws

Cat. No.	Separation Inches	Depth of Back, In.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
59108	5/8	5/8	10	250	63	\$.20

With Binding Screws Covered

4109	5/8	1 1/8	10	250	90	\$.25
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With Loop Terminals

4132	3/2	3/2	10	250	65	\$.20
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With 6-inch Wires

4003	3/2	3/2	10	250	82	\$.28
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Deep Rings Only

.....	25	250	30	\$.08
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Bryant Porcelain Receptacles for Outlet Boxes and Metal Signs

660 Watts, 250 Volts

With Deep (9/16-inch) Screw Ring

Screw ring has groove for Weatherproof shade-holders, and recess for Emergency shade-holders.

The hole required for receptacles is 1 1/2 in. in diameter. Diameter of receptacles, 1 3/4 in. Diameter of rings, 1 1/2 in.

No. 4134 is provided with a porcelain button which covers live terminals and takes the place of waxing. No. 4136 has loop terminals to which wires may be hooked and soldered, live metal parts then covered with insulating wax.

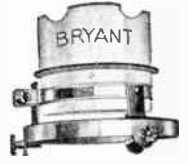
No. 4135 is fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, 4 1/2 cents per foot each conductor. No. 14 slow-burning wire can be furnished; 6-inch leads, 3 cents per socket extra; longer leads, 9 cents per foot each conductor.



No. 4133



No. 4133 with No. 443 Shade-holder



No. 4133 with No. 628 Shade-holder

No. 4134 is provided with a porcelain button which covers live terminals and takes the place of waxing. No. 4136 has loop terminals to which wires may be hooked and soldered, live metal parts then covered with insulating wax.

No. 4135 is fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads, 4 1/2 cents per foot each conductor. No. 14 slow-burning wire can be furnished; 6-inch leads, 3 cents per socket extra; longer leads, 9 cents per foot each conductor.



No. 4135

With Binding Screws

Cat. No.	Schedule	Separation Inches	Depth of Back, In.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4133	B	5/8	5/8	10	250	58	\$.25

With Binding Screws Covered

4134	B	5/8	1 1/8	10	250	90	\$.30
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With Loop Terminals

4136	B	2 1/2	2 1/2	10	250	60	\$.25
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With 6-inch Wires

4135	B	2 1/2	2 1/2	10	250	80	\$.33
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Shade-holder Rings Only

.....	25	100	10	\$.10
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No. 59107 Bryant Receptacles for Outlet Boxes

Conduit Box Receptacles

660 Watts, 600 Volts

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
59107	B	10	100	45	\$.30

No. 4074 Bryant Porcelain Receptacles with Loop Terminals

660 Watts, 600 Volts

Hole required, 1 1/16 inches. Diameter over lugs, 2 3/8 inches. Depth, 1 1/16 inches. Screw spacings, 2 1/8 inches.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4074	B	10	100	42	\$.25

Bryant Receptacles for 3 1/4-inch Outlet Boxes

660 Watts, 250 Volts

With Shade-holder Groove

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4227	B	5	100	78	\$.40

Without Shade-holder Groove

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
62357	B	5	100	83	\$.35



Bryant Receptacles for 4-inch Outlet Boxes

660 Watts, 250 Volts

With Shade-holder Groove

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4228	B	5	100	108	\$.50

Without Shade-holder Groove

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4064	B	5	100	112	\$.45



Bryant Porcelain Receptacles for 3 1/4-inch Outlet Boxes

660 Watts, 600 Volts



No. 4110

Diameter, 3 1/2 inches. Supporting screw spacings, 2 3/4 inches.

With Black Japanned Flat Cover

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4110	B	1	100	75	\$.35

With Sherardized Flat Cover

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4111	B	1	100	75	\$.45

Bryant Porcelain Receptacles for 4-inch Outlet Boxes

660 Watts, 600 Volts



No. 4113

With Black Japanned Raised Cover

Cat. No.	Sched-ule	Outside Diam., In	Screw Spacings, In	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4113	B	4 1/8	3 1/2	1	100	96	\$.40

With Sherardized Raised Cover

Cat. No.	Sched-ule	Outside Diam., In	Screw Spacings, In	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4114	B	4 1/8	3 1/2	1	100	98	\$.52

No. 4033 Bryant One-piece Flush Receptacles for Outlet Boxes

660 Watts, 250 Volts



Hole required, 1 1/8-inch diameter. Outside diameter face, 2 3/8 inches; thickness, 3/8 inch. Depth from back of flange, 1 1/2 inches. Screw holes spaced 1 7/8 inches.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4033	B	10	250	94	\$.20

No. 9514 Bryant 2-piece Flush Receptacles For Outlet Boxes

660 Watts, 250 Volts



Hole required, 1 1/8-in. diameter. Flange, 2 1/4 in. diameter; thickness, 1 1/2 in. Depth from back of flange, 1 3/32 in. Screw hole spacings, 1 7/8 in.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
9514	B	10	250	92	\$.30

No. 9397 Bryant Outlet Box Receptacles

660 Watts, 250 Volts

Base is 2x1 3/8 inches. Height, 1 1/2 inches. Holes for supporting screws are spaced 1 1/2 inches on centers.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
9397	B	10	250	40	\$.20

Bryant Receptacles for Outlet Boxes

660 Watts, 250 Volts

With Marine Screw Shell

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
22287	B	10	100	46	\$.35

With Regular Screw Shell

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4149	B	10	100	44	.25



No. 4037 Bryant Porcelain Temporary Sockets

660 Watts, 250 Volts

Diameter of body is 1 1/2 inches. Diameter of cap, 1 3/8 inches. Length, 2 3/16 inches. Provided with pointed binding screws.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4037	B	10	250	82	\$.24

No. 4056 Bryant Mica Temporary Sockets

660 Watts, 250 Volts

Diameter of body is 1 1/2 inches. Diameter of cap 1 3/8 inches. Length, 2 3/8 inches.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4056	B	10	250	76	\$.30

No. 4038 Bryant Temporary Cleat Receptacles

660 Watts, 250 Volts

Diameter of main base is 1 3/8 inches. Diameter over lugs, 2 5/8 inches. Height, 1 3/8 inches. Holes for supporting screws are spaced 1 5/8 inches on centers.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4038	B	10	250	102	\$.18

Bryant Sockets for Decorative Lighting

660 Watts, 250 Volts

Porcelain

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4034	B	10	250	70	\$.20

Mica

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
4041	B	10	250	60	\$.25



Bryant Weatherproof Bragdon Porcelain Sockets

660 Watts, 600 Volts

With Groove for Shade-holder



Extension skirt carries the drip away from the lamp and socket. Method of wiring at top removes the strain from the wire connections. Extra hole in porcelain at top allows for independent suspension if desired.

Main diameter, 1 5/8 inches. Diameter of skirt, 2 1/8 inches. Length, 3 inches. Fitted with 6 inches of No. 14 B. & S. stranded rubber covered wire. Sockets with longer wires, extra charge, 9 cents per foot.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
50997	B	10	250	163	\$.50

Bryant Porcelain Receptacles for Metal Signs

660 Watts, 250 Volts

With Binding Screw Terminals



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4063	B	10	250	73	\$.17

With Loop Terminals

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4159	B	10	250	73	\$.17

Hole required, 1 3/8 inches; diameter, 1 3/8 in.; depth, 1 1/2 in.; screw spacings, 1 3/8 in.

No. 40488 Bryant Receptacles for Outlet Boxes

Pony Sign Receptacles

660 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
40488	B	10	250	60	\$.18



Bryant Receptacles for Outlet Boxes

Ruby Sign Receptacles With Binding Screws



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4014	B	10	250	69	\$.28

Ruby Sign Receptacles With Stranded Wire Leads

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4057	B	10	250	92	\$.33

No. 1700 Bryant Receptacles for Wooden Signs

660 Watts, 250 Volts

Hole required, 1 1/8-inch diameter. Screw holes spaced 1 7/8 inch. No. 1700 Pony Sign Receptacles.

Diameter of back, 1 7/8 inches; thickness of back, 3/8 inch; length of neck, 1 3/4 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1700	B	10	250	66	\$.17



Bryant Porcelain Pull Outlet Receptacles

250 Watts, 250 Volts

With Shade-holder Groove



Can be mounted on metal, tiled or concrete surfaces in addition to standard 3 1/4 and 4-inch outlet boxes.

Diameter of base, 4 1/4 in. Height, 2 5/8 in. Four slots range radially from center and spacing is from 2 3/4 to 3 1/2 inches. Regularly fitted with polished nickel-plated chain. Brush brass at no extra charge. For other electroplated finishes, add 2 cts. except for silver and gold. Chain insulator, 8 cts.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4275	B	1	50	76	\$.120

Bryant Porcelain Pull Receptacles

For Ceiling Rings—With Binding Screws

250 Watts, 250 Volts — Schedule B



No. 61978

For use in metal ceiling rings which have 1 1/2-inch throats and made to hold a shade or globe at bottom. A porcelain clamping ring and asbestos gasket are provided to hold receptacle securely in ceiling ring. A separable chain guide is furnished. Hole required for chain guide, 1 3/4-inch diameter.

Standard finish of metal chain parts is brush brass, but polished nickel can be supplied without extra charge. For any other finish except silver and gold add 2 cents to price except for No. 61979 for which add 6 cents.

Diameter, 1 3/8 inches. Length over all 2 1/4 inches. Length above ring, 1 3/8 inches.

Cat. No.	Cord and Chain Equipment	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61974	8-in.Chain, Insulator, 6-ft. Cord.	10	100	50	\$.91
61975	8 " " " " " " " " " " "	10	100	50	.75
61976	6-ft. Cord. " " " " " " " " "	10	100	50	.75
61977	8-in. Chain, Insulator " " " " " "	10	100	50	.83
61978	8 " " " " " " " " " " "	10	100	50	.83
61979	3-ft. No. 3 Chain " " " " " "	10	100	50	.98

No. 9408 Bryant Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

With Bottom Wires and Shade-holder Groove



Outside diam. of base, 2 1/8 in. Height, 2 3/8 inches. Screw spacings, 2 1/4 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9408	B	10	100	77	\$.30

No. 9411 Bryant Pony Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

With Bottom Wires

Outside diam. of base, 2 3/8 in. Height, 1 3/8. Diam. over lugs, 2 3/8 in. Screw spacings, 2 3/8 in. Fitted with 6-in. wire.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9411	B	10	100	55	\$.25



No. 399 Bryant Weatherproof Porcelain Sockets

660 Watts, 600 Volts

Main diam., 1 1/2 in. Flange diam., 1 5/8 in. Length porcelain 1 1/2 in. Fitted with 6 in. of No. 14 B. & S. stranded rubber covered wire. Longer wires, 9 cents extra per foot.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
399	B	10	250	77	\$.16

No. 9366 Bryant Weatherproof Porcelain Sockets

660 Watts, 600 Volts

With Groove for Shade-holder

Main diam., 1 1/2 inches. Flange diam., 1 5/8 inches. Length porcelain, 2 3/4 inches. Fitted with 6 inches of wire.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9366	B	10	250	86	\$.18



No. 60666 Bryant Weatherproof Composition Sockets

660 Watts, 600 Volts

Composition socket with groove for Weatherproof Shade-holder. Main diam. tapers from 1 3/8 in. to 1 1/8 in. Flange diam. is 1 5/8 in. Length of composition, 2 3/8 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60666	B	10	250	73	\$.20



No. 43310 Bryant Weatherproof Composition Sockets

660 Watts, 600 Volts

Pony Size—With Shade-holder Groove

Main diam., 1 1/8 in. Flange diam., 1 5/8 in. Length of composition, 2 in. Fitted with 6 in. of wire.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
43310	B	10	250	64		\$.18



Bryant Weatherproof Bracket Composition Sockets

660 Watts, 250 Volts

Wires inside pipe. Main diam., 1 1/2 in. Flange diam., 1 5/8 in. Length composition, 1 5/8 in. Fitted with 6-in. No. 14 B. & S. wire.

Cat. No.	Schedule	Pipe In.	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
43311	B	1/8	10	100	33		\$.60
43312	B	3/8	10	100	33		.60



Bryant Weatherproof Bracket Composition Sockets

660 Watts, 600 Volts

Wires outside pipe. Main diam., 1 1/2 in. Flange diam. 1 5/8 in. Length composition, 1 5/8 in. Fitted with 6-in. No. 14 B. & S. wire.

Cat. No.	Schedule	Pipe In.	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
43313	B	1/8	10	100	33		\$.60
43314	B	3/8	10	100	33		.60



Bryant Weatherproof Bracket Porcelain Sockets

660 Watts, 250 Volts

Wires inside of pipe. Diam., 1 5/8 in. Length, 2 3/8 in. Fitted with 6 in. of No. 14 B. & S. stranded rubber covered wire.

Cat. No.	Schedule	Pipe In.	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
9448	B	1/8	10	100	43		\$.60
9496	B	3/8	10	100	43		.60



Bryant Street Hood Sockets

With Binding Screw Terminals

660 Watts, 250 Volts

Has side lugs.

Length over all, 3 1/8 inches. The screws which attach the porcelain base to the malleable iron yoke are spaced 2 1/2 inches on centers.

Emergency Shade Holders, Nos. 443, 444 and 445 may be attached to this receptacle only when used on not over 250 volts.



Cat. No.	Schedule	Yoke In.	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
25706	B	3/8	10	100	67		\$.27
4233	B	1/2	10	100	67		.27

No. 9407 Bryant Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

Outside diam. of base, 2 1/8 in. Thickness of base, 1 in. Height, 2 1/8 in. Holes for screws spaced 2 3/8 in.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
9407	B	10	100	76		\$.30



No. 44912 Bryant Pony Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

Diam. of base, 1 3/4 inches; over lugs, 2 1/4 in. Thickness of base, 1 in. Height, 2 1/8 in. Holes for supporting screws are spaced 1 3/4 in. on centers.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
44912	B	10	100	51		\$.25



No. 30000 Bryant Angle Weatherproof Porcelain Receptacles

660 Watts, 600 Volts

With Side Wires, Angle Base and Groove for Weatherproof Shade-holder

Regularly fitted with 6-inch leads of No. 14 B. & S. stranded rubber-covered wire. Longer leads will be furnished at 4 1/2 cents per foot each conductor.

Can be fitted with 6-inch leads of No. 14 B. & S. slow-burning wire at an advance in price of 3 cents each. Longer leads, 9 cents per foot each conductor.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Pkg.	Price Each
30000	B	10	100	88		\$.44

No. 4077 Bryant Porcelain Mogul Keyless Socket Bodies

Two-piece
Elongated Holes
1500 Watts, 600 Volts

Main diameter, 2 3/8 inches. Flange diameter, 2 5/8 inches. Length, 3 inches. Screw spacings, 1 3/4 to 1 5/8 in.

Cat. No.	4077
Schedule	B
Carton	5
Std. Pkg.	50
Wt., Std. Pkg. lbs.	56
Price, No. 4077..... each	\$.70



No. 4062 Bryant Porcelain Mogul Keyless Socket Bodies

1500 Watts, 600 Volts

Main diameter, 2 1/4 inches. Flange diameter, 2 1/2 inches. Length, 2 1/2 inches. Screw spacings, 1 3/4 inches.

Cat. No.	4062
Schedule	B
Carton	5
Std. Pkg.	50
Wt., Std. Pkg. lbs.	43
Price, No. 4062..... each	\$.55



No. 4088 Bryant Porcelain Mogul Keyless Socket Bodies

1500 Watts, 600 Volts
With Loop Terminals

Diameter, 2 3/8 inches.

Length, 2 1/2 inches.

Screw spacings, 1 3/4 inches.

Cat. No.	4088
Schedule	B
Carton	5
Std. Pkg.	50
Wt., Std. Pkg. lbs.	40
Price, No. 4088..... each	\$.55



No. 4081 Bryant Porcelain Mogul Keyless Socket Bodies

1500 Watts, 600 Volts

With 15-inch Leads

Diameter, 2 $\frac{3}{4}$ inches.
Length, 2 $\frac{1}{2}$ inches.
Screw spacings, 1 $\frac{1}{4}$ inches.



Cat. No.	4081
Schedule	B
Carton	5
Std. Pkg.	50
Wt., Std. Pkg.	45 lbs.
Price, No. 4081	each \$.70

No. 4123 Bryant Porcelain Mogul Keyless Socket Bodies

1500 Watts, 600 Volts

With Binding Screws

Diameter, 2 $\frac{3}{4}$ inches.
Length, 2 $\frac{1}{2}$ inches.
Screw spacings, 1 $\frac{1}{4}$ inches.



Cat. No.	4123
Schedule	B
Carton	5
Std. Pkg.	50
Wt., Std. Pkg.	40 lbs.
Price, No. 4123	each \$.55

No. SD Bryant Mogul Socket Yokes

$\frac{3}{8}$ -inch Female Cast Iron



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SD	B	10	50	22	\$.15

No. SE Bryant Mogul Socket Yokes

$\frac{1}{2}$ -inch Female Cast Iron



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SE	B	10	50	22	\$.15

No. SA Bryant Mogul Socket Caps

$\frac{3}{8}$ -inch Female Aluminum



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SA	B	10	50	6	\$.30

No. SB Bryant Mogul Socket Caps

$\frac{1}{2}$ -inch Female Aluminum

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SB	B	10	50	6	\$.30



No. 4073 Bryant Porcelain Cleat Receptacles

Schedule B

1500 Watts, 250 Volts

For Mogul Base Lamps

Diameter over lugs, 3 $\frac{1}{2}$ inches.
Diameter of neck, 2 $\frac{1}{4}$ inches.
Height, 2 $\frac{5}{8}$ inches. Diameter of main part of base, 2 $\frac{3}{8}$ inches. Supporting screw spacings, 2 $\frac{1}{8}$ inches.

The assembling screws of this device are waxed with a compound which will not soften under heat.

Can be supplied with a lamp grip feature at an additional price of 5 cents each.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4073	10	50	51	\$.75

Bryant Brass Shell Mogul Keyless Sockets

Schedule B

1500 Watts, 600 Volts

Brass shell sockets have asbestos shell linings and paper cap linings.

Diameter, 2 inches.

Length, 3 $\frac{3}{4}$ inches.

The assembling screws of these devices are waxed with a compound which will not soften under heat.

Standard finish, brush brass.



No. 4021

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.		Price Each
			Std. Pkg.	Each	
$\frac{3}{8}$-inch Cap					
4021	10	50	40		\$1.50
$\frac{1}{2}$-inch Cap					
4022	10	50	40		\$1.50

Socket Reducers



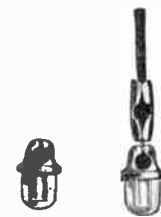
No. 391



No. 392

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
421	B	Mogul to Medium..	10	100	23	\$.25
392	B	Medium to Candelabra.....			25	100 8 .10
391	B	Candelabra to Miniature.....			100	100 1 .06

Bryant Small Undark Luminous Pendants



No. 750



No. 751 Attached to Cord

Undark luminous pendants, No. 750, for attachment to pull chain are also supplied mounted 10 on a handsome three-color counter display card which suggests places for their use, and shows how to attach them. Packed in this way the price is 25 cents each, standard package 50, carton 10, and no less than a carton quantity will be shipped.

For Attachment to Pull Chain

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
750	B	10	50	1	\$.25
For Attachment to Devices with Pull Cords					
751	H	10	50	1	\$.28

Hubbell Pull Sockets with Insulated Chain



Schedule B

Hubbell pull sockets may be furnished with insulated chain. This arrangement is effected by inserting a piece of fibre rod 1/2-inch long in the chain. For sockets so equipped, add 8 cents to the list price.

Standard package quantity is the same as for the standard socket with which the insulated chain is ordered

May be furnished on any style of pull socket.

The illustration shows a pull socket with insulating link and detachable acorn assembled.

Hubbell Extension Eyelets for Pull Sockets

Schedule B

For Standard and Electrolier Sockets

When sockets are furnished with extension eyelets, add 10 cents to the list price of corresponding socket with regular eyelet.

Standard eyelet sold separately from socket, 5 cents each. Standard package, 250. Unless otherwise specified, sockets with 1-inch extension eyelet will be furnished. If assorted, 100 extension eyelets constitute a standard package.



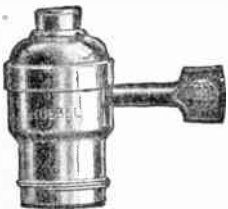
For special finished eyelets not attached to socket, add 2 cents to price. Standard finish is brushed brass.

Special finished sockets with extension eyelets take same advance as regular sockets, plus extra, as above, for the extension eyelet.

CAT. NOS.		Ext. Eyelet In.	Carton	Std. Pkg.	Wt. Oz. Std. Pkg.	Price Each
For Standard Sockets	For Electrolier Sockets					
3322	3292	3/8	*	50	8	\$.15
3329	3293	1/2	*	50	9	.15
3323	3294	3/4	*	50	10	.15
3324	3295	1	*	50	12	.15
3325	3296	1 1/4	*	50	14	.15
3326	3297	1 1/2	*	50	16	.15
3327	3298	1 3/4	*	50	18	.15
3328	3299	2	*	50	20	.15

*In bulk.

Hubbell Sockets with Extra Long Keys



All Hubbell key sockets are equipped with 1-inch keys, but can be fitted with longer keys on special order, which must specify distance desired between outside of shell and end of keys.

The following can be furnished: Length, 1 1/4, 1 1/2, 1 3/4, 2, 2 1/4 and 2 1/2 inches. Add to list price of standard socket, 5 cents.

Standard package, 100 of one length.

On orders for sockets with extra long keys, where the length is not given, 1 1/2 inch will be supplied.

Hubbell Special Finishes Sockets and Shade Holders

Description	PULL SWITCHES		SOCKET AND PULL PARTS				
	Keyless Push	Pull	Caps	Bases	Key, Keyless, Push Bodies	Pull Bodies	Shade Holders
Barff, (Bauer Lacquer)	\$.06	\$.08	\$.03	\$.12	\$.03	\$.05	\$.03
(a) Brass, Brush	.10	.12	.05	.16	.05	.07	.05
" Flemish	.06	.08	.03	.12	.03	.05	.03
" Lemon	.10	.12	.05	.16	.05	.07	.05
" Oxidized	.06	.08	.03	.12	.03	.05	.03
" Polished	.06	.07	.03	.12	.03	.04	.03
(Not Lacquered)							
Brass, Sand Blast	.22	.24	.11	.30	.11	.13	.11
Antique	.18	.20	.09	.28	.09	.11	.09
Brass, Sand Blast Brush	.10	.12	.05	.16	.05	.07	.05
Bronze, Brush	.10	.12	.05	.16	.05	.07	.05
" Japanese (Dark)	.10	.12	.05	.16	.05	.07	.05
Bronze, Polished	.10	.12	.05	.16	.05	.07	.05
" Statuary (Light)	.10	.12	.05	.16	.05	.07	.05
Bronze, Sand Blast Antique	.22	.24	.11	.30	.11	.13	.11
Copper, Antique or Acid	.16	.18	.08	.25	.08	.10	.08
Copper, Brush	.10	.12	.05	.16	.05	.07	.05
" Mottled	.10	.12	.05	.16	.05	.07	.05
" Oxidized	.10	.12	.05	.16	.05	.07	.05
" Polished	.10	.12	.05	.16	.05	.07	.05
(b) Enamel, White (Lacquer)	.06	.08	.03	.12	.03	.05	.03
Gilt, Rich	.06	.07	.03	.12	.03	.04	.03
(c) Gold	.10	.12	.05	.16	.05	.07	.05
Gun Metal	.10	.12	.05	.16	.05	.07	.05
Nickel, Dull	.10	.12	.05	.16	.05	.07	.05
" Polished	.10	.12	.05	.16	.05	.07	.05
" Sand Blast	.22	.24	.11	.30	.11	.13	.11
Silver, Butler's (Brushed)	.20	.30	.10	.25	.10	.20	.10
Silver, Oxidized	.20	.30	.10	.25	.10	.20	.10
" Polished	.20	.30	.10	.25	.10	.20	.10
" Satin	.20	.30	.10	.25	.10	.20	.10
Verde, Antique (Lacquer)	.06	.08	.03	.12	.03	.05	.03

(a) Standard finish on all brass shell devices is Brush Brass which will be furnished on all orders where no finish is specified.

Any electroplated finish on pull chain parts furnished at an addition of 2 cents list. This addition is subject to quantity reduction applying to socket finishes.

(b) Pull Devices in white finish but with chain eyelet, chain and acorn in any electroplated finish except Brush Brass add 2 cents list advance over price shown for Key, Keyless and Push Sockets.

Pull Devices in Brush Brass finish but chain, acorn and eyelet in any other finish add to list difference between columns 1 and 2 for the finish desired.

(c) All finishes not listed above, including Gold, prices on application. Sample should be submitted with inquiry.

Standard and special finishes of one catalog number may be assorted to make up standard package.

The above prices for special finishes apply to small lots. When ordering in quantity lots of one finish, one shipment, one catalog number, they are reduced.

Sockets are also furnished unassembled, the interiors, linings, etc., being packed separately. Sockets furnished in this manner carry the same list price as assembled sockets.

Special finishes, on chain and parts other than gold and silver, add to list prices as follows:

Chain Eyelets, standard or extension, 2 cents.

Chains, not longer than 1 foot, with or without cords and insulators, 2 cents.

Brass Acorn, 2 cents.

Chain Splicing Link, 2 cents.

Chain Insulator, 2 cents.

For any chain, not longer than 1 foot, with any combination of Chain Eyelet, Connector, Insulator Link, and Brass Acorn in one finish, per set, 2 cents.

Chains, longer than 1 foot, per extra foot or fraction, 2 cents.

Chain in bulk, per foot, 2 cents.

Prices for gold and silver will be quoted on application.

Hubbell Socket Parts

Medium, Mogul and Candelabra Base

Brush brass is standard finish on all metal parts listed below and will be furnished unless otherwise specified.

Carton quantity will be considered one-fifth standard package.

**Medium Base
Schedule B**

Description	Std. Pkg.	Price Each
Shells, All Kinds, without Linings	250	\$.10
Cap, 1/8-inch without Lining	250	.09 1/2
" 1/4 " " "	250	.15 1/2
" 3/8 " " "	250	.15 1/2
" Pendant, without Bushing or Lining	250	.08 1/2
Linings, Shell, All Kinds	250	.03
" Cap, " Sizes	250	.00 1/2
Bushings, Pendant Cap, Porcelain	250	.02 1/2
" " Composition	250	.02
Interior, Keyless, (Medium Base M-300)	250	.17
" Push, with Non-removable Buttons (M-412)	250	.20
Interior, Key, 250 Watts (M-200)	250	.20
" " 660 " (M-202)	250	.23
" Pull, 75 Watts, with Chain Eyelet, Chain and Acorn (M-104)	250	.17
Interior, Pull, 250 Watts, with Chain Eyelet, but without Chain or Acorn (MA-100)	250	.28
Interior, Pull, 250 Watts, without Chain, Acorn and Chain Eyelet (MB-100)	250	.25
Interior, Pull, 250 Watts, with Chain, Acorn and Chain Eyelet (M-100)	250	.34
Interior, Pull, 660 Watts, with Chain Eyelet, Chain and Acorn (M-109)	250	.53
Standard Chain Eyelet for Pull Sockets (D-7500)	250	.05
Electroliner " " " (D-7501)	250	.05
8-inch Chain with Acorn	250	.13
Acorn for Pull Chain	250	.06
Screw Shells, All Kinds	250	.03 1/2

**Mogul Base
Schedule B**

Shells, All Kinds, without Linings	50	\$.55
Cap, 3/8-inch, without Lining	50	.75
Linings, Shell, All Kinds	50	.10
" Cap, " Sizes	50	.03
Interior, Keyless, (Medium Base M-300)	50	.37
Screw Shells, All Kinds	50	.12

**Candelabra Base
Schedule F**

Shells, All Kinds, without Linings	50	\$.10
Cap, 1/8-inch, without Lining	50	.06 1/2
Linings, Shell, All Kinds	50	.03
" Cap, " Sizes	50	.00 1/2
Interior, Keyless, (Medium Base M-300)	100	.17
" Pull, 75 Watts, with Chain Eyelet, Chain and Acorn (M-104)	50	.64
Standard Chain Eyelet for Pull Sockets (D-7500)	50	.05
8-inch Chain with Acorn	50	.13
Acorn for Pull Chain	50	.06
Screw Shells, All Kinds	100	.02

No. 998 Line—Hubbell Pull Receptacle Parts

**Medium Base
Schedule B**

Description	Std. Pkg.	Price Each
Porcelain Ring	100	\$.08
Interior Only (M-115)	100	.40
Gasket	100	.02
Porcelain Shell	100	.13
8-inch Chain with Acorn	100	.17
8 " " 6-foot Cord and Acorn	100	.25
8 " " Insulator and Acorn	100	.25
3-foot " with Acorn	100	.25

No. 60 Hubbell Quick Catch Pull Socket Bodies

250 Watts, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60	B	25	250	45	\$.40

No. 178 Hubbell Quick Catch Pull Socket Bodies

660 Watts, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
178	B	25	250	45	\$.59

No. 61 Hubbell Quick Catch Key Socket Bodies

250 Watts, 250 Volts

Standard finish is brush brass.

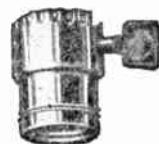


Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61	B	25	500	45	\$.26

No. 75 Hubbell Quick Catch Key Socket Bodies

660 Watts, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
75	B	25	500	95	\$.29

No. 62 Hubbell Quick Catch Keyless Socket Bodies

660 Watts, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62	B	25	500	85	\$.23

No. 63 Hubbell Quick Catch Single-pole Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
63	F	10	100	18	\$.53



No. 64 Hubbell Quick Catch Single-pole Fixture Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Standard finish is brush brass.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
64	F	10	50	10	\$.68

No. 65 Hubbell Quick Catch Single-pole Rosette Pull Switch Bodies

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Standard finish is brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
65	F	10	50	8	\$.53

No. 66 Hubbell Quick Catch Single-pole Wall Pull Switch Bodies



3 Amperes, 125 Volts; 1 Ampere, 250 Volts
Standard finish is brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
66	F	10	50	8	\$.53

No. 11 Hubbell Quick Catch Caps

1/8-inch Female



Standard finish is brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
11	B	25	500	25	\$.10

No. 12 Hubbell Quick Catch Caps

1/4-inch Female

Standard finish is brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
12	B	25	100	15	\$.16

No. 13 Hubbell Quick Catch Caps

3/8-inch Female

Standard finish is brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
13	B	25	250	15	\$.16

No. 14 Hubbell Quick Catch Caps

Pendent

Standard finish is brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
14	B	25	500	15	\$.10

No. 15 Hubbell Quick Catch Caps

1/8-inch Male

Standard finish is brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
15	B	25	100	7	\$.10

No. 18 Hubbell Quick Catch Caps

1/8-inch Angle

Standard finish is brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
18	B	25	100	7	\$.21

No. 25 Hubbell Quick Catch Small Concealed Socket Bases



Supporting screw holes are spaced 1 1/8 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
25	B	10	250	50	\$.18

No. 57 Hubbell Quick Catch Small Concealed Socket Bases

Supporting screw holes are spaced 1 1/8 inches on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
57	Slotted B	10	250	50	\$.18

No. 26 Hubbell Quick Catch Small Covered Concealed Socket Bases

Supporting screw holes are spaced 1 3/4 inches on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
26	B	10	250	60	\$.28

No. 27 Hubbell Quick Catch Surface Wiring Socket Bases

Supporting screw holes are spaced 2 1/8 inches on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
27	B	10	250	80	\$.23

No. 28 Hubbell Quick Catch Wood Molding Socket Bases

Supporting screw holes are spaced 2 3/2 inches on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
28	B	10	100	25	\$.18

No. 30 Hubbell Quick Catch Angle Concealed Socket Bases

Supporting screw holes are spaced 1 1/8 inches on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
30	B	10	100	20	\$.23

No. 38 Hubbell Quick Catch Insulated Ceiling Socket Bases for 3 1/4-inch Outlet Boxes

Supporting screw holes are spaced 2 5/8 and 2 3/4 in. on centers.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
38	B	10	100	45	\$.37

No. 40 Hubbell Quick Catch Insulating Ceiling Socket Bases for 4-inch Outlet Boxes

Supporting screw holes are spaced 2 5/8, 2 3/4 and 3 1/2 inches on centers.

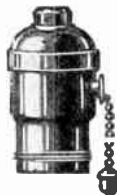


Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
40	B	5	100	35	\$.67

No. 3618 Hubbell Quick Catch Pull Sockets

250 Watts, 250 Volts

Standard finish is brush brass.



Sockets furnished with chains over 8 inches in length add to list 10 cents per foot.

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3618	B	25	250	60	\$.50

No. 3822 Hubbell Quick Catch Electrolier Key Sockets

250 Watts, 250 Volts

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3822	B	25	500	100	\$.36



No. 3950 Hubbell Quick Catch Electrolier Push Button Sockets

660 Watts, 250 Volts

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3950	B	25	500	105	\$.36



Hubbell Quick Catch Key Sockets

250 Watts, 250 Volts



Standard finish is brush brass.

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3664	B	25	500	50	\$.36

Hubbell Quick Catch Keyless Sockets

660 Watts, 250 Volts

Standard finish is brush brass. Quick catch devices are supplied with threaded shells only.

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3667	B	25	500	60	\$.33



No. 5702 Hubbell Quick Catch Ceiling Pull Switches

3 Amperes, 125 Volts
1 Ampere, 250 Volts

With 1/8-inch Cap

Standard finish is brush brass.

Regularly furnished with short chain and 6-foot black cord.

For extra chain add 10 cents per foot or fraction; cord, 1 cent per foot or fraction.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5702	F	10	100	32	\$.60

No. 3821 Hubbell Quick Catch Electrolier Pull Sockets

250 Watts, 250 Volts

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3821	B	25	250	50	\$.50



No. 3756 Hubbell Quick Catch Electrolier Keyless Sockets

660 Watts, 250 Volts

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3756	B	25	500	75	\$.33



No. 3899 Hubbell Quick Catch Electrolier Short Shell Keyless Sockets

660 Watts, 250 Volts

With 1/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3899	B	25	500	80	\$.33



No. 70 Hubbell Quick Catch Electrolier Pull Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
70	B	25	250	35	\$.40

No. 71 Hubbell Quick Catch Electrolier Key Socket Bodies

250 Watts, 250 Volts

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
71	B	25	500	85	\$.26



No. 59 Hubbell Quick Catch Electrolier Push Button Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
59	B	25	500	85	\$.26

No. 72 Hubbell Quick Catch Electrolier Long Shell Keyless Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
72	B	25	500	85	\$.23

No. 73 Hubbell Quick Catch Electrolier Short Shell Keyless Socket Bodies

660 Watts, 250 Volts

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
73	B	25	500	60	\$.23



No. 94 Hubbell Quick Catch Electrolier Candle Switch Socket Bodies

3 Amperes, 125 Volts
1 Ampere, 250 Volts



With Side Wire Outlet

Standard finish, brush brass.

Regularly supplied with 8-inch chain.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
94	F	10	50	15	\$.68

No. 41 Hubbell Quick Catch Electrolier Caps

1/8-inch Female

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
41	B	20	500	20	\$.10



No. 43 Hubbell Quick Catch Electrolier Caps

3/8-inch Female

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
43	B	25	250	13	\$.16



No. 45 Hubbell Quick Catch Electrolier Caps

1/8-inch Male

Standard finish is brush brass.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
45	B	25	50	6	\$.10



No. 99 Hubbell Quick Catch Electrolier Caps

1/8-inch with Side Outlet Bushing

Standard finish is brush brass.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
99	B	25	100	10	\$.12



No. 35024 Hubbell Pull Sockets with Lamp Base Attachment

250 Watts, 250 Volts

Can be attached to any ordinary key socket or receptacle.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
35024	B	10	10	4	\$.70



Hubbell Keyless Pony Wall Sockets
660 Watts, 250 Volts



No. 50717



No. 50718

Cat. No.	Schedule	Plain Base		Wt., Lbs. Std. Pkg.	Price Each
		Carton	Std. Pkg.		
50717	B	10	250	65	\$.25
50718	B	10	250	65	\$.25

Supporting screw holes spaced 1 3/8 inches on centers. Standard finish is brush brass.

Hubbell Pull Socket Current Taps

Plug Outlet—660 Watts, 250 Volts
Socket Outlet—250 Watts, 250 Volts



No. 3190



No. 3191

No. 3190 screws into any standard socket or socket receptacle. All orders for twenty or more packed in special counter containers.

The plug outlet is provided with TT slots which will take all types of Hubbell standard plug caps with tandem, parallel or right angle (polarized) blades.

Pull socket current taps will accommodate standard shade holders.

The standard finish is brush brass, and will be furnished on all orders, unless otherwise specified.

With Medium Screw Base

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3190	B	10	50	22	\$1.00
3191	B	10	50	20	\$.80
3193	B	10	50	20	\$.86
3194	B	10	50	20	\$.80

Hubbell Attachments

For Pull Sockets

Schedule F



For Brass Shell Sockets

No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5828	For 8, 10 and 12-in. Reflectors	25	100	8	\$.25
5829	" 14-in. Reflector	25	100	9	.25
5953	" 16 " " "	25	100	24	.30
5954	" 18 and 20-in. Reflectors	25	100	24	.30
6317	" 22-in. Reflector	25	100	25	.40

For Porcelain Pull Sockets

No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5957	For 8, 10 and 12-in. Reflectors	25	100	8	\$.25
5958	For 14-in. Reflector	25	100	9	.25
5959	" 16 " " "	25	100	24	.30
5960	" 18 and 20-in. Reflectors	25	100	24	.30
5961	" 22-in. Reflector	25	100	25	.40

Hubbell Porcelain Pull Receptacles For Ceiling Fixtures

250 Watts, 250 Volts
Schedule B

Standard gaskets are of special packing compound to withstand heat. Asbestos gaskets supplied without additional cost.

Hole required in sign, 1½ inches.

Insulator in chain is placed 4 inches from eyelet.

Each receptacle is furnished with an extra chain eyelet which can be riveted or spun on shell of ceiling fixture or outlet box cover. When sold separately, price of extra chain eyelet is 4 cents.

Standard finishes are brush brass and nickel plate.

Brush brass is furnished unless otherwise specified. For all other finishes except on No. 999, add 2 cents, and on No. 999, add 10 cents.

Regularly equipped with 8-inch chain except Nos. 999 and 991. For chain longer than 8 inches, add 10 cents per foot or fraction thereof.

Extra length cord, 1 cent per foot.

For insulators, add 8 cents.



Extra Chain Eyelet

With Binding Screws



No. 997 No. 998 No. 999

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
995	With 8-inch Chain	10	100	50	\$.75
997	" 8 " " and Insulator	10	100	50	.83
998	" 8 " " " 6 Ft. of Cord	10	100	50	.83
999	" 3-foot "	10	100	50	.98

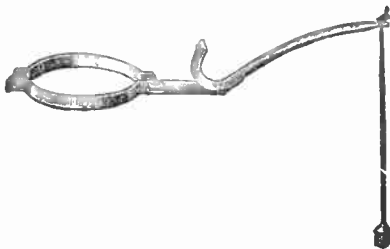
With 6-inch Leads No. 14 B & S Stranded Rubber Covered Wire



No. 990

987	With 8-inch Chain	10	100	50	\$.83
989	" 8 " " and Insulator	10	100	50	.91
990	" 8 " " " 6 Ft. of Cord	10	100	50	.91
991	" 3-foot "	10	100	50	1.06

No. 7009 Hubbell Pull Socket Attachments For Ceiling Fixtures



Standard finishes are brush brass and dull nickel. Dull nickel for use with white kitchen units, shipped unless otherwise specified. Attachment is for 2-inch neck.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
7009	F	For 2-inch Neck	25	100	8	\$.25

Hubbell Socket Chain, Cord and Acorns



No. 5382 Standard finish is brush brass. For special finishes on chain add 2 cents list per foot or fraction.

Full standard packages of 1000 feet No. 5382 chain will be shipped on spools of 200 feet each. Quantities less than 100 feet will be shipped in hanks.

Pull chains less than 8 inches in length with acorns attached, take the same price as regular 8-inch chain or 13 cents.

All standard Hubbell pull sockets are now supplied with No. 6982 new detachable acorn. Standard finish is brush brass. All other finishes on acorns, add 2 cents to price.

Pull sockets furnished with short chain and 3 feet of cord, complete with acorn instead of 8-inch chain, without extra charge.

Separate chain cut to length with acorn, or chain sold as part of a device, is subject to Schedule B and takes a price of 10 cents per foot or fraction thereof.

Cord, with or without acorn, Schedule F. Acorns are designed especially for use with Hubbell sockets. Counter cards of 25 luminous acorns can be furnished.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
5382	F	No. 6 Standard Socket Chain	290	1000	15	\$.05
5535	F	" 3 Candelabra Chain	100	500	20	1.05
6563	F	Black Linen Cord	*	1000	10	1.01
3435	B	3-ft. Cord with Short Chain and Acorn	*		250	5 .13
3436	B	6 " " " " " " "	*		250	10 .16
3437	B	10 " " " " " " "	*		250	12 .20
3320	B	8-in. Pull Chain Complete with Acorn	*		250	\$5 .13
3321	B	8 " " " Complete with Acorn	*			
		Insulator and Acorn	*		250	10 .21
3438	B	12-inch Pull Chain Complete with Acorn	*		250	12 .16
3439	B	12 " " " " " Fiber Insulator and Acorn	*		250	15 .24
3440	B	18-inch Pull Chain Complete with Acorn	*		250	17 .21
3441	B	18 " " " " " Fiber Insulator and Acorn	*		250	17 .29
6561	F	6-ft. Cord Only with Acorn	*		250	10 .12
6562	F	10 " " " " " " "	*		250	15 .16
6982	F	Acorn, Standard for Pull Sockets	250		250	1 .06
5919	F	" Adjustable for Linen Cord	*		250	5 .06
7015	F	" Detachable, Luminous	25	50	\$9	.25
7004	F	" " Candelabra	50	50	1	.06

*Packed in bulk. †Feet, and price per foot. §Ounces. ‡Furnished in black finish to match cord.

Hubbell Detachable Nuclasp Insulating and Splicing Links



These devices are easy to attach and detach and are neat in appearance.

Standard finish is brush brass. All other finishes on insulators and connectors, add 2 cents to price.



Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Oz.	Price Each
6089	F	Clip Splicing Link	100	200	6	\$.03
6999	F	Detachable Insulator	100	100	1	.09
7026	F	" Chain Insula-tor	100	200	1½	.03
*6814	F	Detachable Insulating Link	100	100	1½	.8

*This device is fitted with slotted catches for chain.

Hubbell Keyless Candle Sockets
660 Watts, 250 Volts



No. 3394



No. 3921

With Hickey

Cat. No.	Schedule	Bushing Inches	Length Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3394	B	1/8	2 3/16	25	250	20	\$.16

Without Hickey

3921	B	1/8	2 1/16	25	250	20	\$.16
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Hubbell Candle Pull Sockets
With Detachable Hickeys
250 Watts, 250 Volts



No. 3393



No. 3931



No. 3932

Standard finishes for exposed metal parts, brush brass and nickel plate. For other finishes, add 2 cents.

Fiber tube of Nos. 3393, 3931 and 3936 measures 1 3/16 inches, and will take candles 1 1/4 inches inside diameter. No. 3931 is made 1/8 inch longer than candle to compensate for raised outer tube when seated on curved saucers.

Pull candle sockets are equipped with 5-inch chains. For extra length chain, add 10 cents per foot.

Cat. No.	Schedule	Hickey Inches	Bushing Inches	Over All Length Inches	For Candle Length Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3393	B	3/4	1/8	3 11/16	3 3/4	10	100	20	\$.75
3931	B	1 1/8	1/8	4 1/16	4	10	100	24	.75
3936	B	1 5/16	1/8	3 7/8	4	10	100	24	.75
3932	B	*	*	2 5/16	3 3/4	10	100	18	.65

*Candle socket body less hickey.

Hubbell Detachable Hickeys
For Candle Sockets
250 Watts, 250 Volts



No. 3933



No. 3934



No. 3935

Standard finishes are brush brass and nickel plate. For all other finishes, add 2 cents.

Cat. No.	Schedule	Size Inches	For Candle Length Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3933	B	3/4	3 3/4	25	100	4	\$.10
3934	B	1 5/16	4	25	100	4	.10
3935	B	1 1/8	4	25	100	5	.10

No. 3927 Hubbell Candle Pull Sockets
With 1/8-inch Fixed Bushing and Short Hickey

250 Watts, 250 Volts



Standard finishes for exposed metal parts are brush brass and nickel plate. For other finishes, add 2 cents.

Fiber tube measures 1 3/16 inches and will take a candle measuring not less than 1 1/4 inches inside diameter.

Regularly equipped with 5-inch chain measured from bottom of threaded bushing. For extra length chain, add 10 cents per foot or fraction thereof.

Length over all, 3 3/16 inches.

For candle measuring 3 1/4 inches.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3927	B	10	100	20	\$.75

Hubbell Candle Length Sockets

Furnished with white enamel slip candles, and require no further covering, but can be used with separate casing if desired. No extra charge is made for tinted tubes. Standard finishes for metal parts, brush brass and nickel plate. For other finishes, add 2 cents.

Pull

250 Watts, 250 Volts

Equipped with 5-inch chain. For extra length chain add 10 cents per foot or fraction thereof.

Cat. No.	Schedule	Bush-ing In.	Lgth. In.	Car-ton	Std. Pkg.	Wt. Lbs. S. P.	Price Each
3925	B	1/8	4 1/2	10	50	15	\$.90

Keyless

660 Watt, 250 Volts

3924	B	1/8	4 1/2	10	50	10	\$.50
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No. 3925



No. 3924

Hubbell Extensions, Collars and Candles

Schedule F



No. 5481



No. 6145



No. 5482



No. 5483

No. 5481 extension measures 4 3/8 inches over all.

Candles or extensions shorter or longer than standard are special and prices will be quoted on application.

Extensions although 4 3/8 inches in length, are designed to take a 4-inch candle.

For special finished collar add to list 4 cents. Brush brass furnished unless otherwise specified.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5481	Extension, Candelabra Base	50	50	1	\$.45
6145	" Med. Screw "	25	50	5	.85
5482	Collar for Candelabra Socket	50	50	1	.05
5483	Candle, 4 Inches Long for Candelabra Socket	25	50	2	.35

Hubbell Candelabra and Miniature Pull Sockets

75 Watts, 125 Volts
Schedule F

Two-screw Lock Shell Fastening

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
5792	Bayonet	10	50	10	\$.90

Quick Catch Shell Fastening

5742	Candelabra	10	50	10	\$.84
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No. 5792

No. 5742 with Ext. Eyelet

Pull sockets furnished with chain over 4 inches in length, add to list, per foot, 10 cents.

For candelabra and miniature pull sockets equipped with extension eyelets, add to list 10 cents. 1/2-inch extension eyelets are standard. Separate extension eyelets, 15 cents each.

No. 5753 Hubbell Candelabra Keyless Sockets

75 Watts, 125 Volts
Schedule F



Screw Thread Shell Fastening

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
5753	Candelabra	25	100	10	\$.32

Hubbell Porcelain Candelabra Receptacles for Candle Fixtures

75 Watts, 125 Volts
Schedule F



No. 5686

No. 7042

No. 5819

These receptacles are known as standard round candelabra receptacles, and will take candelabra base lamps.

They are constructed of porcelain and especially designed for use with fixtures equipped with glass candles.

The receptacle screws into a central supporting tube, and the candle, when in place, completely covers both the supporting tube and receptacle. Fitted with both male and female thread.

No. 5812 Receptacle is provided with porcelain skirt 1/4-inch longer than standard. Otherwise is identical in construction with No. 5686.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
5686	5/16-inch Male Bushing	25	100	6	\$.21
5812	5/16-inch " " with Extra Long Porcelain Skirt	25	100	6	.21
7042	1/8-inch Pipe Tap Female Bushing Single Support	25	100	6	.21
5819	1/8-inch Pipe Tap Female Bushing	25	100	6	.21
6169	1/8-inch Pipe Tap Male Bushing	25	100	6	.21

No. 160 Hubbell Porcelain Pull Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
160	B	10	100	30	\$.59

No. 161 Hubbell Porcelain Key Socket Bodies

250 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
161	B	10	250	60	\$.26

No. 162 Hubbell Porcelain Keyless Socket Bodies

660 Watts, 250 Volts



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
162	B	10	250	55	\$.23

No. 150 Hubbell Porcelain Socket Caps

Pendent

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
150	B	10	250	30	\$.10



No. 151 Hubbell Porcelain Socket Caps

1/8-inch Brass

Standard finish is brush brass.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
151	B	10	100	15	\$.20



No. 152 Hubbell Porcelain Socket Caps

1/4-inch Brass

Standard finish is brush brass.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
152	B	10	100	35	\$.30



No. 153 Hubbell Porcelain Socket Caps

3/8-inch Brass

Standard finish is brush brass.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
153	B	10	100	15	\$.24





No. 156 Hubbell Porcelain Concealed Socket Bases

Supporting screw holes are spaced 2 1/4 inches on centers. Outside diameter, 2 3/4 inches.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
156	B	10	100	40	\$.15

No. 157 Hubbell Porcelain Cleat Socket Bases

Supporting screw holes are spaced 1 5/8 inches on centers.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
157	B	10	100	45	\$.14

No. 189 Hubbell Porcelain Small Ceiling Socket Bases

For 3 1/4-inch Outlet Boxes



Supporting screw holes are spaced 2 3/4 inches on centers. The porcelain flange of this style base is 4 7/8 inches in diameter.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
189	B	5	100	55	\$.40

No. 158 Hubbell Porcelain Small Ceiling Socket Bases

For 3 1/4-inch Outlet Boxes
Supporting screw holes are spaced 2 3/4 inches on centers. Diameter of base, 3 1/8 inches. Standard package, 100.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
158	B	10	100	45	\$.30

No. 159 Hubbell Porcelain Large Ceiling Socket Bases

For 4-inch Outlet Boxes

Supporting screw holes are spaced 3 1/2 inches on centers. Outside diameter 4 7/8 inches. Standard packages, 100.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
159	B	5	100	55	\$.40

Hubbell Porcelain Ceiling Receptacles

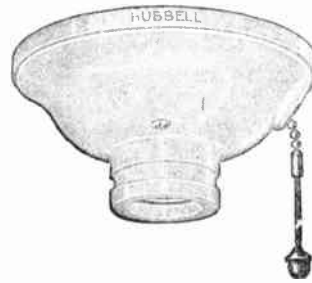
For 3 1/4 and 4-inch Outlet Boxes



No. 3922

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3922	3 1/4	100	80	\$.40
3923	4	100	110	.50

Hubbell Porcelain Outlet Receptacles With Shade Holder Groove



Designed for use on metal ceilings, concrete or tiled walls, or on 3 1/4 or 4-inch outlet boxes and are recommended for hospitals, laboratories, bath rooms, basements, or any other place where brass covered receptacles might be subjected to dampness or fumes.

The metal back plate of these receptacles is designed to take either the round outlet box such as is commonly used with conduit, or the flat type of BX cable box having a center stud.

Diameter of base is 4 5/8 inches. Height of receptacle, 2 5/8 inches. Supporting screw holes are slotted to take both 3 1/4 and 4-inch outlet box spacings.

Cat. No.	Schedule	Description	Pull Receptacles 250 Watts, 250 Volts		Price Each
			Car-ton	Std. Pkg.	
829	B	With Short Chain and 6-foot Cord	1	50	75 \$1.20
830	B	With 8-inch Insulated Chain	1	50	75 1.20
Keyless Receptacles 660 Watts, 250 Volts					
860	B	Keyless	1	50	65 \$.60

No. 60666 Hubbell Weatherproof Heat Resisting Composition Sockets

660 Watts, 600 Volts
With Shade Holder Groove
Each socket is furnished with 6 inches of No. 14 B. & S. stranded rubber-covered wire.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
60666	10	250	65	\$.20

No. 43310 Hubbell Weatherproof Heat Resisting Composition Sockets

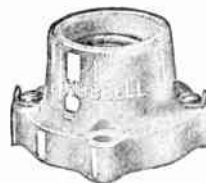
660 Watts, 600 Volts
Without Shade Holder Groove
Each socket is furnished with 6 inches of No. 14 B. & S. stranded rubber-covered wire.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
43310	10	250	55	\$.18

Hubbell Porcelain Cleat Receptacles

660 Watts, 250 Volts
Without Shadeholder Groove



No. 4013

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9402	B	10	250	115	\$.17
4013	B	10	250	110	\$.22

No. 9171 Hubbell Porcelain Cleat Receptacles

660 Watts, 250 Volts

Supported by one screw in center.
Outside diameter of base, 2 inches.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
9171	B	10	500	90	\$.12

No. 50715 Hubbell Porcelain Pony Cleat Receptacles

660 Watts, 250 Volts

Holes for supporting screws spaced $1\frac{15}{16}$ inches on centers. Dimensions of base, $2\frac{1}{2} \times 2\frac{3}{8}$ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
50715	B	10	250	70	\$.12



No. 59108 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Shallow—With $\frac{9}{16}$ -inch Ring

Hole required, $1\frac{1}{2}$ inches diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
59108	B	10	250	60	\$.20



No. 7027 Hubbell Porcelain Outlet Box Interchangeable Receptacles

With Double T Slot

10 Amperes, 250 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
7027	H	10	50	20	\$.30



No. 7032 Hubbell Porcelain Outlet Box Interchangeable Receptacles

With Covered Terminals

With Double T Slot

10 Amperes, 250 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
7032	H	10	50	20	\$.35



Hubbell Porcelain Sign Receptacles

Nos. 4036, 4099, 4109, 59108 and 61988 have eight notches and are easy to install. A notch in the side of hole punched in metal sign engages one of the slots in porcelain and prevents turning. No. 1197 pliers are used for forming these notches or lugs.

Nos. 4099 and 4109 are provided with a porcelain button which covers the line terminal screws. This porcelain piece is attached in place by one center screw.

No. 4036 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Shallow—With $\frac{9}{16}$ -inch Ring Grooved for Shade Holder

Hole required, $1\frac{1}{2}$ -inch diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4036	B	10	250	80	\$.25



No. 4099 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Deep—With $\frac{3}{8}$ -inch Ring and Covered Terminals

Hole required, $1\frac{1}{2}$ inches diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4099	B	10	250	88	\$.25



No. 4109 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Shallow—With $\frac{9}{16}$ -inch Ring

Hole required, $1\frac{1}{2}$ -inch diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4109	B	10	250	80	\$.25



No. 61988 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Deep—With $\frac{3}{8}$ -inch Ring

Hole required, $1\frac{1}{2}$ inches diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61988	B	10	250	70	\$.20



No. 4003 Hubbell Porcelain Sign Receptacles

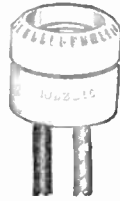
For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

With $\frac{9}{16}$ -inch Ring and 6-inch No. 14 Wires

Hole required, $1\frac{1}{2}$ -inch diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4003	B	10	250	85	\$.28



No. 4035 Hubbell Porcelain Sign Receptacles

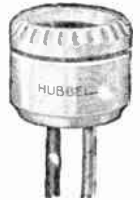
For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

With $\frac{3}{8}$ -inch Ring and 6-inch No. 14 Wires

Hole required, $1\frac{1}{2}$ inch diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4035	B	10	250	85	\$.28



No. 4037 Hubbell Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

With $\frac{9}{16}$ -inch Ring Grooved for Shade Holder and 6-inch No. 14 Wires

Hole required, $1\frac{1}{2}$ inch diameter.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4037	B	10	250	85	\$.33



Hubbell Porcelain Rings

For Nos. 4003, 4035, 4099, 4109, 59108 and 61988 Receptacles

Standard package, 100; weight, 8 lbs.
Priceeach \$.06

For Nos. 4036 and 4037 Receptacles

Standard package, 100; weight, 6 lbs.
Priceeach \$.10

No. 1197 Hubbell Metal Sign Pliers

A notch in the side of the hole punched in metal sign engages one of the slots in the porcelain receptacle, preventing turning. No. 1197 pliers are used for forming these notches or lugs.



Cat. No.	Sched-ule	Description	Std. Pkg.	Price Each
1197	B	For Nos. 4036, 4099, 59108 and 61988	1	\$1.50

No. 1140 Hubbell Wrenches

Schedule B

Designed for attaching removable rings to sign receptacles.

Standard package, 1.

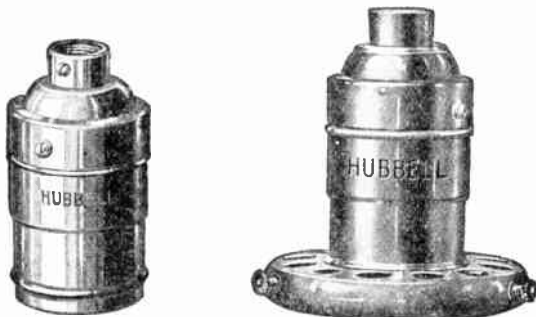
Carton, 1.

Price, No. 1140each \$.50



Hubbell Brass Shell Keyless Mogul Sockets

1500 Watts, 600 Volts



Without Shade Holder

With Shade Holder

These Mogul base sockets are fitted with special, high heat-resisting linings capable of withstanding the intense heat generated by type C gas-filled lamps.

These linings are largely composed of asbestos fiber with special binder, and in process of manufacture, are treated at a temperature of approximately 650° F. and are practically non-combustible.

Laboratory tests show these linings chemically neutral; of good dielectric strength, and moisture-proof to about the same degrees as ordinary fiber linings.

Shell and cap are fastened together by means of a screw thread and held in place by a steel set screw.

Without Shadeholder

Cat. No.	Description	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3383	With 3/8-in. Cap.	B	10	50	35		\$1.50

With 3/4-inch Shadeholder Permanently Attached

3385	Keyless, 3/8-in. Cap...	B	1	50	50		\$1.80
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Hubbell Brass Shell Keyless Mogul Ceiling Sockets

1500 Watts, 600 Volts



Diameter of base, 4 5/8 inches. Screw holes spaced 2 3/4 and 3 1/2 inches on centers.

For special finish on Mogul base sockets without the shadeholder, add to list price twice the addition made for special finishes on standard sockets.

For special finish on Mogul base sockets with shadeholder, add to list price twice the regular addition for standard socket and the regular addition for the standard 3/4-inch shadeholder.

Standard finish, brush brass.

**With Porcelain Base
For 3/4 and 4-inch Outlet Boxes**

Cat. No.	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3460	B	1	50	95		\$1.50

For 3/4 and 4-inch Outlet Boxes with 3/4-inch Shadeholder Attached

3461	B	1	50	100		\$1.80
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Hubbell Porcelain Keyless Mogul Sockets

1500 Watts, 600 Volts



No. 3465

No. 3390

Without Cap or Yoke

Screws spaced 1 1/2 inches on centers.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3465	B	2	50	55		\$.70

With Aluminum Cap

Cat. No.	Size Cap Inches	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3390	3/8	B	2	50	75		\$1.00
3391	1/2	B	2	50	75		1.00
3392	3/4	B	2	50	75		1.00

Hubbell Porcelain Keyless Mogul Sockets

1500 Watts, 600 Volts



No. 3289

No. 3468

With Cast Iron Yoke

Cat. No.	Size Yoke Inches	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3289	3/8	B	2	50	85		\$.85
3290	1/2	B	2	50	85		.85
3291	3/4	B	2	50	85		.85

With Aluminum Cap—One-piece Porcelain

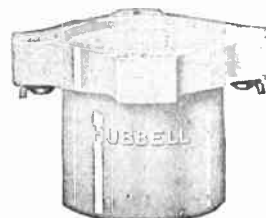
Cat. No.	Size Cap Inches	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3468	3/8	B	2	50	60		\$.85
3469	1/2	B	2	50	60		.85

With Cast Iron Yoke—One-piece Porcelain

Cat. No.	Size Yoke Inches	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3471	3/8	B	2	50	60		\$.70
3472	1/2	B	2	50	60		.70
3473	3/4	B	2	50	60		.70

Without Cap or Yoke—One-piece Porcelain

Cat. No.	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3474	B	2	50	40		\$.55



No. 3464 Hubbell Porcelain Mogul Cleat Receptacles

1500 Watts, 600 Volts
Screws spaced 2 7/8 inches.
Diameter of base, 3 1/2 inches.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
3464	B	2	50	50		\$.75

H & H Adjustable Candle Sockets



No. 5998

No. 5998 is for 4-inch candle with holders ranging from flat to 1 5/8-inches deep. Also for 5-inch candles with holders from flat to 5/8-inch deep. Adjustment in length from 3 1/8 to 5 5/8 inches.

No. 6000 is for 6-inch candles with holders ranging from flat to 1 1/2 inches deep. Also for 5-inch candles with holders ranging from 1/8 to 2 1/2 inches. Adjustment in length from 5 1/8 to 7 1/2 inches.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5998	25	250	44	\$.17
6000	25	100	20	.18

H & H Adjustable Pull Candle Sockets



To meet all requirements of 4, 5 or 6-inch candles and holders, 4 separate yokes have been designed which may be attached to pull body, Part No. 90.

The most commonly used is Yoke BY, 2 inches long.

When fastened to socket body Part (BY-90), it may be used with 4-inch candles, and holders flat to 1/16 inch deep.

There are 2 set screw holes on each yoke, the top being used practically entirely.

When special conditions arise, however, such as an extra shallow holder, the yoke is easily cut off 5/32 inch above the center of the bottom hole and then a new range of adjustment is available.

A special set screw easily accessible after socket is screwed down in holder, keeps pull chain in alignment with hole in bobèche.

Socket cannot work loose.

Candle Sockets Complete with Yokes

Cat. No.	Length Over All Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AY-90	4 - 4 1/16	10	50	12	\$.75
BY-90	4 1/16 - 5 1/16	10	50	13	.75
CY-90	5 1/16 - 6 1/16	10	50	12	.80
DY-90	6 1/16 - 7 1/16	10	50	12	.80

Parts Only

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AY	1-inch Yoke for Part 90	25	50	3	\$.05
BY	2 " " " " 90	25	50	4	.05
CY	3 " " " " 90	25	50	3	.10
DY	4 " " " " 90	25	50	3	.10
90	Candle Pull Body	10	50	12	.70

No. 5990 H & H Pull Candle Sockets

Standard pull socket.

Length of pull chain is 3 inches below the bottom of the socket. Pull chain longer than standard will be furnished at 10 cents list extra per foot.

Standard finish for chain is old or brush brass, but when specified nicked or silvered finishes will be furnished without extra charge.

For other finishes add 4 cents list.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5990	10	100	30	\$.75

H & H 2-piece Sign Receptacles With Removable Ring

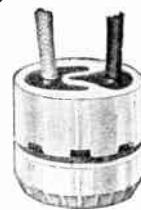
Schedule B



No. 6092



No. 6094



No. 4003

Have notched bases and may be fitted into corresponding projections in the metal sign. It cannot be turned or twisted out of position. Rubber gaskets are standard but asbestos gaskets furnished without extra charge when specified.

No.	Description	Ring In.	Dpth. Back, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6092	Shallow; Covered Terminals and Wire Grooves	5/8	1 3/8	10	250	69	\$.25
6093	Covered Terminals and Wire Grooves	7/16	1 3/32	10	250	89	.25
*4003	Shallow with No. 14 B & S Stranded Rubber Covered Wires	5/8	1 3/8	10	250	70	.28
6094	Same as 4003 without Wire Leads	5/8	1 3/8	10	250	65	.20

*Longer wires at 4 1/2 cents per foot per conductor.

No. 6090 H & H Metal Sign Pliers



Projections or niches in the metal sign easily made with this plier.

One in carton; 1 in standard package. Weight package, 1 pound. Price, No. 6090.....each \$1.50

No. 860 H & H Porcelain Keyless Outlet Box Receptacles

With Weatherproof Shadeholder Groove For 3 1/4 and 4-inch Outlet Boxes 660 Watts, 250 Volts



Diameter, 4 5/8 inches. Screw hole spacings, 2 3/4 and 3 1/2 inches on centers.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
860	B	1	50	75	\$.60

H & H Porcelain Pull Outlet Box Receptacles

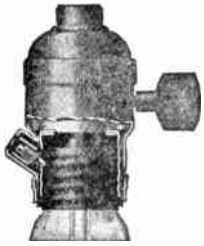
For 3 1/4 and 4-inch Outlet Boxes 250 Watts, 250 Volts



No. 829 is furnished with 6-foot cord and short chain; No. 830 is furnished with 8-inch chain and insulator. Nickel chain is standard.

Cat. No.	Diam. In.	Screw Hole Spacings on Centers, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
829	4 5/8	2 3/4 and 3 1/2	1	50	75	\$1.20
830	4 5/8	2 " 3 1/2	1	50	75	1.20

P & S Shurlok Sockets



The prime object of Shurlok Sockets and Receptacles is to prevent the theft of the lamp. The value of Shurlok in addition to the prevention of theft is suggested by the few examples shown below:

HOTELS.—Prevents the breakage of lamps by careless removal and handling. Prevents guests from installing high wattage lamps, heating appliances, etc., which tends to overload the circuits and cause trouble.

Prevents guests using electric flat irons without the knowledge and permission of the proprietors.

APARTMENTS.—Insures the permanent location of lamps over fire exits and dark stairways. Insures that lamps which illuminate danger signals will not be removed.

FACTORIES.—Guards the illumination necessary for employees to work efficiently. Prevents the exchange of broken lamps during the absence of the employees.

COMPENSATION DAMAGE SUITS.—Reduces the number of damage suits and compensation litigation because accidents are prevented.

VIBRATION.—Prevents the loosening and falling of lamps due to excessive vibration in moving vehicles, etc.

MINES.—Prevents the theft of lamps that are within easy reach as the majority of lamps are taken because it is easy.

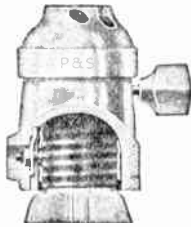
All Shurlok and regular brass sockets are supplied with a threaded bead to which any Uno shade holder may be attached instantly. This feature is valuable as the Shurlok also prevents the removal of the glassware; the glassware will not slip over the body of the lamp.

The illustrations show how the Shurlok Sockets and Receptacles keep the lamp on the job. A rugged set-screw with a triangular head and pointed end is forced into the brass lamp-base and thus the lamp is firmly gripped to prevent the turning of the lamp in the socket. The Shurlok key is of special design and is properly insulated to protect the user while locking or unlocking the Shurlok. When lamps are properly locked in these sockets they cannot be removed without the aid of the Shurlok Key No. 1299. The head of the set-screw, when the lock is in operation is recessed a considerable distance in the bushing or boss so it cannot be reached or operated with tools other than Shurlok key.

The No. 1299 Shurlok keys are designed for use in all types of Shurlok sockets and receptacles. These keys are not given away under any circumstances. The price of the No. 1299 Shurlok key is 35 cents each, net, regardless of quantity. Strict watch is kept to see that no keys are obtained by those unauthorized to possess them.

UNO SHADE HOLDERS.—Brass Shurlok sockets and receptacles are designed to accommodate the Uno shade holders in all patterns.

Shurlok Sockets and Receptacles are manufactured both in the brass and the porcelain types and porcelain Shurlok sockets and receptacles are recommended for use in exposed positions where the brass sockets and receptacles might be easily disintegrated by acid-fumes and gases.



P & S Interchangeable Porcelain Sockets

The key movement is of the double break, single pole type. The caps and bases are secured to the bodies by means of a rugged center-screw, which permits the bodies to be removed from the cap or base while the current is on.

The porcelain Shurlok devices are designed to prevent the unauthorized removal of the lamp and furthermore when the lamp is locked in place the body cannot be removed from the cap or base.

P & S Interchangeable Porcelain Sockets With Pendant Cap—For Reinforced Cord

Key—250 Watts, 250 Volts					
Cat. No.	Sched. Ule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
61317	B	10	250	100	\$.36
800 Shurlok	L	10	100	37	.63



No. 61317

Keyless—660 Watts, 250 Volts					
60317	B	10	250	80	\$.33
801 Shurlok	L	10	100	30	.60

For Twisted Lamp Cord

Key—250 Watts, 250 Volts					
61217	B	10	250	100	\$.36
802 Shurlok	L	10	100	37	.63

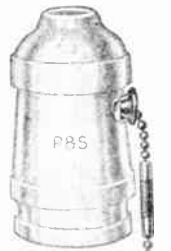
Keyless—250 Watts, 250 Volts					
60217	B	10	250	80	\$.33
803 Shurlok	L	10	100	30	.60

P & S Interchangeable Porcelain Pull Sockets

With Pendant Cap—For Reinforced Cord

250 Watts, 250 Volts					
Cat. No.	Sched. Ule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
901	B	10	100	37	\$.69
931 Shurlok	L	10	100	37	1.18

660 Watts, 250 Volts					
6901	B	10	100	37	\$.91
6931 Shurlok	L	10	100	37	1.18



No. 901

For Twisted Lamp Cord

250 Watts, 250 Volts					
902	B	10	100	37	\$.69
932 Shurlok	L	10	100	37	.96

660 Watts, 250 Volts					
6902	B	10	100	37	\$.91
6932 Shurlok	L	10	100	37	1.18

P & S Interchangeable Porcelain Sockets

With 1/8-inch Brass Cap

Key—250 Watts, 250 Vols					
Cat. No.	Sched. Ule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
61227	B	10	100	37	\$.46
804 Shurlok	L	10	100	37	.73

Keyless—660 Watts, 250 Volts					
60227	B	10	100	30	\$.43
305 Shurlok	L	10	100	30	.70



No. 61227

With 1/4-inch Brass Cap

Key—250 Watts, 250 Volts					
434	B	10	100	37	\$.56
806 Shurlok	L	10	100	37	.83

Keyless—660 Watts, 250 Volts					
435	B	10	100	35	\$.53
807 Shurlok	L	10	100	35	.80

With 3/8-inch Brass Cap

Key—250 Watts, 250 Volts					
Cat. No.	Sched. Ule	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
61327	B	10	100	37	\$.50
808 Shurlok	L	10	100	37	.77

Keyless—660 Watts, 250 Volts					
60327	B	10	100	35	\$.47
809 Shurlok	L	10	100	35	.74

P & S Interchangeable Porcelain Receptacles

With Small Concealed Base

Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
61237	B	10	100	35	\$.38	
824	Shurlok	L	10	100	35	.65

Keyless—660 Watts, 250 Volts

60237	B	10	100	33	\$.35	
825	Shurlok	L	10	100	35	.62

Pull—Small Concealed Base

250 Watts, 250 Volts

912	B	10	50	25	\$.71	
942	Shurlok	L	10	50	25	.98

660 Watts, 250 Volts

6912	B	10	50	25	\$.93	
6942	Shurlok	L	10	50	25	1.20



No. 61237

P & S Interchangeable Porcelain Receptacles

With Large Concealed Base

Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
62247	B	10	100	52	\$.41	
834	Shurlok	L	10	100	52	.68

Keyless—660 Watts, 250 Volts

60247	B	10	100	50	\$.38	
835	Shurlok	L	10	100	50	.65

Pull—Large Concealed Base

250 Watts, 250 Volts

915	B	10	50	25	\$.74	
945	Shurlok	L	10	50	25	1.01

660 Watts, 250 Volts

6915	B	10	50	25	\$.96	
6945	Shurlok	L	10	50	25	1.23



No. 915

P & S Interchangeable Porcelain Receptacles

With Cleat Base

Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
61087	B	1	100	38	\$.40	
826	Shurlok	L	1	100	38	.67

Keyless—660 Watts, 250 Volts

61107	B	1	100	35	\$.37	
827	Shurlok	L	1	100	35	.64

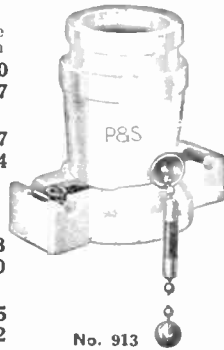
Pull—With Cleat Base

250 Watts, 250 Volts

913	B	10	50	25	\$.73	
943	Shurlok	L	10	50	25	1.00

660 Watts, 250 Volts

6913	B	10	50	25	\$.95	
6943	Shurlok	L	10	50	25	1.22



No. 913

P & S Interchangeable Porcelain Receptacles

With Wood Moulding or Conduit Fitting Base

Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
100136	B	10	100	40	\$.46	
832	Shurlok	L	10	100	40	.73

Keyless—660 Watts, 250 Volts

426	B	10	100	38	\$.43	
833	Shurlok	L	10	100	38	.70

Pull—With Wood Moulding or Conduit Fitting Base

250 Watts, 250 Volts

914	B	10	50	25	\$.95	
944	Shurlok	L	10	50	25	1.22

660 Watts, 250 Volts

6914	B	10	50	25	\$ 1.01	
6944	Shurlok	L	10	50	25	1.28



No. 100136

P & S Interchangeable Porcelain Receptacles

With 3/4-inch Box Base



Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
46	B	1	100	95	\$.56	
836	Shurlok	L	1	100	95	.83

Keyless—660 Watts, 250 Volts

4	B	1	100	92	\$.53	
837	Shurlok	L	1	100	92	.80

Pull—With 3/4-inch Box Base

250 Watts, 250 Volts

916	B	1	50	50	\$.89	
946	Shurlok	L	1	50	50	1.16

660 Watts, 250 Volts

6916	B	1	50	50	\$ 1.11	
6946	Shurlok	L	1	50	50	1.38

P & S Interchangeable Porcelain Receptacles

With 4-inch Box Base



Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
82	B	1	100	152	\$.66	
838	Shurlok	L	1	100	152	.93

Keyless—660 Watts, 250 Volts

83	B	1	100	149	\$.63	
839	Shurlok	L	1	100	149	.90

Pull—With 4-inch Box Base

250 Watts, 250 Volts

917	B	1	50	50	\$.99	
947	Shurlok	L	1	50	50	1.26

660 Watts, 250 Volts

6917	B	1	50	50	\$ 1.21	
6947	Shurlok	L	1	50	50	1.48

P & S Interchangeable Porcelain Receptacles

With Condulet Base

Key—250 Watts, 250 Volts

Cat. No.	Sched. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each	
1241	B	10	100	40	\$.49	
840	Shurlok	L	10	100	40	.76

Keyless—660 Watts, 250 Volts

1242	B	10	100	38	\$.46	
841	Shurlok	L	10	100	38	.73

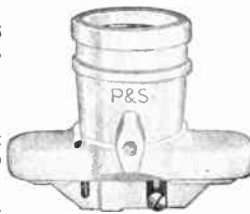
Pull—With Condulet Base

250 Watts, 250 Volts

918	B	10	50	25	\$.82	
948	Shurlok	L	10	50	25	1.09

660 Watts, 250 Volts

6918	B	10	50	25	\$ 1.04	
6948	Shurlok	L	10	50	25	1.31



No. 1241

P & S Interchangeable Porcelain Sockets

Push Button, Double Break, Single-pole
With Pendent Cap

660 Watts, 250 Volts

The cap and base are secured to the body by means of a rugged center-screw which permits the body to be removed from the cap or base while the current is on or off.

For Reinforced Cord

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1249	B	10	100	42	\$.39

For Twisted Lamp Cord

1250	B	10	100	42	\$.39
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No. 1249

P & S Interchangeable Porcelain Sockets

Push Button, Double Break, Single-pole

660 Watts, 250 Volts

The cap and base are secured to the body by means of a rugged center-screw which permits the body to be removed from the cap or base while the current is on or off.

With 1/8-inch Brass Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1251	B	10	100	42	\$.49

With 3/8-inch Brass Cap

1253	B	10	100	42	\$.53
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No. 1253

P & S Interchangeable Porcelain Receptacles

Push Button, Double Break, Single-Pole

660 Watts, 250 Volts

With Small Concealed Base

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1264	B	10	100	45	\$.41

With Cleat Base

1265	B	10	100	43	\$.43
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With Wood Moulding or Conduit Fitting Base

1266	B	10	100	50	\$.49
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With Condulet Base

1267	B	10	100	50	\$.52
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No. 1264

P & S Interchangeable Porcelain Receptacles

Push Button, Double Break, Single-pole

660 Watts, 250 Volts

With Large Concealed Base

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1268	B	10	100	95	\$.44

With 3 1/4-inch Box Base

1269	B	1	100	95	\$.59
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With 4-inch Box Base

1270	B	1	100	152	\$.69
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No. 1268

P & S Keyless Candle Sockets

660 Watts, 250 Volts



No. 198



No. 4004



No. 4005

These sockets may be used in candles or tubing measuring not less than 1 1/4 inches inside diameter.

Cat. No.	Nipple Inches	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
198	1/8	B	25	250	25	\$.18
4004	1/8	B	25	250	30	.18
4005	1/8	B	25	250	25	.18

P & S Chain Pull Candle Fixture Sockets

250 Watts, 250 Volts



No. 1215



No. 4120



No. 4230

Designed to eliminate awkward and difficult wiring in a limited space, as the wires are brought through the fixture arms and thence directly to the terminals on the outside of the socket body.

Cat. No.	Nipple Inches	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1215	1/8	B	10	100	18	\$.75
4120	1/8	B	10	100	18	.75
4230	1/8	B	10	100	18	.75

P & S Extension or Candle Length Sockets

Length over all is 4 7/8 inches. Length of body is 4 9/16 inches. Interior is supported by a rigid hickey or leg which gives ample room for free wiring. This socket may be used in candles or tubing measuring not less than 1 1/4 inches inside diameter. The fibre casing having a highly finished white glazed enamel surface allows the socket to be used without casing if desired.



Keyless Sockets

660 Watts, 250 Volts

Cat. No.	Nipple Inches	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1900	1/8	B	10	50	20	\$.50

Pull Sockets

250 Watts, 250 Volts

1901	1/8	B	10	100	22	\$.90
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P & S Porcelain Candelabra Adapters

75 Watts, 250 Volts

Designed for use with candle sockets and candelabra base lamps. Medium to candelabra.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1262	XA	25	100	10	\$.15

P & S Porcelain Covered Outlet Receptacles

Pull Receptacles—250 Watts, 250 Volts
Keyless Receptacles—660 Watts, 250 Volts



Designed for use on metal ceilings, concrete or tiled walls on 3 1/4-inch or 4-inch outlet boxes.

Shade holder groove. Holes for supporting screws are slotted to accommodate both the 3 1/4 and 4-inch outlet box spacing. Outside diameter of base is 4 1/2 inches. Height of receptacle, 2 3/2 inches. No. 830 is supplied with 8-inch nickel-plated chain with insulator. No. 829 is supplied with 8-inch nickel-plated chain and 6 feet of linen cord with ball.

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
829	Pull, 6-ft. Cord	A	1	50	76	\$1.20
830	" Ins. Chain	A	1	50	76	1.20
860	Keyless	A	1	50	76	.60

P & S Brass Covered Outlet Receptacles

250 Watts, 250 Volts

Holes for supporting screws 2 3/4 inches on centers and 3 1/2 inches on centers (two sets of screw holes). Outside diameter, 4 3/2 inches. Height of receptacle, 2 inches. Terminals are 1/2-inch from surface wired over, which permits its use for many types of concealed wiring. Supplied with short chain and 6 feet of linen cord with ball.



Standard finish of covers, brush brass.

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
428	Pull, 6-ft. Cord	A	1	50	85	\$1.30

P & S Brass Covered Outlet Receptacles

660 Watts, 250 Volts

No. 1010 Keyless—With Terminals



No. 1010

Holes for supporting screws 2 3/4 inches on centers and 3 1/2 inches on centers. (Two sets of screw holes.) Outside diameter, 4 3/2 inches. Height of receptacle, 1 1/2 inches.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1010	A	1	100	100	\$.60

No. 78 Keyless with Wires

Similar to No. 1010 with the exception that it is fitted with 6 inches of No. 14, stranded single braid rubber covered wire.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
78	A	1	100	110	\$.65

No. 1009 Keyless

Holes for supporting screws 2 3/4 inches on centers. Outside diameter, 3 3/2 inches. Height of receptacle, 1 1/2 inches. Terminals are 1/2-inch from surface wired over which permits its use for many types of concealed wiring.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1009	A	1	100	70	\$.45

No. 85 Keyless

Similar to No. 1009 with the exception that it is fitted with 6 inches of No. 14, stranded single braid rubber covered wire.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
85	A	1	100	90	\$.50

P & S All-porcelain Receptacles

For 3 1/4 and 4-inch Outlet Boxes
Pull Receptacles—250 Watts, 250 Volts
Keyless Receptacles—660 Watts, 250 Volts



No. 849

The all-porcelain shade holder will not rust, tarnish, nor lose its luster. Easy to clean with a damp cloth.

The porcelain ring is interchangeable with the shade holder and is designed for use with the ball lamp.

Outside diameter, 4 1/2 inches.

With 2 1/4-inch Porcelain Shade Holder

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
849	Pull Short Chain, 6-ft. Cord	A	1	50	90	\$1.50
850	" " Insulated Chain	A	1	50	90	1.50
851	Keyless	A	1	50	85	.90

With 3 1/4-inch Porcelain Shade Holder

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1349	Pull Short Chain, 6-ft. Cord	A	1	25	48	\$1.70
1350	" " Insulated Chain	A	1	25	48	1.70
1351	Keyless	A	1	25	46	1.10

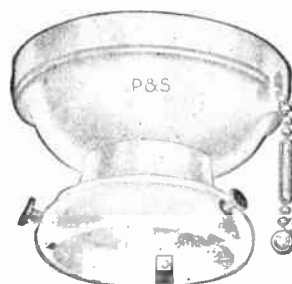
Without Porcelain Shade Holder, with Porcelain Ring

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
949	Pull Short Chain, 6-ft. Cord	A	1	50	85	\$1.30
950	" " Insulated Chain	A	1	50	85	1.30
951	Keyless	A	1	50	80	.70

P & S All-porcelain Small Receptacles

For 3 1/4-inch Outlet Boxes Only

Pull Receptacles—250 Watts, 250 Volts
Keyless Receptacles—660 Watts, 250 Volts



These compact porcelain receptacles offer a wide range of use for mounting on a narrow frame of the bath room mirror or with 3 1/4-inch outlet boxes.

The supporting bridge is flush with the back and slotted to accommodate variation in the spacing of the outlet box screws.

The porcelain shade holder and ring are interchangeable. Chain fittings and screws are heavy nickel-plated, making a durable finish and pleasing appearance.

Outside diameter, 3 3/4 inches.

With 2 1/4-inch Porcelain Shade Holder

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
929	Pull Short Chain, 6-ft. Cord	A	1	50	80	\$1.40
930	" " Insulated Chain	A	1	50	80	1.40
960	Keyless	A	1	50	76	.80

Without Porcelain Shade Holder with Porcelain Ring

Cat. No.	Description	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
919	Pull Short Chain, 6-ft. Cord	A	1	50	80	\$1.20
920	" " Insulated Chain	A	1	50	80	1.20
921	Keyless	A	1	50	76	.60

P & S All-porcelain Receptacles

With Deep Recessed Back
For 3¼ and 4-inch Outlet Boxes

Pull Receptacles—250 Watts, 250 Volts
Keyless Receptacles—660 Watts, 250 Volts



Outside diameter, 5½ inches.

These deep back receptacles are designed for use where the outlet box is mounted on the wall surface or where the box is tilted or uneven with the wall surface.

The depression at the back of these receptacles is 1¼ inches deep, 4¼ inches wide at the base and 3 inches wide at the top of the depression.

The porcelain shade holder will not rust, tarnish, nor lose its luster.

With 2¼-inch Porcelain Shade Holder

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
869	Pull Short Chain, 6-ft. Cord ...	A	1	20	60	\$1.60
870	" " Insulated Chain ...	A	1	20	60	1.60
871	Keyless ...	A	1	20	60	1.00

With 3¼-inch Porcelain Shade Holder

1369	Pull Short Chain, 6-ft. Cord ...	A	1	20	67	\$1.80
1370	" " Insulated Chain ...	A	1	20	67	1.80
1371	Keyless ...	A	1	20	65	1.20

With 4-inch Porcelain Shade Holder

1469	Pull Short Chain, 6-ft. Cord ...	A	1	20	72	\$1.85
1470	" " Insulated Chain ...	A	1	20	72	1.85
1471	Keyless ...	A	1	20	70	1.25

**No. 1410 P & S Brass Sub-base Adapters
For Outlet Boxes**



The sub-base adapter is a new departure and is designed for use with 4-inch box base receptacles and rosettes where the outlet boxes are not flush with the surface of the wall or where the outlet boxes are tilted. The sub-base adapter carries the receptacle or rosette base 1 inch from the wall and permits unusual variations in the position of the outlet boxes. It is held in place by a circular lip which surrounds the devices.

Standard finish is Brush Brass.

Cat. No.	Sched-ule	For Box Base Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1410	XA	4	10	20	7	\$.35

P & S Conduit Box Straps

For Outlet Boxes



No. 1179

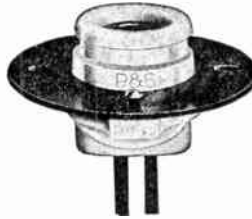


No. 1180

Cat. No.	Sched-ule	With Locknut Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1179	XA	3/8	50	50	8	\$.05
1182	XA	1/2	50	50	8	.05
1180	XA	3/8	50	50	8	.07
1181	XA	1/2	50	50	8	.07

P&S Weatherproof Outlet Box Receptacles

660 Watts, 600 Volts



With Removable
Metal Covers

Holes for supporting screws are spaced 2¾ inches on centers. Height of receptacles, ½ inch.

Outside diameter of covers, 3½ inches.

For 3¼-inch Outlet Boxes

Cat. No.	Finish of Cover	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
288	Brush Brass	A	1	100	81	\$.50
442	Jap. Iron	A	1	100	81	.35
1176	Galv. "	A	1	100	75	.45

P&S Weatherproof Outlet Box Receptacles

660 Watts, 600 Volts

With Removable
Metal Covers

Covers are arranged with a pivot for quick removal. Holes for supporting screws are spaced 3½ inches on centers. Height of receptacles, 1½ inches. Outside diameter of covers, 4½ inches.



For 4-inch Outlet Boxes

Cat. No.	Finish of Cover	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
289	Brush Brass	A	1	100	110	\$.60
443	Jap. Iron	A	1	100	120	.40
1177	Galv. "	A	1	100	120	.52

P&S Weatherproof Receptacles

660 Watts, 600 Volts



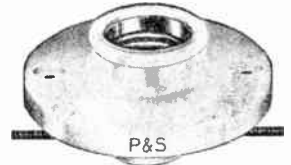
Receptacles for removable metal covers. With 6-inch wires. Holes for supporting screws are spaced 2½ inches on centers. Outside dimensions, 1½ by 2½ inches.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
372	A	10	100	32	\$.30

P&S Porcelain Outlet Box Receptacles

660 Watts, 600 Volts

Highly glazed finish. Recommended for use wherever a sanitary easily cleaned surface is desired. Fitted with 6-inch wires. Keyless.



For 3¼-inch Outlet Boxes

Holes for supporting screws are spaced 2¾ inches on centers. Height of receptacle, 1½ inches. Outside diameter of receptacle, 3½ inches.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
40	With Groove	A	1	100	85	\$.50
109	Without Groove	A	1	100	85	.50

For 4-inch Outlet Boxes

Holes for supporting screws are spaced 3½ inches on centers. Height of receptacle, 1¼ inches. Outside diameter of receptacle, 4½ inches.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
122	With Groove	A	1	100	115	\$.60
121	Without Groove	A	1	100	115	.60

P & S Porcelain Outlet Receptacles



660 Watts, 250 Volts

These receptacles are easy to wire and are built for long severe service.

No. 41

For 3/4-inch Outlet Boxes

Holes for supporting screws are spaced 2 3/4 inches on centers. Height of receptacles, 1 1/2 inches. Outside diameter of receptacle, 3 1/2 inches.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
41	Keyless, with Groove	A	1	100	70	\$.40
62357	" without	A	1	100	70	.40

For 4-inch Outlet Boxes

Holes for supporting screws are spaced 3 1/2 inches on centers.

110	Keyless, Shadeholder Groove	A	1	100	90	\$.50
111	" without Groove	A	1	100	90	.50

P & S Porcelain Two-piece Receptacles

Open or Concealed Wiring

660 Watts, 250 Volts

Screw holes spaced 1 1/2 inches.

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
598	B	10	250	70	\$.25



P & S Porcelain Concealed Receptacles

660 Watts, 250 Volts



No. 88259

Holes spaced 1 1/2 in. on centers. Outside diameter of base, 2 1/2 inches. Height of receptacle, 2 inches. The porcelain body is secured to the base by means of a center retaining screw and when the body is separated from the base the terminals are exposed for wiring.

The shadeholder groove on P & S 88259 is 1 5/8 inches in diameter.

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
451	B	10	250	114	\$.25

With Groove

88259	B	10	250	100	\$.30
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P & S Porcelain Concealed Receptacles

660 Watts, 250 Volts

Holes spaced 1 5/8 in. on centers.

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
4000	B	10	250	104	\$.25

With Groove

4001	B	10	250	104	\$.30
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P & S Porcelain Cleat Receptacles

With Concealed Terminals

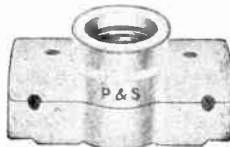
660 Watts, 250 Volts

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
64369	B	10	250	125	\$.28

With Shadeholder Groove

66612	B	10	250	125	\$.33
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No. 50715 P & S Porcelain Cleat Receptacles

For Standard Work

660 Watts, 250 Volts

Known to the trade as a Pony Receptacle. Screw holes spaced 1 5/8 inches.

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
50715	B	10	250	65	\$.12



P & S Porcelain Receptacles

For Ceiling Lights

250 Watts, 250 Volts



Nos. 998 and 999 are fitted with porcelain clamping rings and gaskets, and are for use with units having 1 1/2-inch throat. No. 998 has short chain and 6 feet of linen cord with composition ball. No. 999 has 3-foot chain and snap-lock ball.

No. 997 has pull insulated chain.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
994	B	10	100	40	\$.91
995	B	10	100	40	.75
996	B	10	100	40	.75
997	B	10	100	40	.83
998	B	10	100	40	.83
999	B	10	100	40	.98

No. 9171 Porcelain Receptacles

Cleat Receptacle with Single Center Supporting Screw

660 Watts, 250 Volts

Without groove.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
9171	B	10	500	130	\$.12



No. 9403 P & S Porcelain Receptacles

Cleat Receptacles with Brass Shells for Shadeholders

660 Watts, 250 Volts



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
9403	B	10	250	92	\$.27

No. 9402 P & S Porcelain Cleat Receptacles

For Heavy Duty Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
9402	B	10	250	100	\$.17

With Shadeholder Groove

4013	B	10	250	100	\$.22
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P & S Porcelain Concealed Receptacles

For Wood Moulding or Conduit Fittings

Without Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
61770	B	10	250	100	\$.30

With Shadeholder Groove

61670	B	10	250	90	\$.35
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No. 62358 P & S Porcelain Cleat Receptacles

For Damp Places and Electric Signs

Without groove.

Provided with square recess for stovebolts in the base.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
62358	B	10	250	82	\$.25

No. 61777 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts
Punch required for this receptacle is 1 3/8 inches in diameter.
Holes for supporting screws are spaced 1 3/16 inches on centers.
Length of back, 1 5/16 inches.
Wires carried from surface 1 inch.



No. 61777 is used extensively by manufacturers of stage lighting equipment for foot lights, border lights and various other purposes.

Furnished complete with screws.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61777	C	25	250	62	\$.18

No. 61072 P & S Porcelain Sign Receptacles

For Wood Signs
660 Watts, 250 Volts

The hole required for this receptacle is 1 1/2 inches in diameter.

Holes for supporting screws are spaced 1 3/16 inches on centers.

Length of back 3/8 inch, on which wires are carried.

Constructed with a 1-inch skirt.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61072	C	25	250	55	\$.17

No. 878 P & S Porcelain Sign Receptacles

For Metal Signs—Candelabra Base
75 Watts, 125 Volts

Punch required, 2 3/32 inch in diameter. Length of back, 5/16 inch. Wires, 3/4 inch from surface.
Porcelain ring and gasket.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
878	C	25	100	25	\$.20

No. 677 P & S Porcelain Sign Receptacles

For Metal Signs—Candelabra Base
75 Watts, 125 Volts

Punch required for this receptacle is 3 3/8 inch in diameter.

Holes for supporting screws are spaced 1 3/16 inches on centers.

Length of back, 5/16 inch.

Wires carried from surface, 5/16 inch.

Furnished complete with screws.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
677	C	25	100	25	\$.18

No. 778 P & S Porcelain Sign Receptacles

For Metal Signs—Candelabra Base
75 Watts, 125 Volts

Punch required for this receptacle is 2 3/8 inch in diameter.

Holes for supporting screws are spaced 1 3/16 inches on centers.

Length of back, 5/16 inch.

Wires carried from surface, 5/16 inch.

Furnished complete with screws.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
778	C	25	100	25	\$.18



No. 61971 P & S Porcelain Cleat Receptacles

With Concealed Terminals
660 Watts, 250 Volts

Without groove. For use with decorative lighting.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61971	B	10	250	146	\$.28

No. 54 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes
660 Watts, 250 Volts



Punch required, 1 3/8 inches in diameter. Holes spaced, 1 3/8 inches. Length, 1 7/8 inches. Supplied with copper parts at an advance of \$.05 each. Wires carried from surface 1 inch.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
54	C	25	250	64	\$.17
*5400	C	25	250	64	.17

*With loop terminals.

No. 61977 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes
660 Watts, 250 Volts

Punch required, 1 3/8 inches in diameter. Holes spaced, 1 3/16 inches. Length, 1 3/8 inches.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61977	C	25	250	57	\$.18



P & S Porcelain Sign Receptacles
For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Punch required, 1 1/2 inches in diameter. Length, 3/8 inch. Wire carried from surface, 5/8 inch. Porcelain ring, gasket.



No. 59108



No. 4109

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
59108	C	25	250	55	\$.20
With Screw Terminals					
4132	C	25	250	55	\$.20
With Loop Terminals					
4109	C	25	250	80	\$.25
With Loop Terminals Enclosed					
41090	C	25	250	80	\$.25

P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes
660 Watts, 250 Volts

Punch required, 1 1/2 inches in diameter.

With Screw Terminals

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61988	C	25	250	62	\$.20

With Loop Terminals

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
439	C	25	250	62	\$.20



No. 4003 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Punch required, 1½ inches. Length, ¾ inch. With 6-inch stranded No. 14 rubber covered wires. Porcelain ring, gasket.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4003	C	10	250	82	\$.28

No. 4036 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Punch required, 1½ inches in diameter. Length, 5/16 inch. Wires carried from surface, 5/8 inch. Grooved ring, gasket.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4036	C	25	250	62	\$.25

No. 4037 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Punch required, 1½ inches. Length, 7/8 inch. With 6-inch stranded No. 14 rubber covered wires. Grooved ring, gasket.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4037	C	10	250	82	\$.33

P. & S. Porcelain Sign Receptacles

660 Watts, 250 Volts

Diameter, 1½ inches. Length, 1¼ inches. Wires from surface, 1 inch.

Without Loop Terminals

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
102704	C	25	250	102	\$.25

With Loop Terminals

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
102700	C	25	250	102	\$.25



P & S Porcelain Sign Receptacles

For Ceiling Fixtures and Outlet Boxes

660 Watts, 250 Volts



Punch required, 1½ inches in diameter. Length, 1 5/16 inches. Wire carried from surface, 1 3/16 inches.

With Screw Terminals

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
427	C	25	250	62	\$.20

With Loop Terminals

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4270	C	25	250	62	\$.20

No. 4035 P & S Porcelain Sign Receptacles

For Metal Signs and Outlet Boxes

660 Watts, 250 Volts

Punch required, 1½ inches in diameter. Length, 1 inch. With 6-inch stranded No. 14 rubber covered wires.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4035	C	10	250	80	\$.28

P & S Two-piece Porcelain Reflector Sockets

For Use on Tyre Clamps

660 Watts, 250 Volts



No. S62



No. S63

Screw holes are spaced 1 5/16 inches on centres.

Porcelain Bodies Only

Without Shadeholder Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
S62	B	10	100	35	\$.35
S72 Shurlok	L	10	100	40	.62

With Shadeholder Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
S63	B	10	100	35	\$.40
S73 Shurlok	L	10	100	40	.67

With 3/8-inch Solid Metal Cap

Without Shadeholder Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1235	B	10	100	62	\$.55
1235 Shurlok	L	10	100	65	.82

With Shadeholder Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1236	B	10	100	67	\$.60
1236 Shurlok	L	10	100	70	.87

With 1/2-inch Solid Metal Cap

Without Shadeholder Groove



No. 1238

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1237	B	10	100	67	\$.55
1237 Shurlok	L	10	100	70	.82

With Shadeholder Groove

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1238	B	10	100	67	\$.60
1238 Shurlok	L	10	100	67	.87

No. 1140 P & S Wrenches

For Porcelain Ring Type Sign Receptacles

For use in installing the ring-type porcelain receptacles in ceiling fixtures or spun brass units.



Cat. No.	Schedule	Ca on	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1140	XA	1	10	5	\$.50

No. 1260 P & S Wrenches

For Porcelain Fixture Sockets

Designed for exclusive use when installing P & S porcelain fixture sockets in socket covers or husks.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1260	XA	5	10	1 1/2	\$.50



No. 1261 P & S Wrenches

For Fluto and Flutolier Sockets

The bar may be changed quickly to either end of the wrench.

For husk-work it is found invaluable.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1261	XA	5	10	1 1/2	\$.50

P & S Miniature Weather-proof Receptacles

Fitted with 6-inch No. 18 rubber covered fixture wires. Sockets with longer wires furnished at 4 1/2 cents list per foot, each conductor. Punch required is 3/32 inch in diameter.



No. 422

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
422	Keyless	XA	50	100	7	\$.25

P & S Mogul Brass Sockets

1500 Watts, 600 Volts

Elastoid Fibre is used exclusively in these sockets as a lining. This fibre is approved for use with gas-filled lamps of above 100 watt capacity with or without shades or other enclosures.



No. 216

Cat. No.	Size Cap Inches	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
216	3/8	B	10	50	34		\$1.50
433	1/2	B	10	50	35		1.50

With 3 1/4-inch Shadeholder Rigidly Attached

429	3/8	B	1	25	25		\$1.80
441	1/2	B	1	25	25		1.80

P & S Mogul Porcelain Sockets

1500 Watts, 600 Volts

With Short Two-piece Body, Front Connected With Brass Cap

Nos. 1194 and 538 have 3/4 inch male threaded cap with locknut for holding shade or fixture fitting.

Cat. No.	Size of Cap or Yoke In.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
1186	3/8	B	2	50	50		\$1.00
1187	1/2	B	2	50	50		1.00
1188	3/4	B	2	50	45		1.00
1194	1/2	B	2	50	45		1.10



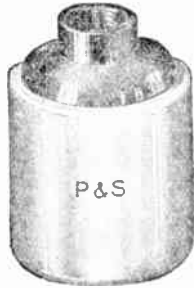
No. 1186

With Short Body With Brass Cap

Cat. No.	Size Cap or Yoke In.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
522	3/8	B	10	50	45		\$.85
521	1/2	B	10	50	45		.85
592	3/4	B	10	50	50		.85
538	3/4	B	10	50	50		.95

With Cast Iron Yoke

593	3/8	B	10	50	50		\$.70
594	1/2	B	10	50	50		.70
595	3/4	B	10	50	50		.70



No. 521

P & S Mogul Porcelain Socket Bodies

1500 Watts, 600 Volts, Schedule B

Screw holes spaced 1 1/2 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
S53	Two-piece Body only	2	50	35		\$.70
S54	One- " "	10	50	35		.55



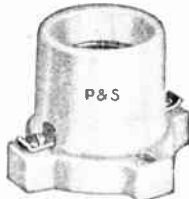
No. 553

P & S Mogul Porcelain Receptacles

1500 Watts, 600 Volts, Schedule B

Holes spaced, No. 520, 2 7/8 inches; No. 516, 2 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
520	Without Groove	2	50	40		\$.75



No. 80 P & S Porcelain Weatherproof Sockets

660 Watts, 250 Volts

Fitted with 6-inch stranded No. 14 rubber covered wires. Has shadeholder bead.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
80	B	10	250	83		\$.16



No. 9366 P & S Porcelain Weatherproof Sockets

660 Watts, 600 Volts

Fitted with 6-inch stranded No. 14 rubber covered wires. Has shadeholder groove.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
9366	B	10	250	90		\$.18

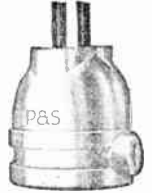


No. 9366 Shurlok P & S Weatherproof Sockets

660 Watts, 600 Volts
Schedule L

Fitted with 6-inch stranded No. 14 rubber covered wires. Has shadeholder groove.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
9366	Shurlok	10	100	35		\$.49



No. 60666 P & S Black Cold Moulded Weatherproof Sockets

660 Watts, 250 Volts

Fitted with 6-inch stranded No. 14 rubber covered wires. Has shadeholder groove.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
60666	B	10	250	84		\$.20

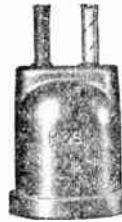


No. 43310 P & S Cold Moulded Weatherproof Sockets

660 Watts, 600 Volts

Fitted with 6-inch stranded No. 14 rubber covered wires. Has shadeholder groove.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
43310	B	10	250	70		\$.18



No. 540 P & S Bakelite Weatherproof Sockets

660 Watts, 600 Volts

Fitted with 6-inch wires. Will resist high temperature and rough handling.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
540	Shurlok	L	10	100	20	\$.75



No. 542 P & S Condensite Weatherproof Bracket Sockets

660 Watts, 600 Volts

Fitted with 6-inch No. 18 rubber covered fixture wires. Has 3/8-inch female nipple.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
542	B	10	100	30		\$.65



No. 542 Shurlok P & S Condensite Weatherproof Bracket Sockets

660 Watts, 600 Volts

Fitted with 6-inch No. 18 rubber covered fixture wire. Has 3/8-inch female nipple.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
542	Shurlok	L	10	100	25	\$.92



P & S Weatherproof Aluminum Shell Sockets

660 Watts 600 Volts

The terminals of this socket are located sufficient distance from the skirt of the cap, so that the interior may be placed in position before the connections are made.

This prevents a surplus of wire in the cap.

With Bayonet Shell and 3/8-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
486	B	10	50	17	\$.50



With Petticoat Shell for Shadeholders

486B	B	10	50	18	.50
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P & S Weatherproof Aluminum Shell Sockets

660 Watts, 600 Volts

With Bayonet Shell and 1/2-inch Cap

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
487	B	10	50	16	\$.50

With Petticoat Shell for Shadeholders

487B	B	10	50	17	.50
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P & S Moulded Mica Decorative Sockets

For Temporary Work

660 Watts, 250 Volts

Contact screws are sharp-pointed; designed to puncture insulation and make contact with the wires.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
464	B	10	250	65	\$.30

P & S Porcelain Suspension Cleats

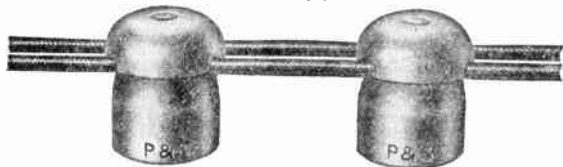
Intended for use in decorative festoon work to relieve conductor wires of strain. For use where streamers are of considerable length.

Cat. No.	Description	Schedule	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
430	Wires 3/4 inch apart	XA	100	10	\$.07
291	" 2 1/2 inches "	XA	100	15	.12



P & S Ready Wired Mica Sockets

660 Watts, 250 Volts
Schedule B



These sockets are put up in lengths of about 500 feet and will be shipped in these lengths unless otherwise specified.

Special lengths will be supplied, subject to specifications, and if wanted, extra lengths of wire can be supplied on each end of the streamer. Extra wire on the ends of the streamers will be charged for at 4 1/2 cents per foot, list, each conductor, for No. 14 wire, and 5 cents per foot, list, each conductor, for No. 12 wire. These sockets are wired up with New Code, single braid, rubber covered, stranded wire.

Quotations furnished on any spacing of sockets and delivery. These goods are packed in barrels unless reels are specified. Extra charge to cover cost of reels.

Wired with No. 14

Wired with No. 12

Sockets Centered Inches	Cat. No.	Std. Pkg.	Price per 100	Sockets Centered Inches	Cat. No.	Std. Pkg.	Price per 100
6	222	250	\$32.50	6	257	250	\$35.50
12	229	250	37.00	12	263	250	40.20
18	236	250	41.50	18	269	250	45.15
24	248	250	46.00	24	275	250	50.10
30	254	250	50.50	30	281	250	55.10

Benco Weatherproof Sockets

Keyless Type—Medium Base

660 Watts, 600 Volts

Benjamin Type S Shade Holders and Reflectors may be attached to screw thread at bottom of socket. Three finishes: Brushed brass for interior lighting, polished aluminum for general weatherproof work and natural copper for severe conditions such as seaboard service. Benjamin Lamp Grip, to prevent loosening of lamps under conditions of severe vibration, supplied with sockets at \$.15 advance in list.



No. 4200

Tapped for 1/2-inch Iron Pipe Connection

No.	Casing Material	Finish	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4200	Aluminum	Pol. Alum.	10	15	\$.70
4202	Brass	Brush. Brass	10	15	.85
4204	Copper	Nat. Copper	10	15	.70

Tapped for 3/8-inch Iron Pipe Connection

4201	Aluminum	Pol. Alum.	10	15	\$.70
4203	Brass	Brush. Brass	10	15	.85
4205	Copper	Nat. Copper	10	15	.70

Brushed for Drop Cord Up to 1/2-inch Diameter

Have strain relief effective on 16 gauge and larger conductors.

4335	Aluminum	Pol. Alum.	10	15	\$.70
4336	Brass	Brush. Brass	10	15	.85
4337	Copper	Nat. Copper	10	15	.70

Benco Pull Chain Sockets

660 Watts, 250 Volts—Medium Base

Benjamin Type Shade Holders and Reflectors may be attached to screw threads at bottom of socket. Enclosing shell has no opening to admit moisture. Chain passes down through a space inside, thoroughly insulated from current carrying parts. Interior is of molded composition.

Sockets have Benjamin lamp grip.



No. 4207

Cat. No.	Description	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4225	Polished Aluminum	1/2	10	3 1/4	\$1.40
4207	Brushed Brass	1/2	10	3 1/4	1.40
4236	Natural Copper	1/2	10	3 1/4	1.40
4226	Polished Aluminum	3/8	10	3 1/4	1.40
4208	Brushed Brass	3/8	10	3 1/4	1.40
4237	Natural Copper	3/8	10	3 1/4	1.40

Pull Socket Interior Only

4209	Molded Composition		10	2 1/4	\$.70
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Benco Threaded Type S Holders

For Medium Screw Base Benco Sockets and Outlet Box Fittings



2 1/4-inch Holder Form O

These holders are equipped with holder screws and are made to fit any glass or metal reflectors with standard neck sizes.

Polished Aluminum Holders—Weather-proof

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4215	2 1/4	10	3/8	\$.28
4217	3 1/4	10	3/4	.50

Natural Copper Holders—Weather-proof

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4370	2 1/4	10	7/8	\$.30
4372	3 1/4	10	1 5/8	.50
4373	4	10	2	.80



3 1/4-inch Holder

Brushed Brass Holders

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4377	2 1/4	10	7/8	\$.30
4379	3 1/4	10	1 1/4	.50
4380	4	10	1 7/8	.80



4-inch Holder

**Benjamin Metal Tops
For Mogul Porcelain Sockets**



**No. 2567
Includes
Fitting Only**

Catalogue Nos. 2567-2568 have screw holes on both 1 3/32-inch and 1 1/2-inch centers. Catalogue Nos. 3846-3847 have screw holes on both 1 5/32 and 1 3/4-inch centers.



**No. 3846
Includes
Fitting Only**

Cat. No.	Tapped In.	For Socket Nos.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2567	1/2	169-696-692-698	Cast Alum. Cap	10	1	\$.42
2568	3/8	169-696-692-698	" " "	10	1	.42
3846	1/2	69-693-691-695	" Iron Yoke	10	2 1/2	.21
3847	3/8	69-693-691-695	" " "	10	2 1/2	.21

Benjamin One-piece Mogul Porcelain Sockets

Sockets attach to a surface or bracket by means of screws passing through the base. Screw holes are spaced 1 5/32 inches on centers. Nos. 69 and 169 are without lamp grip. Nos. 691 and 692 are with lamp grip.



No. 69

With Open Terminals

Cat. No.	Body Has	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
69	Bead	10	5	\$.77
691	"	10	5	.92

With Concealed Terminals

Cat. No.	Body Has	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
169	Bead	10	5	\$.77
692	"	10	5	.92

Benjamin Two-piece Mogul Porcelain Sockets



No. 695

With Open Terminals

Sockets attach to flange or surface by means of screws through the base.

Wires are brought in through side outlets in upper base. Screw holes are spaced 1 3/4 inches on centers. No. 693 is without lamp grip; No. 695 with lamp grip.

Cat. No.	Body Has	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
693	Bead	10	6	\$.98
695	"	10	6	1.13

Benjamin Two-piece Mogul Porcelain Sockets

With Concealed Terminals



No. 698

Sockets attach to a flange or surface by means of screws through the base.

Wires are brought in through central opening in upper base. Screw holes slotted for 1 1/2 to 1 3/4 inches on centers. This socket can be used for replacement in Benjamin Fixtures having two-piece Mogul base sockets. No. 696, without lamp grip; No. 698, with lamp grip.

Cat. No.	Body Has	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
696	Bead	10	6	\$.98
698	"	10	6	1.13

Benjamin Copper Cap Porcelain Sockets

660 Watts, 600 Volts



No. 4422

These sockets have tapped copper cap with threaded bushing with set screw.

Bodies are interchangeable and are secured to cap with 2 screws reached through the bottom. No rewiring necessary when changing bodies.

For indoor or outdoor service.
Have Benjamin lamp grip.

Cat. No.	Description	Tapped Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4416	Less Bead	3/8	10 3		\$.91
4418	"	1/2	10 3		.98
4422	With "	3/8	10 3		.91
4423	"	1/2	10 3		.98

No. 91 Benjamin Plug Socket Extensions

660 Watts, 250 Volts



This extension is particularly suited for use where it is desired to get a wide diffusion of light with a small amount of lamp wattage. For example, a fixture designed for 100-watt lamps can be used successfully with 75s by adding a No. 91 Socket Extension.

The extension lowers the filament of the lamp one inch, placing it in the proper position with tee fixture for maximum light diffusion.

The bead offers a convenient method of attaching glassware to flush receptacles, outlet boxes, etc.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
91	With Bright Brass Casing Having Shade Holder Bead	10 1		\$3.30

No. 1261 Benjamin Strain Relief Cord Grips



Serves as a strain relief and a cord bushing. Fits any socket tapped 1/2-inch and accommodates any cord from 3/8 to 1 1/2-inch diameter, inclusive.

Easy to attach. Slip cord fitting over end of terminal wires, then wire socket in ordinary way and screw cord grip into position. By means of 2 screws, tighten the steel straps so they will firmly grip cord.

Consists of an iron galvanized malleable bushing with 1/2-inch iron pipe thread, to which 2 straps are attached by machine screws.

Standard package, 10.

Price, No. 1261.....each \$1.10

No. 98 Benjamin Mogul Socket Reducers

660 Watts, 250 Volts

For adapting mogul screw base sockets for use with medium screw base lamps. Both threaded shells are made of copper. Standard package, 10.

Weight, standard package, 1 1/2 pounds.
Price, No. 98.....each \$3.35



Bushings



No. 50787



No. 9165

Cat. No.	Description	Size Hole Inches	Size, Cap Inches	Std. Pkg.	Price per 1000
50787	Composition	1 3/32	3/8	500	\$10.00
9165	"	3/32	1/8	1000	7.50

No. 23 Dim-A-Lite Attachments



For dimming or turning down a single incandescent lamp.

Can be used with either carbon or Mazda lamps up to 50 watts. Suitable for any current, either direct or alternating. Operated by a simple pull of chain which gives five changes of light, full, low, dim, nitelite and out.

Portable, interchangeable type. Brush brass finish. Fits any fixture or chandelier socket and takes any ordinary lamp.

Approved by Underwriters. Standard package, 48.

Price, No. 23.....each \$1.25

110 volts furnished unless otherwise ordered. Add 10 cents for 220 volts. Add 10 cents for 32 volts.

For special finishes, add 25 cents.

No. 24 Dim-A-Lite Attachments

For dimming incandescent lamps.

Portable shade holder type, brush brass finish. Operated, either by turning shade or pulling cord.

Slight turn of shade gives any degree of light desired. Equipped with 2 1/4-inch shade holder. Preferred when the light is within easy reach.

A simple pull of cord gives five changes of light, full, low, dim, nitelite and out.

Can be used with either carbon or Mazda lamps up to 50 watts. Suitable for any current, either direct or alternating. Approved by Underwriters. Standard package, 60.

Price, No. 24.....each \$1.25

110 volts furnished unless otherwise ordered. Add 10 cents for 220 volts. Add 10 cents for 32 volts.

For special finishes, add 25 cents.



No. 34 Dim-A-Lite Attachments



For dimming incandescent lamps. Portable shade holder type, brush brass finish. Perforated shade holder takes standard size shade.

A simple pull of cord gives five changes of light, full, low, dim, nitelite and out.

Can be used with either carbon or Mazda lamps up to 50 watts. Suitable for any current, either direct or alternating. Approved by Underwriters. Standard package, 60.

Price, No. 34.....each \$1.40

110 volts furnished unless otherwise ordered. Add 10 cents for 220 volts. Add 10 cents for 32 volts.

For special finishes, add 25 cents.

No. 33 Dim-a-lite Pull-Chain Sockets



Dim-a-lite pull-chain socket is permanently wired to any electric light fixture or lamp, just the same as an ordinary pull-chain socket. It replaces and improves upon standard pull-chain sockets.

Giving maximum comfort and convenience at minimum cost, Dim-a-lite socket gives five changes of light and saves 30% to 80% current at the meter.

For dimming or turning down a single incandescent lamp. Can be used with either carbon or Mazda lamps up to 50 watts. Suitable for any current, either direct or alternating. Standard package, 100.

Price, No. 33.....each \$1.25

110 volts furnished unless otherwise ordered. Add 10 cents for 220 volts. Add 10 cents for 32 volts.

For special finishes, add 25 cents.

Bryant Ventilated Uno Shade-holders



No. 501

Designed to be attached to the threaded bead of brass shell medium base socket or receptacle.



No. 504—Style H

Standard finish, brush brass.

With Screws to Hold Shade

Cat. No.	Schedule	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
						Finished	Unfinished
501	D	2 1/4	50	500	33	\$6.00	\$5.50
503	D	H(2 1/4)	25	250	31	15.50	13.75
505	D	3 1/4	25	250	34	14.85	13.05
511	D	4	10	100	27	20.55	18.35

With Spring Grip to Hold Shade

502	D	2 1/4	50	250	20	\$9.25	\$8.75
504	D	H(2 1/4)	25	100	17	15.90	14.20
506	D	3 1/4	25	100	19	19.00	17.50

Bryant Solid Uno Shade-holders

Schedule D

Uno Shade-holders are designed to attach directly to the threaded bead of all Bryant brass shell medium base sockets and receptacles. Standard finish, brush brass.



No. 533

With Screws to Hold Shade

Cat. No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
					Finished	Unfinished
532	2 1/4	50	500	33	\$8.50	*\$7.75
534	3 1/4	25	250	30	15.90	*14.20
536	4	10	100	27	23.45	*21.65

With Spring Grip to Hold Shade

533	2 1/4	50	250	22	\$9.05	\$8.00
535	3 1/4	25	100	20	19.35	17.85

*Furnished with screws separate from shadeholders.

Wires only, for Spring Grip Shade-holders

...	2 1/4 H	..	250	..	\$3.00	\$3.00
...	3 1/4	..	250	..	4.00	4.00

Bryant Threaded Weatherproof Shade-holders

Schedule D



No. 3702

Fit sockets Nos. 3706-8 and 3726-8. Standard finish, brush brass.

Without Ventilating Holes, Aluminum

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3702	3 1/4 " " " 3 "	10	50	10	.30
3704	4 " " " 3 "	10	50	12	.40

Without Ventilating Holes, Copper

3720	2 1/4-inch with 3 Screws.....	10	50	10	\$.20
3722	3 1/4 " " " 3 "	10	50	13	.30
3724	4 " " " 3 "	10	50	15	.40

With Ventilating Holes, Aluminum

3710	2 1/4-inch with 3 Screws.....	10	50	7	\$.20
3712	3 1/4 " " " 3 "	10	50	9	.30
3714	4 " " " 3 "	10	50	11	.40

With Ventilating Holes, Copper

3730	2 1/4-inch with 3 Screws.....	10	50	9	\$.20
3732	3 1/4 " " " 3 "	10	50	12	.30
3734	4 " " " 3 "	10	50	14	.40

No. 732 Bryant Banner Shade-holders

A two-part device which holds the shade between the two parts. Can be used with shades which have no shade-holder rim and presents a neat appearance. Fastens to the socket by means of the Uno thread.

Standard finish, brush brass.



Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price, per 100 Fin.	
						Pkg.	Price
732	D	2 1/4-inch.....	50	500	49	\$8.00	

Bryant Shade-holders for Screw Ring Porcelain Receptacles



No. 521



No. 522

Supported by porcelain ring which forms part of the receptacle. Ventilated. Standard finish, brush brass.

Cat. No.	Schedule	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100 Finished
521	D	2 1/4	25	100	16	\$15.00
522	D	3 1/4	25	50	9	20.00

Bryant Ventilated Shade-holders for Bayonet Base Material

Schedule D



No. 578

For use with bayonet base Edi-Swan sockets and receptacles. Supported on the socket by means of a threaded brass shade-holder ring which clamps them securely to the receptacle or shell of the socket.

Standard finish, brush brass.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
578	2 1/4-inch, with Screws to Hold Shade...	50	500	34	\$.10
654	2 1/4 " " Spring Grip to Hold Shade	50	500	34	.12

Bryant Emergency Shade-holders



No. 443

Designed specially for use in connection with medium screw base porcelain sockets and receptacles on not over 250 volts. The method of attachment is by means of a screw shell, thoroughly insulated from the holder itself, which threads onto the outside of the screw shell of the lamp socket without in any way interfering with the use of the lamp. May also be used with most porcelain sockets and receptacles of other manufacture. Emergency shade-holders are made with spring grip only.

Standard finish, brush brass.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100 Fin.
443	D	2 1/4-inch, Solid	25	100	10	\$20.00
444	D	Form H (2 1/4-inch, Ventilated)	10	50	9	25.00
445	D	3 1/4-inch, Ventilated	10	50	9	30.00

Bryant Weatherproof Shade-holders

May be used with any porcelain or composition socket or receptacle which is provided with a shade-holder groove.

Cat. No.	Schedule	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100 Finished
628	D	2 1/4	25	250	23	\$8.50
629	D	3 1/4	10	100	17	16.25



No. 5690 Hubbell Shade Holders

Form H Type—Schedule D

Size, 2 1/4 inches. Carton, 25. Standard package, 100. Weight, 20 pounds.

Price, Finished....per 100 \$15.90
 " Unfinished.... " 14.20
 Standard finish, brush brass.



Hubbell Shade Holders—Three-screw Type

Schedule D



No. 5339



No. 5594

Cat. No.	Size Inches	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
5339	2 1/4	Finished	50	500	30	\$6.00
5339	2 1/4	Unfinished	50	500	30	5.50
5594	2 1/4	Solid Finished	50	500	32	8.50
5594	2 1/4	Solid Unfinished	50	500	32	7.75
5340	3 1/4	Finished	25	250	27	14.85
5340	3 1/4	Unfinished	25	250	27	13.05
5596	3 1/4	Solid Finished	25	250	30	15.90
5596	3 1/4	Solid Unfinished	25	250	30	14.20
5595	4	Finished	25	100	15	20.55
5595	4	Unfinished	25	100	15	18.35
5597	4	Solid Finished	25	100	16	23.45
5597	4	Solid Unfinished	25	100	16	21.65

Price, No. D1675, Finished, Separate Split Rings, Standard Package, 200.....per 100 \$2.00
 Standard finish, brush brass.

No. 5528 Hubbell Shade Holders Locking Spring Type

Schedule D

Size, 2 1/4 inches. Carton, 50. Standard package, 250. Weight, 17 pounds.

Price, Finished....per 100 \$9.25
 " Unfinished.... " 8.75

Standard finish, brush brass.



Nos. 501 and 505 Hubbell Direct Threading Shade Holders

Three-screw Type—Schedule D

Cat. No.	Size Inches	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
501	2 1/4	Finished	50	500	30	\$6.00
501	2 1/4	Unfinished	50	500	30	5.50
505	3 1/4	Finished	25	250	37	14.85
505	3 1/4	Unfinished	25	250	37	13.05

Nos. 6633-6635 Hubbell Shade Holders

For Medium Base Weatherproof Sockets

Schedule D

Cat. No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
6633	2 1/4	25	200	25	\$8.50
6634	3 1/4	10	100	15	16.25
6635	4	10	100	20	32.00



No. 6276 Hubbell Shade Holders

For Brass Shell Mogul Base Sockets

Schedule D

Ventilated

Cat. No.	Size Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
6276	4	10	100	20	\$40.00



Nos. 6636 and 6637 Hubbell Shade Holders For Porcelain Mogul Base Sockets

Schedule D

Price, No. 6636 Size, 3 1/4 inches....per 100 \$37.00

Price, No. 6637 Size, 4 inches....per 100 45.00

Carton, 10. Standard package, 100. Weight, 20 pounds.



Bryant Porcelain Junior Two-piece Rosettes Cleat Base



Main diam., $2\frac{3}{32}$ in. Diam. over lugs, $2\frac{3}{16}$ in. Ht., $1\frac{1}{4}$ in. Screw spacings, $1\frac{1}{8}$ in.
With Fusible Cap—2 Amp., 125 Volts

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1501	H	10	250	108	\$.20
With Fuseless Cap—660 Watts, 250 Volts					
297	H	10	250	109	\$.16

Bryant Porcelain Cleat Rosettes with Covered Connections



Length, $3\frac{1}{8}$ inches. Width, 1 inch. Height, $1\frac{1}{2}$ inches.



Supporting screw spacings, $\frac{3}{32}$ inch by $\frac{1}{8}$ inch.

No. 965

Bryant Porcelain Junior Two-piece Rosettes Concealed Base

Outside diam. of base, $2\frac{1}{4}$ in. Ht., $2\frac{1}{8}$ in. Supporting screw spacings, $1\frac{5}{8}$ inch.
With Fusible Cap—2 Amp., 125 Volts

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1502	H	10	250	132	\$.20
With Fuseless Cap—660 Watts, 250 Volts					
298	H	10	250	134	\$.16



No. 1502

Bryant Porcelain Two-piece Junior Rosettes Wood Molding Base

Base, $2\frac{1}{4}$ inches square. Height, $1\frac{1}{8}$ inches. Screw spacings, $1\frac{5}{8}$ inches.

With Fusible Cap—2 Amp., 125 Volts

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1503	H	10	250	116	\$.20
With Fuseless Cap—660 Watts, 250 Volts					
299	H	10	250	118	\$.16



No. 1503

Bryant Junior One-piece Rosettes Cleat and Concealed Combined—Fuseless

660 Watts, 250 Volts
 Main diameter, $2\frac{3}{32}$ inches; diameter over lugs, $2\frac{3}{16}$ inches. Height, $1\frac{3}{8}$ inches. Screw holes spaced $1\frac{1}{4}$ in. on centers.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1999	H	10	500	130	\$.10



Bryant K. P. One-piece Rosettes

660 Watts, 250 Volts
 Base $3\frac{3}{32}$ inches. Height, $1\frac{5}{8}$ inches. Screws spaced $2\frac{1}{2}$ inches.

Cleat—Fuseless

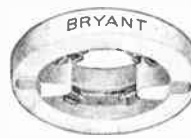
Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1499	H	10	250	165	\$.24

Concealed—Fuseless

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1710	H	10	250	146	\$.24



No. JS Bryant Porcelain Small Box Bases



Outside diameter, $2\frac{7}{8}$ inches. Supporting screw spacings, $2\frac{3}{32}$ inches. Fits Type 500 Adaptiboxes, Types GN, HM and W (Forms 5 and 10) octagonal Unilets and Size 10 round opening pipe Taplets.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JS	H	10	100	37	\$.15

No. JT Bryant 3/4-inch Porcelain Box Bases

Outside diameter of base, $3\frac{3}{8}$ inches. Supporting screw spacings, $2\frac{3}{4}$ inches.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JT	H	10	100	60	\$.20



No. JU Bryant Porcelain Box Bases For 3/4 and 4-inch Boxes



Outside diameter of base, $4\frac{5}{8}$ inches. Supporting screw spacings, $2\frac{3}{4}$ and $3\frac{1}{2}$ inches.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JU	H	10	100	98	\$.30

No. 720 Bryant Lamp Receptacle Bodies

660 Watts, 250 Volts

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
720	B	10	100	56	\$.30



No. 721 Bryant Spartan Receptacle Bodies

10 Amperes, 250 Volts



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
721	R	10	50	25	\$.30

No. 722 Bryant Rosette and Interconnecting Block Bodies

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
722	H	10	100	45	\$.20



Bryant Porcelain One-piece Fuseless Rosettes

660 Watts, 250 Volts
For 3/4-inch Outlet Boxes

Outside diam., $3\frac{1}{2}$ inches. Height 1 inch. Supporting screw spacings, $2\frac{3}{4}$ inches. Machine screws furnished for mounting.

Plain Rosettes

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
572	H	10	100	55	\$.10

Rosettes with Binding Screw Terminals

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
574	H	10	100	64	\$.22



For 4-inch Outlet Boxes
 Outside diameter, $4\frac{3}{32}$ inches. Height, 1 inch. Supporting screw spacings, $3\frac{1}{2}$ inches. Machine screws furnished.

Plain Rosettes

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
573	H	5	100	100	\$.17

Rosettes with Binding Screw Terminals

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
575	H	5	100	106	\$.30

Bryant Unit Wall Brackets
250 Watts, 250 Volts

With Brass Covered Base
Distance from wall to center of socket, 3 1/8 inches. Fitted with 8 inches of No. 6 chain. Standard finish, brush brass. For small Undark luminous pendant, add 25 cents. For Brylock feature, add 27 cents.

For 3 1/4-inch Boxes
Diameter of base, 3 5/8 inches. Supporting screw spacings, 2 3/4 inches.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
674	II	1	10	12	\$2.00

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
675	II	1	10	20	\$2.15

Bryant Compact Wall Brackets
250 Watts, 250 Volts

With Porcelain Base

Distance from wall to center of socket, 2 3/8 inches. Fitted with 8 inches of No. 6 chain. Standard finish, brush brass. For small Undark luminous pendant, add 25 cents. For Brylock feature, add 27 cents.

For 3 1/4-inch Boxes
Diameter of base, 3 1/2 inches. Supporting screw spacings, 2 3/4 inches.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
684	H	1	50	60	\$1.10

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
685	II	1	50	82	\$1.17

Bryant Brass-covered Wall Bracket Bases
With 3/8-inch Male Stud



Distance from surface of wall to end of stud, 2 1/4 inches. Standard finish, brush brass. Machine screws for mounting, furnished.

For 3 1/4-inch Box
Diameter of base, 3 5/8 inches. Supporting screw spacings, 2 3/4 inches.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
694	H	10	50	36	\$.60

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
695	II	10	50	60	\$.70

Bryant Porcelain Wall Bracket Bases
With 3/8-inch Male Stud

Suitable machine screws for mounting are furnished with these bases.

For 3 1/4-inch Box
Diameter of base, 3 1/2 inches. Height, 1 inch. Supporting screw spacings, 2 3/4 inches.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
772	II	10	100	66	\$.24

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
773	II	10	100	110	\$.31

Bryant Outlet Box Covers



Center holes of these outlet box covers are filled with white wax knock-outs. Suitable machine screws for mounting these devices are furnished.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
672	II	10	100	64	\$.12

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
673	II	5	100	110	\$.20

P & S Fuseless Brass Covered Rosettes



660 Watts, 250 Volts
Diameter base, 4 1/2 inches.
Spring Clip Contact
Cat. No. Sched. Car- Std. Wt., Lbs. Price
200 XA 1 50 65 \$.80
Binding Screw Contact
112 XA 1 50 65 \$.80

No. 1170 P & S Brass Socket Loops



Has threaded shank 1/4 inch long and 1/8-inch male thread.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1170	SM	50	100	5	\$.11

No. 1171 P & S Brass Fixture Loops

Has threaded shank 9/16 inch long complete with hexagon locknut.



Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1171	SM	50	100	6	\$.13

No. 1217 P & S Brass Fixture Loops

Fixture loop is so tapered that a wide variety of chains may be used.

Brush brass finish. Add 2 cents for other finishes.

Cat. No.	Sched-ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1217	SM	20	20	5	\$.24

No. 1178 P & S Brass-plated Iron Fixture Chain



Brush brass is regular finish. All other finishes add 10 cents to price, per foot. Cannot be supplied in special finishes in lengths greater than 3 feet.

Cat. No.	Sched-ule	Std. Pkg. Feet	Wt., Lbs. Std. Pkg.	Price per Ft.
1178	SM	99	25	\$.20

P & S Pull Canopy Fixture Switch Rosettes

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



May be used on metal ceilings, concrete or tiled walls, or 3 1/4 or 4-inch outlet boxes.

Supplied with 10 feet of linen cord with ball.

Outside diameter of base is 4 1/2 inches. Height of rosette, 3 1/2 inches. Brass canopy snaps on or off without the use of tools.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
With 3/8-inch Nipple					
1211	XA	1	20	38	\$1.30
With Porcelain Bushing					
1213	XA	1	20	36	\$1.30

P & S Fuseless Canopy Rosettes Without Switch

660 Watts, 250 Volts

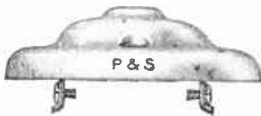
May be used on metal ceilings, concrete or tiled walls, or 3 1/4 or 4-inch outlet boxes.

Outside diameter of base is 4 1/2 inches. Height of rosette, 3 1/2 inches. Brass canopy snaps on or off without the use of tools.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
With Porcelain Bushing					
1214	XA	1	50	75	\$.80

P & S Porcelain Outlet Box Rosettes
660 Watts, 250 Volts



These rosettes are fitted with brass terminals. Each carton contains extra outlet box screws.

For Use on 3 1/4-inch Boxes Only

Screw holes spaced 2 3/4 in. Outside diameter, 3 21/32 in.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1174	Fuseless for Pendant	XA	10	100	46	\$.22

For Use on 4-inch Boxes Only

Screw holes spaced 3 1/2 in. Outside diameter, 4 1/2 in.

1175	Fuseless for Pendant	XA	5	100	100	\$.30
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P & S Porcelain Outlet Box Covers



These covers are without brass fittings. Each carton contains extra outlet box screws.

For Use on 3 1/4-inch Boxes Only

Screw-holes spaced 2 3/4 in. Outside diameter, 3 21/32 in.

Cat. No.	Description	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1172	Fuseless for Pendant	XA	10	100	46	\$.10
1167	Porcelain Blank Cover	XA	10	100	46	.12

For Use on 4-inch Boxes Only

Screw holes spaced 3 1/2 in. Outside diameter, 4 1/2 in.

1173	Fuseless for Pendant	XA	5	100	90	\$.17
1168	Porcelain Blank Cover	XA	5	100	90	.20

P & S Little Gem Concealed Rosettes

2-piece Fusible

2 Amperes, 125 Volts



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
390	XA	10	250	125	\$.20

2-piece Fuseless

660 Watts, 250 Volts

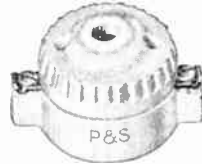
79	XA	10	250	125	\$.16
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P & S Little Gem Cleat Rosettes

2-piece Fusible

2 Amperes, 125 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
400	XA	10	250	85	\$.20



2-piece Fuseless

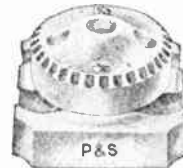
660 Watts, 250 Volts

76	XA	10	250	85	\$.16
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P & S Little Gem Moulding Rosettes

2-piece Fusible

2 Amperes, 125 Volts



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
810	XA	10	250	100	\$.20

2-piece Fuseless

660 Watts, 250 Volts

176	XA	10	250	100	\$.16
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P & S Porcelain Concealed Rosettes

2-piece Fuseless

660 Watts, 250 Volts

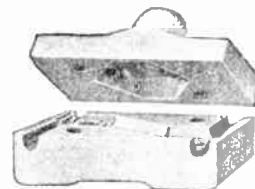
Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
604	XA	10	250	125	\$.19



No. 607 P & S Porcelain Concealed Terminal Cleat Rosettes

2-piece Fuseless

660 Watts, 250 Volts



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
607	XA	10	250	65	\$.17

No. 610 Concealed Porcelain Rosettes

For Wood Moulding or Conduit Fittings

2-piece Fuseless

660 Watts, 250 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
610	XA	10	250	60	\$.17



No. 1999 Cleat or Concealed Rosettes

1-piece Fuseless

660 Watts, 250 Volts



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1999	XA	10	500	124	\$.10

The Bryant Spartan Line of Attachment Plugs and Receptacles



The Bryant Spartan Line is composed of a variety of attachment plug caps, bodies and receptacles which incorporate the two main features of Interchangeability and Standardization. They are the standard in general use.

The Spartan design has become accepted as standard throughout the United States and Canada, and is being used extensively in the making of plug devices for both surface and flush installations.

The original Spartan design for both parallel ⊖ and tandem ⊕ slots was the "Quad" slot arrangement, thus: ⊖. For purposes of standardization, this design is now being replaced by the "T" slot arrangement, thus: ⊕.

Spartan receptacles are designed to receive plugs with prongs or blades which are either parallel ⊖ or tandem ⊕. Thus the trade-name Spartan is derived from the two words which are descriptive of the design of these interchangeable devices.

Spartan Plugs are made in two separable pieces. One is the cap with parallel blades. The other is the screw base body with parallel slots into which the blades of the cap are inserted. The combined cap and body form the complete plug.

All Spartan caps fit all Spartan bodies and receptacles. And all Spartan devices are interchangeable with all other makes of standard parallel-blade attachment plug devices.

The Spartan Polarity Feature



WIDE SLOT
Quad Slots



WIDE BLADE
Polarity Cap



WIDE SLOT
T Slots

When it is desired that an attachment plug cap fit into a receptacle in only one way, not reversible, thus providing a polarized connection, Spartan polarity caps should be ordered by substituting for the first letter K of any Spartan cap, the letter M to indicate polarity cap. Thus: A KA cap with polarity feature is known as an MA cap and an MK cap is a polarity cap, in all other respects exactly like a KK cap.

Polarity (M) caps differ from standard Spartan (K) caps only in the greater width of one prong. This wide prong will not fit the narrow slot of the two parallel slots of either the quad slot or T slot receptacles. It will fit the wide slot: This feature is shown in the illustration above. Because of this wide prong, a polarity cap can be inserted into a standard slot receptacle in only one way.

Polarity (M) caps cost the same, their schedule, discount, standard package and carton quantities and their weights are the same as similar standard Spartan (K) caps.

Spartan Composition Caps

10 Amperes, 250 Volts

1 3/32-inch Cord Hole

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Lbs. Price
KA	R	Standard	10	250	27	\$.10
MA	R	Polarity	10	250	27	.10



Spartan Composition Caps

10 Amperes, 250 Volts

9/32-inch Cord Hole



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Lbs. Price
KJ	R	Standard	10	250	27	\$.10
MJ	R	Polarity	10	250	27	.10

Bryant Spartanette Composition Caps

10 Amperes, 250 Volts — Schedule R

Carton, 25. Std. Pkg., 500; Wt., Lbs., 37.



Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Price, Ea.
KT	Standard, Elong., 9/32 x 3/8 Inch...				\$.08
MT	Polarity, " 9/32 x 3/8 "				.08
KX	Standard, " 1/4 x 3/16 "				.08
MX	Polarity, " 1/4 x 3/16 "				.08
KY	Standard, Round, 3/32-in. Diam.				.08
MY	Polarity, " 3/32 " "				.08

Spartan Fusible Composition Caps

3 Amperes, 250 Volts

Schedule R

1 3/32-inch Cord Hole

Has connections for 2 Type 2A glass tube midget fuses Nos. 348, 284 or 349A.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KP	Standard	10	20	9	\$.50
MP	Polarity	10	20	9	.50



Spartan Brass Covered Composition Caps

10 Amperes, 250 Volts

1 3/32-inch Cord Hole



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Lbs. Price
KB	R	Standard	10	250	28	\$.25
MB	R	Polarity	10	250	28	.25

Spartan Brass Covered Composition Caps

10 Amperes, 250 Volts

With Finger Grip, 1 3/32-inch Cord Hole

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Price Each
KC	R	Standard	10	50	7	\$.35
MC	R	Polarity	10	50	7	.35



Spartan Steel Covered Composition Caps

10 Amperes, 250 Volts

1 3/32-inch Cord Hole



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Price Each
KZ	R	Standard	10	250	28	\$.16
MZ	R	Polarity	10	250	28	.16

Spartan Elongated Composition Caps

10 Amperes, 250 Volts

1 3/32-inch Cord Hole

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt. Lbs.	Price Each
KD	R	Standard	10	100	17	\$.25
MD	R	Polarity	10	100	17	.25



Spartan Composition Caps

10 Amperes, 250 Volts

With 3/8-inch Knostrain Bushing



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KM	R	Standard	10	50	8	\$.25
MM	R	Polarity	10	50	8	.25

Price, with Bushing Omittedeach .20

No. JK Spartan Standard Composition Caps

With Steel Cord Grip Short Pattern

10 Amperes, 250 Volts
1 3/32-inch Cord Hole



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
JK	R	Standard	10	50	8	\$.20

Spartan Brass Covered Composition Caps

10 Amperes, 250 Volts

With 3/8-inch Knostrain Bushing



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KN	R	Standard	10	50	9	\$.45
MN	R	Polarity	10	50	9	.45

Price with Bushing Omitted40

Bryant Spartan Composition Caps

10 Amperes, 250 Volts

With Cord Grip and 1/16-inch Hole

For 1/4-inch to 3/8-inch diameter cord.



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
*KK	R	Standard	10	100	34	\$.20
*MK	R	Polarity	10	100	34	.20

*Without cord grip, 15 cents each.

Spartan Composition Motor Attachment Caps

10 Amperes, 250 Volts
1 3/32-inch Cord Hole



Base, 1 1/2 in. in diam. and 1/8 in. thick.

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KG	R	Standard	10	50	7	\$.13
MG	R	Polarity	10	50	7	.13

Screw spacings, 1 in.

Bryant Spartan Composition Caps

10 Amperes, 250 Volts

With Cord Grip and 1/16-inch Hole

For 3/8-inch to 9/16-inch diameter cord.



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
*KU	R	Standard	10	100	34	\$.20
*MU	R	Polarity	10	100	34	.20

*Without cord grip, 15 cents each.

Spartan Midget Composition Motor Attachment Caps

10 Amperes, 250 Volts

Designed for use only in connection with No. 130 cord connector body. Outside diam., 1 1/8 in.

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KR	R	Standard	10	50	3	\$.11
MR	R	Polarity	10	50	3	.11



No. 100 Spartan Edison Composition Screw Bodies

660 Watts, 250 Volts

Schedule R



These bodies do not have tandem slots.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs.	Price Each
100	R	10	250	23	\$.10

Spartan to Edison Porcelain Adapters

660 Watts, 250 Volts

Diam., 1 3/8 in. Length, 1 1/2 in.



Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KF	R	Standard	10	100	21	\$.20
MF	R	Polarity	10	100	21	.20

No. 600 Bryant Spartanette Edison Composition Screw Bodies

660 Watts, 250 Volts

Does not have tandem slots. Intended for use chiefly with No. KT cap.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs.	Price Each
600	R	25	500	41	\$.07

Spartan to Edison Composition Adapters

660 Watts, 250 Volts

Diam., 1 9/16 in. Length, 1 1/2 in.

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KL	R	Standard	10	100	22	\$.30
ML	R	Polarity	10	100	22	.30



No. 118 Spartan Edison Composition Screw Adapter Bodies

660 Watts, 250 Volts

Schedule R

These bodies do not have tandem slots.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs.	Price Each
118	R	10	100	7	\$.10



Spartan Composition Pilot Caps

10 Amperes, 125 Volts

Schedule R

Furnished with brass guard and lamp for 125 volts.

Diameter, 1 3/8 inches.

Length, 3 1/2 inches.

Extra lamps for these caps are listed on another page.



Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Price Each
KE	Standard	10	30	9	\$.95
ME	Polarity	10	30	9	.95

No. 103 Spartan Composition Cord Connector Bodies

10 Amperes, 250 Volts

Diameter, 1 3/8 inches. Cord hole, 7/16 inch. Length, 1 1/2 inches.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs.	Price Each
103	R	10	50	9	\$.30

No. 130 Bryant Spartan Midget Composition Cord Connector Bodies

10 Amperes, 250 Volts

For use in connection with Nos. KR, MR, KT, KN and KY caps. Has no tandem slots. Diam., 1 3/8 inches. Length 1 inch. Cord hole, 5/16 inch.



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs.	Price Each
130	R	10	50	6	\$.30

No. 726 Bryant Spartan Cord Connectors

Schedule R

For Christmas Tree Lighting Outfits

Does not have tandem slots. Diameter is 1 1/4 inches. Length, 1 3/8 inches. Cord hole, 5/16 inch.

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
726	10	50	6	\$.15



No. 138 Bryant Spartan Composition Connector Bodies

For Vacuum Cleaners

3 Amp., 250 Volts; 6 Amp., 125 Volts

Flange is 1 3/4 in. in diam., 1/4 in. thick. Body, 7/8 in. in diam., 9/16 in. long. Does not have tandem slots.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
138	B	25	100	8	\$.20



No. 113 Bryant Spartan Composition Outlet Box Bodies

For 1/2-inch Knockouts

10 Amperes, 250 Volts

Does not have tandem slots. Will not take polarity caps.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
113	R	10	50	9	\$.25



No. 127 Bryant Spartan Composition Outlet Box Bodies

For 3/4-inch Knockouts

10 Amperes, 250 Volts

Does not have tandem slots.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
127	R	10	50	10	\$.35



Bryant Attachment Plugs

660 Watts, 250 Volts

Spartan separable composition attachment plugs.

Cat. No.	Schedule	Size Cord Hole, In.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
700	R3	13/32	25	250	44	\$.20
701	R3	9/32	25	250	44	.20



Bryant Spartanette Composition Separable Attachment Plugs

660 Watts, 250 Volts — Schedule R

Carton, 25. Std. Pkg., 500; Wt., Lbs., 68.

Cat. No.	Description and Cord Hole	Price Each
699	Elong. Cord Hole 9/32 x 3/8 Inches (KT-600) ...	\$.15
KX-600	Elong. Cord Hole 1/4 x 3/8 Inch. ....	.15
KY-600	Round Cord Hole 9/32-inch Diam. ....	.15



No. KV-677 Bryant Spartan Brown "Templus" Composition Separable Attachment Plugs

Round cord hole, 13/32 inch.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KV-677	R	10	100	20	\$.25



Bryant Attachment Plugs With Brass Cap, Porcelain Body

660 Watts, 250 Volts

Standard finish, cap, brush brass.

Fuseless, 13/32-inch Cord Hole

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1948	H	10	250	48	\$.22



Fusible, 13/32-inch Cord Hole

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
925	H	10	250	48	\$.22

No. 345 Bryant Attachment Plugs

Molded Weatherproof, Fuseless

660 Watts, 600 Volts

No. 345 plug is fitted with 6 inches of No. 14 B. & S. stranded rubber covered wire. Longer wires on special order. Extra charge, 9 cents list per foot (4 1/2 cents each conductor).

Mfrs. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
345	H	10	250	57	\$.22



No. 1009 Bryant Attachment Plugs

660 Watts, 250 Volts

This plug is furnished with enameled wood handle and is fuseless.

Cord hole, 13/32 inch.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1009	H	10	250	33	\$.12



Bryant Composition Two-piece Fuseless Motor Connectors

Schedule R

10 Amperes, 250 Volts

Midget, 5/16-inch Cord Hole

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KR 130	10	50	10	\$.41

Spartan, 7/16-inch Cord Hole

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KG-103	10	50	14	\$.43



No. KT-130 Bryant Spartanette Composition Two-piece Cord Connectors

Schedule R

10 Amperes, 250 Volts

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KT-130	10	50	12	\$.38



No. 131 Bryant Spartan Multiple Composition Current Tap Bodies

660 Watts, 250 Volts

Weatherproof shade-holders Nos. 628 and 629 may be attached to this body.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
131	R	10	50	29	\$.50



No. 101 Bryant Spartan Multiple Porcelain Current Tap Bodies

660 Watts, 250 Volts

Weatherproof shade-holders Nos. 628 and 629 may be attached to this body.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
101	R	10	50	29	\$.50



No. 102 Bryant Spartan Series Porcelain Current Tap Bodies

660 Watts, 250 Volts

Weatherproof shade-holders Nos. 628 and 629 may be attached to this body.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
102	R	10	50	29	\$.50



Spartan Composition Duplex Adapters

660 Watts, 250 Volts

Schedule R

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1948	H	10	250	48	\$.22
925	H	10	250	48	\$.22



Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KH	Standard	10	10	5	\$.70
MH	Polarity	10	10	5	.70

No. 29081 Bryant Combination Switches and Receptacles

For Ceiling Fixtures

Schedule R

660 Watts, 125 or 250 Volts

For kitchen lighting units which are placed out of reach. The push button switch operates the light in kitchen unit. The outlet is always alive and will carry more than 660 watts at 250 volts. It takes any standard parallel or tandem blade attachment plug cap. Dark brown, moulded Bakelite, highly polished.

Carton quantity, 10. Std. pkg., 50.
 Price, No. 29081, Only . . . each \$.75
 " " 29081, with 5 Ft. of 3-conductor, Reinforced, Brown, Cotton-covered Cord Attached to Switch. . . . each 1.50



No. 114 Bryant Spartan Porcelain Outlet Box Cover Bodies

10 Amperes, 250 Volts

Requires hole $1\frac{1}{8}$ in. in diam. Diam. is $1\frac{1}{8}$ in.; projects $\frac{3}{8}$ in. above and $1\frac{1}{8}$ in. below cover; distance from back of cover to bottom of wire grooves, 1 in.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
114	R	10	50	23	\$.30



No. 123 Bryant Spartan Porcelain Outlet Box Bodies

10 Amperes, 250 Volts

Composition Base

Does not have tandem slots. Base diam., $1\frac{3}{4}$ inches. Top diam., $1\frac{3}{8}$ inches. Height, $1\frac{1}{8}$ inches. Screw spacings, $1\frac{3}{8}$ -inch.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
123	R	10	100	35	\$.32



No. 109 Bryant Spartan Porcelain Bodies

For $\frac{1}{2}$ -inch Obround Condulets

10 Amperes, 250 Volts

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
109	R	10	100	50	\$.40



No. 135 (JS-721) Bryant Spartan Porcelain Terminal Block Receptacle Bodies and Bases

Schedule R

10 Amperes, 250 Volts

This device is designed for use with Type 500 Adaptiboxes, with Types GN, HM and W (Forms 5 and 10) Octagonal Unilets and with Size 10 Round Opening Pipe Taplets.

Diameter of base, $2\frac{1}{8}$ inches. Height, $1\frac{1}{8}$ inches. Screw spacings, $2\frac{1}{8}$ -inch.

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
135(JS-721)	10	50	39	\$.45



No. 132 Bryant Spartan Porcelain Bodies

Schedule R

10 Amperes, 250 Volts

For $\frac{1}{2}$ -inch Rectangular Unilets

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
132	10	100	50	\$.40



No. 104 Bryant Spartan Porcelain Cleat Base Bodies

10 Amperes, 250 Volts

Main diam., $2\frac{1}{8}$ inches. Diam. over lugs, $2\frac{3}{8}$ inches. Height, $1\frac{1}{8}$ inches. Screw spacings, $1\frac{1}{8}$ -inch and $2\frac{3}{8}$ -inch.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
104	R	10	50	21	\$.30



No. 129 (JU-721) Bryant Spartan Porcelain Terminal Block Receptacle Bodies and Bases

Schedule R

10 Amperes, 250 Volts

For $3\frac{1}{4}$ -inch and 4-inch Outlet Boxes

Diameter of base, $4\frac{5}{8}$ inches. Height, $1\frac{3}{8}$ inches. Screw spacings, $2\frac{3}{4}$ -inch and $3\frac{1}{2}$ -inch.

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
129(JU-721)	5	50	70	\$.60



No. 111 Bryant Spartan Porcelain Bodies

10 Amperes, 250 Volts

For Type No. 500 Adaptiboxes

Diameter of base, $2\frac{1}{8}$ inches. Height, $\frac{3}{4}$ inch. Screw spacings, $2\frac{3}{8}$ -inch.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
111	R	10	50	24	\$.35



No. 105 Bryant Spartan Porcelain Bodies

Concealed Base

10 Amperes, 250 Volts

Diam. of base is $2\frac{1}{8}$ in. Height, $1\frac{1}{2}$ in. Screw spacings, $1\frac{1}{2}$ in.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
105	R	10	50	21	\$.30



No. 112 Bryant Spartan Porcelain Outlet Box Bodies
 Porcelain Base

10 Amperes, 250 Volts

Base diam. is $1\frac{3}{4}$ in. and top diam., $1\frac{3}{8}$ in. Height, $1\frac{1}{2}$ in. Screw spacings, $\frac{5}{8}$ in.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
112	R	10	50	20	\$.30



No. 126 (JT-721) Bryant Spartan Porcelain Terminal Block Receptacle Bodies and Bases

Schedule R

10 Amperes, 250 Volts

For $3\frac{1}{4}$ -inch Outlet Boxes

Diameter of base, $3\frac{3}{8}$ inches. Height, $1\frac{3}{8}$ inches. Screw spacings, $2\frac{3}{4}$ -inch.

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
126(JT-721)	10	50	51	\$.50



No. 120 Bryant Spartan Porcelain Flush Receptacle Bodies



For Plate without Door
10 Amperes, 250 Volts
Base, 2 9/16 x 1 5/8 in. Depth, 1 1/8 in. Screw spacings: outside, 3 3/4 in.; inside, 2 5/8 in.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 120 R 10 100 41 \$.30

No. 760 Bryant Spartan Composition Flush Receptacle Bodies



For Plate without Door
10 Amperes, 250 Volts
Base, 1 7/8 x 1 1/8 inches. Depth, 7/8-inch. Outside screw spacings, 3 3/4 inches; inside, 2 5/8 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 760 R 10 100 22 \$.30

No. 9020 Bryant Spartan Composition Flush Receptacle Bodies



For Plate without Door
10 Amperes, 250 Volts
Base, 2 9/16 x 1 5/8 inches. Depth, 1 1/8 inches. Supporting screw spacings: Outside, 3 3/4 inches; inside, 2 13/16 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 9020 R 10 100 41 \$.30

No. 124 Bryant Spartan Porcelain Flush Receptacle Bodies



For Plate with Door
10 Amperes, 250 Volts
Base, 2 9/16 x 1 5/8 in. Depth, 1 1/8 in. Screw spacings: outside, 3 3/4 in.; inside, 2 5/8 in.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 124 R 10 50 26 \$.35

No. 764 Bryant Spartan Composition Flush Receptacle Bodies



For Plate with Door—Each Outlet 10 Amperes, 250 Volts
With side wiring terminals. Base, 1 7/8 x 1 1/8 inches. Depth, 7/8 inch. Screw spacings: Outside, 3 3/4 inches; inside, 2 13/16 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 764 R 10 50 12 \$.35

No. 125 Bryant Spartan Porcelain Duplex Flush Receptacle Bodies

For Plate with Doors
Each Outlet 10 Amperes, 250 Volts
Base, 2 5/8 x 1 1/8 inches. Depth, 1 1/8-inch. Screw spacings, 3 3/4 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 125 R 10 50 34 \$.53



No. 122 Bryant Spartan Porcelain Duplex Flush Receptacle Bodies



For Plate without Doors
Each Outlet 10 Amperes, 250 Volts
Base, 2 5/8 x 1 1/8 in. Depth, 1 1/8 in. Screw spacings, 3 3/4 in.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 122 R 10 50 34 \$.48

No. 762 Bryant Composition Duplex Flush Receptacle Bodies



For Plate without Doors
Each Outlet 10 Amperes, 250 Volts
Base, 2 5/8 x 1 1/8 inches. Depth, 3 7/8 inch. Supporting screw spacings, 3 3/4 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 762 R 10 50 15 \$.48

No. 9022 Bryant Spartan Composition Duplex Flush Receptacle Bodies

For Plate without Doors
Each Outlet 10 Amperes, 250 Volts
Base, 2 5/8 x 1 1/8 inches. Depth, 1 1/8 inches. Supporting screw spacings, 3 3/4 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 9022 R 10 50 34 \$.48



No. 9024 Bryant Spartan Composition Flush Receptacle Bodies

For Plate with Door—Each Outlet 10 Amperes, 250 Volts
With top wiring terminals.
Base, 2 9/16 x 1 1/8 inches. Depth, 1 1/8 inches. Screw spacings: Outside, 3 3/4 inches; inside, 2 5/8 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 9024 R 10 50 20 \$.35



Bryant Spartan Composition Duplex Receptacle Bodies



For Use with Symbol V2 Plates with Doors
Each Outlet 10 Amperes, 250 Volts
No. 9025
With top wiring terminals.
Base, 2 5/8 x 1 1/8 inches. Depth, 1 1/8 inches.
Supporting screw spacings, 3 3/4 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 9025 R 10 50 34 \$.53

No. 765

With side wiring terminals.
Base, 2 1/8 x 1 3/8 inches. Depth, 27/32 inch. Supporting screw spacings, 3 3/4 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 765 R 10 50 15 \$.53

No. 115 Bryant Spartan Porcelain Receptacles with Round Brass Plates



10 Amperes, 250 Volts
Diam. of plate, 2 3/4 in.; receptacle, 1 7/8 in. Depth, 1 1/8 in. Screw spacings, 1 7/8 in.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 115 R 1 50 24 \$.85
Price, No. 115 Less Plate...each \$.50

No. 116 Bryant Spartan Porcelain Receptacles with Round Brass Plates



10 Amperes, 250 Volts
For 3/4-in. outlet boxes. Diam. of plate, 3 3/8 in.; receptacle, 1 7/8 in. Screw spacings, 2 3/4 in.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 116 R 1 50 38 \$.95
Price, No. 116 Less Plate...each \$.50

No. 733 Bryant Spartan Porcelain Receptacle Bodies



10 Amperes, 250 Volts
With Ears
Diameter, 1 7/8 inches
Depth, 1 3/8 inches.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 733 R 10 50 13 \$.40

No. 734 Bryant Spartan Round Brass Plates for No. 733 Receptacle Bodies



Diameter, 2 3/4 inches. Supporting screw spacings, 1 7/8-inch. Standard finish, brush brass. Suitable machine screws for mounting this device on the box are furnished.
Cat. Sched- Car- Std. Wt. Lbs. Price
No. 734 11 10 50 9 \$.40

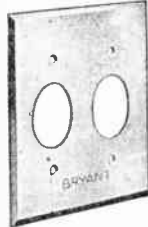
Bryant Brass Flush Plates for Spartan Single Flush Receptacles Without Doors

Schedule H

For Receptacles Nos. 120, 427, 475, 556, 760, 1708 and 9020



No. OF61 (Old No. 429)



No. OF12 (Old No. 529)

Brass mounting screws packed in the carton with each plate. Standard finish, brush brass.

A standard package of flush plates for flush receptacles consists of a sufficient number, all of the same one style, to accommodate 100 receptacles. A carton is 1/5 of a standard package. Plates of the same style may be assorted in various finishes, thicknesses and gangs to make up a standard package or a carton. No other assortment permitted.

Description	Pkg. Wt. Lbs.	STANDARD FINISH		PERMA FINISH		Price Each
		Cat. No.	Old Price	Cat. No.	Old Price	
One-gang, .060 In., Stamped.....	29	OF61	429	\$.18	OF61-P	\$.14
One-gang, .040 In., Stamped.....	23	OF41	741	.14	OF41-P	2929 .10
One-gang, Solid....	37	OF11	545	.34	OF11-P	.... .30
Two " " " " " " " " " " " " " "	32	OF12	529	.68	OF12-P	.... .60
Three " " " " " " " " " " " " " "	29	OF13	530	1.02	OF13-P	.... .90
Four " " " " " " " " " " " " " "	27	OF14	531	1.60	OF14-P	.... 1.44

Plates, brush brass, standard spacings and dimensions, less than four gangs, list per gang: Solid, \$.34; .060 inch \$.18; .040 inch, \$.14. Four gangs or more, list per gang: Solid, \$.40; .060 inch, \$.26; .040 inch, \$.22.

Bryant Brass Flush Plates for Spartan Single Flush Receptacles With Door

Schedule H

For Receptacles Nos. 124, 1708 and 9024

Schedule H



OE61 (Old No. 1709)

Brass mounting screws are packed in the carton with each plate.

Standard finish is brush brass which will be furnished when no finish is specified.

A standard package consists of a sufficient number, all of the same one style to accommodate 100 receptacles. A carton is one-fifth of a standard package. Plates of the same style may be assorted in various finishes, thicknesses, and gangs to make up a standard package or a carton. No other assortment permitted.

Description	Wt. Lbs. Pkg.	STANDARD FINISH		PERMA FINISH		Price Each
		Cat. No.	Old Price	Cat. No.	Old Price	
One-gang, .060 In., Stamped.....	32	OE61	1709	\$.23	OE61-P	2928 \$.19
One-gang, .040 In., Stamped.....	25	OE41	3678	.19	OE41-P	2948 .15
One-gang, Solid....	41	OE11	544	.39	OE11-P	.... .35
Two " " " " " " " " " " " " " "	35	OE12	526	.78	OE12-P	.... .70
Three " " " " " " " " " " " " " "	35	OE13	527	1.17	OE13-P	.... 1.05
Four " " " " " " " " " " " " " "	31	OE14	528	1.80	OE14-P	.... 1.64

Symbol E plates, brush brass, standard spacings and dimensions, less than four gangs, list per gang: Solid, \$.39; .060 inch, \$.23; .040 inch, \$.19. Four gangs or more, list per gang: Solid, \$.45; .060 inch, \$.31; .040 inch, \$.27.

Bryant Brass Flush Plates for Spartan Duplex Flush Receptacles Without Doors

Schedule H

For Receptacles Nos. 122, 762 and 9022



OV61 (Old No. 550)

Brass mounting screws are packed in the carton with each plate.

Standard finish, brush brass.

A standard package of flush plates for flush receptacles consists of a sufficient number, all of the same one style, to accommodate 50 receptacles. A carton is one-fifth of a standard package. Plates of the same style may be assorted in various finishes, thicknesses and gangs to make up a standard package or a carton. No other assortment permitted.

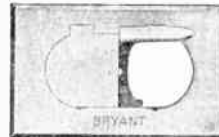
Description	Wt. Lbs. Pkg.	STANDARD FINISH		PERMA FINISH		Price Each
		Cat. No.	Old Price	Cat. No.	Old Price	
One-gang, .060 In., Stamped.....	29	OV61	550	\$.18	OV61-P	.... \$.14
One-gang, .040 In., Stamped.....	19	OV41	727	.14	OV41-P	2930 .10
One-gang, Solid....	33	OV11	551	.34	OV11-P	.... .30
Two-gang, Solid....	30	OV12	552	.68	OV12-P	.... .60
Three-gang, Solid..	27	OV13	553	1.02	OV13-P	.... .90
Four-gang, Solid...	25	OV14	554	1.60	OV14-P	.... 1.44

V plates, brush brass, standard spacings and dimensions, less than four gangs, list per gang: Solid \$.34; .060 inch \$.18; .040 inch \$.14. Four gangs or more, list per gang: Solid \$.40; .060 inch \$.26; .040 inch \$.22.

Bryant Brass Flush Plates for Spartan Duplex Flush Receptacles With Doors

Schedule H

For Receptacles Nos. 125, 765 and 9025



Brass mounting screws packed in carton with each plate. Standard finish, brush brass.

Standard package, 25.

Carton, 25.

Description	Wt. Lbs. Pkg.	STANDARD FINISH		PERMA FINISH		Price Each
		Cat. No.	Old Price	Cat. No.	Old Price	
One-gang, Solid....	8	OV211	579	\$.80	OV211-P	... \$.76

No. 1708 Bryant Screw Plug Flush Receptacles 660 Watts, 250 Volts

Single Receptacle, Porcelain Cup



Length of porcelain cup, 2 9/16 inches; width, 1 13/16 inches; depth, 1 1/2 inches.

Supporting screw spacings: Outside, 3 5/8 inches; inside, 2 1/2 inches.

Suitable machine screws for mounting on box furnished.

When ordering combination plates, specify E or F sections to accommodate No. 1708 door receptacles according to whether with or without door types are desired.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1708	H	10	100	35	\$.21

Bryant Brass Plates for No. 1708 Receptacles

Schedule II
With Door, One-gang

Standard finish is brush brass which will be furnished unless otherwise specified. Perma finish, 4 cents per gang less than price given below.

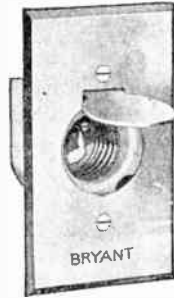
Length of plate, 4½ inches; width, 2¾ inches.

Brass mounting screws furnished.

Standard package consists of sufficient number, all of the same one style to accommodate 100 receptacles. Plates of the same style may be assorted in any finish to make up standard package or carton.

Cat. No.	Old No.	Description	Car- ton	Wt., Lbs. Std. Pkg.	Price Each
OF61	1709	.060-in., Stamped	20	32	\$.23
OE41	3678	.040 " " "	20	25	.19
*OE41-P	2948	.040 " " "	20	25	.15
OE11	544	Solid	20	41	.39

*Perma finish only.



Nos. 1708 and OE61

Bryant Brass Plates for No. 1708 Receptacles

Without Door, One-gang

Schedule II

These plates are necessary when receptacles are to be used as lamp sockets because door on E plates interferes.

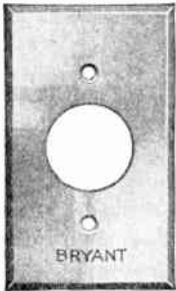
Length of plate is 4½ inches; width, 2¾ inches.

Standard finish, brush brass. Perma finish, 4 cents per gang less than standard. Brass mounting screws furnished.

Standard package consists of a sufficient number, all of the same one style to accommodate 100 receptacles. Plates of the same style may be assorted in any finish to make up standard package or carton.

Cat. No.	Old No.	Description	Car- ton	Wt., Lbs. Std. Pkg.	Price Each
OF61	429	.060-in., Stamped	20	29	\$.18
OF41	741	.040 " " "	20	23	.14
*OF41-P	2929	.040 " " "	20	23	.10
OF11	545	Solid	20	37	.34

*Perma finish only.



No. OF61

No. 1363 Bryant Chapman Flush Receptacles

Schedule II

12 Amperes, 250 Volts

Not National Electrical Code Standard

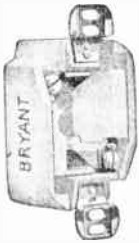
Length of porcelain cup, 2⅝ inches; width, 1⅝ inches; depth, 1⅜ inches.

Supporting screw spacings: Outside, 3⅝ inches inside, 2⅝ inches.

Machine screws for mounting furnished.

When ordering combination plates, specify C sections to accommodate No. 1363 receptacles.

Cat. No.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1363	10	100	50	\$.40



Bryant Plugs for Chapman Receptacles
No. 1363

Schedule II

12 Amperes, 250 Volts

Not National Electrical Code Standard

Porcelain Reversible

Cat. No.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1110	25	100	10	\$.20

Composition Reversible

397	25	25	3	\$.40
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No. 397

Bryant Chapman to Edison Adapters
For Receptacle No. 1363

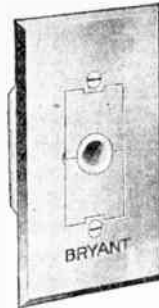
Schedule II

Each Outlet, 630 Watts, 250 Volts

Not National Electrical Code Standard

Adapts a Chapman receptacle to two Edison bases in multiple.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
472	Black Glazed Porcelain	5	10	7	\$.50



Nos. 1363, OC61 and 1110

Cat. No.	Old No.	Description	Car- ton	Wt., Lbs. Std. Pkg.	Price Each
OC61	1364	One-gang, .060-inch, Stamped	30	30	\$.45
OC11	543	" Solid	35	35	.70

Bryant Old Style Chapman Receptacles

Schedule II

12 Amperes, 250 Volts

Not National Electrical Code Standard

Length of cups, 2⅞ inches; width, 1⅝ inches; depth, 1⅝ inches; supporting screw spacings, 3⅝ inches.

Suitable machine screws for mounting furnished.

When ordering combination plates, specify N sections to accommodate Nos. 281 and 613 receptacles.



No. 613

Cat. No.	Car- ton	Std. Pkg.	Porcelain Cup		Price Each
			Wt., Lbs. Std. Pkg.	Price Each	
281	5	25	13		\$.70
613	5	25	13		\$.75

Bryant Composition Plugs for Old Style Chapman Receptacles Nos. 281 and 613

Schedule II

12 Amperes, 250 Volts

Not National Electrical Code Standard

Plugs Nos. 283 and 614 have binding screw terminals for open link fuses.

Standard package number, 25.

Carton, 5.



No. 614

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
283	Fusible, 1⅜-inch Cord Hole	6	\$.50
614	" 1/2 " " " with Hand Grip	7	.55
641	Fuseless, 1/2 " " " " " " " " " " " " " " " "	7	.55

Bryant Brass Plates for Old Style Chapman Receptacles Nos. 281 and 613

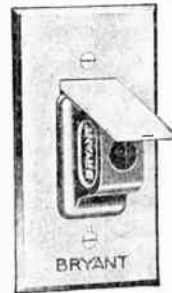
Schedule II

One-gang, solid. Supporting screw spacings, 2⅞ inches.

Standard finish, brush brass.

Brass mounting screws furnished.

Cat. No.	Old No.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ON11	282	25	25	12	\$.65



Nos. 281, ON11 and 283

Brush brass plates, solid only, for mounting Nos. 281 and 613 receptacles in gangs will be furnished on special order only at a price of \$.75 per gang. When so mounted, receptacles will be spaced 1⅝ inches on centers.

Bryant D. D. Disappearing Door Flush Receptacles

Schedule II
10 Amperes, 250 Volts



No. 630

Length of cups, 2 1/8 inches; width 1 1/8 inches; depth, 1 1/8 inches. Supporting screw spacings: Outside, 3 3/8 inches; inside, 2 3/8 inches.

Suitable machine screws for mounting are furnished.



Nos. 430, OD61 and 432

With Porcelain Cup

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
430	10	30	15	\$.50

With Composition Cup

630	10	30	15	\$.55
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Bryant D. D. Disappearing Door Flush Plugs

Schedule II

10 Amperes, 250 Volts



No. 594



No. 616

Nos. 494, 594 and 595 will be made Polarity when so specified without extra charge.

The standard finish is brush brass which will be furnished when no finish is specified. When plates and plugs are ordered at the same time, the plugs will be finished to match the plates without extra charge. For plugs alone in Perma finish the price is the same as for brush brass.

Composition, 1 3/32-inch Cord Hole

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
494	10	30	5	\$.50

Composition, Brass Covered, 1 3/32-inch Cord Hole

432	10	30	6	\$.60
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Composition, Brass Covered, 1 3/32-inch Cord Hole

Polarity				
539	10	30	6	\$.60

Composition, Brass Covered, Side Outlet, Elongated Cord Hole, 3/16 by 9/32 Inches

594	10	30	7	\$.60
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Composition, Brass Covered, Two Side Outlets, Elongated Cord Holes, Each 3/16 by 9/32 Inches

595	10	30	7	\$.70
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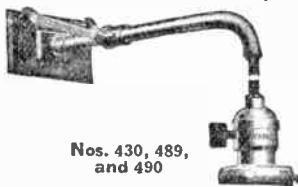
Composition D. D. to Spartan Adapter

Polarity				
616	10	30	8	\$.65

Bryant D. D. Hotel Sample Room Brackets

Schedule II

10 Amperes, 250 Volts



Nos. 430, 489, and 490

The lamp, socket, cord, bracket, plug, and braces can be removed at will, the receptacle alone remaining. If desired, this can be concealed by a hinged section of the picture molding.

Socket, shade-holder and cord not included. Length of

bracket, 10 1/8 inches. Plate attaches to a regular No. 430 D. D. receptacle.

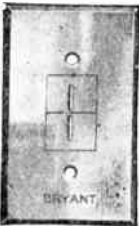
Standard finish is brush brass; Perma finish, 4 cents per gang less, on plates; no extra charge for special finish on plugs when ordered with plates in special finish.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
489	D. D. Bracket Plate, Solid Brass	10	10	8	\$ 1.00
490	D. D. Plug and Bracket	1	10	10	3.50

Bryant Brass Flush Plates for D. D. Receptacles

Nos. 430 and 630

Schedule II



D plates .040-inch are not made. Standard finish, brush brass. Perma finish, 4 cents per gang less.

A standard package consists of a sufficient number to accommodate 30 D. D. receptacles.

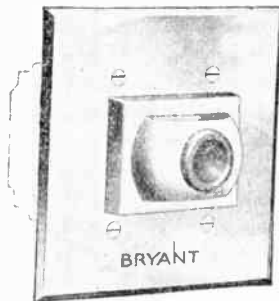
Cat. No.	Old No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OD61	431	One-gang, .060 Stamped..	10	11	11	\$.45
OD11	520	“ Solid.....	10	13	13	.70
OD12	523	Two-gang, “.....	5	10	10	1.40
OD13	524	Three-gang, “.....	5	11	11	2.10
OD14	525	Four-gang, “.....	5	12	12	2.80

D plates, brush brass, standard spacings and dimensions, any number of gangs, price per gang: solid, \$.70; .060-inch, \$.45.

Bryant High Capacity D. D. Receptacles and Plugs

Schedule II

25 Amperes, All Voltages Up To 250 Volts Maximum



This receptacle has been developed in response to the demand for a device having a carrying capacity suitable for atmospheric heaters, moving picture machines, and other portable current-consuming apparatus requiring a large amount of current. The hole in the plug is 3/8 inches in diameter, and is designed for No. 10 portable cable which should be used when the receptacle is to be loaded to its full capacity.

No. 2568 high capacity flush switch may be used for controlling the current to this receptacle, and these two devices may be mounted together on a Y-Z combination flush plate in which case a four-gang switch box is required for mounting.

Receptacle cup; 2 1/8 inches long; 3 1/2 inches wide; 2 1/2 inches deep. Requires a two-gang box. Supporting screw spacings (four holes) 3 3/8 inches vertically and 1 1/8 inches horizontally.

Suitable machine screws for mounting on box are furnished.

When ordering combination plates, specify Z sections to accommodate No. 446 receptacle.

Standard finish for plugs is brush brass. Perma finish for plugs when ordered alone is same as for brush brass. Plugs ordered with special finish plates are given same finish free of extra charge.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
446	Receptacle, Porcelain Cup.....	1	10	14	\$ 1.50
448	Plug, Composition, Brass Covered Polarity.....	1	10	6	1.50

No. OZ12 Bryant Brass Flush Plates For No. 446 Receptacle

Schedule II

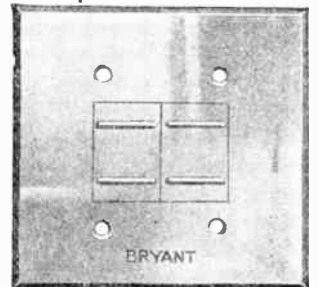
A single, two-gang, solid brass flush plate for No. 466 receptacle.

Standard finish, brush brass. Perma finish, deduct 4 cents per gang.

Brass mounting screws furnished.

Z plates, brush brass, solid only, for mounting No. 466 receptacles in gangs will be furnished only on special order at a price of \$2.00 per receptacle (two-gang). When so mounted, receptacles will be spaced 3 3/8 inches on centers.

Cat. No.	Old No.	Length	Width	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OZ12	447	4 1/2	4 3/8	1	10	7	\$ 2.00



No. 621 Bryant 20-ampere Polarized Receptacles

20 Amperes, 250 Volts

Porcelain Surface Receptacle for Open (Cleat) Wiring



Approved to carry 20 amperes at all voltages up to 250 volts. They are particularly suitable for use on farm lighting and other 32-volt circuits for supplying current to flat irons and other current consuming devices drawing 400 to 660 watts.

Diameter of main base is 2 1/2 inches; diameter over lugs, 2 7/8 inches; height, 1 5/8 inches. Two pairs of holes for supporting screws are respectively 1 5/8 and 2 3/8 inches on centers.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
621	R	10	30	16	\$.50

No. 622 Bryant 20-ampere Polarized Receptacles

20 Amperes, 250 Volts

Porcelain Surface Receptacle for Concealed Wiring

Approved to carry 20 amperes at all voltages up to 250 volts. They are particularly suitable for use on farm lighting and other 32-volt circuits for supplying current to flat irons and other current consuming devices drawing 400 to 660 watts.

Diameter of base is 2 1/2 inches. Height, 1 1/2 inches. Holes for supporting screws spaced 1 1/2 inches on centers.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
622	R	10	30	15	\$.50

No. 556 Bryant 20-ampere Polarized Receptacles

20 Amperes, 250 Volts



Suitable for use on farm lighting and other 32-volt circuits for supplying current devices drawing 400 to 660 watts. Receptacle is 2 5/8 inches high, 1 1/2 inches wide, 1 inch deep. Outside supporting screw holes, 3 3/8 inches on centers; inside holes, 2 3/8 inches. Receptacles regularly shipped with porcelain boss, which projects through plate, glazed black. White, when specified, will be sent without extra charge. When ordering combination plates, specify F selections for No. 556 Receptacles.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
556	R	10	30	11	\$.75

Bryant 20-ampere Polarized Plugs

For Nos. 621, 622 and 556 Receptacles

When No. 653 plugs are ordered at the same time and with an equal quantity of flush receptacles and plates, there will be no extra charge for special finishes on the plugs.

The cord hole in the plugs is 9/16 inch in diameter, making them suitable for No. 12 approved portable cord which should be used when the plugs are to be loaded to full rated capacity.



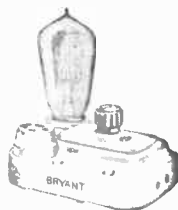
Cat. No.	Description	Schedule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
652	Composition Plug . . .	R	10	30	7	\$.30
653	Plug, Brass Covered	R	10	30	8	.50
623	Comp. Plug with Grip for 1/4 to 3/8-in. Cord	R	10	30	10	.50
723	Comp. Plug with Grip for 3/8 to 9/16-in. Cord	R	10	30	10	.50

Bryant Porcelain Surface Heater Control Combinations

Schedule II

10 Amperes, 250 Volts

Non-fusible



No. 466 may be used for cleat, concealed or molding work. A combination of a 10-amp., 250-volt D. P. indicating switch with No. 2781 porcelain handle, a Spartan receptacle, and, in parallel with it, an Edison receptacle for a pilot lamp.

Base, 4x5 inches. Four holes for supporting screws spaced 1 1/2 x 3 3/8 inches for attachment to standard two-gang switch or outlet boxes, which should preferably be mounted in a vertical position.

Switch cover is reversible so that it will show indications correctly, whether feed wires enter from above or below.

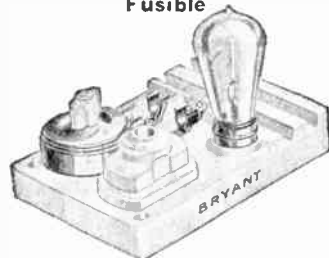
Machine screws for mounting are furnished. On special order an expulsion type switch mechanism especially designed for inductive loads will be substituted for the regular switch mechanism at an advance in price of 30 cents each.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
466	Complete	1	10	27	\$1.50
2734	Switch Mechanism only, without Handle	10	10	4	.71

No. 439 Bryant Porcelain Surface Heater Control Combinations

Schedule II

25 Amperes, 250 Volts Fusible



A combination of one No. 1919 branch cut-out, 25-ampere D. P. indicating switch with brass cover, polished nickel finish, and with No. 2784 porcelain handle, No. 342 25-ampere plug receptacle, No. 343 25-ampere plug and a receptacle for pilot lamp. Machine screws for mounting are furnished.

Base, 5 3/4 x 8 3/8 inches. Height over switch handle, 3 1/2 inches. Four holes for supporting screws spaced 4 3/4 and 2 1/8 by 6 3/8 inches. On special order an expulsion type switch mechanism especially designed for inductive loads will be substituted for the regular switch mechanism at an advance in price of 40 cents.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
439	Complete	1	10	75	\$3.50

Bryant Surface Receptacles and Plugs For Concealed Work



No. 342

Positive and negative symbols permit the restoring of plug in receptacle without reversing the polarity; polarity can be reversed if desired.



No. 343

Cat. No.	Schedule	Car-ton	Std. Pkg.	Description	Wt. Lbs.	Price Each
341	H	5	25	Receptacle with Plug	30	\$.60
342	H	5	25	“ Only	21	.35
343	H	5	25	Plug Only, 9/16-in. Hole	10	.25
344	H	5	20	Porcelain Sub-base for Cleat and Molding Work	7	.10

Bryant Bull's Eye Plates



A Section

The B section consists of an F plate into which has been fastened a No. 736 bull's eye jewel.

The A sections should be used only in large combinations so that any lamp can be replaced without removing the whole plate.

When A and B plates are desired with ventilated jewels No. 737, they should be ordered by catalogue No. followed by the words, with No. 737 jewel.

The cost of any plate with No. 737 jewels instead of the standard No. 736 jewels is 50 cents additional for each No. 737 jewel specified. Unless otherwise specified ruby jewels will be furnished. Green, clear, amber, opalescent or blue jewels can be furnished on special order without extra charge.

Standard finish, brush brass.

Bryant Brass Plates with No. 736 Ruby Jewel

For One No. 427 or No. 627 Receptacle
Schedule II

Standard package, 30. Carton, 10.

Assortment of plates is permitted.

When combination plates longer than three gangs are ordered it is advisable to specify A sections instead of B sections.

The price of B plates, solid only, in gangs, when dimensions and spacings are standard, is \$1.00 per gang.

Brass mounting screws are furnished.
Standard finish, brush brass.



OB41 (Old No. 738)

Description	Wt. Lbs. Pkg.	STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
One-gang, Stamped .010 in.	13	OB41	738	\$.80	OB41-P	2938	\$.76
One-gang Solid	17	OB11	428	1.00	OB11-P	....	.96

Bryant Brass Plates with No. 736 Ruby Jewel

For Two No. 427 Receptacles
Schedule II



Lamps with candelabra bases are commercially limited to a maximum voltage of 125 volts. When bull's eyes are desired for circuits above 125 volts it is necessary to connect two No. 427 receptacles in series in a two-gang box and cover them with a No. OX12 plate. Voltage of two No. 427 receptacles wired in series is 250 volts maximum.

Standard package, 10 plates all of the same one style. Carton, 2 plates of the same style. Plates of the same style may be assorted in various finishes and thicknesses to make up a standard package or carton. No other assortment.

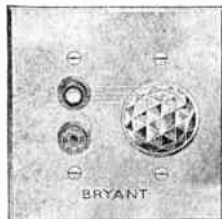
Description	Wt. Lbs. Pkg.	STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
Two-gang	8	OX12	436	\$1.60	OX12-P	....	\$1.52

No. 413 Bryant Bull's Eye Combinations

Schedule H
10 Amperes, 125 Volts

With solid plate, push-button switch, ready wired, two gang. Consists of one-piece porcelain cup, 2 9/16 x 3 1/2 x 1 1/8 inches, with eight supporting screw holes spaced 3 5/8 inches and 2 1/8 inches on centers vertically and 1 1/2 inches on centers horizontally for installation in a standard two-gang outlet box. This cup incorporates a No. 427 and a No. 2520 receptacle which is fitted with a No. 2523 double-pole switch mechanism.

A solid brass plate No. OPB12 with No. 736 ruby jewel is furnished to cover the working parts.



Cat. No.	Description	Carton	Std. Pkg.	Wt. Lbs.	Price Each
413	Ready-wired, Complete	1	10	25	\$3.55
413	Without Plate OPB12	..	..	..	2.01

Bryant Bull's Eye Combinations

One Switch and One Bull's Eye

With .040-inch Plate, Not Ready-wired, Two-gang

Schedule II

10 Amperes, 125 Volts

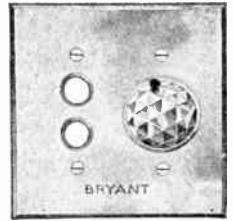
These combinations are made up of assorted parts which must be ordered separately and wired. A No. 427 receptacle with either a No. 2202 push-button switch with a No. OPB42 plate or a No. 2952 tumbler switch with a No. OSB42 plate makes up a combination when wired.

Porcelain cup of receptacle is 2 9/16 x 1 1/8 x 1 5/8 inches. Supporting screw spacings. Outside, 3 5/8 inches; inside, 2 9/16. Receptacle is furnished with a No. 618 lamp, regularly, but will take a Form II lamp. Plates of the same one style may be assorted in various finishes and thicknesses to make up a standard package or a carton. No other assortment permitted.

Standard finish of plates is brush brass. For Perma finish deduct 4 cents per gang from the price. For other finishes consult special list on another page.

Brass mounting screws are packed in the carton with each plate and suitable machine screws are furnished for mounting switch device on the box.

Switches can be furnished with either luminous handle or button for 25 cents extra. Identical devices, regular and luminous, may be assorted.



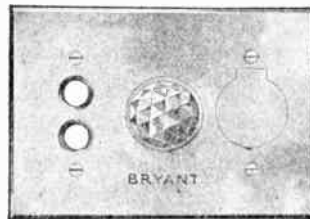
No. OPB42

Cat. No.	Description	Carton	Std. Pkg.	Wt. Lbs.	Price Each
2202	Push-button Switch	10	50	31	\$.70
OPB42	Plate	2	10	8	1.04
2952	Tumbler Switch	10	50	27	.70
OSB42	Plate	2	10	8	1.04
427	Receptacle	10	30	17	1.00
Price, Complete Assortment of Parts with Either Push-button or Tumbler Switch					\$2.74

Bryant Combination Bull's Eye Brass Plates

Stamped .040-inch

Schedule II



No. OPBE43
Old No. 3715

Brass mounting screws are packed in the carton with each plate.

Standard package, 10 plates, all of the same style. Carton, 2 plates of the same style. Plates of the same style may be assorted in various finishes and thicknesses to make up a standard package or a carton. No other assortment permitted.

For One Switch and with One No. 736 Ruby Jewel

Description	Wt. Lbs. Pkg.	Two-gang STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
Takes Push-button Switch	8	OPB42	3705	\$1.04	OPB42-P	2905	\$.96
Takes Tumbler Switch	8	OSB42	3716	1.04	OSB42-P	2916	.96
For One Push-button Switch with One No. 736 Ruby Jewel and for One Receptacle							

Description	Wt. Lbs. Pkg.	Three-gang STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
*Takes Single Receptacle	8	OPBF43	3737	\$1.23	OPBF43-P	2937	\$1.11
**Takes Single Receptacle	8	OPBE43	3715	1.28	OPBE43-P	2920	1.16
**Takes Duplex Receptacle	8	OPBV43	3739	1.23	OPBE43-P	2939	1.11

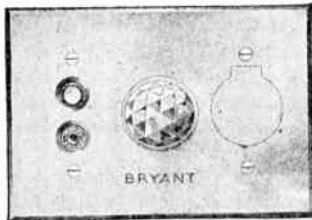
For One Tumbler Switch with One No. 736 Ruby Jewel and One Receptacle

Description	Wt. Lbs. Pkg.	Three-gang STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
*Takes Single Receptacle	10	OSBF43	3729	\$1.23	OSBF43-P	2926	\$1.11
**Takes Single Receptacle	10	OSBE43	3725	1.28	OSBE43-P	2925	1.16
*Takes Duplex Receptacle	10	OSBV43	3735	1.23	OSBV43-P	2935	1.11

*Without door. **With door.

No. 437 Bryant Bull's Eye Combinations

Schedule II
660 Watts, 125 Volts



With No. OPBE solid plate, double-pole switch, No. 1708 receptacle, ready-wired.

One-piece porcelain cup, 2 9/16 x 5 3/32 x 1 1/8 inches, with eight supporting screw holes spaced 3 3/8 and 2 9/16 inches on centers vertically and 3 5/8 inches on centers horizontally for installation in a

standard three-gang outlet box. This cup incorporates a No. 2520 cup with a No. 2523 double-pole push-button switch mechanism, a No. 427 receptacle and a No. 1708 receptacle, all internally connected and ready for connection to the line wires.

When the switch is on, the lamp is lighted and the receptacle is alive.

Solid brass plate No. OPBE13 with No. 736 ruby jewel is furnished to cover the working parts.

Standard finish is brush brass which will be furnished when no finish is specified. Perma finish, deduct 4 cents per gang.

Suitable machine screws for mounting this device are furnished and brass mounting screws are packed in the carton with each plate.

Can be furnished with luminous handle or button at an addition to price of 25 cents each. Identical devices, regular and luminous, may be assorted.

A No. 619 lamp, 32 volts, can be furnished on special order with the No. 427 receptacle instead of the No. 618, 125 volts, regularly furnished.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
437	Ready-wired, Complete	1	10	33		\$4.40
437	Without No. OPBE13 Plate					2.37

Bryant Bull's Eye Combinations

Schedule II
10 Amperes, 125 Volts

These combinations of one double-pole switch, one bull's eye, one single Spartan receptacle and one .040-inch plate, three-gang, are not ready-wired. The parts must be ordered separately and wired.



No. OPBF43

Receptacles Nos. 427 and 120 may be combined either with push-button switch No. 2202 and plate No. OPBF43 or with tumbler switch No. 2952 and plate No. OSBF43.

The lamps used with these combinations limit the voltage. No. 618 lamp which is supplied with No. 427 receptacle unless otherwise specified, is for use on 125 volts. On special order and without additional charge, No. 619 lamp, 32 volts, can be furnished.

Machine screws are furnished for mounting switches and receptacles. Brass mounting screws are packed with each plate.

The standard finish of plates is brush brass which will be furnished unless special finish is specified. Perma finish is 4 cents per gang less than price of standard finish.

Can be furnished with luminous handle or button at an addition to price of 25 cents each. Identical devices, regular and luminous, may be assorted.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2202	Push-button Switch	10	50	31		\$.70
OPBF43	Plate	2	10	10		1.23
2952	Tumbler Switch	10	50	27		.70
OSBF43	Plate	2	10	10		1.23
427	Receptacle, Bull's Eye	10	30	17		1.00
*120	"	10	100	41		.30

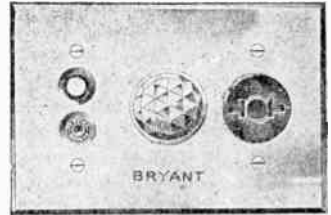
Price, Parts Complete Including Either a Push-button or Tumbler Switch..... \$3.23
*Schedule R.

No. 467 Bryant Bull's Eye Combinations

Schedule II

10 Amperes, 125 Volts

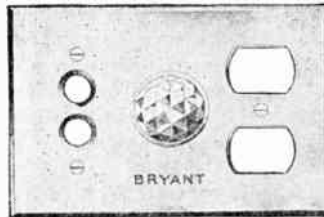
Consists of one-piece porcelain cup, 2 9/16 x 5 3/32 x 1 1/8 inches, with 8 supporting screw holes spaced 3 3/8 and 2 9/16 inches on centers vertically, 3 5/8 inches horizontally, for installation in 3-gang outlet box. Cup incorporates a No. 2520 cup with No. 2523 double-pole push-button switch mechanism, a No. 427 receptacle and a No. 120 Spartan single receptacle, with No. OPBF13 plate to cover working parts. When the switch is on the lamp is lighted. Luminous handle or button, 25 cents extra.



Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
467	Ready-wired, Complete	1	10	35		\$4.45
467	Without Plate No. OPBF13					2.47

Bryant Bull's Eye Combinations

Schedule II
10 Amperes, 125 Volts



No. OPBV43

These combinations of one double-pole switch, one bull's eye, one receptacle and one .040-inch plate, three-gang, are not ready-wired.

The parts must be ordered separately and wired.

Receptacles Nos. 427 and 122 may be combined either with No. 2202 push-

button switch and No. OPBV43 plate or with No. 2952 tumbler switch and plate No. OSBV43.

The lamps used in these combinations limit the voltage. No. 618 lamp, supplied unless otherwise specified, is for use on 125 volts. On special order and without extra charge, No. 619, 32 volts, will be furnished.

Machine screws are furnished for mounting switches and receptacles and brass mounting screws are packed with each plate.

The standard finish of plates is brush brass which will be furnished unless special finish is specified. Perma finish is 4 cents per gang less than price of standard finish.

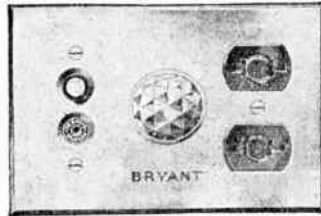
Can be furnished with luminous handle or button at an additional cost of 25 cents. Identical devices, luminous and regular, may be assorted.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2202	Push-button Switch	10	50	31		\$.70
OPBV43	Plate	2	10	11		1.23
2952	Tumbler Switch	10	50	27		.70
OSBV43	Plate	2	10	11		1.23
427	Receptacle, Bull's Eye	10	30	17		1.00
*122	"	10	50	34		.48

Price, Parts Complete Including Either a Push-button or Tumbler Switch..... \$3.41
*Schedule R.

No. 558 Bryant Bull's Eye Combinations

Schedule II
10 Amperes, 125 Volts

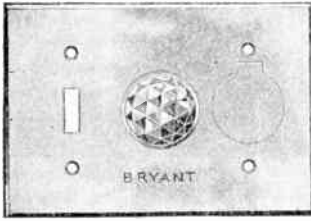


a No. 2520 cup with No. 2523 double-pole push-button switch mechanism, a No. 427 receptacle, and a No. 122 Spartan duplex receptacle, with a No. OPBV13 plate to cover working parts. When the switch is on the lamp is lighted. Luminous button or handle, 25 cents extra.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
558	Ready-wired, Complete	1	10	35		\$4.60
558	Without Plate No. OPBV13					2.62

Bryant Bull's Eye Combinations

Schedule II
660 Watts, 125 Volts



No. OSBE43

These combinations of one double-pole switch, one bull's eye, one receptacle, and one .040-inch plate, three-gang are not ready-wired. The parts must be ordered separately and wired.

Receptacles Nos. 427 and 1708 may be combined either with No. 2202 push-button switch and No.

OPBE43 plate or with No. 2952 tumbler switch and plate No. OSBE32.

The lamps used in these combinations limit the voltage. No. 618 lamp which is supplied with No. 427 receptacle is for use on 125 volts. No. 619 lamp, 32 volts, will be furnished on special order without additional charge.

Machine screws are furnished for mounting switches and receptacles. Brass mounting screws are packed with each plate.

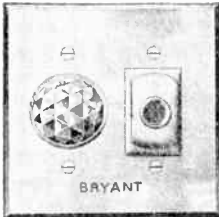
The standard finish of plates is brush brass which will be furnished unless finish is specified. Perma finish is 4 cents per gang less than price given for standard finish.

Can be furnished with luminous handle or button at an addition to price of 25 cents each. Identical devices, regular and luminous, may be assorted.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
2202	Push-button Switch.....	10	50	31	\$7.70
OPBE43	Plate.....	2	10	12	1.28
2952	Tumbler Switch.....	10	50	27	.70
OSBE43	Plate.....	2	10	12	1.28
427	Receptacle, Bull's Eye...	10	30	17	1.00
1708	".....	10	100	35	.21
Price, Parts Complete Including Either a Push-button or Tumbler Switch.....					\$3.19

No. 514 Bryant Bull's Eye Combinations

Schedule II
10 Amperes, 125 Volts



Ready-wired combination of 1 bull's eye receptacle, 1 D. D. receptacle with plug and solid plate, 2-gang.

Consists of 1-piece porcelain cup 2 9/16 inches long, 3 1/2 inches wide, 1 5/8 inches deep, with 8 supporting screw holes spaced 3 3/4 inches and 2 5/8 inches on centers vertically and 1 5/8 inches on centers horizontally for installation in a standard 2-gang outlet box. This cup incorporates a No. 427 receptacle and a No. 430 receptacle so connected that when the No. 432 plug furnished is inserted in the No. 430 receptacle the lamp in the No. 427 receptacle lights and illuminates the bull's eye. The device is ready for connection to the line wires.

A solid brass plate No. OBD12 with No. 736 ruby jewel is furnished to cover the working parts.

Standard finish is brush brass which will be furnished when no finish is specified.

Suitable machine screws are furnished for mounting this device on box.

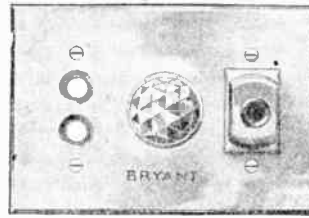
Price of Perma (Symbol P) finish for any flush plate is 4 cents per gang less than the price of similar plate in brush brass finish.

Brass mounting screws are packed in the carton with each plate.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
514	Ready-wired, Complete.....	1	10	26	\$3.80
514	Without No. OBD12 Plate...	2	10	..	1.90

Bryant Bull's Eye Combinations
One Switch, One Bull's Eye, One D. D. Receptacle with Plug and Solid Switch Plate, Three-gang

Schedule II
10 Amperes, 125 Volts



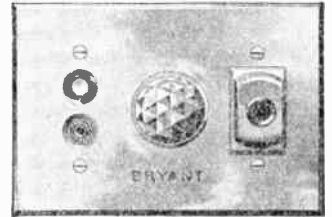
The parts for this combination must be ordered separately and wired. If a tumbler switch is desired, order No. 2952 switch and No. OSBD13 plate in place of Nos. 2202 and OPBD13, at no additional charge.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
2202	Double-pole Switch.....	10	50	31	\$7.70
427	Receptacle.....	10	30	17	1.00
430	D. D. Receptacle.....	10	30	15	.50
432	D. D. Plug.....	10	30	6	.60
OPBD13	Plate.....	2	10	15	2.34
Price, Complete Assembly.....					\$5.14

No. 518 Bryant Bull's Eye Combinations

Schedule II
10 Amperes, 125 Volts

Consists of a one-piece porcelain cup, 2 9/16 x 5 1/2 x 1 5/8 inches, with standard supporting screw spacings for mounting in standard three-gang outlet box. This cup incorporates a double-pole push-button switch, a bull's eye receptacle and a D. D.



receptacle with plugs internally connected and ready for connection with line wires. When switch is on lamp is lighted and receptacle is alive.

Machine and brass mounting screws furnished. Standard finish, brush brass. Luminous handle or button, \$0.25 extra.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
518	Ready-wired, Complete.....	1	10	35	\$5.60
518	Without OPBD13 Plate.....	..	..	..	3.26

Bryant Pilot Combinations

One Switch and One Lamp with Brass Guard

Ready-wired, One-gang

Schedule II
10 Amperes, 125 Volts



No. 465

Each combination consists of a one-piece porcelain cup, 2 9/16 x 1 1/2 x 1 5/8 inches, with supporting screw holes spaced 3 3/4 and 2 1/2 inches on centers vertically for installation in a standard one-gang outlet box. This cup incorporates a switch and a candelabra base receptacle ready-wired in multiple, and has two terminals with binding screws on each end.

A No. 618 lamp is fitted in the receptacle and the whole is covered by an M .060-inch plate. This lamp cannot be removed without removing the plate.

The lamp is in circuit when the switch is closed, so this device can be used for remote control of cellar lights, garage and attic lights, and in many other places where a tell-tale is desired.

One No. 2126 key is furnished with each No. 469 switch.

Standard finish is brush brass. For Perma finish, deduct 4 cents per gang. Special finish, see another page.

Suitable machine screws for mounting this device are furnished and brass mounting screws are packed in the carton with each plate.

Price of No. OM61 plate is \$1.30, schedule II, standard package, 10, carton 1.

The price of any combination without No. OM61 plate is \$1.30 less than the price given below.

When ordering combination plates, specify M sections to accommodate the combinations listed.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
465	With Double-pole Switch.....	1	10	15	\$3.50
495	" Three-point Push Switch...	1	10	15	3.50
469	" Double-pole Rotary Lock Switch.....	1	10	15	4.00

Bryant Bull's Eye Flush Receptacles

75 Watts—Schedule E

Special receptacles designed for holding a small electric lamp back of a glass jewel fastened in a flush plate of standard dimensions. Lamp is wired in multiple. Porcelain cup: $2\frac{9}{16} \times 1\frac{1}{16} \times 1\frac{5}{8}$ inches. Supporting screw spacings: Outside, $3\frac{3}{8}$ inches, inside, $2\frac{3}{8}$ inches. Suitable machine screws furnished for mounting device box.



Receptacle with No. 618 Lamp, 125 Volts

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
*427	10	30	17	\$1.00

Receptacle with No. 619 Lamp, 32 Volts

627	10	30	17	\$1.00
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*Also take a Form H lamp, 2 candle power, clear pear shaped bulb, carbon filament, candelabra base, 125 volts.

Type T-7 Lamps for Receptacles Nos. 427 and 627



No. 618 Type T-7 Lamp

Candelabra base, 2 candle power, clear, tubular bulb, carbon filament lamps.

Candelabra base lamps are commercially limited to a maximum voltage of 125 volts. For bull's eyes for higher voltages see listing of No. OX12.

125 Volts

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
618	10	30	3	\$.50

32 Volts

619	10	30	3	\$.50
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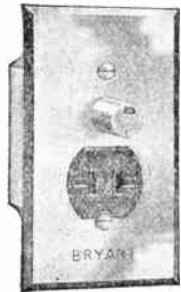
No. 117 Bryant Spartan Porcelain Flush Receptacle and Type O Double-pole Indicating Switch Combination Bodies

With .060-inch Brass Plate
10 Amperes, 125 Volts
5 Amperes, 250 Volts

Plate, $2\frac{3}{4} \times 4\frac{1}{4}$ inches. Base, $2\frac{5}{8} \times 1\frac{1}{8}$ inches. Depth, $1\frac{1}{8}$ inches.

Supporting screw spacings: Outside, $3\frac{3}{8}$ inches; inside, $2\frac{3}{8}$ inches.

Screws for mounting furnished.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.		PRICE, EACH	
				Std. Pkg.	With Plate	Without Plate	Without Plate
117	R	1	10	15	\$2.00	\$1.65	

Plate Only

Standard finish, brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OW61	H	1	10	....	\$.35

No. 121 Bryant Spartan Porcelain Flush Receptacle and Pilot Lamp Combinations

With .040-inch Brass Plate
10 Amperes, 125 Volts

Cannot be used above 125 volts because of lamp.

Lamp lights when plug is inserted.

Does not have tandem slots.

Plate, $2\frac{3}{4} \times 4\frac{1}{2}$ inches. Base, $2\frac{1}{16} \times 1\frac{11}{16}$ inches. Depth, $1\frac{1}{16}$ inches.

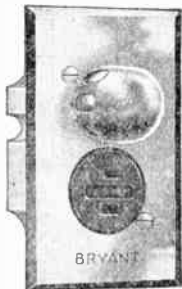
Machine screws for mounting furnished.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs.		PRICE, EACH	
				Std. Pkg.	With Plate	Without Plate	Without Plate
121	R	1	10	15	\$2.80	\$1.50	

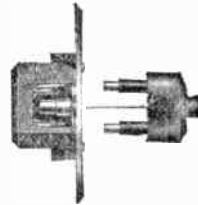
Plate Only

Standard finish, brush brass.

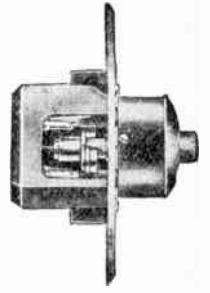
Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
O141	H	1	10	...	\$1.30



Diamond H Flush Type Receptacles



Receptacle Complete



No. 6510 Plate with Receptacle and Plug

Receptacles

Rating: 10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6520	Porcelain Receptacle	10	100	48	\$1.40
1652	Old Style Deep Receptacle	10	100	50	.40

Plugs

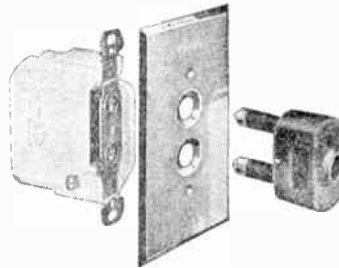
6530	Plug Only, Brass Cap	10	100	30	\$.35
6531	" " Black "	10	100	30	.30
†16530	" " Old Style Brass Cap	10	100	30	.40
†1653	" " " Black "	10	100	30	.35
6532	Two Cord Plug, Top Outlet	10	100	30	.40
6533	" " " Side "	10	100	30	.40

Plates

6510	One-gang (060 Brass)	10	...	41	\$.70
6511	" " (Solid Brass)	10	...	59	.90
6512	Two " (" ")	1	...	56	1.90
6513	Three-gang (" ")	1	...	54	2.70
6514	Two-gang Tandem (Solid Brass)	1	...	59	2.00

†To complete installations of old style deep receptacles and plugs 2 inches deep are carried in stock at all times. Add one-half additional list as shown for special finish on receptacle plugs.

H & H Baseboard Receptacles



The contacts are deep sleeves of bronze that closely engage the plug fingers over a large conducting area. Although they grip the fingers tightly, a slight pull will disengage the plug.

These devices have great overload capacity because the contacts are separated by a wall of porcelain so that the current cannot jump across and because the plug fingers

reach the contacts through narrow tubes or porcelain that choke the arc and prevent its reaching the plate when the plug is withdrawn.

Dirt-proof Receptacles—10 Amperes, 250 Volts

The openings of these receptacles are automatically closed with shutters when the plug is withdrawn. The insertion of the plug automatically opens the shutters.

Standard switch plates can be used with these receptacles.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3087	Receptacle Complete	30	31	\$1.23
2850	" Base	30	15	.80
2002	" Plug	30	8	.25
2301	Single Plate for Receptacle	100	30	1.18

Plates may be furnished in gangs and also in gang combinations with switch plates.

Receptacles in gangs spaced $1\frac{1}{16}$ inches between centers.

Outside supporting screw holes spaced $3\frac{3}{8}$ inches on centers; inside holes, $2\frac{3}{8}$ inches.

Hubbell Single Convenience Outlets

10 Amperes, 250 Volts
Schedule II

The supporting screw holes of these outlets are spaced $2\frac{3}{8}$ inches and $3\frac{3}{8}$ inches.



No. 5850

Black Porcelain Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5547	10	100	40	\$.30
7500	10	100	21	.30

Composition Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5850	10	100	45	\$.33
7550	10	100	21	.30

Hubbell Duplex Convenience Outlets

10 Amperes, 250 Volts
Schedule II

The supporting screw holes of these outlets are spaced $2\frac{3}{8}$ inches and $3\frac{3}{8}$ inches. Top wired.



No. 6257

Back Porcelain Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6257	10	50	18	\$.48
7525	10	50	11	.48

Composition Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5890	10	50	18	\$.48
7575	10	50	15	.48

Hubbell Plates for Convenience Outlets

For 3-wire Receptacles Nos. 6051 and 6810

For Polarized Receptacles Nos. 5566 and 5552

Schedule II

Horizontal Gangs



Nos. 6835, 6780, 5548 and 6585

Struck-up, .040-inch Metal

Brush Brass

Cat. No.	Description	Dimens. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6835	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	20	100	20	\$.14
6836	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	17	.28
6837	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	15	.42

Lacco Brass

6780	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	20	100	20	\$.10
6838	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	17	.20
6839	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	15	.30

Gang plates, .040-inch, up to and including 8 gangs, can be furnished at 22 cents per gang for brush brass, and 18 cents per gang for Lacco.

Struck-up, .060-inch Metal

Brush Brass

5548	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	20	100	20	\$.18
5549	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	18	.36
6840	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	16	.54

Gang plates, .060-inch, up to and including 8 gangs, can be furnished at 26 cents per gang for brush brass.

Solid Brass, .100-inch Metal

Brush Brass

6585	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	20	100	25	\$.34
6586	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	20	.68
5550	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	18	1.02

Solid plates beyond 3 gangs can be furnished at 40 cents per gang for brush brass.

Plates for tandem or vertical gangs can be furnished in solid brass and take 20 per cent advance over horizontal gangs.

*A standard package consists of 100 single plates or the equivalent in gangs.

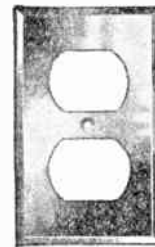
**One-fifth standard package, or 20 gangs, will be considered carton quantity.

Any of these plates may be assorted for standard package or carton quantity.

Hubbell Plates for Convenience Duplex Outlets

Schedule II

Horizontal Gangs



Nos. 6854, 6784, 6258 and 6587

Struck-up, .040-inch Metal

Brush Brass

Cat. No.	Description	Dimens. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6854	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	10	50	15	\$.14
6855	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	14	.28
6856	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	12	.42

Gang plates, .040-inch, up to and including 8 gangs, can be furnished at 22 cents per gang for brush brass and 18 cents per gang for Lacco brass.

Lacco Brass

6784	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	10	50	15	\$.10
6857	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	14	.20
6858	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	12	.30

Struck-up, .060-inch Metal

Brush Brass

6258	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	10	50	16	\$.18
6259	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	14	.36
6859	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	12	.54

Gang plates, .060-inch, up to and including 8 gangs can be furnished at 26 cents per gang for brush brass.

†Solid Brass, .100-inch Metal

6587	Single Plate	$4\frac{1}{2} \times 2\frac{3}{4}$	10	50	23	\$.34
6588	2-gang "	$4\frac{1}{2} \times 4\frac{1}{8}$	**	*	21	.68
6260	3 " "	$4\frac{1}{2} \times 6\frac{3}{8}$	**	*	19	1.02

†Solid plates beyond 3 gangs can be furnished at 40 cents per gang for brush brass.

Plates in tandem or vertical gangs can be furnished in solid brass and take 20 per cent advance over horizontal gangs.

*A standard package consists of 50 single plates or equivalent in gangs.

**One-fifth standard package or 10 gangs will be considered carton quantity.

Any of the above plates may be assorted for standard package or carton quantity.

**Hubbell Single Convenience Outlets
For Plates with Lift Cover**

10 Amperes, 250 Volts
Schedule II

The supporting screw holes of these outlets are spaced $2\frac{1}{8}$ inches and $3\frac{3}{8}$ inches.



No. 6980

Black Porcelain Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5579	10	50	40	\$.35

Composition Convenience Outlets

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6980	10	50	40	\$.38

Hubbell Flush Door Receptacles

6 Amperes, 250 Volts
Each Outlet
Schedule H



No. 6775

No. 6775 is porcelain body for single flush door receptacle. No. 6755 is porcelain body for duplex flush door receptacle.

Outside screw holes, $3\frac{3}{8}$ inches on centers. Inside screw holes, $2\frac{1}{8}$ inches on centers.



No. 6755

Cat. No.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6775	10	30	15	\$.50
6755	10	30	17	.75

Hubbell Plates with Lift Cover, Single Hinge

For Nos. 5579 and 6980 Convenience Outlets

Horizontal Gangs

Schedule II

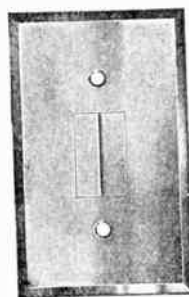
Plates in tandem or vertical gangs can be furnished in solid brass and take 20 per cent advance over horizontal gangs.

One-fifth standard package of single hinge plates or 20 gangs will be considered carton quantity.

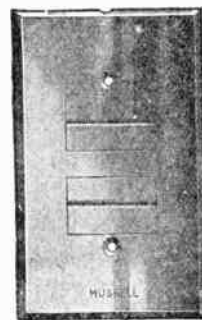
Any of the plates listed below may be assorted for standard package or carton quantity.



Hubbell Flush Door Plates for Nos. 6775 and 6755 Receptacles



No. 6776



No. 6756

No. 6776 is single plate with flush door. No. 6756 is duplex plate with flush door.

Cat. No.	Size In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	*Price Each
6776	$2\frac{3}{4} \times 4\frac{1}{2}$	10	30	12	\$.60
6756	$2\frac{3}{4} \times 4\frac{1}{2}$	10	30	12	.95

*Applies to .060-inch metal plates only. For solid plates, add 25 cents to list.

Struck-up—.040-inch Metal

Brush Brass Finish

Lacco Brass Finish

Gang plates up to and including eight gangs can be furnished at 31 cents per gang for brush brass and 27 cents per gang for Lacco finish.

Cat. No.	No. of Receptacles	Std. Pkg.	Price Each	Cat. No.	No. of Receptacles	Std. Pkg.	Price Each
6866	1	*	\$.19	6805	1	*	\$.15
6867	2	*	.38	6869	2	*	.30
6868	3	*	.57	6870	3	*	.45

Struck-up—.060-inch Metal

Brush Brass Finish

Cat. No.	No. of Receptacles	Standard Package	Price Each
6801	1	*	\$.23
6871	2	*	.46
6872	3	*	.69

*Standard package of single hinge plates consists of 100 single plates or equivalent in gangs.

Hubbell Plates with Lift Cover, Double Hinge

For Nos. 5579 and 6980 Convenience Outlets
Horizontal Gangs

Schedule II



Plates in tandem or vertical gangs can be furnished in solid brass and take 20 per cent advance over horizontal gangs.

One-fifth standard package of double hinge plates or 10 gangs will be considered carton quantity. Any of the plates listed below may be assorted for standard package or carton quantity.

Solid Brass—.114-inch Metal

Brush Brass Finish

Cat. No.	No. of Receptacles	Std. Pkg.	Price Each	Cat. No.	No. of Receptacles	Std. Pkg.	Price Each
5580	1	50	\$1.15	5582	3	*	\$4.50
5581	2	*	3.00	5600	4	*	6.00

*Std. pkg. consists of 50 single plates or equivalent gangs.

**Hubbell Caps for Nos. 6775 and 6755
Flush Door Receptacles**



No. 6758
Top Outlet



No. 6759
End Outlet



No. 6778
Two-cord Outlet



No. 6779
Top Outlet

Nos. 6758, 6759 and 6778 are brass covered composition cap; No. 6779 is all composition cap.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6758	10	30	6	\$.60
6759	10	30	6	.60
6778	10	30	6	.70
6779	10	30	6	.50

Hubbell Separable Composition Attachment Plugs

Pony Size, Parallel Blades



No. 7000

Schedule II
660 Watts, 250 Volts

Contact blades of cap are standard and will fit double T-slot convenience outlets. Made of composition.

Cat. No.	Description	Cord Hole, In.	Car-ton	Wt., Lbs.		Price Each
				Std. Pkg.	Std. Pkg.	
7000	Plug, Oval Cord Hole.....	3/8x3/32	25	500	63	\$.15
7012	" " " " " " " " " "	5/16x13/64	25	500	63	.15
7030	" " Round " " " " " "	1/4	25	500	63	.15
7001	" " Body Only " " " " " "		25	500	40	.07
7002	Cap Only, Oval Cord Hole	3/8x3/32	25	500	40	.08
7014	" " " " " " " " " "	5/16x13/64	25	500	40	.08
7031	" " Round " " " " " "	1/4	25	500	40	.08

Hubbell Composition Separable Attachment Plugs

Standard Size, Parallel Blades

Schedule II

660 Watts, 250 Volts

With Composition or Brass Covered Caps



Cat. No.	Description	Cord Hole, In.	Car-ton	Wt., Lbs.		Price Each
				Std. Pkg.	Std. Pkg.	
5915	Plug, Round Cord Hole	13/32	25	250	35	\$.20
6707	" " " " " " " " " "	9/16	25	250	35	.20
5917	" " Body Only " " " " " "		25	250	18	.10
5964	Composition Cap " " " " " "	13/32	25	250	18	.10
5965	Brass Covered Cap " " " " " "	13/32	25	250	18	.25
6708	Composition Cap " " " " " "	9/16	25	250	18	.10
6740	Brass Covered Cap " " " " " "	9/16	25	250	18	.25

Hubbell Composition Separable Attachment Plugs

Standard Size, Parallel Blades

Schedule II

660 Watts, 250 Volts

With Steel Covered (Armored) Cap



Cat. No.	Description	Cord Hole, In.	Car-ton	Wt., Lbs.		Price Each
				Std. Pkg.	Std. Pkg.	
6828	Plug, Round Cord Hole.....	13/32	25	250	40	\$.26
7033	" " " " " " " " " "	9/16	25	250	40	.26
5917	" " Body Only " " " " " "		25	250	18	.10
6827	Cap Metal Covered (Ar-mored).....	13/32	25	250	25	.16
7034	Cap Metal Covered (Ar-mored).....	9/16	25	250	25	.16

Hubbell Bakelite Separable Attachment Plugs

Standard Size, Parallel Blades

Schedule II

660 Watts, 250 Volts

Made of genuine Bakelite, regularly furnished in solid brown or black colors at prices listed. For green finish add 5 cents to the price of complete plug; 2 cents to price of body and 3 cents to price of cap. Brown Bakelite plugs furnished unless otherwise specified. Prices for plugs in other colorings upon application.



Cat. No.	Description	Cord Hole, In.	Car-ton	Wt., Lbs.		Price Each
				Std. Pkg.	Std. Pkg.	
9000	Plug, Oval Cord Hole....	3/8x3/32	10	100	20	\$.25
9004	" " Round " " " " " "	13/32	10	100	12	.25
9001	" " Body Only " " " " " "		10	100	14	.12
9002	Cap Only, Oval Cord Hole	3/8x3/32	10	100	12	.13
9003	" " Round " " " " " "	13/32	10	100	12	.13

No. 5467 Hubbell Standard Composition Attachment Plugs

With Double T Slots



Schedule H—660 Watts, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
5467	Plug Complete.....	250	\$.38
5612	Base Only.....	250	.25
5420	Cap " 1 1/2-in. Cord Hole...	100	.13

No. 5406 Hubbell Standard Porcelain Attachment Plugs

With Double T Slots

Schedule H—660 Watts, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
5406	Plug Complete.....	250	\$.32
5607	Base Only.....	250	.20
5419	Cap " 1 1/2-in. Cord Hole...	100	.12

No. 6712 Hubbell Composition Attachment Plugs with Bayonet Base

660 Watts, 250 Volts



No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6712	25	100	13	\$.20

Hubbell Moisture-proof Rubber Casings and Rings

Schedule II

Rubber casing for attachment plugs.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5583	30	5	\$.30
5589	30	1	\$.05

Rubber ring for use with weather-proof sockets.

Hubbell Composition Attachment Plug Caps

10 Amperes, 250 Volts



Cat. No.	Sched-ule	Cord Hole, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5964	H	13/32	25	250	18	\$.10
6708	H	9/16	25	250	18	.10

No. 5965 Hubbell Brass Covered Composition Attachment Plug Caps

10 Amp., 250 Volts



Standard finish, brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5965	H	25	250	18	\$.25

No. 6060 Hubbell Composition Attachment Plug Caps with Knostrain Bushing

Parallel Blades



660 Watts, 250 Volts

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6060	H	10	50	8	\$.25

No. 6061 Hubbell Brass Covered Composition Attachment Plug Caps with Knostrain Bushing

660 Watts, 250 Volts



Standard finish, brush brass.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6061	H	10	50	12	\$.55

No. 5419 Hubbell Porcelain Attachment Plug Caps



660 Watts, 250 Volts

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5419	H	25	100	15	\$.12

No. 5420 Hubbell Composition Attachment Plug Caps

660 Watts, 250 Volts



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5420	H	25	100	15	\$.13

No. 5421 Hubbell Brass Covered Porcelain Attachment Plug Caps

660 Watts, 250 Volts



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5421	H	25	100	15	\$.25

No. 5523 Hubbell Brass Covered Composition Attachment Plug Caps

660 Watts, 250 Volts



Standard finish, brush brass.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5523	H	25	100	15	\$.30

Hubbell Attachment Plug Caps



Elongated Composition

660 Watts, 250 Volts

Cat. No.	Cord Hole In.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6336	1 3/32	H	10	100	15	\$.30
6337	1/2	H	10	100	15	.30

No. 5657 Hubbell Attachment Plug Caps

Brass Covered Composition With Knostrain Bushing With 3/8-inch Knostrain Bushing



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5657	H	10	50	12	\$.45

No. 5700 Hubbell Attachment Plug Caps

Brass Covered Composition With Knostrain Bushing 660 Watts, 250 Volts For Nos. 16 and 18 Cord



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5700	H	10	50	12	\$.55

No. 6606 Hubbell Brass-covered Composition Plug Caps

With 3/8-inch Threaded Nipple 10 Amperes, 250 Volts



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6606	H	10	100	20	\$.40

Hubbell Composition Attachment Plugs

With Paraline Convertible Caps

Cap—10 Amperes, 250 Volts

Plug—660 Watts, 250 Volts

Schedule H



Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6670	Plug and Cap.	25	100	25	\$.30
6671	Cap Only.	25	100	12	.20

Hubbell Composition Te-caps

Schedule H

660 Watts, 250 Volts

Tandem Blades

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6771	20	20	8	\$.30



Parallel Blades

Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6772	20	20	8	\$.30

No. 6771

No. 6339 Hubbell Composition Current Tap Bodies with Shade Holder Groove

Multiple Type

660 Watts, 250 Volts



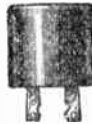
Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6339	H	10	50	20	\$.50

Hubbell Attachment Plug Lamp Receptacles

Schedule H

Composition and Porcelain

10 Amperes, 250 Volts



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5857	Composition	10	100	15	\$.35
5424	Porcelain	10	100	14	.25

No. 5515 Hubbell Angle Lamp Receptacles

Schedule H

660 Watts, 250 Volts

Porcelain



For show case and window lighting. Fits Hubbell std. base, wall or flush receptacle.

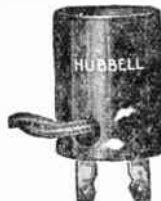
Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5515	10	50	12	\$.50

Hubbell Composition Side Wire Outlet Current Taps

Schedule H

660 Watts, 250 Volts

Multiple and Series



No. 6335



No. 7029

Used with all styles of double T slot plugs, receptacles.

Cat. No.	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6335	Multiple with Tandem Blades	10	50	15	\$.45
7029	Series with Parallel Blades	10	50	15	.40

No. 5917 Hubbell Attachment Plug Bases

Composition

660 Watts, 250 Volts



Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5917	H	25	250	18	\$.10



Hubbell Signalite Current Taps

Schedule H

10 Amperes, 125 Volts

With Standard Knife-blade Contacts

Signalites are suitable for use with all electrically heated devices of 10 amps., 125 volts or less.

Plug is supplied with an electro-welded lamp guard to protect lamp from breakage.

Signalites supplied with red lamps.

All brass parts are nickel-plated. Equipped with std. Hubbell knife-blade contacts, making them interchangeable with the entire line of Hubbell Attachment Plugs, Wall and Flush Receptacles.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6108	Without Lamp.....	10	30	12	\$.55
6109	Complete with Red Lamp...	10	30	12	1.00
6101	125-volt Red Lamp.....	10	10	1	.45

No. 5607 Hubbell Attachment Plug Bases

Porcelain
Double T Slot

660 Watts, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5607	H	10	250	58	\$.20



No. 5612 Hubbell Attachment Plug Bases

Composition
Double T Slot

660 Watts, 250 Volts

Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5612	H	25	250	48	\$.25



No. 5826 Hubbell Cartridge Fuse Composition Attachment Plug Bases

660 Watts, 250 Volts

Compact with 6-ampere Type 9 Baby Fuse.

If wanted without fuse, deduct \$.25 from the price.

Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5826	H	10	50	18	\$.75

No. 5624 Hubbell Porcelain Conduit Box Receptacles

Screws, 5/8-inch Centers

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5624	H	10	50	13	\$.30

No. 6103 Hubbell Conduit Box Porcelain Receptacles

Covered Suspension

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
6103	H	10	50	\$.45

No. 5617 Hubbell Porcelain Concealed Base Plug Receptacles

Screws, 11/32-inch Centers

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5617	H	10	50	18	\$.30

No. 5618 Hubbell Porcelain Cleat Base Plug Receptacles

Screws, 11/32-inch Centers

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5618	H	10	50	18	\$.30

No. 5619 Hubbell Porcelain Moulding Base Plug Receptacles

Screws 11/8-inch Centers

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
5619	H	10	50	\$.30

No. 5939 Hubbell One-way Porcelain Plug Receptacles

For National Metal Moulding

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
5939	H	10	50	\$.35

No. 6068 Hubbell Two-way Porcelain Plug Receptacles

For National Metal Moulding

10 Amperes, 250 Volts



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
6068	H	10	50	\$.35

No. 5620 Hubbell Porcelain Fielding Base Plug Receptacles

10 Amperes, 250 Volts

Screws, 25/16-inch centers.



Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
5620	H	10	50	\$.35

No. 6900 Hubbell Triplex Table Taps

10 Amperes, 250 Volts



This device combines three Hubbell Te-Slot Outlets, arranged in multiple, with a connector plug. May be fastened to the underside of a table or to a wall surface or may be used portably on table or desk.

Furnished complete with cord connector body. No. 5964 attachment plug cap, and 8 feet of black silk-covered cord.

Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6900	H	1	5	10	\$3.00

No. 6252 Hubbell Fixture Plug Receptacles with Brass Casing

With 1/8-inch Bushing

10 Amperes, 250 Volts

Standard finish, brush brass.

Cat. No.	Sched- ule	Car- ton	Std. Pkg.	Price Each
6252	H	10	20	\$.37



No. 7020 Hubbell Switch-plugs for Ceiling Fixtures

Schedule II



Provides a switch for independent control of the light and an ever ready standard T slot outlet for electric iron, toaster or other electrically operated appliance.

Outlet can be used without switching on the light.

The Hubbell Switch-plug is highly desirable for kitchen units and may also be adapted for many other uses.

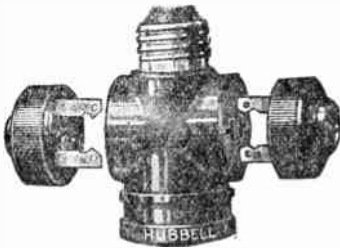
Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
7020	Composition Switch-plug	10	50	12	\$.75
7023	Complete with Five Feet 3-conductor Cord.....	10	50	15	1.50

Hubbell Double Outlet Current Taps

Schedule II

660 Watts, 250 Volts

Multiple-Composition



Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6710	With 2 No. 5420 Comp. Caps....	10	20	12	\$.86
6711	Less Caps.....	10	20	10	.60

Hubbell Multiple Attachment Plugs

Schedule II

10 Amperes—250 Volts



For all convenience outlets, excepting those having lift cover plates.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
7010	Composition Multiple Plug, Knife-blade Base, Two Outlets, Tandem Blades.	10	10	5	\$.50
7035	Composition Multiple Plug with Parallel Blades.....	10	10	5	.50

Hubbell Multiple Attachment Plugs

With Knife-blade Contacts

Schedule II

10 Amperes, 250 Volts



No. 6290 is black porcelain. For use with all Hubbell Receptacles, except flush receptacles having lift cover.

Nos. 6291 and 6292 are for use only with flush receptacles having lift cover. Prices of these plugs do not include caps.

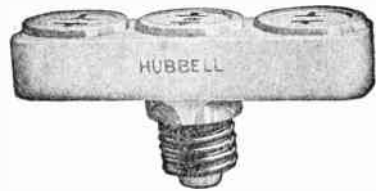
Cat. No.	No. of Outlets	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6291	2	5	10	10	\$.70
6290	3	5	10	15	1.05
6292	3	5	10	15	1.05

Hubbell Multiple Attachment Plugs

With Medium Screw Base

Schedule II

660 Watts, 250 Volts



No. 6288

Cat. No.	No. of Outlets	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6287	2	5	10	10	\$.70
6288	3	5	10	15	1.05

No. 6253 Hubbell Fixture Plug Receptacles with Brass Casing

With 3/8-inch Bushing

10 Amperes, 250 Volts

Standard finish, brush brass.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6253	H	10	20		\$.43

No. 5614 Hubbell Porcelain Round Flush Receptacles with Supporting Straps

10 Amperes, 250 Volts

Designed as a flush receptacle for special apparatus. Screw holes in supporting straps 1 1/4 inches on centers.



Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5614	10	50	20	\$.40

No. 6282 Hubbell Flush Plug Receptacles

With 2 3/4-inch Plate Assembled

10 Amperes, 250 Volts

Brush brass finish.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6282	H	1	50	18	\$.85

No. 6283 Hubbell Flush Plug Receptacles

With 3 1/4-inch Plate Assembled

10 Amperes, 250 Volts

Brush brass finish.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6283	H	1	50	25	\$.95

No. 6116 Hubbell Composition Cord Connectors

Schedule II

10 Amperes, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
6116	Plug Complete.....	50	\$.40
6118	Body Only.....	50	.30
5964	Cap ".....	50	.10



No. 5518 Hubbell Composition Extension Cord Connectors

Schedule II

10 Amperes, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
5518	Plug Complete.....	50	\$.43
5574	Body Only.....	50	.30
5420	Cap ".....	100	.13



No. 5894 Hubbell Composition Motor Attachment Plugs

Schedule II

10 Amperes, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
5894	Plug Complete	50	\$.43
5574	Body Only	50	.30
5896	Base	50	.13



Hubbell Polarized Caps

Schedule II



No. 5567



No. 5553



No. 6720 and 6730

Cat. No.	Description	Amps.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
5567	Brass Cov. Pore	10	10	30	5	\$.50
5553	" " "	20	10	30	5	.50
6156	" " Comp.	20	10	30	5	.55
6720	Comp. Polarized Cap	20	10	30	4	.30
6730	" " "	10	10	30	1	.25
With Knostrain Bushing for No. 10 Jumper Cable						
5665	Brass Cov. Pore	20	10	30	12	\$1.00
5589	" " Comp.	20	10	30	12	1.05

No. 6807 Hubbell Flush Motor Plugs

Schedule II

10 Amperes, 250 Volts



No. 6807



No. 6808



No. 6630

Base is composition with metal casing. Body is composition and has 3/32-inch cord hole.

Supporting screw holes are spaced 1 1/4 inches on centers. Diameter of brass shell, 1 3/8 inches.

Cat. No.	Description	Std. Pkg.	Price Each
6807	Plug Complete	50	\$.50
6808	Body Only	50	.30
6630	Base	50	.30

Hubbell Polarized Wall Receptacles

Schedule II

Concealed Base Only

10 Amperes, 250 Volts

Screw holes spaced 1 1/2 inches.



No. 5885

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
5885	10	30	9	\$.40
20 Amperes, 250 Volts				
Screw holes spaced 1 1/8 inches.				
5621	10	30	14	\$.50

Cleat Base Only

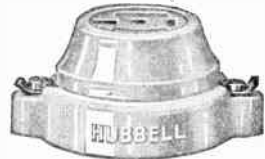
10 Amperes, 250 Volts

Screw holes spaced 1 3/8 inches.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
5886	10	30	13	\$.40

20 Amperes, 250 Volts

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
5622	10	30	18	\$.50



No. 5886

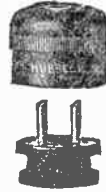
No. 6179 Hubbell Small Composition Motor Plugs

Schedule II

10 Amperes, 250 Volts

1 5/8 inches in length and 1 1/2 inches in diameter.

Cat. No.	Description	Std. Pkg.	Price Each
6179	Plug Complete	50	\$.41
6630	Body Only	50	.30
6631	Base	50	.11



No. 6180 Hubbell Small Composition Cord Connectors

Schedule II

10 Amperes, 250 Volts

Connector measures 1 5/8 inches over all.



Cat. No.	Description	Std. Pkg.	Price Each
6180	Plug Complete	50	\$.40
6630	Body Only	50	.30
6181	Base	50	.10

No. 6143 Hubbell Composition Motor Plugs



Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
6143	Motor Plug Complete	10	50	25	\$.70

No. 5743 Hubbell Polarized Composition Cord Connectors with Brass Covered Cap

Schedule II—Polarized
10 Amperes, 250 Volts



Cat. No.	Description	Std. Pkg.	Price Each
5743	Plug Complete	30	\$1.05
6278	Body Only	30	.55
5567	Brass Covered Pore. Cap	30	.50

No. 6277 Hubbell Polarized Composition Motor Plugs

Schedule II

10 Amperes, 250 Volts

Cat. No.	Description	Std. Pkg.	Price Each
6277	Plug Complete	30	\$.85
6278	Body Only	30	.55
6279	Base	30	.30



Hubbell Polarized Composition Attachment Plugs

Schedule H—660 Watts, 250 Volts

Polarization is effected by providing a cap with one wide and one narrow blade which fit in corresponding slots in plug base.



Cat. No.	Description	Std. Pkg.	Std. Pkg. Wt., Lbs.	Price Each
6989	Plug Complete	250	35	\$.20
6764	Cap Only, 3/32-inch Cord Hole	250	18	.10

Hubbell Composition Cord Connectors

20 Amps, 250 Volts Polarized, Schedule H

Cord Connectors Complete

Cat. No.	Car-ton	Std. Pkg.	Std. Pkg. Wt., Lbs.	Price Each
6706	10	30	15	\$1.30

Composition Bodies Only

Cat. No.	Car-ton	Std. Pkg.	Std. Pkg. Wt., Lbs.	Price Each
6717	10	30	10	\$.75

Brass Covered Caps, Polarized

Cat. No.	Car-ton	Std. Pkg.	Std. Pkg. Wt., Lbs.	Price Each
6156	10	30	15	\$.55



Hubbell Polarized Flush Receptacles



Supporting screw holes spaced $2\frac{3}{8}$ and $3\frac{3}{8}$ inches.

10 Amperes, 250 Volts

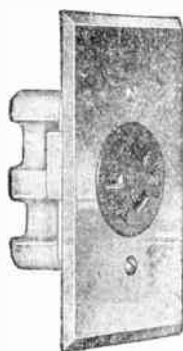
Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5566	Black Porcelain	10	30	12	\$.40

20 Amperes, 250 Volts

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5552	Black Porcelain	10	30	12	\$.75

No. 5566

Hubbell 20-ampere Flush Receptacles For Three-wire Work



No. 6810 with Plate No. 5548

Polarized—Schedule H

20 Amperes, 250 Volts

Outside supporting screw holes are $3\frac{3}{8}$ inches on centers; inside supporting screw holes are $2\frac{3}{8}$ on centers.

Brush brass is standard finish for flush plates and caps.

Cat. No.	Description	Std. Pkg.	Std. Pkg.	Price Each
6810	Porcelain Receptacle Only	30	15	\$.95
5548	Single Plate (.060 Metal-stamped)	100	20	. 18
6058	Brass Covered Polarized Cap.	30	15	. 60

Hubbell Polarized Separable Attachment Plugs

For Three-wire Work

Schedule H

660 Watts, 250 Volts

Carton quantity, 10.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6146	With Composition Cap	100	40	\$.55
6042	Porcelain Base Only	100	25	. 30
6149	Composition Cap Only	50	6	. 30
6150	Brass Covered Comp. Cap	50	7	. 35

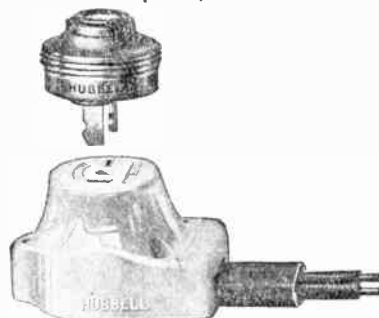


No. 6146

Hubbell Polarized Wall Receptacles For National Metal Molding

Schedule H

20 Amperes, 250 Volts



With One-way Base

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6091	Porcelain Base Only	10	30	15	\$.50
5553	Brass Covered Porc. Cap Only	10	30	5	. 50

With Two-way Base

6093	Porcelain Base Only	10	30	15	\$.50
5553	Brass Covered Porc. Cap Only	10	30	5	. 50

Hubbell Polarized Wall Receptacles

For Three-wire Work

Schedule H

The neutral contact-blade of the three-wire cap is made longer than the others and makes contact first when the plug is inserted, and holds contact until after the others are disconnected. The polarity arrangement insures proper connection at all times.

10 Amperes, 250 Volts

Standard finish of brass covered caps, brush brass.

Screw holes are spaced $1\frac{3}{4}$ inches on centers.



No. 6055

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6147	Receptacle, Composition Cap	10	50	30	\$.75
6149	Composition Cap	10	50	6	. 25
6047	Concealed Base Only	10	50	25	. 50

20 Amperes, 250 Volts

Supporting screw holes spaced $1\frac{3}{4}$ inches on centers.

6055	Concealed Base, Polarized Cap	10	30	30	\$ 1.25
6058	Polarized Cap Only	10	30	15	. 60
6059	Concealed Base "	10	30	25	. 65

Hubbell Composition Cord Connectors

For Three-wire Work, Polarized

Schedule H

10 Amperes, 250 Volts

Cord Connectors Complete

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6408	10	50	20	\$.75
6409	10	50	15	\$.50

Composition Bodies Only



No. 5605 Hubbell Polarized Conduit Box Receptacles

Schedule H—Polarized

20 Amperes, 250 Volts

Screw holes spaced $\frac{5}{8}$ inch on centers.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5757	Porcelain Base Only	10	30	18	\$.50
5553	Polarized Cap	10	30	5	. 50



Hubbell Porcelain Adapters for Polarized Plug Receptacles

Schedule H

660 Watts, 250 Volts



Cat. No.	Amps.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5898	20	10	30	7	\$.35

No. 6821 Hubbell Polarized Composition Cord Connectors

Schedule H

10 Amperes, 250 Volts



Cat. No.	Description	Std. Pkg.	Price Each
6821	Plug Complete	50	\$.45
6822	Body Only	50	. 30
6918	Base "	50	. 15

No. 903 Benjamin Swivel Attachment Plugs

660 Watts, 250 Volts

With Fibre Ring

Swivel shell permits plug to be attached or removed without twisting cord. Has fibre insulating ring, porcelain base, and molded bushing with 1/2-inch opening for cord.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
903	With 1/2-inch Cord Opening	100	6 1/4	\$.15

No. 903F Benjamin Swivel Attachment Plugs

660 Watts, 250 Volts

For Reinforced Cord

For the appliance service that requires a heavy reinforced cord, No. 903F should be an important part of the equipment. It has a heavy molded bushing with a 1/2-inch cord opening that will take any heavy reinforced cord or flexible armored cable whose outside diameter does not exceed 1/2 inch.



A flat metal screw grips cord tightly, protecting both the cord and binding screw connection with plug.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
903F	With Bushing, 1/2-inch Opening	100	9 3/8	\$.50

No. 903H Benjamin Flexi-handle Attachment Plugs

660 Watts, 250 Volts

Flexible metal extension is 5 inches long. Cord passes through hollow stem, which turns freely upon cable up to 1/2-inch in diameter.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
903H	10	1 1/2	\$.60

No. 904 Benjamin Swivel Attachment Plugs

660 Watts, 250 Volts

With Molded Ring

Equipped with swivel shell which allows plug to be turned into or out of socket without twisting cord. Fitted with molded insulating ring and bushing with 1/2-inch opening for cord.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
904	100	9 3/8	\$.18

No. 916 Benjamin Heavy Duty Swivel Attachment Plugs

660 Watts, 250 Volts

For railroad and heavy work. Has chuck type bushing which takes a firm grip on any of the standard portable cords up to 3/16 inch in diameter.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
916	10	3	\$.83

No. 960 Benjamin Swivel Separable Attachment Plugs

660 Watts, 250 Volts

The No. 960 Swivel Separable Attachment Plug is especially convenient for use in attaching portable household electrical appliances to either screw base sockets or parallel blade slotted receptacles.

Where it is desired to make attachment to parallel blade slotted receptacles, the plug cap readily separates from its base for the purpose. Base and cap are of molded composition, polished. Approved by N. B. of F. U.



Cat. No.	Cord Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
960	1 1/2	10	1 1/2	\$.50

Price, No. 961, Base Onlyeach \$.30
 " " 962, Cap " " .20

Benjamin Swivel-separable Attachment Plugs

With Standard Cap

Most of cord failure is due to twisting cord when plug is screwed in, something which cannot happen when Swivel-separable is used. Many prefer to screw a separable swivel attachment plug into the socket in one piece, rather than separate cap from base.



No. 900

Base is molded bakelite and is polarized. Cap has large binder screws and parallel blades. Standard package of 10. Weight per standard package, No. 900, 1 1/4 pounds; No. 901, 1 pound.

Price, No. 900, Plug Complete (Base and Cap).....each \$.35
 " " 901, Polarized Base Only..... " .25

Benjamin Attachment Plugs With Parallel Blades

660 Watts, 250 Volts

No. 1001 is the standard type of separable plug in common use. It consists of a standard parallel blade cap No. 938 and polarized base No. 940. No. 938 is of strong high heat molded insulating material with gripping-bead to facilitate removal. It has large binder screws and standard parallel blades. No. 939 is same but has polarized blades. No. 940 base is same material and is polarized. It will fit any medium screw base socket.



No. 1001

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1001	Std. Cap and Base	250	31 1/4	\$.20
1010	Polarized Cap and Base	250	31 1/4	.20
938	Std. Cap Only	100	6 1/4	.10
939	Pol. " " " "	100	6 1/4	.10
940	" Base	250	15 5/8	.10

No. 1006 Benjamin Parallel Blade Adapters

Designed to change a standard slotted base receptacle into a medium Edison screw base outlet, or to connect an appliance with a 1-piece screw base attachment plug, to a slotted base receptacle. Parallel blades have standard spacings.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1006	Brass Shell, Fibre Lined	30	1 7/8	\$.25

Benjamin Two-way Plugs

660 Watts, 250 Volts

Fits any medium screw base socket or wall receptacle.



Cat. No.	No. of Lights	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
92	2	Multiple	10	4	\$.10
92 1/2	2	Series	10	4	.90
93	3	Multiple	10	6	.75
94	4	"	10	6	1.60

No. 292 Benjamin Pull Plugs With Pull Chain

660 Watts, 250 Volts

One outlet is equipped with a pull chain mechanism which permits turning the lamp on and off without interfering with the use of an appliance on the other outlet.

Cat. No.	No. of Lights	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
292	2	Multiple	10	6	\$1.00



No. 942 Benjamin Plug Twin Sockets

660 Watts, 250 Volts

For corners and in flush receptacles with doors which prohibit the use of other plural plugs. Swivel shell. Lies close to the wall, and occupies little space.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
942	Multiple	10	2 3/4	\$.75



No. 77 Benjamin Swivel

2-way Plugs

600 Watts, 250 Volts

One-piece molded bakelite. Friction swivel on plug end permits the side outlet to be turned to any direction for an extension cord. Lamp outlet hangs straight down.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
77	Multiple	10	2 1/2	\$.75



No. 122 Benjamin Two-way Plugs

660 Watt, 250 Volts

Molded body, brass trim. Desirable where an inconspicuous device is more important than the position of the outlets.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
122	Multiple	10	2	\$.60



No. 1080 Benjamin Locatap Plugs

600 Watts, 250 Volts

Side outlet of molded material, takes standard parallel blade cap. Screw plug is swivel type which permits adjustment of side outlet to any point of circle. Standard shade holder can be used.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1080	Multiple	10	2 1/2	\$.75



No. 1083 Benjamin 3-way Plugs

660 Watts, 250 Volts

A new 3-way plug which provides 2 side outlets to take standard parallel blade attaching caps and 1 Edison base outlet at the bottom. Threaded shell at bottom accommodates standard 2 1/4-inch shade holders and permits the lamp to hang straight down. Plug has black molded composition body and brass socket shell.

A handsomely colored dispenser-display stand is furnished free with every 10 devices.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1083	Multiple	10	2 1/4	\$.75



No. 1042 Benjamin 2-way Plugs

660 Watts, 250 Volts

Made to give double service on convenience outlets. It lies close to the wall and is practically safe from accidental breakage. The blades fit any standard parallel slotted receptacle. Finish, brushed brass.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1042	Multiple	10	2	\$.75



No. 808 Benjamin 2-way Plugs

10 Amperes, 250 Volts

A neat, compact 2-way plug which provides 2 outlets to take any standard form parallel blade attachment caps. Depressed surface around slots makes easy entrance for slots.

Body is made of black, high heat, molded composition and is polished. The parallel blades fit any standard slotted receptacle. An attractively colored dispenser-display box is furnished with every 10 plugs.

Cat. No.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
808	10	1 3/4	\$.50



Benjamin Adjustable Plug Sockets

660 Watts, 250 Volts

This socket is designed for changing the angle of lamps to the vertical. A swivel shell permits the complete revolution of the adapter, while the hinged joint allows 63 degrees of angular adjustment.

Cat. No.	Description	Finish	Wt., Lbs. Std. Pkg.	Price Each
99	Adjustable Plug Socket	Brushed Brass	10 2	\$1.00



No. 200 Hemco Twin-Lite Plugs

660 Watts, 250 Volts

The Hemco Twin-Lite Plug will fit any standard socket or baseboard receptacle.

In service, the plug is practically indestructible, being molded in one piece of condensite.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
200	5	100	25	\$.60



No. 202 Hemco Tach-Lite Plugs

660 Watts, 250 Volts

Threaded outlets permit the use of Uno or standard shade holders. Clamp type shade holders fastened directly above threaded end. Shade permits lamp to hang straight down.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
202	5	100	25	\$.60



No. 203 Hemco Trip-Lite Plugs

660 Watts, 250 Volts

Same design as Tach-Lite with an additional outlet, permitting the servicing of two appliances and one light. Molded in one piece of condensite

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
203	5	100	30	\$1.10



No. 205 Hemco Tee-Lite Plugs

660 Watts, 250 Volts

To fit all standard prong type receptacles. Fits closely to baseboard, at the same time permitting the connection of all types of attachment plug.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
205	5	100	20	\$.75



Elexits

Elexits are new standardized wiring devices which make portable, removable and interchangeable lighting fixtures a reality. All lighting outlets in properly wired installations will now be finished with elexits.

An elexit outlet is a combination of a mechanical support for the fixture and a receptacle for its lighting circuit. Each part functions independently. No splicing or connecting of wires is required to put an elexit fixture in service and no cutting of wires is necessary to remove it.

Each outlet is complete and covered with a flush brass plate.

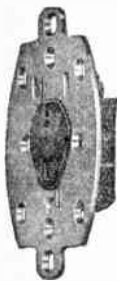
An elexit plug is fitted into the base of every elexit fixture whether for wall or ceiling suspension. Separate prongs are provided in this plug for mechanical support and for connections to the electrical circuit.

Elexit plugs can be attached to practically any style of electric lighting fixture.

Elexit Wall Receptacles

10 Amperes, 250 Volts

No. LX101, with Standard Steel Supporting Plate



Receptacle LX101 can be installed in various ways: first, by means of the screw holes spaced $3\frac{3}{2}$ inches on centers in the two elexit covers listed for LX 111; second, by means of the screw holes spaced $2\frac{3}{4}$ inches on centers direct to $3\frac{1}{2}$ inches round and octagonal boxes, also to 4-inch square, round and octagonal boxes, if they have covers with ears drilled and tapped $2\frac{3}{4}$ inches on centers for No. 8-32 screws; third, by means of stirrup LX 151 or LX 153 attached to fixture stud or gas pipe; if gas pipe is alive, use gas cap to support stirrup.

Extreme care must be used to have receptacles exactly flush with wall surface.

Mounting screws, $\frac{5}{8}$ inch, No. 8-32, are included.

Cat. No.	Schedule	Plate Required	Car-ton	Std. Pkg.	Price Each
LX101	LX	LX301	10	50	\$.80

No. LX111, with Narrow Steel Supporting Plate

Supported by screws $3\frac{3}{2}$ inches on centers vertically.

Designed for attachment to special outlet box covers 52C63 and 54C63.

This receptacle can be used only with these two covers.

If wall outlet boxes are tapped for two No. 8-32 screws, spaced $3\frac{3}{2}$ inches apart, and arranged vertically, elexit receptacle may be installed by using these screw holes. If the openings in such box covers are sufficiently narrow, the elexit receptacle may be finished with a narrow oval plate.

Mounting screws, $\frac{5}{8}$ inch, No. 8-32 are included.

Cat. No.	Schedule	Plate Required	Car-ton	Std. Pkg.	Price Each
LX111	LX	LX111	10	50	\$.75

Elexit Steel Supporting Stirrups

No. LX151 short stirrup, is designed to support LX101 from $\frac{3}{8}$ -inch fixture stud, when end of stud is $\frac{5}{8}$ inch to $1\frac{1}{4}$ inches back of wall surface.

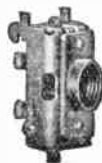
No. LX153 long stirrup, is designed to support LX101 from $\frac{3}{8}$ -inch fixture stud, when end of stud is $1\frac{1}{4}$ inches or more back of wall surface.

Cat. No.	Schedule	Car-ton	Std. Pkg.	Price Each
LX151	LX	10	50	\$.16
LX153	LX	10	50	.16

No. LX501 Elexit Wall Plugs

For permanent attachment to slip-canopy brackets or may be bushed down for center knob brackets.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Price Each
LX501	LX	$\frac{3}{8}$ -inch Female Plug	10	50	\$.75



No. LX507 Elexit Wall Plugs



For center knob brackets or for permanent attachment to slip-canopy brackets of $\frac{3}{8}$ -inch brass tubing.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Price Each
LX507	LX	$\frac{1}{8}$ -inch Female Plug	10	50	\$.75

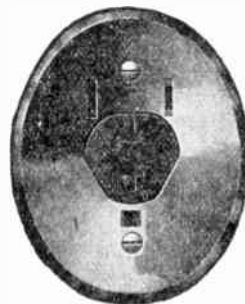
No. LX511 Elexit Wall Plugs

For supporting flat back brackets provided with bridge, strap, saddle or back bar. Back of bar must be not less than $\frac{3}{16}$ inch and front of bar not more than $\frac{3}{8}$ inch from wall surface.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Price Each
LX511	LX	Plug with Spring Hook	10	50	\$.75



Elexit Wall Plates



No. LX301 with No. LX101



No. LX311 with No. LX111

Plates are stamped from .040-inch brass and are $\frac{1}{8}$ inch deep. Oval head brass screws for attaching to receptacle are included with each plate.

Standard finish is brush brass. For specified finishes, see another page.

No. LX301 Standard Oval Plate

Cat. No.	Schedule	Size Inches	Fits Receptacle No.	Car-ton	Std. Pkg.	Price Each
LX301	LX	$4\frac{1}{8} \times 3\frac{3}{2}$	LX101	10	50	\$.35

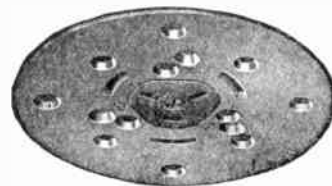
No. LX311 Narrow Oval Plates

LX311	LX	$4\frac{1}{8} \times 2\frac{1}{8}$	LX111	10	50	\$.30
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Elexit Standard Ceiling Receptacles

10 Amperes, 250 Volts

No. LX200, with Large Steel Supporting Plate



May be supported first, by screws spaced $2\frac{3}{4}$ inches on centers; second, by screws spaced $3\frac{1}{2}$ inches on centers; third, by fixture stud, using stirrup LX252 or LX254. Must be installed flush with ceiling surface.

Mounting screws, 1 inch, No. 8-32, are included.

Cat. No.	Schedule	Plate Required	Car-ton	Std. Pkg.	Price Each
LX200	LX	LX400	10	50	\$1.05

No. LX202, with Small Steel Supporting Plate

Receptacle is supported from the fixture stud, using stirrup LX252 or LX254. A steel seating ring must also be used, LX262 or LX264 or LX266, depending on the position of the fixture stud with reference to the ceiling surface.



Cat. No.	Schedule	Car-ton	Std. Pkg.	Price Each
LX202	LX	10	50	\$.90

Elxite Steel Supporting Stirrups



No. LX252, Short

Designed for supporting LX200 or LX202 when fixture stud is not more than 1 inch back of ceiling surface.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX252	LX	10	50	\$.18

No. LX254, Long

Designed for supporting LX200 or LX202 when fixture stud is 1 inch to 1 1/4 inches back of ceiling surface.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX254	LX	10	50	\$.18

Elxite Steel Seating Rings

No. LX262, Shallow

For steadying LX202 when fixture stud is 3/8 inch to 1 1/4 inches back of ceiling surface and LX252 stirrup is used; or when fixture stud is 1 1/4 inches or more back of ceiling surface and LX254 stirrup is used.



Cat. No.	Schedule	Plate Required	Carton	*Std. Pkg.	Price Each
LX262	LX	LX462	10	50	\$.22

No. LX264, Medium

Cat. No.	Schedule	Plate Required	Carton	*Std. Pkg.	Price Each
LX264	LX	LX464	10	50	\$.27

No. LX266, Deep

For steadying LX202 when fixture stud projects 1/4 inch to 1 1/2 inches below ceiling surface, using LX252 stirrup.

Cat. No.	Schedule	Plate Required	Carton	*Std. Pkg.	Price Each
LX266	LX	LX466	10	50	\$.33

*May be assorted in unbroken cartons to make standard package.

Elxite Standard Ceiling Plugs

10 Amperes, 250 Volts



No. LX600 Plugs

Plug, 3/8 inch female. Designed for use under canopies.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX600	LX	10	50	\$.90

No. LX602 Plugs

Threaded plug, 3/8 inch female. Designed for use where plug is exposed. LX642 plug covers should be used.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX602	LX	10	50	\$.105



No. LX642 Plug Covers

Slips over LX652 hook and threads on to neck of LX602 plug. Standard finish, brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX642	LX	10	50	\$.40

No. LX652 Hooks

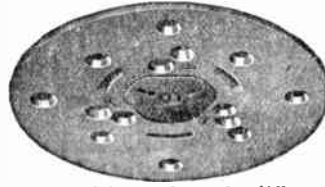
Hook, 3/8 inch male, with hole for conductors to pass. For use with any ceiling plug. So designed that LX642 will slip over it. Standard finished, brush brass.



Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX652	LX	10	50	\$.25

Elxite Two-circuit Ceiling Receptacles

10 Amperes, 250 Volts



Mounting screws, 1 inch No. 8-32 are included with each receptacle.

Receptacles LX230 and LX232 correspond respectively to LX200 and LX202, with respect to all dimensions and mounting

conditions, the only difference being in the arrangement of the contacts. Plates listed in the table below are designed for use also with two-circuit receptacles under exactly corresponding conditions.

No. LX230, with Large Steel Supporting Plate

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX230	LX	10	10	\$1.35

No. LX232, with Small Steel Supporting Plate

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX232	LX	10	10	\$1.20

Elxite Two-circuit Ceiling Plugs

Plugs LX630 and LX632 correspond with respect to size and appearance respectively to LX600 and LX602, differing only by the addition of a third contact. Two-circuit plugs can be used only with two-circuit receptacles. Hook LX652 can be used with either LX630 or LX632 and cover LX642 can be attached to LX632.



No. LX630 Plugs

Plug, 3/8 inch female. Designed for use under canopies.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX630	LX	10	10	\$1.05

No. LX632 Plugs

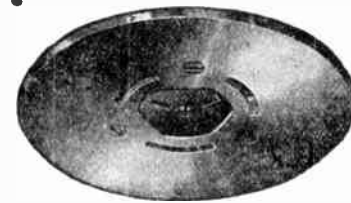
Threaded plug, 3/8 inch female. Designed for use when plug is exposed.

Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX632	LX	10	10	\$1.20

Elxite Ceiling Plates

No. LX400 Plates For LX200

Depth, 1/8 inch, diameter, 4 5/8 inches. Stamped from .025-inch brass. Screws for attaching to receptacle are included.



Cat. No.	Schedule	Carton	Std. Pkg.	Price Each
LX400	LX	10	50	\$.45

No. LX462 Shallow Plates for LX202

Must be used in connection with LX262 steel seating ring. Stamped from .025-inch brass. Oval head screws for attaching to receptacles are included with each plate. Standard finish, brush brass.



Cat. No.	Schedule	Depth Inches	Diameter Inches	Carton	*Std. Pkg.	Price Each
LX462	LX	1/2	4 3/8	10	50	\$.45

No. LX464 Medium Plates for LX202

Must be used in connection with LX264 steel seating ring. Stamped from .025-inch brass. Screws for attaching to receptacle are included. Standard finish, brush brass.

Cat. No.	Schedule	Depth Inches	Diameter Inches	Carton	*Std. Pkg.	Price Each
LX464	LX	1 5/16	4 3/4	10	50	\$.55

No. LX466 Deep Plates for LX202

Must be used in connection with LX266 steel seating ring. Plates are stamped from .025-inch brass. Oval head screws for attaching to receptacles are included with each plate. Standard finish, brush brass.

Cat. No.	Schedule	Depth Inches	Diameter Inches	Carton	*Std. Pkg.	Price Each
LX466	LX	2 1/2	4 11/16	10	50	\$.90

*Plates may be assorted in unbroken cartons to make standard package.

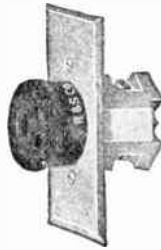
R & S Switch Box Type Receptacles and Plugs

10 Amperes, 250 Volts — 2-wire

The receptacle bodies and plugs which are made of moulded composition with self-aligning contacts, are alike and interchangeable.

Plate, 2 3/4 x 4 1/2-inch struck up brass, .060-inch. Brush brass finish. Polished nickel or brass at same price.

Receptacles packed in cartons of ten. Plugs in cartons of ten. Plates in bulk, no carton.



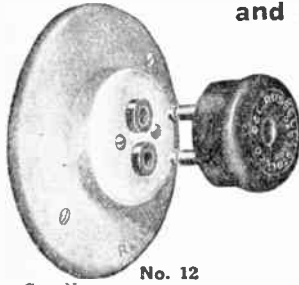
Description	Wt. Lbs.	REVERSIBLE		SELECTIVE	
		Cat. No.	Price Each	Cat. No.	Price Each
Complete with Plug.....	3 1/4	121	\$2.20	346	\$2.35
Plug Only.....	1/4	120	.85	347	1.00
Plate ".....	1/4	130	.55	130	.55
Receptacle Only.....	1/4	131	.85	348	.85

R & S Junction Box Type Receptacles and Plugs

10 Amps., 250 Volts—2-wire

Fits all standard 4-inch round outlet boxes. Cover is heavy spun brass, 4 1/4 inches in diameter. Finished in brush brass. Polished nickel or brass at same price; other finishes, extra. Receptacles and plugs are of moulded composition.

Receptacles packed in cartons of 10; plugs in cartons of 10.



No. 12

Cat. Nos.	Reversible	Selective	Description	Net Wt. Lbs.	Price Each
12	271		Complete with Plug.....	3 1/4	\$2.20
120	347		Plug Only.....	1/4	.85
272	272		Plate ".....	1/4	.50
131	273		Receptacle Only.....	1/4	.85

R & S Testing-plug Type Receptacles and Plugs

10 Amps., 250 Volts

Furnished with single pole plugs for testing, but will also take the two-wire plug No. 120 or No. 347.

Box is cast brass; 2 1/2 inches in diameter and 2 1/2 inches deep. Cover, overhang brass, 3 3/4 inches in diameter. Finished in brush brass, polished nickel or brass; other finishes, extra.



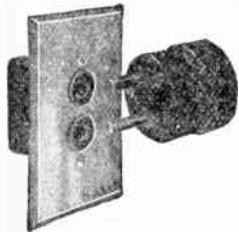
Cat. Nos.	Reversible	Selective	Description	Net. Wt. Lbs.	Price Each
127	287		Brass Box, with 2 Plugs....	2 1/8	\$3.85
129	129		Plug Only, 1/4-inch Pin.....	1/8	.65
...	270		" " 5/16 " ".....	1/8	.65

R & S Switch Box Type Receptacles and Plugs

30 Amps., 250 Volts

Heavy, molded composition receptacle, with machined cast bronze contacts and strong, non-reversible composition plug.

Unless otherwise specified, plates on above receptacles will be furnished Brush Brass finish. Polished nickel or brass will be substituted without extra charge. Other finishes extra.



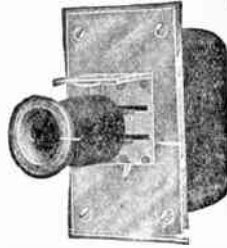
Price, No. 80, Complete with Plug.....	each	\$3.75
" " 556, Plug Only.....	"	1.50
3 Wire		
Price, No. 81, Complete with Plug.....	each	\$6.60
" " 157, Plug Only.....	"	1.75

R & S Flush Type Receptacles and Plugs

60 Amps., 125 Volts

Iron box 5 3/4 inches long, 2 3/4 inches wide, 4 3/4 inches deep; tapped for conduit, as required, without extra charge; with heavy Brush Brass finished plate 7 1/8 x 4-inch with hinged door.

Suitable for stereopticon, picture machine and power connection.



No. 14

Price, No. 14, Complete with Plug.....	each	\$14.00
" " 141, Same, with Lock and Key.....	"	15.00
" " 140, Plug Only.....	"	3.50

R & S Weather-proof Type Receptacles and Plugs

10 Amperes, 250 Volts—2-wire

A ruggedly designed fitting suitable for greenhouses, garages, factories, power houses, etc., on porches and all places exposed to moisture or dust. This fitting is furnished in all iron or brass box and cover as listed.

The receptacle bodies and plugs which are made of moulded composition with self-aligning contacts, are alike and interchangeable.

Box and cover is R & S 3-inch No. 382 enameled cast iron (galvanizing extra) or No. 381 brass junction box, with a flap door cover and gasket. Also furnished as listed in 4-inch square type iron or brass box and cover.

Outlets, maximum 3/4-inch conduit.

Description	Wt. Lbs.	REVERSIBLE		SELECTIVE	
		Cat. No.	Price Each	Cat. No.	Price Each
Round Iron Box and Cover with Plug..	2 1/4	123	\$4.15	319	\$4.30
" Brass " " " " " " " " " " " "	2 1/2	128	5.00	320	5.15
Square Iron " " " " " " " " " " " "	2 1/2	124	4.40	321	4.55
" Brass " " " " " " " " " " " "	2 1/2	978	5.50	979	5.65
Plug Only.....	1/4	120	.85	347	1.00

In ordering specify outlets required.

R & S Weather-proof Type Receptacles and Plugs

10 Amp., 125 Volts

Composition receptacle, mounted in round or square iron box, with flap door, box tapped for 1/2 or 3/4-inch conduit, as required, without extra charge. Plug made of heavy composition, with polished maple handle and is non-reversible or "polarity."

Suitable for greenhouses, garages, etc., on porches and all places exposed to dust or moisture.

2 Wire

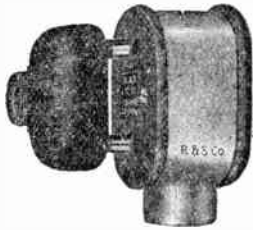
Price, No. 455, 3-inch Round Box, 1 3/4-inches Deep, Complete with Plug.....	each	\$3.30
Price, No. 355, 4-inch Square Box, 1 3/4 inches Deep, Complete with Plug.....	each	4.15
Price, No. 352, Plug Only.....	"	1.40

3 Wire

Price, No. 350, 3 1/2-inch Round Box, 1 3/4 inches Deep, Complete with Plug.....	each	\$5.00
Price, No. 351, 4-inch Square Box, 1 3/4 inches Deep, Complete with Plug.....	each	5.50
Price, No. 353, Plug Only.....	"	2.50

R & S Floor Outlet Type Receptacles and Plugs

15 Amp., 250 Volts—Two-wire, Non-selective



No. 2690

Used in banking houses, offices, etc., for connection of desk lamps or fans to floor outlets.

Compactness and rugged construction have made this fitting popular among architects and engineers.

Heavy composition receptacles and plug, mounted in cast brass box, tapped for 1/2-inch extensions which may be attached to any floor box or used in conjunction with the elbows and adjustable sleeves.

Unless otherwise ordered, boxes will be furnished Brush Brass finish. Polished nickel or brass will be substituted without extra charge. Other finishes extra.

Cat. No.	Description	Approx. Wt. Lbs.	Price Each
2690	One Receptacle, One Outlet, without Plugs..	1	\$3.00
2691	Two Receptacles, " " " " " "	1	4.00
2692	One Receptacle, Two Outlets, " " " "	1 1/4	3.60
2693	Two Receptacles, " " " " " "	1 1/4	5.00
2694	Three " " " " " " " "	1 3/4	8.25
2695	Four " " " " " " " "	2	9.60
69	Plug Only for Above	1/4	.55

R & S Receptacles and Plugs

60 Amperes, 125 Volts



Porcelain receptacle, 2-wire, water-tight iron box; cover, 4x7 inches; depth, 4 3/4 inches; non-reversible plug. Brass cover, cap and cone.

No. 142, Complete.....each \$18.00
" 140, Plug only..... " 3.50

R & S Receptacles and Plugs

30 Amperes, 250 Volts

Composition receptacle, 3-wire, water-tight iron box; cover, 5-inch diameter; depth, 3 3/4 inches; non-reversible plug. Brass cover, cap and cone.

No. 89, Complete.....each \$9.70
" 57, Plug only..... " 1.75



No. 155

75 Amperes, 440 Volts

Composition receptacle, 3-wire, water tight iron box with brass cover, cap and cone. Diameter of cover, 6 3/4 inches; depth of box, 4 1/2 inches. Non-reversible plug.

No. 155, Complete.....each \$23.00
" 151, Plug only..... " 5.50

R & S Receptacles and Plugs

100 Amperes, 250 Volts

Slate receptacle, 2-wire, watertight iron box; cover, 6 3/4 inches; depth, 4 1/2 inches; non-reversible plug. Brass cover, cone and cap.

No. 239, Complete.....each \$33.00
" 234, Plug only..... " 9.90

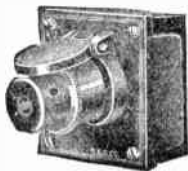


R & S Receptacles and Plugs

15 Amperes, 250 Volts

Composition receptacle, 4x4x1 3/4-inch iron box. Separable fused polarity plug.

No. 487, 2-wire Complete.....each \$7.70
" 457, 2 " Plug..... " 4.40
" 488, 3 " Complete. " 13.20
" 443, 3 " Plug..... " 8.80



R & S Receptacles and Plugs

30 Amperes, 250 Volts



Composition receptacle, non-reversible plug.

4x4x3 1/2-inch weatherproof box. No. 82, 2-wire Complete.....each \$5.50

No. 556, 2-wire Plug..... " 1.50

" 83, 3 " Complete.. each 7.50

" 157, 3 " Plug... " 1.75

R & S Receptacles and Plugs

60 Amperes, 125 Volts

Porcelain receptacle, non-reversible plug. Size box: No 143, 6 1/2x4x3 1/2 inches; No. 144, 6 1/2x8x3 1/2 inches.

" 143, Complete.....each \$10.00

" 144, 2-gang, Complete... " 20.00

" 140, Plug only..... " 3.50



R & S Receptacles and Plugs

60 Amperes, 125 Volts



Porcelain receptacle, non-reversible plug.

5 1/2x4x2 1/2-inch weatherproof box. No. 71 With No. 76 Plug.....each \$11.00

" 72 " " 77 " " 13.20

" 76 Plain Plug..... " 3.30

" 77 Protected Plug... " 5.50

R & S Receptacles and Plugs

75 Amperes, 440 Volts

Composition receptacle, 3-wire, non-reversible plug.

6 3/4x6 3/4x3 1/4-inch weatherproof box.

No. 85 Complete, Exposed Work.....each \$19.75

No. 151, Plug Only..... " 5.50



R & S Receptacles and Plugs

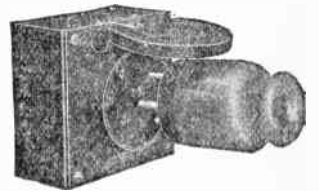
30 Amperes, 250 Volts—4-wire

Polarity Type

Heavy slate receptacle interior with machined contacts. Plug consists of a composition base and hard maple wood handle.

Mounted on enameled cast iron, 5x5x2 1/2 inches deep with gasketed flat door.

Outlets, maximum conduit 1 1/4 inches in any side.



Cat. No.	Description	Approx. Wt. Each	Price Each
1731	Complete with Plug.....	7	\$20.00
337	Plug Only.....	3/4	7.00

R & S Combination Outlet Receptacles and Stands



Height, 6 inches over all. Furnished complete or in part. Moulded composition receptacle for tandem or parallel blade plugs. Standard finish, brush brass.

Heavy brass receptacle housing. Brass extension, 1/2-inch, standard pipe size.

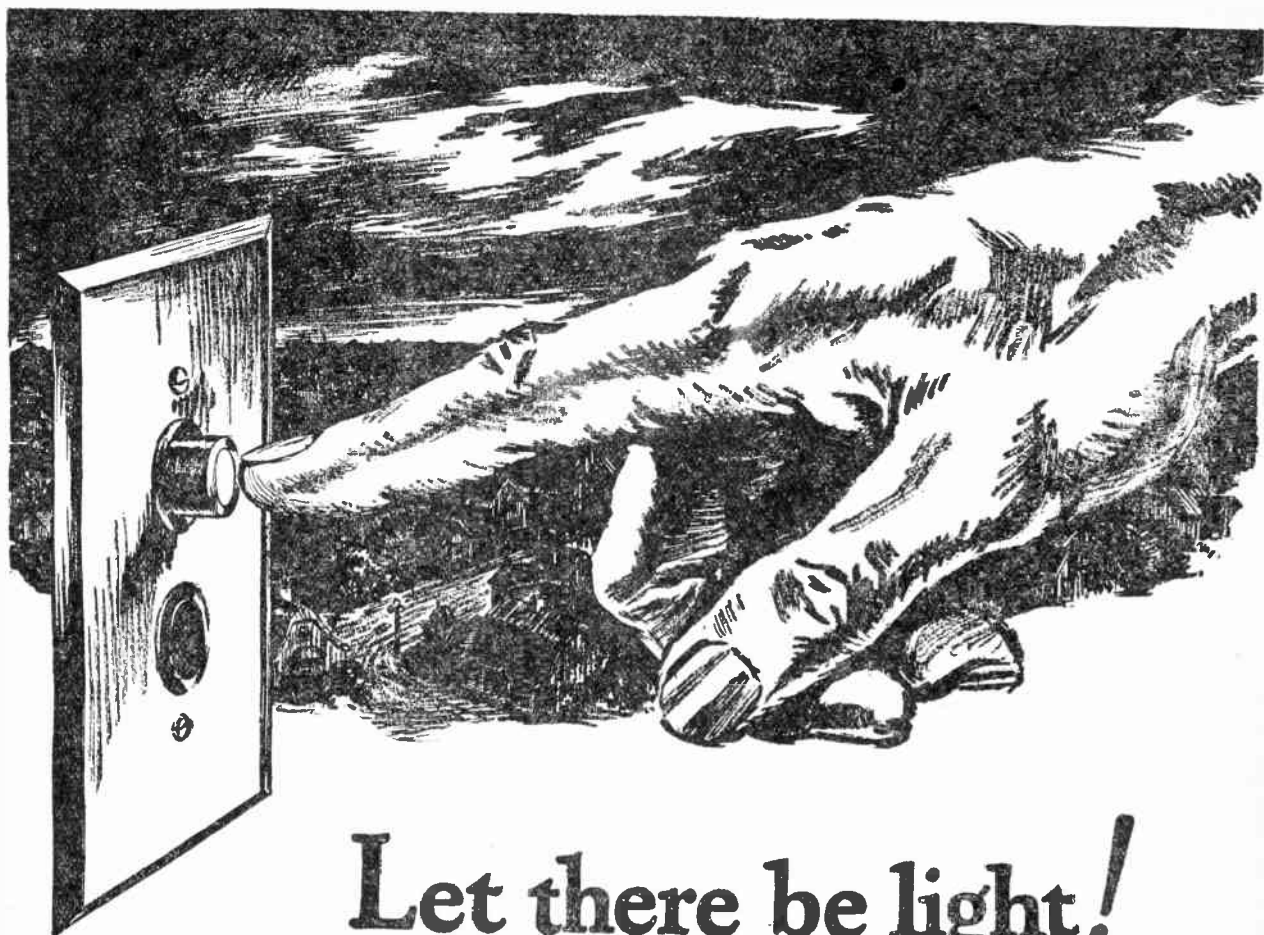
Lock flange of heavy brass.

Price, No. 2696, Duplex Receptacle (No Plugs Furnished).....each \$3.00

Price, No. 1921, 3 1/2-inch Extension, 1/2-inch Standard Pipe Size, Threaded for Flange.....each .80

Price, No. 2619, Lock Flange for No. 1921 Extension.....each 1.20

Price, No. 3000, Three Piece Combination, Complete.....Each 5.00



Let there be light!

"It was a dark and stormy night." But even so there can be cheerful light in this city. Here we have—

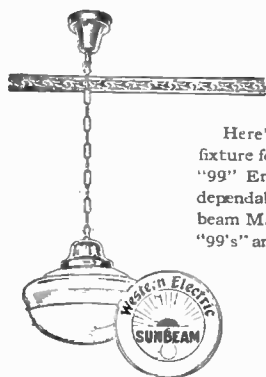
An electric power and light company on the job twenty-four hours a day.

A group of electrical contractors competent to equip your premises with an installation you can depend on.

An electrical supply house that carries stocks of everything needed on a lighting job—for residence, store, factory or office. To wholesale buyers Western Electric offers a line of quality electrical products available on short notice.

Better light means better health

For better living conditions and better working conditions get in touch with the lighting company, the contractor or the fixture dealer. The services of a Western Electric lighting expert are available to wholesale buyers. Look into this now. Wherever you go, "let there be light!"



Here's a well-designed fixture for your offices—the "99" Enclosed Unit. For dependable results use Sunbeam Mazda lamps in your "99's" and all other fixtures.

Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Perkins Shallow Cup Switches

Schedule II

Extremely shallow switches for use in thin partitions, two-button, flush, push types.

Porcelain cups are 2 3/8 inches long, 1 1/2 inches deep. No. 5501 is 1 7/16 inches wide; Nos. 5502, 5503, 5504 and 5505, are 1 1/8 inches. Supporting screw spacings: outside, 3 1/2 inches, inside, 2 3/8 inches.

When ordering combination plates, specify P sections to accommodate two-button flush push switches.

Machine screws for mounting are furnished.

Prices of switches with metal or fibre buttons longer than regular will be quoted upon application. The standard moulded composition buttons in other than regular lengths cannot be furnished.

For switches with metal buttons, regular length, add 10 cents. For switches waxed with a compound that will not melt add, 20 cents which includes metal buttons regular length. Metal buttons are necessary where switches are subjected to heat. For switches with both buttons ivory add \$1.00. Luminous button, 25 cents extra.



No. 5501

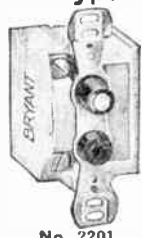
Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		125 V.	250 V.				
5501	Single-pole	10	5	10	100	40	\$.35
5502	Double-pole	10	10	10	50	25	.70
5503	Three-point	10	5	10	50	25	.50
5504	Four-point	5	2	10	10	5	2.00
5505	Double-pole	20	10	10	50	25	1.00

Type P Perkins Flush Push Switches

Schedule II

Single-pole and double-pole switches are regularly made with one pearl and one black button; three-point and four-point switches with two black buttons. On special order these switches will be furnished with two pearl buttons without extra charge.

Length of porcelain cup, 2 3/8 inches. Width, 1 1/8 inches. Depth, 1 1/8 inches. Supporting screw spacings: Outside, 3 1/2 inches; inside, 2 3/8 inches.



No. 2201

When ordering combination plates, specify P sections to accommodate two-button flush push switches.

Prices of switches with metal or fibre buttons longer than regular will be quoted on application. Standard molded composition buttons in other than regular lengths cannot be furnished. For switches with metal buttons, regular length, add 10 cents extra. For switches waxed with a compound that will not melt, add 20 cents to price, which includes metal buttons regular length. For switches with assembling screws soldered, add 10 cents. White ivory buttons, add \$1.00. Luminous button, 25 cents each.

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		125 V.	250 V.				
2201	Single-pole	10	5	10	100	55	\$.45
2202	Double-pole	10	10	10	50	31	.70
2203	Three-point	10	5	10	50	30	.70
2204	Four-point	10	5	10	10	7	2.00
2203	Double-pole	20	10	10	20	12	.80

Type Y Bryant Yankee Flush Push Switches

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Porcelain cup is 2 3/8 inches long, and 1 5/8 inches deep. No. 2901 is 1 3/4 inches wide and No. 2903 is 1 3/4 inches wide.

Outside supporting screw holes 3 3/8 inches on centers.

Inside supporting screw holes 2 3/8 inches on centers.

For switches with supporting screws soldered, add to price \$.10. For switches with both buttons white ivory, regular length, add to price \$1.00.

When ordering combination plates, specify P sections to accommodate Type Y switches.



Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2903	H	Three-point	10	50	29	.50

Type P Perkins Flush Push Lock Switches

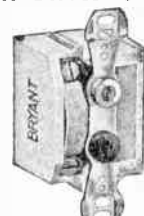
Schedule II

One No. 2299 key is furnished with each lock switch. Half-lock switches with one regular button and one lock attachment can be furnished on special order at the same prices as lock switches.

Length of porcelain cup, 2 3/8 inches. Width, 1 1/8 inches. Depth, 1 1/8 inches.

Supporting screw spacings: Outside, 3 3/8 inches; inside, 2 3/8 inches.

Machine screws for mounting on box furnished with each switch.



No. 2295

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		125 V.	250 V.				
2295	Single-pole	10	5	10	100	56	\$.90
2298	Double-pole	10	10	10	50	32	1.15
2296	Three-point	10	5	10	50	31	1.15
2297	Four-point	10	5	10	10	7	2.45
2624	Double-pole	20	10	10	20	12	1.25

Type B Bryant Flush Push Switches

Mechanism is enclosed in a dirt-proof case. Equipped with a self-adjusting yoke which accommodates the switch and the plate to the box, holding both switch and plate in their proper positions on the wall.

Composition cup is 2 3/8 inches long, 1 1/8 inches wide and 1 1/2 inches deep.

Outside supporting screw holes 3 3/8 inches on centers. Inside supporting screw holes 2 3/8 inches on centers. Button and lock switches of the same description may be assorted to make up standard package.



Cat. No.	Sched-ule	Description	CAPACITY AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
			125 V.	250 V.				
601	H	Single-pole	10	5	10	50	31	\$.72
603	H	Three-point	10	5	10	20	12	.88
604	H	Four	10	5	10	10	6	2.00
602	H	Double-pole	10	10	10	10	6	.88
609	H	"	20	10	10	10	6	1.40

Push Lock Switches

One No. 2299 key is furnished with each lock switch.

605	H	Single-pole	10	5	10	50	33	\$ 1.17
607	H	Three-point	10	5	10	20	12	1.33
608	H	Four	10	5	10	10	7	2.45
606	H	Double-pole	10	10	10	10	6	1.33
610	H	"	20	10	10	10	7	1.85

Type P Perkins Electrolier Flush Push Switches

Schedule II

5 Amperes, 125 Volts; 2 Amperes, 250 Volts

These switches have one metal button operating a type O switch mechanism. The other button is composition and does not move.

When ordering combination plates, specify P sections to accommodate two-button flush push switches.

Length of porcelain cups, 2 3/8 inches. Width, 1 1/8 inches. Depth, 1 3/8 inches.

Supporting screw spacings: Outside, 3 3/8 inches; inside, 2 3/8 inches.

Machine screws for mounting on box furnished with each switch.



No. 2625

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2626	" 1-1 & 2-1-Off	10	10	7	1.95
2627	" 1-1 & 2-1 & 2 & 3-Off	10	10	7	1.05
2628	" 1-Off 2-Off	10	10	7	1.05
2629	" 1-Off 1 & 2-Off	10	10	7	1.05
2630	" 1-1 & 2-Off	10	10	7	1.05
2631	Motor Speed Control, 1-2-Off	10	10	7	1.05
2632	" " 1-2-3-Off	10	10	7	1.05

Type D Perkins Flush Push Switches

Schedule II
10 Amperes, 125 Volts; 5 Amperes, 250 Volts



The Type D switch consists of two type O switch mechanisms mounted in a single porcelain cup of standard dimensions.

Shipped with black buttons unless otherwise specified, but buttons can be finished to match plates without extra charge.

Length of cup, 2 5/8 in. Width, 1 1/8 in. Depth, 1 3/8 in. Supporting screw spacings: Outside, 3 3/8 in.; inside, 2 3/8 in.

No. 2639 can also be used as a two-circuit electrolier by making proper connections.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2709	Two Single Pole, Separate Feed...	10	10	7	\$2.00
2639	" " " " Common " " " "	10	10	7	1.80
2710	One S. P. and One 3-point Switch Common Feed.....	10	10	7	2.00

Type D Perkins Two-button Flush Push Switches

With One Single-pole and One Electrolier Switch Common-feed

Schedule II

10 Amperes, 125 Volts; 5 Amperes, 250 Volts—Single-pole
5 Amperes, 125 Volts; 2 Amperes, 250 Volts—Electrolier

Black buttons unless otherwise specified, or finished to match plates without extra charge.

Porcelain cups, 2 5/8 x 1 1/8 x 1 3/8 inches. Screw spacings: Outside, 3 3/8 in., inside, 2 3/8 inches. Machine screws furnished.



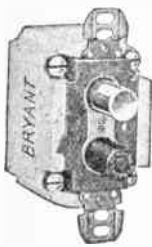
Cat. No.	Operating Position	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2728	1-2-1 & 2-Off.	10	10	7	\$2.00
2739	1-1 & 2-1-Off.	10	10	7	2.00
2740	1-Off-2-Off...	10	10	7	2.00
2741	1-Off-1 & 2-Off	10	10	7	2.00
2742	1-1 & 2-Off...	10	10	7	2.00
*2743	1-2-Off.....	10	10	7	2.00

*Single-pole, and motor control.

Type D Perkins Flush Push Switches

Schedule II

10 Amperes, 125 Volts; 5 Amperes, 250 Volts on Single-pole End
5 Amperes, 125 Volts; 2 Amperes, 250 Volts on Electrolier End



Selective, one single-pole switch in series with one 3-circuit electrolier switch.

Successive pushes on the electrolier switch button (black button) select the desired combination of circuits. Successive pushes on the single-pole switch button (nickled) alternately open and close the main line circuit which feeds the various branch circuits through the electrolier switch.

Length of porcelain cup, 2 5/8 in. Width, 1 1/8 in. Depth, 1 3/8 in. Screw spacings: Outside, 3 3/8 in.; inside, 2 3/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2640	S. P. and Elect'r, 1-1 & 2-1 & 2 & 3	10	10	7	\$2.00

Perkins Removable Mechanism Flush Switches and Receptacles

Schedule II

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

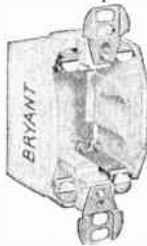
Connections are made to the terminals of the receptacle. The switch mechanism fits into the receptacle and makes contact with the terminal plates on the cup. Switch and cup are both necessary to make a complete unit.

Dimensions No. 2520, 2 5/8 x 1 1/8 x 1 1/8 inches. Supporting screw spacings, outside, 3 3/8 in., inside, 2 3/8 inches.

Special Emergency Switch for Hospital Signal System

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
488	..	..	..	\$1.10
2520	10	50	24	\$.40

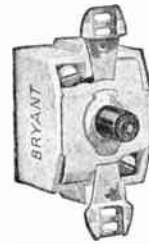
Porcelain Receptacles for Nos. 488 and 2523 Switches



No. 2520

Type O Bryant Perkins Flush Push Switches

Schedule II



These switches can also be supplied to make the same connections as Nos. 2626, 2628, 2629 and 2632.

Switches will be shipped with black buttons, unless otherwise specified, but buttons can be finished to match plates without extra charge.

Porcelain cups measure 2 1/2 inches high, 1 1/8 inches wide, and 1 1/8 inches deep. Outside supporting screw holes, 3 3/8 inches on centers. Inside supporting screw holes 2 3/8 inches on centers.

Single-pole

Cat. No.	CAPACITY AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	125 V.	250 V.				
2457	10	5	10	50	30	\$1.00

Three-point

2458	10	5	10	50	32	\$1.50
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Four-point

2459	5	2	10	10	6	\$1.05
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Electrolier 1-2-1 and 2-off

1st, circuit 1 on; 2nd, circuit 1 off and circuit 2 on; 3rd, circuit 1 and 2 on. 4th, all off.

2460	5	2	10	10	6	\$1.05
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Electrolier 1-1 and 2-1 and 2 and 3-off

1st, circuit 1 on; 2nd, circuits 1 and 2 on; 3rd, circuits 1, 2 and 3 on. 4th, all off.

2461	5	2	10	10	6	\$1.05
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No. OO61 Bryant Brass Plates

For Perkins Type O One-button Flush Push Switches

Schedule II

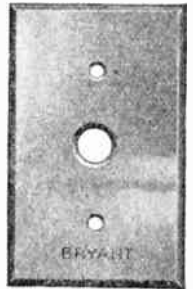
Standard finish, brush brass, will be furnished unless other finish is specified.

Perma finish, 4 cents less per gang. Other special finishes, see another page.

A standard package consists of a sufficient number to accommodate 100 type O switches. May be assorted in any finishes, thicknesses and gangs to make up standard package or carton.

Symbol O plates, brush brass, standard spacings and dimensions, less than five gangs, per gang: solid, \$.34; .060 in., \$.18; .040 in. \$.14. Five gangs or more: solid, \$.40; .060 in., \$.26; .040 in., \$.22. Tandem plates, solid only, add 20 per cent.

Cat. No.	Old Schedule No.	Description	Dim'n. In. Lgth.	Dim'n. In. Wdth.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OO61	3641	H One-gang, .060 in.	4 1/2	2 3/4	20	32	20	\$1.18



Perkins Panelboard Switches

Polished Composition Cover and Base

Schedule II



No. 2596



No. 2645

Cat. No.	CAP. AMP 125V	CAP. AMP 250V	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2596	10	10	Double Pole, Rotary, Ind.	10	50	30	\$1.00
2645	10	10	" " " " Push Button	10	50	30	1.00
2646	20	10	" " " " " "	10	50	30	1.10
2767	10	5	3-point Push Button...	10	50	30	1.00
....	..	..	Cover Only, Either Style	..	50	..	.30

Perkins Flush Push Self-Restoring Momentary Contact Switches

Schedule H

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

In these switches the circuit is closed or opened as the case may be, only while the button is held in. As soon as pressure is released, the switch automatically restores itself to its normal position with a quick action.

Length of porcelain cup, $2\frac{1}{8}$ inches. Width, $1\frac{3}{8}$ inches. Depth, $1\frac{1}{2}$ inches.

Supporting screw spacings: Outside, $3\frac{3}{4}$ inches; inside, $2\frac{1}{2}$ inches.

When ordering combination plates specify P sections to accommodate two-button flush push switches.

Machine screws for mounting these devices on boxes are furnished.

Push-button and push lock switches of the same description may be assorted to make up a standard package quantity, and no other assortment is permissible.

Push-button Type

Regularly made with one pearl and one black button.

Prices of switches with metal or fibre buttons longer than regular will be quoted upon application. Regular lengths only of standard moulded buttons. Metal buttons are necessary where switches are subjected to heat, add 5 cents for each regular length button. For switches waxed with a compound that will not melt add 20 cents to price of switch which includes metal buttons regular length. For switches with assembling screws soldered, add 10 cents. For switches with buttons of white ivory add 50 cents per button. Luminous buttons, 25 cents each extra.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2641	Normally Open	10	10	6	\$.85
2707	" Closed	10	10	6	.85

***Lock Type**

2643	Normally Open	10	10	6	\$1.30
2708	" Closed	10	10	6	1.30

*One No. 2299 key is furnished with each lock type switch.

Perkins Self-restoring Door Switches

Single-pole, 6 Amperes, 125 Volts—3 Amperes, 250 Volts

Schedule

The brass plate measures $4\frac{5}{8} \times 1\frac{1}{4}$ inches and the holes for supporting screws are spaced $3\frac{3}{4}$ inches on centers.

The porcelain body is $3\frac{1}{2}$ inches long, $\frac{3}{16}$ inch wide and $1\frac{1}{2}$ inches deep.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2355	Circuit Closed when Door Is Open	1	25	20	\$2.25
2356	Circuit Closed when Door Is Closed	1	10	10	2.25

Perkins Flush Automobile Door Switches

Style A with Attached Flush Plate with Square Corners, Single-pole, Flat Plate

With Polished Nickel Metal Button and Strike Plate

Schedule H



No. 2813



Strike Plate

Circuit is closed when door is open.

Supporting screw spacings, $1\frac{1}{2}$ inches. Cups, 1 inch deep.

Sufficient mounting screws ($\frac{1}{2}$ -inch No. 4 oval head brass wood screws finished to match the plate) are furnished.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2813	10	50	10	\$.75

Bryant Flush Tumbler Switches

Schedule H



No. 2951



No. 2963

Regular and lock switches of the same description may be assorted to make up a standard package quantity, for example, Nos. 2951 and 2871, and no other assortment is allowed.

Dimensions of porcelain and composition cups: Single-pole switches; length, $2\frac{1}{8}$ inches; width, $1\frac{3}{8}$ inches; depth, $1\frac{1}{2}$ inches. All other switches: length, $2\frac{1}{8}$ inches; width, $1\frac{1}{2}$ inches; depth, $1\frac{1}{2}$ inches. Supporting screw spacings: Outside $3\frac{3}{4}$ inches; inside, $2\frac{1}{2}$ inches.

When ordering composition plates, specify S sections to accommodate the tumbler switches listed below by number.

Machine screws for mounting are furnished.

Can be supplied with transparent handle with luminous material inside at an added cost of 65 cents each; luminous handle tip, as shown in illustration of No. 2963, 25 cents extra.

One No. 2126 key is furnished with each Lock Type Switch.

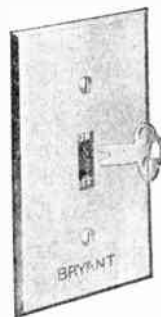
Porcelain Cups, Black Composition Handles

Cat. No.	Description	AMPERES		Car-ton	Wt. Lbs.		Price Each
		125 Volts	250 Volts		Std. Pkg.	Std. Pkg.	
2951	Single-pole, Indicating	10	5	10	100	47	\$.45
2952	Double-pole "	10	10	10	50	27	.70
2953	Three-point	10	5	10	50	28	.70
2954	Four-point	5	2	10	10	5	2.00
2955	Double-pole, Indicating	20	10	10	10	5	1.00

Composition Cups, Black Composition Handles

2961	Single-pole, Indicating	10	5	10	50	27	\$.72
2962	Double-pole "	10	10	10	10	5	.88
2963	Three-point	10	5	10	20	10	.88
2964	Four-point	5	2	10	10	5	2.00
2965	Double-pole, Indicating	20	10	10	10	5	1.40

Porcelain Cups, Lock Type



No. 2871 Switch With No. OS61 Plate

Cat. No.	Description	AMPERES		Car-ton	Wt. Lbs.		Price Each
		125 Volts	250 Volts		Std. Pkg.	Std. Pkg.	
2871	Single-pole, Indicating	10	5	10	100	45	\$.90
2872	Double-pole "	10	10	10	50	26	1.15
2873	Three-point	10	5	10	50	27	1.15
2874	Four-point	5	2	10	10	5	2.45
2875	Double-pole, Indicating	20	10	10	10	5	1.45

Composition Cups, Lock Type

2881	Single-pole, Indicating	10	5	10	50	26	\$1.17
2882	Double-pole "	10	10	10	10	5	1.33
2883	Three-point	10	5	10	20	9	1.33
2884	Four-point	5	2	10	10	5	2.45
2885	Double-pole, Indicating	20	10	10	10	5	1.85

No. 2860 Bryant Trigle Flush Tumbler Switches

Schedule II

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Three switch mechanisms with common feed are mounted in the same cup. Can be used as a three-circuit electrolier switch or for controlling three separate circuits.

Porcelain cup; 2 5/8 inches long; 1 1/8 inches wide; 1 3/8 inches deep. Supporting screw spacings, 3 3/8 inches.

Black composition handle.

When ordering plates, specify S2 sections to accommodate No. 2860 switches.

Can be supplied with luminous handle tips at an additional charge of 25 cents for each handle so equipped. Regular and luminous switches may be assorted.



Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs. Std.	Lbs. Pkg.	Price Each
2860	3-circuit	10	100	60		\$2.00

Bryant Solid Brass Plates For Trigle Switch No. 2860

Schedule II

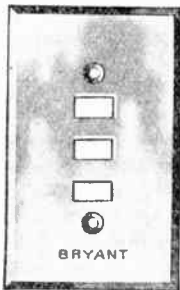
The standard finish is brush brass which will be furnished when no special finish is specified.

A standard package of S2 plates consists of a sufficient quantity to accommodate 100 Trigle switches.

A carton is one-fifth of a standard package.

S2 plates may be assorted in various finishes and gangs to make a carton or a standard package. No other assortment permitted.

Brass mounting screws are packed in the carton with each plate.



Description	Wt. Lbs. Pkg.	Cat. No.	STANDARD FINISH		PERMA FINISH		Price Each
			Old No.	Price Each	Cat. No.	Old No.		Price Each
One-gang	36	OS211	2861	\$.34	OS211-P	..	\$.30

Bryant Glo-Guide Switches



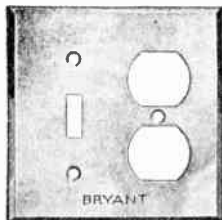
No. 2951-BH Switch with No. OS41 Plate

One of the most recent developments in luminous locators is the Bryant built-in locator for flush tumbler switches.

The luminous handles of these switches are made of clear transparent Bakelite, each of which contains a glass rod covered with radium paint. Only genuine Undark radium paint is used because this brand is made to certain exact luminous standards and will maintain its original luminous brilliance indefinitely. Unlike substitutes it can be used in a permanently dark place. The locator is a permanent non-detachable part of the switch.

Any Bryant tumbler switch with handle can be equipped with this luminous handle at an addition to cost price of 65 cents each. In ordering, specify Cat. No., followed by a hyphen and capital initials, BH.

Bryant Brass Plates for One Tumbler Switch and One Flush Receptacle Two-gang, .040-inch Stamped



Brass mounting screw packed in carton with each plate.

Standard package consists of 10 plates, all of the same style. Carton consists of 2 plates. Plates of the same style may be assorted, in various thicknesses, finishes and gangs.

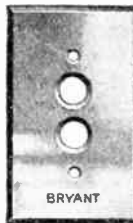
Reversible plate can be turned end for end without affecting the proper operation of devices which it covers.

Plates without Doors for Duplex Flush Receptacles Nos. 122, 762 and 9022

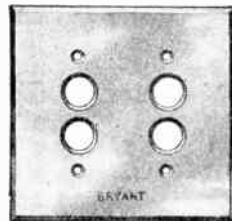
Description	Pkg.	Wt. Lbs.	Cat. No.	STANDARD FINISH		PERMA FINISH		Price Each
				Old No.	Price Each	Cat. No.	Old No.		Price Each
Reversible Plate	5		OSV42	3719	\$.38	OSV42-P	2919	\$.30

Bryant Brass Flush Plates For Two-button Type Push Switches

Schedule II



One-gang



Two-gang

The standard finish is brush brass which will be furnished when no finish is specified.

A standard package of "P" plates consists of a sufficient number to accommodate 100 two-button flush push switches. A carton is one-fifth of a standard package, unless otherwise stated. "P" plates may be assorted in various thicknesses, finishes and gangs to make up carton and standard package quantities. No other assortment permitted.

Brass mounting screws are packed in the carton with each plate.

Solid Brass Plates, One Horizontal Row

Description	Wt. Lbs. Pkg.	Cat. No.	STANDARD FINISH		PERMA FINISH		Price Each
			Old No.	Price Each	Cat. No.	Old No.		Price Each
One-gang	41	OP11	3639	\$.34	OP11-P	....	\$ .30
Two "	35	OP12	3640	.68	OP12-P	....	.60
Three "	32	OP13	3167	1.02	OP13-P	....	.90
Four "	30	OP14	3168	1.36	OP14-P	....	1.20
Five "	28	OP15	3169	2.00	OP15-P	....	1.80
Six "	26	OP16	3170	2.40	OP16-P	....	2.16
Seven "	24	OP17	3171	2.80	OP17-P	....	2.52
Eight "	22	OP18	3172	3.20	OP18-P	....	2.88

The price of brush brass solid "P" plates above eight gangs, when dimensions and spacings are standard, is \$.40 per gang.

Stamped Brass Plates, .060-inch, One Horizontal Row

One-gang	30	OP61	3165	\$.18	OP61-P	....	\$ .14
Two "	27	OP62	3166	.36	OP62-P	....	.28
Three "	25	OP63	3743	.54	OP63-P	....	.42
Four "	23	OP64	3744	1.04	OP64-P	....	.88
Five "	21	OP65	3745	1.30	OP65-P	....	1.10
Six "	23	OP66	3746	1.56	OP66-P	....	1.32
Seven "	21	OP67	3747	1.82	OP67-P	....	1.54
Eight "	22	OP68	3748	2.08	OP68-P	....	1.76

The price of brush brass .060 in. "P" plates, above eight gangs, when dimensions and spacings are standard, is \$.26 per gang.

Stamped Brass Plates, .040-inch, One Horizontal Row

One-gang	24	OP41	3665	\$.14	OP41-P	2921	\$.10
Two "	21	OP42	3666	.28	OP42-P	2922	.20
Three "	20	OP43	3667	.42	OP43-P	2923	.30
Four "	19	OP44	3634	.88	OP44-P	2924	.72
Five "	18	OP45	3635	1.10	OP45-P	2975	.90
Six "	22	OP46	3636	1.32	OP46-P	2976	1.08
Seven "	20	OP47	3637	1.54	OP47-P	2977	1.26
Eight "	23	OP48	3638	1.76	OP48-P	2978	1.44

The price of brush brass .040 in. "P" plates above eight gangs, when dimensions and spacings are standard, is \$.22 per gang.

Solid Brass Plates, One Vertical Row (Tandem)

Two-gang	38	No. 3369	\$.80	3369-P	....	\$ .72
Three "	37	Descriptive No. 3370	1.20	3370-P	....	1.08
Four "	36	Cat. No. 3371	1.60	3371-P	....	1.44

The price of brush brass solid "P" plates in one vertical row ("tandem") above four-gang when dimensions and spacings are standard, is \$.40 per gang.

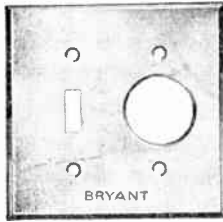
Solid Brass Plates, Two Vertical Rows (Tandem)

Four-gang	34	No. 3672	\$ 2.12	3672-P	....	\$ 1.96
Six "	32	Descriptive No. 3673	3.18	3673-P	....	2.94
Eight "	34	Cat. No. 3674	4.24	3674-P	....	3.92

The price of brush brass solid "P" plates in two vertical rows ("tandem") above eight-gang, when dimensions and spacings are standard, is \$.53 per gang.

Bryant Brass Plates for One Tumbler Switch and One Flush Receptacle

Two-gang, .040-inch Stamped



Brass mounting screws packed in carton with each plate. A standard package consists of 10 plates, all of the same style. A carton consists of 2 plates, both alike in style. Plates of the same style may be assorted in various finishes, thicknesses and gangs to make up a standard package or carton. No other assortment permitted.

Plates without Door for Single Flush Receptacles
Nos. 120, 427, 475, 556, 760, 1708 and 9020

Description	Pkg. Wt. Lbs.	STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
*Reversible Plate. 4 OSF42		3718		\$.38	OSF42-P 2918		\$.30

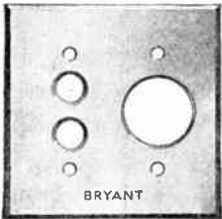
Plates with Door for Single Flush Receptacles
Nos. 124, 764, 1708 and 9024

Switch on Right.. 5 OES42	3736	\$.43	OES42-P 2936	\$.35
" " Left... 5 OSE42	3717	.43	OSE42-P 2917	.35

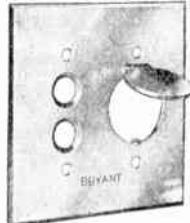
*A reversible plate can be turned end for end without affecting the proper operation of the devices which it covers.

Bryant Brass Plates for One Two-button Push Switch and One Flush Receptacle

Two-gang, .040-inch Stamped



No. OPF42
(Old No. 3650)



No. OPE42
(Old No. 3680)

Brass mounting screws packed in carton with each plate. Standard package of combination plates consists of 10 plates, all of the same style. A carton is 2 plates, both alike in style. Plates of the same style may be assorted in various finishes, thicknesses, and gangs to make up a standard package or carton. No other assortment permitted.

Plates without Door for Single Flush Receptacles
Nos. 120, 427, 475, 556, 760, 1708 and 9020

Description	Pkg. Wt. Lbs.	STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
Reversible Plate .. 4 OPF42		3650		\$.38	OPF42-P 2950		\$.30

Plates with Door for Single Flush Receptacles
Nos. 124, 764, 1708 and 9024

Switch on Right.. 4 OEP42	3679	\$.43	OEP42-P 2991	\$.35
" " Left... 4 OPE42	3680	.43	OPE42-P 2990	.35

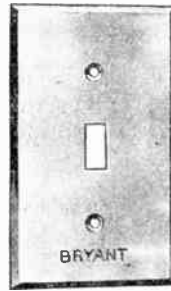
Plates without Doors for Duplex Flush Receptacles
Nos. 122, 762 and 9022

*Reversible Plate. 5 OPV42	3709	\$.38	OPV42-P 2909	\$.30
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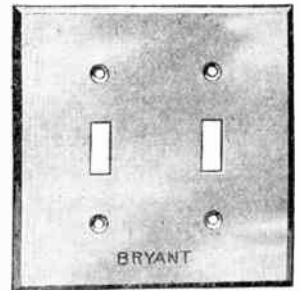
*A reversible plate can be turned end for end without affecting the proper operation of the devices which it covers.

Bryant Flush Plates for Tumbler Switches

Schedule II



One-gang



Two-gang

Brass mounting screws packed in the carton with each plate. Standard finish is brush brass.

A standard package of S plates consists of a sufficient quantity to accommodate 100 flush tumbler switches of the same style. A carton is one-fifth of a standard package quantity, except where otherwise stated, S plates may be assorted in various finishes, thicknesses and gangs to make up carton and standard package quantities. No other assortment permitted.

Standard finish is brush brass which will be furnished when no finish is specified.

Solid Brass Plates, One Horizontal Row

Description	Pkg. No.	Wt. Lbs.	STANDARD FINISH			PERMA FINISH		
			Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
One-gang.....	36	OS11	3691	\$.34	OS11-P	.....	\$.30
Two-gang.....	34	OS12	3692	.68	OS12-P	.....	.60
Three-gang.....	32	OS13	3693	1.02	OS13-P	.....	.90
Four-gang.....	31	OS14	3694	1.36	OS14-P	.....	1.20
Five-gang.....	30	OS15	3695	2.00	OS15-P	.....	1.80
Six-gang.....	33	OS16	3696	2.40	OS16-P	.....	2.16
Seven-gang.....	31	OS17	3697	2.80	OS17-P	.....	2.52
Eight-gang.....	32	OS18	3698	3.20	OS18-P	.....	2.88

The price of brush brass solid S plates above eight gangs, when dimensions and spacings are standard, is 40 cents per gang.

Stamped Brass Plates, .060-inch
One Horizontal Row

One-gang.....	34	OS61	4171	\$.18	OS61-P	.....	\$.14
Two-gang.....	26	OS62	4172	.36	OS62-P	.....	.28
Three-gang.....	24	OS63	4173	.54	OS63-P	.....	.42
Four-gang.....	23	OS64	4174	1.04	OS64-P	.....	.88
Five-gang.....	22	OS65	4175	1.30	OS65-P	.....	1.10
Six-gang.....	20	OS66	4176	1.56	OS66-P	.....	1.32
Seven-gang.....	19	OS67	4177	1.82	OS67-P	.....	1.54
Eight-gang.....	21	OS68	4178	2.08	OS68-P	.....	1.76

The price of brush brass .060-inch S plates above eight gangs, when dimensions and spacings are standard, is 26 cents per gang.

Stamped Brass Plates, .040-inch
One Horizontal Row

One-gang.....	24	OS41	3681	\$.14	OS41-P	2981	\$.10
Two-gang.....	22	OS42	3682	.28	OS42-P	2982	.20
Three-gang.....	21	OS43	3683	.42	OS43-P	2983	.30
Four-gang.....	20	OS44	3684	.88	OS44-P	2984	.72
Five-gang.....	19	OS45	3685	1.10	OS45-P	2985	.90
Six-gang.....	20	OS46	3686	1.32	OS46-P	2986	1.08
Seven-gang.....	18	OS47	3687	1.54	OS47-P	2987	1.26
Eight-gang.....	17	OS48	3688	1.76	OS48-P	2988	1.44

The price of brush brass .040-inch S plates above eight gangs, when dimensions and spacings are standard, is 22 cents per gang.

Solid Brass Plates, One Vertical Row (Tandem)

Two-gang.....	26	No	3792	\$.80	3792-P	.....	\$.72
Three-gang.....	24	Descrip.	3793	1.20	3793-P	.....	1.08
Four-gang.....	37	Cat.No.	3794	1.60	3794-P	.....	1.44

The price of brush brass solid S plates in one vertical row (tandem) above four gangs, when dimensions and spacings are standard, is 40 cents per gang.

Bryant Bakelite Flush Plates

Schedule II

Made of genuine Bakelite and can be furnished only in styles and sizes given below. No combinations can be supplied.

A standard package of F, P or S plates consists of enough plates all of the same style to accommodate 100 similar flush devices. A standard package of V plates consists of 50 plates all of the same style.

Standard finish of Bakelite plates is reddish brown but black plates can be supplied on special order when so specified, without extra charge.

With each F, P and S plate are supplied 2 plate holding screws and 2 ornamental Bakelite rosettes to cover them.

With each V plate are supplied 2 black or brown finished oval head screws to support plate in position and 4 washers of different thicknesses to place under plate, in the center, for support and prevention of cracking.

Cat. No.	Old List No.	Description	No. Gangs Std. Pkg.	Car-ton	Price Each
OF51	55545	One Gang for Single Flush Receptacles.....	100	20	\$.34
OV51	55551	One Gang for Duplex Flush Receptacles.....	50	10	.34
OS51	36591	One Gang for Flush Tumbler Switches.....	100	20	.34
OS52	36592	Two Gang for Flush Tumbler Switches.....	100	20	.68
OS53	36593	Three Gang for Flush Tumbler Switches.....	100	20	1.02
OP51	36539	One Gang for 2-button Flush Push Switches.....	100	20	.34
OP52	36540	Two Gang for 2-button Flush Push Switches.....	100	20	.68
OP53	31567	Three Gang for 2-button Flush Push Switches.....	100	20	1.02

Bryant Blank Brass Flush Plates

Schedule II

One Horizontal Row



Standard finish, brush brass which will be furnished when no other finish is specified.

Brass mounting screws are packed in the carton with each plate.

A standard package of K plates consists of a sufficient number to cover 100 gangs. A carton is one-fifth of a standard package. K plates may be assorted in various finishes, thicknesses and gangs to make up carton and standard package quantities. No other assortment permitted.

Solid blank plates, brush brass finish, one horizontal row only, when spacings

and dimensions are standard, can be furnished at 44 cents per gang, and under the same conditions struck-up blank plates can be furnished at 30 cents per gang when .060 inch thick and at 26 cents per gang when .040 inch thick. For tandem plates, solid only, add 20 per cent.

Unless otherwise specified supporting screws are spaced 3 3/8 inches on centers vertically and 1 1/8 inches on centers horizontally, so that the plate will be attached directly to the ears of the box. When mounting yokes are wanted with the plates, add to the prices shown, 5 cents per gang. When yokes are furnished the plate supporting screws are spaced 2 3/8 inches on centers vertically.

Description	Wt. Lbs. Pkg.	STANDARD FINISH			PERMA FINISH		
		Cat. No.	Old No.	Price Each	Cat. No.	Old No.	Price Each
One-gang, Solid.....	49	OK11	3646	\$.38	OK11-P	.....	\$.34
Two " ".....	41	OK12	3647	.76	OK12-P	.....	.68
Three-gang " ".....	41	OK13	3643	1.14	OK13-P	.....	1.02
One-gang, .060 in. Stpd.....	33	OK61	3546	.22	OK61-P	.....	.18
Two " .060 " ".....	29	OK62	3628	.44	OK62-P	.....	.36
One " .040 " ".....	27	OK41	3551	.18	OK41-P	2927	.14
Two " .040 " ".....	23	OK42	3624	.36	OK42-P	2945	.28
Three-gang, .040 in. ".....	21	OK43	3625	.54	OK43-P	2946	.42

Type R Perkins Flush Rotary Switches

Schedule H

With No. 2779 Composition Handle

Porcelain cups, 2 1/8 inches long, 1 1/8 inches wide, 1 1/8 inches deep. Supporting screw spacings: outside, 3 3/8 inches; inside, 2 3/8 inches.

When ordering combination plates, specify R sections to accommodate these switches.

Machine screws for mounting furnished.

Can be converted into lock switches by removing handles and substituting No. 2384 universal rotary switch lock attachment.



No. 2205

Cat. No.	—AMPERES—		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	125 V.	250 V.				
2205	5	3	10	100	58	\$.62
2206	10	5	10	50	31	.71
Double-pole						
2207	10	10	10	50	31	\$1.05
Three-point						
2325	5	3	10	50	31	\$.82
2208	10	5	10	50	31	1.05
Four-point						
2209	5	2	10	10	7	\$1.05
Electrolier, 1-2-1 and 2-off						
2224	5	2	10	10	7	\$1.05
Electrolier, 1-1 and 2-1 and 2 and 3-off						
2210	5	2	10	10	7	\$1.05

Bryant Brass Flush Plates

For Type R Perkins Switches—One Horizontal Row

Schedule II

The dimensions of these plates are: length, 4 1/2 inches; width, 2 3/4 inches.

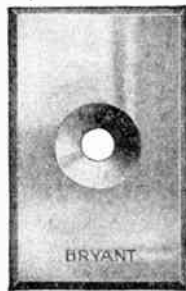
The standard finish is brush brass which will be furnished when no special finish is specified. Perma finish is 4 cents per gang less in price.

Brass mounting screws are packed in carton with each plate.

A standard package consists of a sufficient number of plates to accommodate 100 type R switches. R plates may be assorted in various finishes, thicknesses and gangs to make up a standard package (100 gangs) or a carton (20 gangs). No other assortment is permitted.

Cat. No.	Old No.	Description	Wt. Lbs. Std. Pkg.	Price Each
OR41	3629	One-gang, .040-in., Stamped.....	27	\$.20
OR61	3630	" .060 " ".....	29	.24
OR11	3181	" Solid.....	35	.40

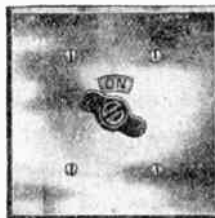
R plates, brush brass, standard spacings and dimensions, less than five gangs, per gang: solid, \$.40; .060-in., \$.24; .040-in., \$.20. Five gangs or more, per gang: solid, \$.46; .060-in., \$.32; .040-in., \$.28. For tandem plates, solid only, add 20 per cent.



No. OR61

Perkins High Capacity Flush Rotary Switches

30-ampere, All Voltages to 250 Volts Maximum



This switch is 1 1/8 inches deep and requires a two-gang box. There are holes for four supporting screws spaced 3 3/8 inches on centers vertically and 1 1/8 inches on centers horizontally. Gang plates for high capacity switches will be made only on special order at a price of \$1.50 per gang.

Cat. No.	Schedule	Length In.	Width In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2568	H	2 1/8	3 1/2	1	10	13	\$2.00
Single Solid Brass Plate for No. 2568							
OY12	H	4 1/2	4 3/8	1	10	9	\$1.00

Bryant Special Finishes

Special Finishes for Brass Shell Sockets, Socket Type Devices and Parts, Canopy Switches Shade-Holders, Fixture Specialties, Attachment Plug Caps and Flush Plates

GENERAL.—The standard finish of all brass shell devices and brass flush plates, unless otherwise noted, is brush brass, which will be supplied when the finish is not specified. Standard and special finishes on all devices of one catalogue number may be assorted to make up the standard package quantity, which will be the same as though all were standard finish.

Assortment of catalog numbers may be made only as indicated in the catalog pages where the devices are listed. Prices on all special finishes other than those listed, including gold, will be quoted on application. Sample of finish desired should always be submitted to avoid mistakes and delays.

DEVICES EXCEPT FLUSH PLATES.—Devices will be supplied unfinished or polished but not lacquered at the same prices as brush brass. When any of the devices mentioned in columns 1, 2, 3, 4, 5 or 6 in special finishes are ordered in quantities the list prices for finishes only will be reduced as follows: lots of 500-999, one catalogue number, one shipment, one finish, 20%; lots over 1000, one catalogue number, one shipment, one finish, 50%.

When any of the devices mentioned in columns 7 and 8 in special finishes are ordered in quantities, the list prices for finishes only will be reduced as follows: lots of 100-499, one finish, 10%; lots of 500-999, one catalogue number, one shipment, one finish, 20%; lots of 1,000 or more, one catalogue number, one shipment, one finish, 30%.

CHAINS AND METAL CHAIN PARTS.—Chain guides, chains not longer than one foot, and chain parts, singly or in combination, can be supplied in any special finish, except silver and gold, at an addition to list price of 2 cents per unit. For silver finishes add 10 cents list per unit. Gold finish prices on application. For pull devices in one finish and chain parts in another finish add 2 cents (10 cents for silver) to the list prices given in columns 1, 3 and 6 below.

FLUSH PLATES.—The charges given below in column 9 cover all one gang plates. For multiple gang plates these charges cover the first gang only; for the second or any additional gangs of a multiple gang plate the charge is 10 cents list per gang for all special finishes except gold. The prices of gold finishes will be quoted on application.

"Perma" Finish is a durable colored lacquer or varnish that resembles brush brass. Any brass flush plate can be supplied in "Perma" finish (the symbol for which is "-P" following the catalogue number) for 4 cents list per gang less than the price of the same plate in brush brass finish. When flush plates in special finishes are ordered in quantities the list prices for finishes only will be reduced as follows: lots of 100-499 gangs, one finish, one shipment, 10%; lots of 500-999 gangs, one finish, one shipment, 20%; lots of 1,000 or more gangs, one finish, one shipment, 30%. Unfinished plates, polished and buffed will be supplied at the same prices as brush brass. Unfinished plates, not polished or buffed will be supplied at the same price as "Perma" finish.

Finish	Class	Finish	Class	Finish	Class
*Barff, Bauer (Lacquer)	A	Black Lacquer	A	Lacquer, Colored, 1 Coat	L1
Brass, Sand Blast Antique	E	Colored Lacquers, 1 Coat	L1	" " 2 Coats	L2
" " " Brush	D	" " 2 Coats	L2	" " 3 " "	L3
" Flemish	B	" " 3 " "	L3	Nickel, Dull	B
" Lemon	A	Copper, Antique	C	" Polished	B
" Oxidized	B	" Mottled	B	Silver, Butler's (Brushed)	F
" Polished	A	" Brush	B	" Satin	F
Bronze, Brush	B	" Oxidized	B	" Oxidized	F
" Japanese (Dark)	B	" Polished	B	" Polished	F
" Polished	B	†Enamel, White (Lacquer)	A	Verde Antique (Lacquer)	A
" Statuary (Light)	B	Gun Metal	B		

*Genuine Bauer Barff finish can be made only on iron and steel.

†White Vitreous Enamel finish cannot be furnished because the brass of which the devices are made will not endure the heat of baking.

Class of Finish	1 Brass Shell Key, Keyless and Push Devices with Caps and Canopy Switches Complete Add to List		2 Brass Shell Pull Devices with Caps Complete Add to List		3 Brass Shell Key, Keyless and Push Bodies, All Shade-Holders and Chain with Chain Guide Add to List		4 Brass Shell Pull Bodies Add to List		5 Brass Shell Socket Caps Brass-Mounted Porcelain Socket Caps and Canopy Switch Nuts and Knob Handles Add to List		6 One-Piece Brass Shell Wall and Ceiling Sockets and Receptacles and "New Wrinkle" Bases Add to List		7 METAL COVERED ATTACHMENT PLUG CAPS 10 Ampere Caps Add to List		8 20 and 25 Ampere Caps Add to List		9 Flush Plates Add to List	
A	\$.06	\$.08	\$.03	\$.05	\$.03	\$.12	\$.04	\$.08	\$.12	\$.08	\$.15	\$.08	\$.15	\$.10	\$.15	\$.20	\$.25	\$.30
B	.10	.12	.05	.07	.05	.16	.08	.15	.10	.19	.16	.25	.20	.25	.30	.45		
C	.16	.18	.08	.10	.08	.25	.10	.19	.10	.25	.27							
D	.18	.20	.09	.11	.09	.28	.03	.16	.09	.28								
E	.22	.24	.11	.13	.11	.30	.12	.25	.11	.30								
F	.20	.30	.10	.20	.10	.25	.14	.27	.10	.25								
†L1	.04	.06	.02	.04	.02	.10	...	...	.02	.10								
†L2	.06	.08	.03	.05	.03	.12	...	...	.03	.12								
†L3	.08	.10	.04	.06	.04	.14	...	...	.04	.14								

†When ordering brass shell devices in colored lacquers send a sample of the finish desired, otherwise it is not possible to definitely state whether one, two or three coats are necessary.

Bryant Flush Devices

EXPLANATION OF GANG.—All flush plates and flush devices of standard design are made to fit into switch or outlet boxes. When flush devices are arranged side by side they are said to be arranged in gangs and the number of such gangs so arranged is specified.

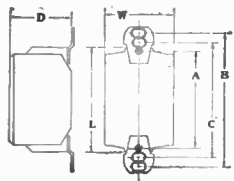
In this catalogue standard flush plates, one horizontal row only, are designated by the number of such gangs as they are designed to cover. Thus a one-gang plate will cover a one-gang box and the one-gang flush device contained by it; likewise a five-gang plate will cover a five-gang box.

When flush devices are arranged end to end they are said to be "in tandem" and flush plates designed to cover them are called tandem plates, the length of the plates being expressed in gangs to show the number of boxes arranged end to end which they are designed to cover.

Tandem plates are not designated by descriptive catalogue numbers.

Standard Spacings and Dimensions

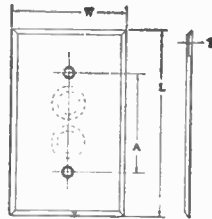
One-gang Flush Device



- A—Plate screw spacings usually $2\frac{3}{8}$ in.
- B—Supporting screw spacings, outside $3\frac{3}{8}$ in.
- C—Supporting screw spacings, inside $2\frac{3}{16}$ in.
- L—Length of body or cup, not over $2\frac{13}{16}$ in.
- W—Width of body or cup, not over $1\frac{11}{16}$ in.
- D—Depth of body or cup.

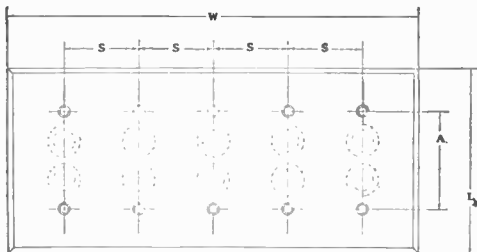
One-gang Flush Plate

- A—Plate screw spacings, usually $2\frac{3}{8}$ in. On G, H, K, T, T2 and T3 plates it is $3\frac{3}{8}$ in.
- L—Length of plate, $4\frac{1}{2}$ in.
- W—Width of plate, $2\frac{3}{4}$ in.
- T—Thickness of plate, solid, 0.100 in.; .060 stamped, 0.060 in.; .040 stamped, 0.040 in.



Five-gang Flush Plate

One Horizontal Row



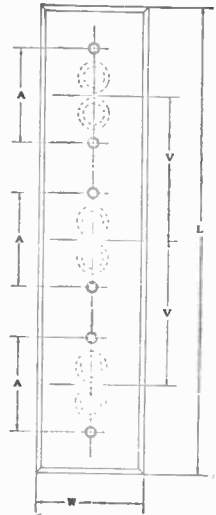
- A—Plate screw spacings, usually $2\frac{3}{8}$ in.
 - S—Spacings between centers of adjacent gangs always $1\frac{9}{16}$ in.
 - L—Length of plate, $4\frac{1}{2}$ in.
 - W—Width of plate varies for different number of gangs as follows:
- | | | | |
|-------------|--------------------|-------------|---------------------|
| 1 Gang..... | $2\frac{3}{4}$ in. | 5 Gang..... | 10 in. |
| 2 "..... | $4\frac{9}{16}$ " | 6 "..... | $11\frac{13}{16}$ " |
| 3 "..... | $6\frac{3}{8}$ " | 7 "..... | $13\frac{5}{8}$ " |
| 4 "..... | $8\frac{3}{16}$ " | 8 "..... | $15\frac{7}{16}$ " |

**Bryant Flush Devices
Standard Spacings and Dimensions**

Continued

**Three-gang
Tandem Flush Plate
One Vertical Row**

- A—Plate screw spacings usually $2\frac{3}{8}$ inches.
 - V—Spacings between centers of adjacent tandem devices always $3\frac{3}{8}$ inches.
 - W—Width of plate varies according to number of vertical rows.
 - L—Length of plate varies according to number of devices in tandem as follows:
- 2—tandem $8\frac{1}{2}$ inches.
 - 3—tandem $11\frac{3}{4}$ inches.
 - 4—tandem $15\frac{3}{8}$ inches.
 - 5—tandem 19 inches.
 - 6—tandem $22\frac{5}{8}$ inches.
 - 7—tandem $26\frac{1}{4}$ inches.



**Information Regarding Flush Plates
Plates of Special Dimensions
and Spacings, Solid Only**

Plates of special dimensions or spacings will be billed at 7 cents per square inch in addition to the price of the corresponding standard solid plate. The standard package quantity will be ten plates of one style and size. Schedule II. On quantity orders for identical plates the following list price per square inch reductions will be allowed: 100-499 plates, 10%; 500-999 plates, 20%; 1000 and over, 30%. When plates are other than rectangular in shape the area by which the price is determined will be the size of the smallest rectangular piece from which the specified plate can be cut.

Hammered Plates, Solid Only

Plates with hammered finish can be supplied at an advance in list price of 20 cents per gang over the cost of the plate plus any special finish desired.

**Plates to Fit Condulets
Solid Only**

Flush plates to properly fit FD and FS Condulets should be solid, with round corners and beveled edges and of the following dimensions:

Description	Length Inches	Width Inches
Single.....	4	$2\frac{1}{2}$
Two-gang.....	4	$4\frac{5}{16}$
Three-gang.....	4	$6\frac{1}{8}$
Four-gang.....	4	$7\frac{15}{16}$

When plates are specified, Condulet dimensions, the only extra charge will be 15 cents per plate for the round corners and beveled edges when dimensions and spacings are standard.

The standard package quantity and schedule will be the same as the standard plate. Single and gang plates to fit the same devices may be assorted to make up the standard package quantity. No other assortment is permitted.

Plates of Special Metals, Solid Only

Plates of genuine rolled bronze, will be furnished at an addition of 10 cents list per gang to the list prices of the corresponding solid brass plates and the standard finish will be brush bronze. Plates of Benedict metal will be furnished at 25 cents list per gang to the list prices of the corresponding solid brass plates and the standard finish will be polished, which has the appearance of polished nickel. Prices for plates of other metals will be quoted on application. Plates of special metal may not be assorted with standard plates to make up a standard package quantity. The standard package quantity and schedule will be the same as for the corresponding standard solid brass plate.

Bryant Flush Plates

Explanation of Catalogue Numbers for Flush Plates

When specifying flush plates there are three things that must be known: The style of plate; the thickness of the metal, and the number of gangs.

Except for tandem plates (plates arranged vertically) and combination plates, each listed Bryant flush plate has a catalogue number which describes the kind of plate it is.

OP12 is the catalogue number for a two-button push switch plate, solid, two-gang (Old No. 3640).

OV61 is the catalogue number for a duplex flush receptacle plate, .060 in. stamped, one-gang (Old No. 550).

OPF42 is the catalogue number for a plate for one two-button push switch and one single flush receptacle, .040 in. stamped, two-gang (Old No. 3650).

OV211 is the catalogue number for a plate with doors for a duplex flush receptacle, solid, one-gang (Old No. 579).

In each case the left-hand number O indicates a flush plate. See examples.

1. The symbol letter or letters immediately following describe the style of plate.

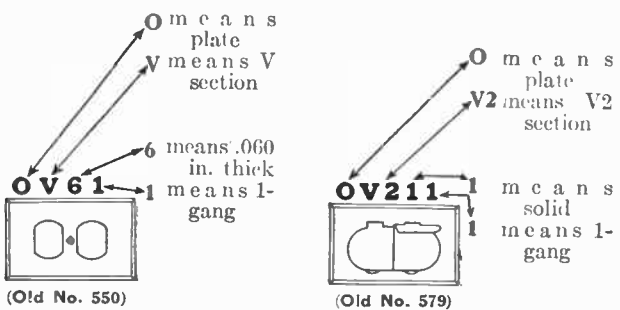
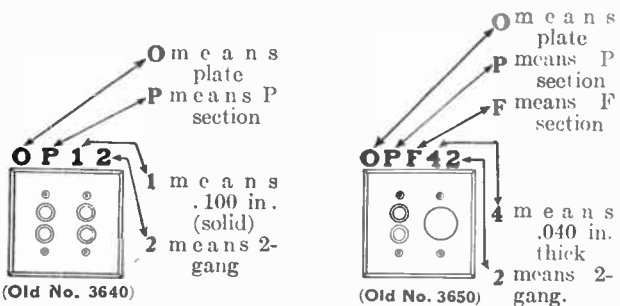
2. The figure next to the right-hand figure indicates the thickness of the plate.

- 1. Indicates .100 in. thick (Solid).
- 6. Indicates .060 in. thick, stamped.
- 4. Indicates .040 in. thick, stamped.

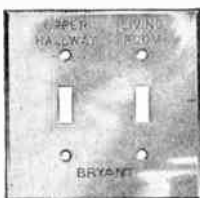
3. The right-hand figure indicates the number of horizontal gangs wide.

When the simple elements of this number system are learned it will be found very easy to specify Bryant plates by catalogue number.

Examples



Engraving

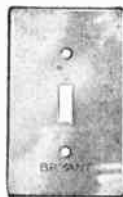


No. OS12 (Old No. 3692) Engraved with 3/16 In. Wide Block Letters

Flush plates will be engraved with words or numbers at an addition to the list price of 10 cents per character, standard package quantity 100 characters. Wide and narrow block letters and figures, 3/16, .053, 1/16, 5/64, 3/32, 7/64, 1/8, 5/32, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4 and 1 in. high, as selected, filled with black, can be made. Schedule will be the same as the plate engraved. Engraved plates may be assorted with standard plates to make up the standard package quantity.

Bryant Flush Plates

Plates with Round Corners and Round Edges Solid Only



No. OS11 (Old No. 3691)

Plates with round corners and round edges, when dimensions and spacings are standard, will be furnished at an addition to the list of solid plates of 15 cents for single plates and 5 cents for each additional section in gang plates.

The standard package quantity and schedule will be the same as the standard plate. Single and gang plates with round corners and round edges to fit the same device may be assorted to make up the standard package quantity. No other assortment permitted.

Plates with Round Corners and Beveled Edges, Solid Only

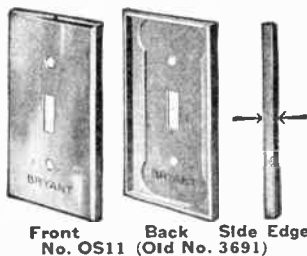
Plates with round corners and beveled edges, when dimensions and spacings are standard, will be furnished at an addition to the list price of solid plates of 15 cents per plate.

The standard package quantity and schedule will be the same as the standard plate. Single and gang plates with round corners and beveled edges to fit the same device may be assorted to make up the standard package quantity. No other assortment permitted.



No. OS11 (Old No. 3691)

Plates with Raised Edges Solid Only



Front No. OS11 Back (Old No. 3691) Side Edge

When ordering plates with raised edges, always give dimension indicated between arrows.

Plates with raised edges are sometimes required when the outlet box projects beyond the surrounding surface. For plates with raised edges not more than 1/2 inch high, add to the price of each plate \$1.00 net for one gang and 50 cents net for each additional gang. Upon application, prices will be quoted for plates with edges raised more than 1/2 inch.

Plates with Square Edges, Solid Only

Plates with square corners and square edges, when dimensions and spacings are standard, will be furnished at the same price as regular solid plates and may be assorted with regular plates to make up the standard package quantity. The standard package quantity and schedule will be the same as the standard plate. For plates with round corners and square edges, the additional charge will be the same as given above for plates with round corners and beveled edges.



No. OS11 (Old No. 3691)

Flush Plate Mounting Screws

The requisite flush plate mounting screws are included with each flush plate. When bought separately they will be billed at 75 cents per 100, standard package quantity 100, Schedule H.

Wood screws are sometimes wanted for use in connection with flush plates. 3/4-inch No. 6 oval head brass wood screws can be furnished at \$3.00 per 100, standard package quantity 100, Schedule H.

The standard finish for these screws is brush brass; however, special finishes, when specified, will be furnished without extra charge.

Bryant Solid Flush Plate Sections

Schedule H



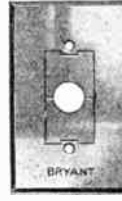


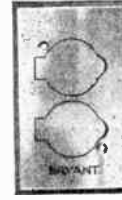
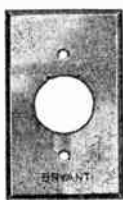
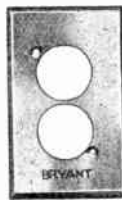






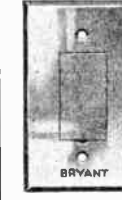
Below are illustrated the standard plate sections which can be furnished, together with a description of each plate and a list of the devices with which it may be used. The symbol letters are those used in the catalogue numbers of plates regularly listed in this catalogue.

Combination plates should be described by using the letters shown on cuts of the respective plates, giving the letters in order from left to right, or from top to bottom, as the devices are to be mounted. The list price, in brush brass finish when dimensions and spacings are standard and the devices are arranged in one horizontal row, will be the sum of the lists as shown. For plates with devices mounted tandem or in more

than one horizontal row, add 20 per cent to the sum of the list prices. The standard package quantity is ten plates of one description (not ten gangs). The carton quantity is two plates.

A combination plate cannot be so considered unless it is described by at least two different letters, but letters may be used to describe any desired arrangement of plate sections. Standard spacings and dimensions for combination plates are listed here. For plates of special dimensions and spacings see another page.

The standard finish of plates is brush brass which will be supplied if no finish is specified. For special finishes see another page.

 <p>A List \$1.35 Bull's Eye With Removable Sub-Plate Used largely for Bryant Silent Call Hospital Signal System Calling Stations</p>	 <p>B List \$1.10 Bull's Eye Consists of "F" Plate with No. 736 Bull's Eye Jewel For Cat. Nos. 427 and 627 Lamp Holder Receptacles</p>	 <p>C List \$0.80 Chapman Receptacle Plate For Cat. No. 1363 Chapman Receptacle</p>
 <p>D List \$0.80 "D.D." Receptacle Plate For Cat. Nos. 430 and 630 "D.D." Receptacles</p>	 <p>E List \$0.49 Single Flush Receptacle Plate With Door For Cat. Nos. 124, 764, 1708 and 9024 Flush Receptacles</p>	 <p>E2 List \$0.90 Duplex Flush Receptacle Plate With Doors For Cat. No. 546 Flush Receptacle</p>
 <p>F List \$0.44 Single Flush Receptacle Plate Without Door Will take Cat. Nos. 736 and 737 Bull's Eye Jewels to make "B" Plate. Also for Cat. Nos. 120, 475, 556, 760, 1708 and 9020 Flush Receptacles</p>	 <p>F2 List \$0.70 Duplex Flush Receptacle Plate Without Doors For Cat. No. 546 Flush Receptacle</p>	 <p>G List \$0.50 * Telephone Plate With one Bushing</p>
 <p>H List \$0.54 * Telephone Plate With two Bushings (Cannot be used) for Flush Switches</p>	 <p>I List \$1.50 Plate for Cat. No. 121 "Spartan" Pilot Receptacle</p>	 <p>J List \$0.44 Plate for Cat. Nos. 411 and 411S "Junior" Flush Receptacle</p>
 <p>K List \$0.48 * Blank Plate</p>	 <p>M List \$1.50 Plate for Cat. Nos. 465, 495 and 469 Combinations</p>	 <p>N List \$0.75 Old Style "Chapman" Receptacle Plate For Cat. Nos. 281 and 613 Chapman Receptacles Supporting Screw Spacings 2 1/8 in.</p>

*Supporting screw spacings on this page are 3 3/8 inches on centers.

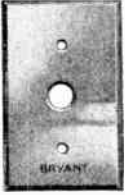
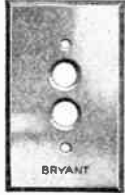
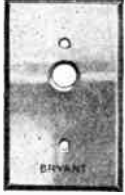


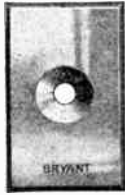
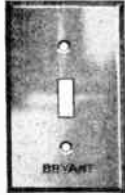
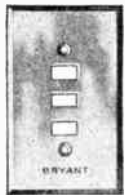



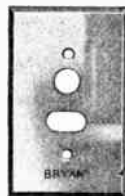
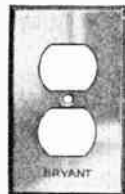


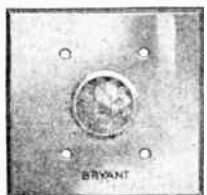

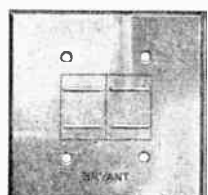
Bryant Solid Flush Plate Sections

Schedule II

Below are illustrated the standard plate sections which can be furnished, together with a description of each plate and a list of the devices with which it may be used. The symbol letters are those used in the catalogue numbers of plates listed in this catalogue. Combination plates should be described by using letters shown on cuts of respective plates, giving letters in order from left to right, or top to bottom, as devices are to be mounted. The list price, in brush brass finish, dimensions and spacings, standard and devices arranged in one horizontal row, will be the sum of the lists as shown.

For plates with devices mounted tandem or in more than one horizontal row, add 20 per cent to sum of list prices. The standard package quantity is ten plates of one description (not ten gangs; the carton, two plates).

A combination plate cannot be so considered unless it is described by at least two different letters, but letters may be used to describe any desired arrangement of plate sections. Standard spacings and dimensions for combination plates are listed here. For plates of special dimensions and spacings, see another page. The standard finish is brush brass.

 <p>O List \$0.44 One-Button Push Switch Plate</p> <p>For all Type "O" Flush Switches</p>	 <p>P List \$0.44 Two-Button Push Switch Plate</p> <p>For all Two-Button Flush Switches</p>	 <p>Q List \$0.44 Plate for Magnetic Control Switches</p> <p>Hospital Signal System</p> <p>Cat. Nos. 480 and 481</p>
 <p>Q2 List \$0.54 Plate for Pull Control Switch</p> <p>Hospital Signal System</p> <p>Cat. No. HS-56</p>	 <p>Q3 List \$0.54 Plate for Pull Control Switch</p> <p>Hospital Signal System</p> <p>Cat. No. HS-58</p>	 <p>R List \$0.50 Rotary Switch Plate</p> <p>For All Rotary Flush Switches</p>
 <p>S List \$0.44 Tumbler Switch Plate</p> <p>For All Single Circuit Flush Tumbler Switches</p>	 <p>S2 List \$0.44 Tumbler Switch Plate</p> <p>For "Trigle" Switch Cat. No. 2860</p>	 <p>T List \$0.44 *Push-Button Plate</p> <p>For 12 Volt Push Button Cat. No. 3675</p>
 <p>T2 List \$0.44 *Telephone Jack Plate for Western Electric Telephone Jack No. 190</p>	 <p>T3 List \$3.00 *Push- Button Plate With 110 Volt Push Button</p> <p>Push-Button and Plate cannot be separated</p>	 <p>U List \$0.44 Plate for Cat. No. 624 Combination, Type "O" Switch and Junior Receptacle</p>
 <p>V List \$0.44 Duplex Flush Receptacle Plate Without Doors</p> <p>For Cat. Nos. 122, 9022 and 762 Duplex Flush Receptacles</p>	 <p>V2 List \$0.90 Duplex Flush Receptacle Plate With Doors</p> <p>For Cat. Nos. 125, 765, and 9025 Duplex Flush Receptacles</p>	 <p>W List \$0.44 Plate for Cat. No. 117 Switch and Receptacle</p>
 <p>X List \$1.60 Two-Gang Bull's Eye Plate</p> <p>For two Cat. No. 427 Lamp Holder Receptacles</p>	 <p>Y List \$1.00 Two-Gang Rotary Switch Plate</p> <p>For Cat. No. 2568 30 Amp., D. P. Rotary Flush Switch</p>	 <p>Z List \$2.00 Two-Gang "D. D." Receptacle Plate</p> <p>For Cat. No. 446 25 Amp. "D.D." Flush Receptacle</p>

*Supporting screw spacings on this plate are $3\frac{9}{32}$ inches on centers.

Bryant Tumbler Type Surface Switches
Indicating, with Black Composition Handle
Porcelain Base and Metal Cover
Schedule II



No. 2933

Diameter of base, 2 inches.
 Height over cover, 1 1/8 inches.
 Height over handle, 1 5/8 inches.
 Supporting screw spacings, 1 3/8 inches.

The standard finish on metal covers is polished nickel which will be furnished when the finish is not specified.

For covers in any other finish, except gold, add 10 cents each.

Indications are stamped on the covers. Polished nickel brass handle can be furnished on special order instead of black composition handle at no increase in cost. Identical switches with composition and metal handles may be assorted.

Perkins Large Size Surface Switches
Single-pole
10 Amperes, 125 Volts; 5 Amperes, 250 Volts



Outside diameter of base, 2 1/8 inches. Nos. 2221 and 2036 can be supplied, on special order, on a base measuring 2 1/4 inches in diameter, which is likewise diameter of cover.

Height over cover, 1 1/8 inches. Height over handle, 2 1/4 inches.

Screw holes spaced 1 1/4 inches on centers.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2001	H	Slotted	10	100	50		\$.48
2221	H	Solid	10	100	50		.48
2048	H	Slotted, Indicating	10	100	50		.54
2036	H	Solid, Indicating	10	100	50		.54

Perkins Single-pole Surface Switches
10 Amperes, 125 Volts; 5 Amperes, 250 Volts
Schedule II



No. 2755 with Cover Off

Metal cover, composition base and No. 2777 composition handle.

Diameter of base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 5/8 inches. Supporting screw spacings, 1 3/4 inches.

Standard finish on metal covers is polished nickel which will be supplied unless otherwise specified. For covers in any other finish, except gold, add 10 cents each to price.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 attachment.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2755	Solid	10	30	15		\$.60
2756	" Indicating	10	30	15		.70

Solid Base
Single-pole

Cat. No.	AMPERES 125 V.	250 V.	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2931	5	3	10	100	30		\$.32
2932	5	5	10	100	30		\$.56
2933	3	1	10	100	30		\$.56
Slotted Base							
Single-pole							
2941	5	3	10	100	30		\$.32
2942	5	5	10	100	30		\$.56
2943	3	1	10	100	30		\$.56

*Non-indicating.

Perkins Small Size Surface Switches
Single-pole

5 Amperes, 125 Volts; 3 Amperes, 250 Volts



Outside diameter of base is two inches. Nos. 2220 and 2035 can be supplied, on special order, on a base measuring 1 3/4 inches in diameter, which is likewise the diameter of the cover.

Height over cover, 1 1/2 inches; over handle, 1 5/8 in. Screw holes are spaced 1 3/8 inches on centers.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2000	H	Slotted	10	250	80		\$.28
2220	H	Solid	10	250	80		.28
2047	H	Slotted, Indicating	10	250	80		.32
2035	H	Solid, Indicating	10	250	80		.32

Perkins Large Size Surface Switches
Single-pole

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Outside diameter of base is 2 inches.

Height over cover, 1 1/2 inches.

Height over handle, 1 5/8 inches.

Holes for supporting screws are spaced 1 1/2 inches on centers.



Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2170	H	Solid	10	100	40		\$.36
2002	H	Slotted	10	100	40		.36
2254	H	Solid, Indicating	10	100	40		.40
2255	H	Slotted	10	100	40		.40

Perkins Three-point Surface Switches

3 Amperes, 125 Volts; 1 Ampere, 250 Volts



Outside diameter of base is 2 inches. No. 2455 can be supplied, on special order, on a base measuring 1 3/4 inches in diameter, which is likewise the diameter of the cover.

Height over cover is 1 1/2 inches. Height over handle is 1 5/8 in. Holes for supporting screws are spaced 1 3/8 inches on centers.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2455	H	Solid	10	100	37		\$.48
2456	H	Slotted	10	100	37		.48

Perkins Three-point Surface Switches

5 Amperes, 125 Volts
3 Amperes, 250 Volts

Outside diameter of base is 2 1/4 inches. Height over cover is 1 3/4 inches. Height over handle is 1 5/8 inches.

Holes for supporting screws are spaced 1 1/2 inches on centers.



Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2175	H	Solid	10	100	40		\$.56
2027	H	Slotted	10	100	40		.56

10 Amperes, 125 Volts; 5 Amperes, 250 Volts
 Outside diameter of base, 2 3/8 inches. No. 2176 can be supplied on 2 1/4 inch in diameter base. Height over cover, 1 3/4 inches; over handle, 2 1/4 inches. Holes spaced 1 1/2 inches.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2176	H	Solid	10	50	25		\$.76
2030	H	Slotted	10	50	25		.76

Perkins Four-point Surface Switches

5 Amperes, 125 Volts; 2 Amperes, 250 Volts



Four-point switches are used in connection with two three-point switches where current is to be controlled from any one of more than two points. A four-point switch is installed between the three-point switches at each additional point.

Four-point switches can also be used individually as pole-changing switches.

Outside diameter of base is 2 7/8 inches. No. 2183 can be supplied, on special order, on a base measuring 2 1/4 inches in diameter, likewise the diameter of the cover. Height over cover is 1 9/16 inches. Height over handle, 2 1/4 inches. Holes for supporting screws are spaced 1 3/4 inches on centers.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2183	H	Solid	10	30	15		\$.86
2033	H	Slotted	10	30	15		.86

Perkins Two-circuit Electroliner Surface Switches

2-circuit, 1-2-1 and 2-off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

1st position, circuit 1 on; 2nd position, circuit 1 off and circuit 2 on; 3rd position, circuits 1 and 2 on; 4th position, all circuits off.

Outside diameter of base is 2 7/8 inches. Nos. 2216 and 2188 can be supplied, on special order, on a base measuring 2 1/4 inches in diameter.

Height over cover, 1 9/16 inches; over handle, 2 1/4 inches. Holes spaced 1 3/4 inches on centers.

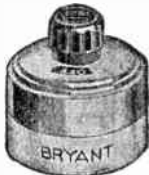


Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2216	H	Solid	10	10	7		\$.76
2215	H	Slotted	10	10	7		.76
2188	H	Solid, Indicating	10	10	7		.86
2074	H	Slotted	10	10	7		.86

Perkins 2-circuit Electroliner Surface Switches

2-circuit, 1, 1 and 2, 1, Off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



1st position, circuit 1 on; 2nd position, circuits 1 and 2 on; 3rd position, circuit 1 on; 4th position, all circuits off.

Outside diameter of base is 2 7/8 inches.

Height over cover, 1 9/16 inches.

Height over handle, 2 1/4 inches.

Supporting screw spacings, 1 3/4 inches.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2649	H	Solid	10	10	7		\$.90
2650	H	Slotted	10	10	7		.90
2651	H	Solid, Indicating	10	10	7		1.00
2652	H	Slotted	10	10	7		1.00

Perkins 2-circuit Electroliner Surface Switches

2-circuit, 1, Off, 2, Off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

1st position, circuit 1 on; 2nd position, all circuits off; 3rd position, circuit 2 on; 4th position, all circuits off.

Outside diameter of base is 2 7/8 inches.

Height over cover, 1 9/16 inches.

Height over handle, 2 1/4 inches.

Supporting screw spacings, 1 3/4 inches.

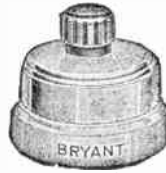


Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2653	H	Solid	10	10	7		\$.90
2654	H	Slotted	10	10	7		.90
2655	H	Solid, Indicating	10	10	7		1.00
2656	H	Slotted	10	10	7		1.00

Perkins 2-circuit Electroliner Surface Switches

2-circuit, 1, Off, 1 and 2, Off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts



1st position, circuit 1 on; 2nd position, all circuits off; 3rd position, circuits 1 and 2 on; 4th position, all circuits off.

Outside diameter of base is 2 7/8 inches.

Height over cover, 1 9/16 inches.

Height over handle, 1 9/16 inches.

Supporting screw spacings, 1 3/4 inches.

Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2657	H	Solid	10	10	7		\$.90
2658	H	Slotted	10	10	7		.90
2659	H	Solid, Indicating	10	10	7		1.00
2660	H	Slotted	10	10	7		1.00

Perkins Three-circuit Electroliner Surface Switches

1-1 and 2-1 and 2 and 3-off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

1st position, circuit 1 on; 2nd position, circuits 1 and 2 on; 3rd position, circuits 1 and 2 and 3 on; 4th position, all circuits off.

Outside diameter of base is 2 7/8 inches. Nos. 2185 and 2187 can be supplied, on special order, on a 2 1/4-inch base.

Height over cover, 1 9/16 inches; over handle, 2 1/4 inches. Holes for supporting screws are spaced 1 3/4 inches on centers.



Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2185	H	Solid	10	10	7		\$.90
2070	H	Slotted	10	10	7		.90
2187	H	Solid, Indicating	10	10	7		1.00
2072	H	Slotted	10	10	7		1.00

Perkins Three-circuit Electroliner or Three-speed Fan Motor Switches

1-2-3-off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

1st position, circuit 1 on; 2nd position, circuit 1 off and circuit 2 on; 3rd position, circuits 1 and 2 off, circuit 3 on; 4th position, all circuits off. Outside diameter of base is 2 7/8 inches. Nos. 2664 and 2666 can be supplied on special order, on a 2 1/4-inch base. Height over cover is 1 9/16 inches, height over handle, 2 1/4 inches. Holes for screws spaced 1 3/4 inches.



Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2664	H	Solid	10	10	7		\$.90
2665	H	Slotted	10	10	7		.90
2666	H	Solid, Indicating	10	10	7		1.00
2667	H	Slotted	10	10	7		1.00

Perkins Two-circuit Electroliner Surface Switches

2-circuit, 1-1 and 2-off

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

1st position, circuit 1 on; 2nd position, circuits 1 and 2 on; 3rd position, all circuits off.

Outside diameter of base is 2 1/4 inches. Height over cover is 1 9/16 inches, height over handle, 2 1/4 inches. There are three supporting screw holes equally spaced on a circle having a diameter of 1 3/4 inches. These switches cannot be supplied on slotted bases.



Cat. No.	Schedule	Description	Car-ton	Std. Pkg.	Wt., Lbs.	Lbs. Pkg.	Price Each
2661	H	Solid	10	10	7		\$.90
2662	H	Indicating	10	10	7		1.00

Perkins Double-pole Surface Switches

5 Amperes, 250 Volts



Outside diameter of base is 2 inches. Nos. 2391 and 2393 can be supplied on special order, on a base measuring 1 3/4 inches in diameter which is likewise the diameter of the cover.

Height over cover, 1 1/8 inches. Height over handle, 2 1/8 inches.

Holes for supporting screws are spaced 1 3/8 inches on centers.

Cat. No.	Sched.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2391	H	Solid	10	100	37	\$.56
2392	H	Slotted	10	100	37	.56
2393	H	Solid, Indicating	10	100	37	.64
2394	H	Slotted, "	10	100	37	.64

Perkins Double-pole Surface Switches

10 Amperes, 250 Volts

Outside diameter of base is 2 1/8 inches. Nos. 2009 and 2038 can be supplied, on a base measuring 2 1/4 inches in diameter, which is likewise the diameter of the cover.

Height over cover, is 1 1/8 inches. Height over handle, 2 1/4 inches. Holes for supporting screws are spaced 1 3/4 inches on centers.



Cat. No.	Sched.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2009	H	Solid	10	100	50	\$.66
2017	H	Slotted	10	100	50	.66
2038	H	Solid, Indicating	10	100	50	.76
2050	H	Slotted, "	10	100	50	.76

20 Amperes, 250 Volts

Outside diameter of base is 3 1/2 inches. Height over cover is 1 3/4 inches. Height over handle, 2 3/4 inches. Holes for supporting screws are spaced 2 3/8 inches on centers.

Cat. No.	Sched.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2011	H	Solid	1	30	25	\$1.40
2019	H	Slotted	1	30	25	1.40
2040	H	Solid, Indicating	1	30	25	1.50
2052	H	Slotted, "	1	30	25	1.50

30 Amperes, 250 Volts

Outside diameter of base, 3 3/8 inches. Height over cover is 1 5/8 inches; over handle, 2 3/4 inches. Holes for supporting screws spaced 2 5/8 inches on centers. Holes are elongated to provide 2 3/4 inches spacing, making them suitable for attachment to 3 1/4-inch outlet boxes, Type WD octagonal Unilets, Type 700 Adaptiboxes and Type SE Condulets.

30-ampere switches regularly furnished with flat handles.

Cat. No.	Sched.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2013	H	Solid	1	30	41	\$1.70
2021	H	Slotted	1	30	41	1.70
2042	H	Solid, Indicating	1	30	41	1.80
2054	H	Slotted	1	30	41	1.80

Perkins Double-pole Double-throw Surface Switches

Schedule II

10 Amperes, 125 Volts;
10 Amperes, 250 Volts

Porcelain base and No. 2779 composition handle. Diam. of base, 2 1/8 in. Height over cover, 1 3/4 in.; over handle, 2 5/8 in. Supporting screw spacings, 2 1/2 in.

Standard finish cover, polished nickel. For special finish, add 10 cents.

Rotary switches can be converted into lock switches by use of No. 2384 lock.



No. 2611 with Cover Off

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2611	Solid	1	10	8	\$2.40
2612	Slotted	1	10	8	2.40
2613	Solid, Indicating	1	10	8	2.50
2614	Slotted	1	10	8	2.50

Perkins Surface Switches With Porcelain Cover and Handle

Schedule H2



Solid



Slotted

Single-pole—5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Outside diameter base, 2 in. Screw holes spaced 1 3/8 in. Height over cover, 1 1/8 in.; over handle, 2 5/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2601	Solid	1	100	47	\$.32
2602	Slotted	1	100	47	.32
2603	Solid, Indicating	1	100	47	.36
2604	Slotted, "	1	100	47	.36

Single-pole—10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Outside diameter base, 2 1/2 in. Screw holes spaced 1 3/4 in. Height over cover, 1 5/8 in.; over handle, 2 3/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2141	Solid	1	30	20	\$.56
2753	Slotted	1	30	20	.56
2435	Solid, Indicating	1	30	20	.62
2754	Slotted, "	1	30	20	.62

Three-point—5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Outside diameter base, 2 in. Screw holes spaced 1 3/8 in. Height over cover, 1 1/8 in.; over handle, 2 5/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2605	Solid	1	10	5	\$.52
2606	Slotted	1	10	5	.52

Three-point—10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Outside diameter base, 2 1/2 in. Screw holes spaced 1 3/4 in. Height over cover, 1 5/8 in.; over handle, 2 3/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2140	Solid	1	10	7	\$.84
2757	Slotted	1	10	7	.84

Four-point—5 Amperes, 125 Volts; 2 Amperes, 250 Volts

Outside diameter base, 2 1/2 in. Screw holes spaced 1 3/4 in. Height over cover, 1 5/8 in.; over handle 2 3/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2142	Solid	1	10	7	\$.94
2758	Slotted	1	10	7	.94

Double-pole—5 Amperes, 125 Volts; 5 Amperes, 250 Volts

Outside diameter base, 2 in. Screw holes spaced 1 3/8 in. Height over cover, 1 1/8 in.; over handle, 2 5/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2607	Solid	1	10	5	\$.60
2608	Slotted	1	10	5	.60
2609	Solid, Indicating	1	10	5	.68
2610	Slotted	1	10	5	.68

Double-pole—10 Amperes, 125 Volts; 10 Amperes, 250 Volts

Outside diameter base, 2 1/2 in. Screw holes spaced 1 3/4 in. Height over cover, 1 5/8 in.; over handle, 2 3/8 in.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2139	Solid	1	10	7	\$.74
2763	Slotted	1	10	7	.74
2438	Solid, Indicating	1	10	7	.84
2764	Slotted	1	10	7	.84

Perkins Two-circuit Electrolier Surface Switches

Operating 1-2-1 & 2-Off
Schedule II

10 Amperes, 125 Volts;
5 Amperes, 250 Volts

With porcelain base, cover and No. 2781 porcelain handle.

Diameter of base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 3/8 inches. Supporting screw spacing, 1 3/4 inches.



No. 2759

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2264	Solid	1	10	7	\$.84
2759	Slotted	1	10	7	.84
2436	Solid, Indicating	1	10	7	.94
2760	Slotted, "	1	10	7	.94

Perkins Three-circuit Electrolier Surface Switches

Operating 1-1 & 2-1 & 2 & 3-Off

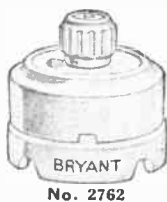
Schedule II

10 Amperes, 125 Volts;
5 Amperes, 250 Volts

With porcelain base, cover and No. 2781 porcelain handle.

Diameter of base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 3/8 inches.

Supporting screw spacings, 1 3/4 inches.



No. 2762

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2263	Solid	1	10	7		\$.98
2761	Slotted	1	10	7		.98
2437	Solid, Indicating	1	10	7		1.08
2762	Slotted "	1	10	7		1.08

Perkins Surface Switches

With Porcelain Outlet Box Base for Type 500 Adaptiboxes, Types GN, HM, and W (Forms 5 and 10) Octagonal Unilets and Form 10 Round Opening

Pipe Taplets

Schedule II

Suitable machine screws are furnished for mounting these devices on boxes.

The metal cover is furnished unless a special finish is specified in standard finish, polished nickel. For special finishes, except gold, add 10 cents each.

Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 switch lock.



No. 2690

With No. 2777 Composition Handle

5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Diameter of base, 2 7/8 inches. Height over cover, 1 1/2 inches. Heights over handle, 2 3/8 inches.

Supporting screw spacings, 2 5/8 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2690	Single-pole	10	100	60		\$.36
2691	" Indicating	10	100	60		.40

With No. 2778 Composition Handle

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Diameter of base, 2 7/8 inches. Height over cover, 1 3/4 inches. Height over handle 2 1/2 inches.

Supporting screw spacings, 2 5/8 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2692	Single-pole	10	50	35		\$.48
2693	" Indicating	10	50	35		.54

Perkins Surface Switches

With Cover Extending over Porcelain Base

Schedule II

Outside diameter base, 1 3/8 inches. Screw holes spaced 1 3/8 in. Height, over cover, 1 1/2 inches; over handle, 2 1/8 inches.

May be converted into lock switch by removing handle and substituting lock attachment.



5 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2429	Single-Pole Solid	10	100	31		\$.36
2430	" " Indicating	10	100	35		.40
3 Amperes, 125 Volts; 1 Ampere, 250 Volts						
2615	Three-Point Solid	10	100	35		\$.56
2616	Four " "	10	50	15		.64
5 Amperes, 125 and 250 Volts						
2617	Double-Pole Solid	10	100	35		\$.64
2618	" " Indicating	10	100	35		.72

Perkins Double-pole Surface Switches

Schedule II

10 Amperes, 125 Volts; 10 Amperes, 250 Volts



No. 2765

With metal cover, composition base and No. 2778 composition handle. Diameter of base, 2 1/2 inches. Height over cover, 1 5/8 inches; over handle, 2 5/8 inches. Supporting screw spacings, 1 3/4 inches.

Unless otherwise specified standard finish metal covers, polished nickel, will be supplied. For any other finish, except gold, add 10 cents for each cover. Rotary switches can be converted into lock switches by removing the handles and substituting No. 2384 universal rotary switch lock attachments.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2765	Solid	10	10	6		\$.78
2766	" Indicating	10	10	6		.88

Perkins Triple-pole Surface Switches

10 Amperes, 125 Volts

10 Amperes, 250 Volts

Outside diameter of base is 2 1/8 inches. Height over cover is 1 3/8 inches. Height over handle, 2 5/8 inches.

Holes for supporting screws are spaced 2 3/8 inches on centers.

These switches are regularly furnished with flat handles.



Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2025	H	Solid	1	10	7		\$ 1.90
2633	H	Slotted	1	10	7		1.90
2046	H	Solid, Indicating	1	10	7		2.00
2634	H	Slotted "	1	10	7		2.00

Bryant and Perkins Surface Switch Covers

Schedule II



Angle Dial Metal Cover

Range Switch Cover

Porcelain Cover Non-indicating



Flat Metal Cover Indicating

Metal covers have insulating linings. Porcelain covers have no linings.

Orders should specify whether indicating or non-indicating covers are desired.

Standard finish on metal covers is polished nickel. Other finishes, except gold, add 10 cents each extra.

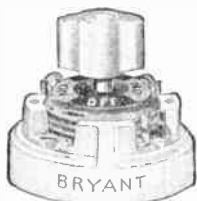
Description	Std. Pkg.	Price Each	Allowance for Omission
Flat Metal, for 10 A., 250 V. and Smaller Rotary Switches	50	\$.08	\$.03
Flat Metal, for 20 A., 250 V. Rotary Switches	50	.20	.07
" " " 30 " 250 " " "	50	.30	.10
" " " 50 " 250 " " "	50	.50	.17
" " with Extension Covering Base, for Nos. 2129, 2130, 2163 and 2615-2618 Switches	50	.20	.07
Angle Dial Metal, for 10 A., 250 V. Heater Switches	50	.25	.03
" " " 15 " 250 " " "	50	.35	.12
" " " 20 " 250 " " "	50	.45	.15
Flat Metal, for Surface Tumbler Switches	50	.08	.03
Black Finished Metal for Range	30	.30	...
For Wall and Ceiling Pull Switches	50	.20	.07
" Nos. 2315, 2077 or 2277 Switches	50	.30	.10
Porcelain, for 10 A., 250 V. and Smaller Rotary Switches	50	.10	.03
Porcelain, for Rotary Switches Larger Than 10 A., 250 V., Except Nos. 2315, 2077 and 2277.	50	.14	.05

**Perkins Expulsion Type Surface Switches
For Inductive Loads and Electric Railway Circuits
With Porcelain Base and Handle, Metal Cover**

Schedule II



No. 2171
with Cover Off



No. 2060, Indicating
with Cover Off

Expulsion type switches are designed with barriers between parts of opposite polarity which are effective in limiting the arc formed when the circuit is broken. For this reason, they should be used to control inductive loads such as motors.

Because of the difference in operating characteristics of inductive apparatus it is not possible to guarantee expulsion type switches on all inductive loads but they will give better results on inductive loads than the regular type of rotary switches.

While only the 600-volt rating of these switches is National Electric Code standard, the suggested rating at 250 volts is also given for each switch.

It is not advisable, though possible, to convert 600-volt switches into lock switches by the use of No. 2384 rotary switch lock attachment.

The standard finish on all metal covers of surface switches unless otherwise noted is polished nickel which will be supplied when the finish is not specified. For covers in any other finish, except gold, add to price 10 cents each.

***Single-pole—5 Amp., 250 Volts; 3 Amp., 600 Volts
With No. 2781 Porcelain Handle**

Diameter of base, 2 1/4 inches; height over cover, 1 7/8 inches; height over handle, 2 5/8 inches.
Supporting screw spacings, 1 1/2 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Std. Wt., Lbs.	Price Each
2171	Solid	10	50	23	\$.54
2003	Slotted	10	50	23	.54
*2226	Solid, Indicating	10	50	23	.60
*2225	Slotted, "	10	50	23	.60

**Single-pole—10 Amp., 250 Volts; 5 Amp., 600 Volts
With No. 2781 Porcelain Handle**

Diameter of base, 2 7/8 inches; height over cover, 1 5/8 inches; height over handle, 2 5/8 inches.
Supporting screw spacings, 1 3/4 inches.

2211	Solid	1	50	27	\$.66
2212	Slotted	1	50	27	.66
*2049	Solid, Indicating	1	50	27	.76
*2103	Slotted, "	1	50	27	.76

**Single-pole—20 Amp., 250 Volts; 10 Amp., 600 Volts
With No. 2784 Porcelain Handle**

Diameter of base, 3 1/2 inches; height over cover, 1 3/4 inches; height over handle, 2 3/4 inches.
Supporting screw spacings, 2 3/8 inches.

2227	Solid	1	50	46	\$ 1.60
2228	Slotted	1	50	46	1.60
*2060	Solid, Indicating	1	50	46	1.70
*2066	Slotted, "	1	50	46	1.70

**Single-pole—30 Amp., 250 Volts; 20 Amp., 600 Volts
With No. 2784 Porcelain Handle**

Diameter of base, 3 7/8 inches; height over cover, 1 5/8 inches; height over handle, 2 7/8 inches.
Supporting screw spacings, 2 9/8 inches.

2301	Solid	1	50	71	\$ 1.90
2302	Slotted	1	50	71	1.90
*2303	Solid, Indicating	1	50	71	2.00
*2304	Slotted, "	1	50	71	2.00

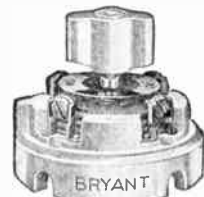
*The window in the cover of this switch is located so that, when the switch is mounted on a wall above eye level, the indications can be read right side up under the handle.

**Perkins Expulsion Type Surface Switches
For Inductive Loads and Electric Railway Circuits
With Porcelain Base and Handle, Metal Cover**

Schedule II



No. 2773



No. 2448, with Cover off

Designed with barriers between parts of opposite polarity which are effective in limiting the arc formed when the circuit is broken.

The 600-volt rating only is N. E. C. S. It is not advisable, though possible, to convert 600-volt switches to lock switches by the use of No. 2384 universal lock attachment.

The standard finish of metal cover is polished nickel. For other finishes, except gold, add 10 cents each.

***Double-pole—10 Amp., 250 Volts; 5 Amp., 600 Volts**

Cat. No.	Description	Car-ton	Std. Pkg.	Std. Wt., Lbs.	Price Each
2771	Solid	1	50	25	\$.90
2772	Slotted	1	50	25	.90
2773	Solid, Indicating	1	50	25	1.00
2774	Slotted, "	1	50	25	1.00

†Double-pole—20 Amp., 250 Volts; 10 Amp., 600 Volts

2445	Solid	1	50	45	\$ 1.80
2446	Slotted	1	50	45	1.80
2447	Solid, Indicating	1	50	45	1.90
2448	Slotted, "	1	50	45	1.90

***Three-point—10 Amp., 250 Volts; 5 Amp., 600 Volts**

2179	Solid	1	50	25	\$.90
2100	Slotted	1	50	25	.90
2413	Solid, Indicating	1	50	25	1.00
2414	Slotted, "	1	50	25	1.00

†Three-point—20 Amp., 250 Volts; 10 Amp., 600 Volts

2397	Solid	1	50	45	\$ 1.70
2398	Slotted	1	50	45	1.70
2415	Solid, Indicating	1	50	45	1.80
2416	Slotted, "	1	50	45	1.80

***Four-point—10 Amp., 250 Volts; 5 Amp., 600 Volts**

2719	Solid	10	20	12	\$ 1.00
2720	Slotted	10	20	12	1.00

†Four-point—20 Amp., 250 Volts; 10 Amp., 600 Volts

2721	Solid	10	20	16	\$ 1.80
2722	Slotted	10	20	16	1.80

**Two-circuit, Expulsion Type Surface Switches
Operating 1, Off, 2, Off**

These switches will break the circuit without the use of an additional switch and are especially adapted for use on electric cars as headlight switches and to control interior lights. The 600-volt rating only is N. E. C. S.

***5 Amp., 250 Volts; 3 Amp., 600 Volts**

2181	Solid	10	50	25	\$.76
2028	Slotted	10	50	25	.76
2062	Solid, Indicating	10	50	25	.86
2068	Slotted, "	10	50	25	.86

†20 Amp., 250 Volts; 10 Amp., 600 Volts

2409	Solid	1	50	45	\$ 1.70
2410	Slotted	1	50	45	1.70
2411	Solid, Indicating	1	50	45	1.80
2412	Slotted, "	1	50	45	1.80

*With No. 2781 porcelain handle.
Diameter of base, 2 7/8 inches; height over cover, 1 5/8 inches; height over handle, 2 5/8 inches.

Supporting screw spacings, 1 3/4 inches.
†With No. 2784 porcelain handle.
Diameter of base, 3 1/2 inches; height over cover, 1 3/4 inches; height over handle, 2 3/4 inches.
Supporting screw spacings, 2 3/8 inches.

Perkins Triple-pole Expulsion Type Surface Switches

For Inductive Loads and Railway Circuits
Schedule II

20 Amperes, 250 Volts, 2 H. P. 250 and 600 Volts, 3-phase



For controlling three-phase A. C. motors up to and including 2 H. P. Only the 600-volt rating is N.E.C.

No. 2597 is designed to be attached to conduit fittings made by The Crouse-Hinds Co., The Appleton Electric Co., The Columbia Metal Box Co., and The V. V. Fittings Co. Dust-tight, indicating cast iron cover, is regularly furnished in black. On special order, sherardized cover is furnished, 15 cents extra.

No. 2887 has a stamped brass cover, non-indicating, polished nickel finish, with insulating lining. Any special finish except gold, furnished 10 cents extra.

The switch mechanism has a composition handle which is fastened to the center post with a screw and which serves as an indicator of the position of the switch.

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		250-volt	600-volt				
2597	Switch with Cast Iron Cover	20	...	1	10	37	\$4.00
2886	" Only, No Cover	20	...	1	10	13	2.32
2888	Cast Iron Cover, Black . . . .	...	...	1	10	24	1.68
2889	" " Sherardized . . . .	...	...	1	10	24	1.83
2887	Switch with Brass Cover . . . .	...	...	1	10	15	2.40

Perkins Expulsion Type Surface Switches
For Inductive Loads and Railway Circuits, Single-pole, Fusible, Slotted, Indicating Porcelain Base, Handle and Cover

5 Amperes, 250 Volts; 3 Amperes, 600 Volts



No. 2077

An open link fuse is laid in a groove near the edge of the cover.

These switches cannot be supplied on solid bases.

Diameter of base, 3 3/8 inches. Height over cover, 1 5/8 inches; over handle, 2 3/8 inches.

Supporting screw spacings, 1 5/8 inches.

Cat. No.	Sched-ule	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2077	H	White Porcelain	1	10	15	\$1.60
2277	H	Brown "	1	10	15	1.60

Perkins Expulsion Type Surface Switches
For Inductive Loads and Railway Circuits

Connections for One Enclosed Fuse No. 2316 Single-pole, Solid, Indicating, Brown Porcelain Base, No. 2782 Handle and Cover

Base, 3 7/8 x 3 in. Height over cover, 1 3/8 in.; over handle, 2 3/8 in. Supporting screw spacings, 3 1/8 x 5/8 inches

Price does not include fuse.



No. 2315

Cat. No.	Sched-ule	AMPERES	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2315	II	250 V. 3 600 V. 3	1	25	43	\$1.50

*Ferrule Type Cartridge Fuse for No. 2315

Cat. No.	Sched-ule	AMPERES	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2316	E2	3 3 3 3	25	100	5	\$.30

*Length, 3 3/8 inches. Diameter, 5/8 inches.

Perkins Rotary Switch Handles

Schedule II

All Perkins rotary switch handles, except the handle of No. 2597, lock attachments and switch center posts, except Nos. 2635 and 2636 and range switches, are threaded alike, regardless of the size of the switch. Handles differ in external shape and size for purposes of leverage appropriate to the size of the switch. In an emergency, any available handle can be attached to any switch.

Refer to switch listings for definite information regarding handles. Any switch regularly equipped with one of these handles can, on special order, be furnished with any other of these handles without extra charge.

When switches are ordered without handles, deduct 2 cents.

Round Handles



Cat. No.	Description	SIZE SWITCH IN AMPS.		Std. Pkg.	Price Each
		125 and 250 Volts	250 and 600 Volts		
2777	Composition	3 and 5	.....	100	\$.06
2778	"	10	.....	100	.06
2781	White Porcelain	3, 5 and 10	3 and 5	100	.06
2782	Brown "	.....	3	100	.06

Flat Handles



Cat. No.	Description	SIZE SWITCH IN AMPS.		Std. Pkg.	Price Each
		20 and 30	Flush		
2779	Composition	20 and 30	Flush	100	\$.06
2780	"	30 " 50	.....	100	.06
2783	White Porcelain	10 " 15	.....	100	.06
2784	" "	20 " 30	10 and 20	100	.06

No. 2785 Perkins Metal Rotary Switch Handles

Schedule II

This metal handle may be substituted for any composition or porcelain switch handle on any size switch.

For switches fitted with this handle add 6 cents extra.

Cat. No.	Description	Std. Pkg.	Price Each
2785	Flat, Nickel-plated Brass	100	\$.12



Perkins Security Ratchet-lock Handles

Schedule II

These handles may be substituted for standard round or flat handles on any of the rotary switches listed in this catalogue except Nos. 2597, 2635, 2636 and range switches.

They are attached in the usual manner, but can be removed only with screw driver.

The ratchet principle is employed so that turning the handle backward does no damage either to handle or switch.

For switches fitted with these handles, add 5 cents extra.

Cat. No.	Description	Substitute for No.	Std. Pkg.	Price Each
2775	Round, Composition	2777 and 2778	100	\$.10
2776	" White Porcelain	2781	100	.10
2797	Flat " "	2783	100	.10
2808	" " "	2784	100	.10
2824	" Composition	2780	100	.10

No. 2299 Bryant Push Lock Switch Keys

Schedule II

One of these keys is furnished without charge with each push lock switch.

Standard package, 100.

Price, No. 2299.....each \$1.10



Bryant and Perkins Rotary Switch Lock Attachments and Keys

Schedule II



No. 2384



No. 2126

By substituting this lock attachment for the handle on any Perkins rotary switch either surface or flush, except Nos. 2597, 2635, 2636 and range switches, lock switches are obtained.

The lock attachment can only be screwed on or removed and the switch operated only by means of the key. Key No. 2126 is also used for operating tumbler lock switches.

Cat. No.	Description	Std. Pkg.	Price Each
2384	Lock Attachment, Polished Nickel	100	\$.16
2126	Key for Rotary Lock Switches	100	.06

Bryant Double-pole Range Switches

Schedule II



No. 2800

Series-parallel, Operating High, Medium, Low, Off

Porcelain base and indicating handle, bakelite insulation, for surface mounting with separable mechanism, black metal cover with embossed dial indications.

Diameter of bases, 3 inches.
Diameter of covers, 2 3/4 inches.
Supporting screw spacings, 1 1/8 inches.

No. 2800, Indicating

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

Consists of No. 2815 switch mechanism, No. 2804 sub-base, No. 2816 cover and No. 2822 porcelain handle.

Height over cover, 2 3/2 inches; over handle, 2 5/8 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2800	Clockwise Rotation	1	10	14	\$1.60

No. 3800, Indicating

30 Amperes, 125 Volts, 15 Amperes, 250 Volts

Consists of No. 3815 switch mechanism, No. 2804 sub-base, No. 3816 cover and No. 3822 porcelain handle.

Height over cover, 2 1/2 inches; over handle, 3 1/8 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3800	Reversible Rotation	1	10	20	\$1.70

Bryant Double-pole Range Switches

Schedule II

On and Off, Operating On, Off, On, Off

Porcelain base and indicating handle, bakelite insulation, for surface mounting with separable mechanism, black metal cover with embossed dial indications.

Diameter of bases, 3 inches.
Diameter of covers, 2 3/4 inches.
Supporting screw spacings, 1 1/8 inches.



No. 2818

No. 2818, Indicating

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

Consists of No. 2819 switch mechanism, No. 2804 sub-base, No. 2820 cover and No. 2822 porcelain handle.

Height over cover, 2 3/2 inches; over handle, 2 5/8 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2818	Clockwise Rotation	1	10	14	\$1.60

No. 3818, Indicating

30 Amperes, 125 Volts; 15 Amperes, 250 Volts

Consists of No. 3819 switch mechanism, No. 2804 sub-base, No. 3820 cover and No. 3822 porcelain handle.

Height over cover, 2 1/2 inches; over handle, 3 1/2 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3818	Reversible Rotation	1	10	14	\$1.70

Perkins Heater Control Surface Switches

Single-pole, Indicating, Porcelain Base and Handle Metal Cover, Bakelite Insulation

Series-Parallel, Operating High, Medium, Low, Off

Schedule II



No. 2635

Standard finish metal cover, polished nickel, will be supplied unless special finish is specified. For special finishes, except gold, add 10 cents.

By substituting No. 2384 universal rotary switch lock attachment for handle these switches can be converted into lock switches.

Indicating with No. 2783 Porcelain Handle

15 Amperes, 125 Volts; 10 Amperes, 250 Volts

Diameter of base, 2 7/8 inches. Height over flat cover, 1 1/2 inches. Height over angle dial cover, 1 9/16 inches. Height over handle of switch with flat cover, 2 1/4 inches. Height over handle of switch with angle dial cover, 2 5/8 inches.

Supporting screw spacings, 1 3/4 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
*2669	Solid, Flat Cover	1	10	6	\$.81
2670	Slotted, Flat Cover	1	10	6	.81
*2619	Solid, Angle Dial Cover	1	10	6	.81
2620	Slotted, Angle Dial Cover	1	10	6	.81

With No. 2825 Arrow Indicating Porcelain Handle

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

Diameter of base, 2 7/8 inches. Height over cover, 1 1/2 inches. Height over handle, 2 1/4 inches.

Supporting screw spacings, 1 3/4 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
*2635	Solid, Flat Cover	1	10	6	\$.81
2636	Slotted, Flat Cover	1	10	6	.81

*Can be supplied, on special order, at no advance in price, on base 2 1/4 inches in diameter, which is the diameter of the cover.

Perkins Heater Control Surface Switches

Single-pole, Indicating, Porcelain Base and No. 2784 Porcelain Handle, Metal Cover, Bakelite Insulation

Series-Parallel, Operating High, Medium, Low, Off 20 Amperes, 125 Volts; 15 Amperes, 250 Volts

Schedule II

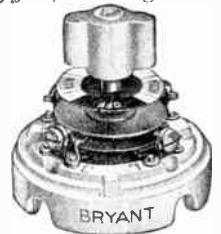
Diameter of base, 3 1/2 in. Height over flat cover, 1 7/8 in.; over handle of switch with flat cover, 2 9/16 in.; over angle dial cover, 1 9/16 in.; over handle of switch with angle dial cover, 2 7/8 in. Supporting screw spacings, 2 3/8 in.

With Flat Cover

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2672	Solid	1	10	9	\$1.00
2673	Slotted	1	10	9	1.00

With Angle Dial Cover

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2679	Solid	1	10	9	\$1.10
2680	Slotted	1	10	9	1.10



No. 2673 With Cover Off

Perkins Heater Control Surface Switches

Single-pole, Indicating, Porcelain Base and No. 2784 Porcelain Handle, Metal Cover, Bakelite Insulation

Series-Parallel, Operating High, Medium, Low, Off 40 Amperes, 125 Volts; 20 Amperes, 250 Volts

Schedule II

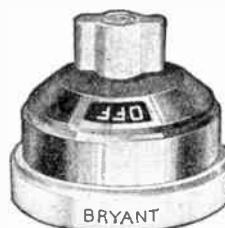
Diameter of base, 3 9/16 in. Height over flat cover, 1 15/16 in.; over handle of switch with flat cover, 2 7/8 in.; over angle dial cover, 2 in.; over handle of switch with angle dial cover, 2 5/8 in. Supporting screw spacings, 2 3/4 inches.

With Flat Cover

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2675	Solid	1	10	17	\$2.00
2676	Slotted	1	10	17	2.00

With Angle Dial Cover

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2621	Solid	1	10	17	\$2.00
2622	Slotted	1	10	17	2.00



No. 2621

Bryant Range Switch Fusible Sub-bases

These sub-bases are designed to be mounted in a row and have provisions for bus-wires, heater-wire connections and means for supporting the switch.

The housings for the switches are supplied by the range manufacturer and include supports for the sub-bases, a cover plate bearing the proper dial indications and through which the center posts of the switch mechanisms project, and an easily removed cover for ready access to the fuses. The porcelain indicating handles plainly show the connections to the various heaters.

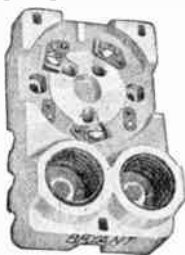
The main-line connections, or bus-wires, are supported in parallel grooves on the backs of the sub-bases. The wires from the switches to the heating units are connected to the terminal plates on the sub-bases and are carried through holes in the porcelain to suitable terminals on the heater units. To determine the height of any switch mounted on any sub-base add the dimensions "Height to mounting surface," and "Height under handle," or "Height over handle".

Bryant Range Switch Fusible Porcelain Sub-bases

Schedule II
30 Amperes, 125 Volts

With Fuse Receptacles Parallel to Switch Center Post

This sub-base may be installed in the range with the fuses either above or below the switch. The bus-wire connections are so devised that the load of the range may be balanced between the neutral wire and each of the two pressure wires. This is accomplished by shifting the contact plate from one pressure wire groove to the other making the proper connections.



No. 3806

Cat. No.	DIMENSIONS, INCHES				Carton	Wt., Lbs.		Price Each
	Lgth.	Wdth.	Height to Mounting Surface	Height to Supporting Screw Spacings		Std. Pkg.	Std. Pkg.	
2806	4 3/4	3	1 7/8	1 1/8	1	10	19	\$.60
3806	4 3/4	3	1 3/4	3/4	1	10	9	.60

No. 2807 Bryant Range Switch Fusible Porcelain Sub-bases

Schedule II
30 Amperes, 125 Volts

With Fuse Receptacles at Right Angle to Switch Center Post

The bus-wire connections are so devised that the load is balanced between the neutral wire and each of the two pressure wires in the 3 grooves on the back and on the end of the cut-out base so that the proper wires will be connected to the terminal plates of the proper sub-bases.



Cat. No.	DIMENSIONS, INCHES				Carton	Wt., Lbs.		Price Each
	Lgth.	Wdth.	Height to Mounting Surface	Height to Supporting Screw Spacings		Std. Pkg.	Std. Pkg.	
2807	3 3/8	3	1 1/8	2 3/8	1	10	8	\$.60

No. 136 Bryant Range Switch Fusible Porcelain Sub-bases

Schedule II

10 Amperes, 125 Volts—Voltage Limited by Plug Fuses
Separable Spartan Attachment Plug Receptacle and Fusible Sub-base Connecting Block

Supporting screw spacings, 2 3/8 inches. The hole required for the boss of the Spartan receptacle is 1 1/2 inches in diameter.

Length, 3 3/8 inches; width, 2 1/8 inches; extreme height, 2 1/4 inches.

Combines a No. 79 Spartan receptacle body with a special double-pole plug fuse porcelain cut-out base and is intended to be installed against the inside of the

range base with the receptacle boss projecting through a hole provided for the purpose.



Cat. No.	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
136	5	100	122	\$.50

Bryant Double-pole Range Switches
Separable Mechanism, Porcelain Bases and Indicating Handles, Bakelite Insulation

The switch mechanism is a separate unit and is fastened to a sub-base by means of screws which also form the electrical connection between the switch mechanism and the sub-base. The wires which connect the switch to the line and to the heater are fastened to suitable terminal plates on the sub-base. The switch mechanism unit can be removed from the sub-base without disturbing any of the wiring connections by loosening the contact screws which secure the mechanism unit to the sub-base. The advantage of this construction is the ease and convenience with which switch replacements can be made without possibility of connecting the switch in the wrong way.

In the following listings, switches described as reversible, are arranged so the handles may be returned backward or forward. This permits a switch to be operated from Off to either High or Low or from High or Low to Off or Medium without going through any other position.

Bryant Double-pole Switch Mechanisms Units for Range Switches

Schedule II

Series-parallel Operating High, Medium, Low, Off

20 Amperes, 125 Volts; 10 Amperes, 250 Volts
Indicating, with mounting screws, but without covers. No. 2822 porcelain indicating handle. Clockwise rotation.

No. 2802

For sub-bases Nos. 2804, 2806, 3806 and 2807 without cover. Can be supplied with center post any specified length.



Cat. No.	DIMENSIONS, INCHES			Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Diam. Base	Ht. Under Handle	Ht. Over Handle				
2802	2 5/8	1 5/8	2 7/8	1	10	8	\$1.00

No. 2815

For use with No. 2804 sub-base and No. 2816 cover to make No. 2800 switch.

2815	2 5/8	1 3/8	2 1/4	1	10	8	\$1.00
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Bryant Double-pole Range Switch Mechanism Units

Indicating, Complete with Mounting Screws but without Cover, with No. 3822 Porcelain Handle

Series-Parallel, Operating High, Medium, Low, Off
30 Amperes, 125 Volts; 15 Amperes, 250 Volts



No. 3802

The No. 3822 indicating handles of these mechanisms are so arranged that they may be turned backward or forward. This permits a switch to be operated from Off to either High or Low or from High or Low to Off or Medium without going through any other position.

No. 3802 can be used with sub-bases Nos. 2804, 2806, 3806 and 2807, but is not intended for use with any cover. Can be supplied on special order, with center post of any specified length to fit standard or special handles.

Diameter of base, 2 5/8 inches; height under handle, 2 inches; over handle, 3 inches.

No. 3815 is intended for use with No. 2804 sub-base and No. 3816 cover to make No. 3800 switch.

Diameter of base, 2 5/8 inches; height under handle, 1 3/8 inches; over handle, 2 3/4 inches.

Cat. No.	Schedule	Description	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3802	H	Reversible Rotation	1	10	9	\$1.10
3815	H	" "	1	10	9	1.10

Bryant Double-pole Range Switch Mechanism Units

Complete with Mounting Screws but without Covers

Operating On, Off, On, Off



Nos. 2819 and 3819 can be used with sub-bases Nos. 2804, 2806, 3806 and 2807. When mounted upon any but No. 2804 sub-base, cannot be used with cover.

Nos. 2821 and 3821 can be used with sub-bases Nos. 2804, 2806, 3806 and 2807, but are not intended for use with any cover. Can be supplied, on special order, with center post of any specified length to fit standard handles or special handles made to order.

With No. 2822 Porcelain Indicating Handle

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

Diameter of base, 2 5/8 in. Height under handle, 1 7/16 in. Height over handle, 2 1/4 in. Intended for use with No. 2804 sub-base and No. 2820 cover to make No. 2818 switch.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2819	Clockwise Rotation.....	1	10	20	\$1.00

With No. 3822 Porcelain Indicating Handle

30 Amperes, 125 Volts; 15 Amperes, 250 Volts

Diameter of base, 2 3/8 in. Height under handle, 1 3/8 in. Height over handle, 2 1/2 in. Intended for use with No. 2804 sub-base and No. 3820 cover to make No. 3818 switch.

3819	Reversible Rotation.....	1	10	20	\$1.10
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With No. 2822 Porcelain Indicating Handle

20 Amperes, 125 Volts; 10 Amperes, 250 Volts

Diameter of base, 2 3/8 inches. Height under handle, 1 5/8 inches. Height over handle, 2 7/16 inches.

2821	Clockwise Rotation.....	1	10	7	\$1.00
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With No. 3822 Porcelain Indicating Handle

30 Amperes, 125 Volts; 15 Amperes, 250 Volts

Diameter of base, 2 3/8 inches. Height under handle, 2 inches. Height over handle, 3 inches.

3821	Reversible Rotation.....	1	10	9	\$1.10
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No. 2804 Bryant Double-pole Round Porcelain Fuseless Sub-bases with Terminals

Schedule H

30 Amperes, 125 Volts; 15 Amperes, 250 Volts



Can be used with Nos. 2802, 3802, 2815, 3815, 2819 and 3819 mechanisms and with Nos. 2816, 3816, 2820 and 3820 covers. Nos. 2802 and 3802 cannot be used with covers.

Supporting screw spacings, 1 1/16 inches.

Cat. No.	DIMENSIONS, INCHES Diameter Thickness	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2804	3 1/16	1	10	6	\$.30

Edwards Eco Door Switches

No. 174

Finish, polished brass.

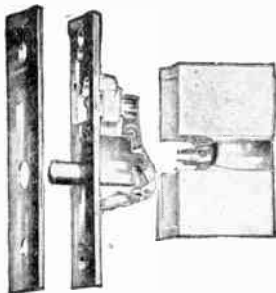
Operation: door shut, light off; open door, light on; enter and close door, light on; open door for exit, light off; shut door, light stays off.

Standard package, 12. Price, No. 174... each \$8.50

No. 175

No. 175A. Operation: door open, light on. Std. pkg., 12. Price, No. 175A... each \$6.00

No. 175B. Operation: door closed, light on. Std. pkg., 12. Price, No. 175B... each \$6.00



No. 175

No. 2000 Conduit Boxes for Door Switches

Price, No. 2000, Standard package, 10..... each \$1.25

P. & S. Canopy Switches

Schedule XA

P & S Nos. 3300, 3301, 3302, 3304 and 3305 may be assorted to make standard package quantities.

Fitted with 6 inches of No. 13 B & S stranded fixture wire.

With Bottom Wires



Cat. No.	For Canopies Thickness, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3300	1/16	10	100	7	\$.60
3301	1/4	10	100	8	.65

With Side Wires

3302	1/16	10	100	8	\$.60
3303	1/4	10	100	9	.65

With Shallow Back, 5/16-inch

3304	1/16	10	100	7	\$.60
3305	1/4	10	100	8	.65

Levolier Fixture Switches

6 Amperes, 125 Volts—3 Amperes, 250 Volts

Nos. 62 and 63 furnished with thin supporting nut and clamping nut. For use on canopies, ceiling units, etc., and may be assorted with No. 61 to make up a standard package.

Always place these switches where they will have a right angle pull.

They can be quickly installed and are out of the way.

No. 60 is replaced by No. 61 but will be supplied when specified. It has 5/8-inch diameter nipple, 1/2-inch long. Same price as No. 61.



Cat. No.	Stem Diam.	Stem Length	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61	7/16 in.	3 3/16 in.	10	100	18	\$.55
62	7/16 "	3 3/8 "	10	100	16	.60
63	7/16 "	3 3/4 "	10	100	17	.60

No. 665 Bryant High Capacity Canopy Pull Switches

6 Amp., 125 Volts; 3 Amp., 250 Volts



No bracket.

For use by manufacturers and dealers who want to furnish their own brackets.

Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
665	H	10	100	28	\$.65

No. 666 Bryant High Capacity Canopy Pull Switches

6 Amp., 125 Volts, 3 Amp., 250 Volts

Has an angle bracket for use in flat pans of indirect and semi-indirect fixtures.

Chain guide is thrust through a hole in the pan and knurled nut secures the switch in place.



Cat. No.	Sched-ule	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
666	H	10	100	36	\$.75

No. 655 Bryant High Capacity Canopy Pull Switches

6 Amp., 125 Volts, 3 Amp., 250 Volts



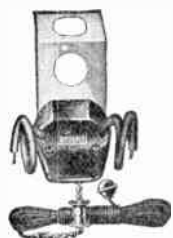
The bracket is a clamp which secures the switch to the pipe.

A hole must be drilled or punched in the rim of the canopy for the chain guide.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
655	H	10	100	27	\$.75

No. 656 Bryant High Capacity Canopy Pull Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts



The bracket is intended for support between the fixture stud and the joint or hickey of the fixture.

A hole must be punched in the bell or rim of the canopy for the chain guide.

Standard finish, brush brass.

Undark luminous pendant furnished, 28 cents additional.

Separable chain guide, 10 cents.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
656	H	10	100	35	\$.75

No. 662 Bryant High Capacity Canopy Pull Switches

6 Amp., 125 Volts, 3 Amp., 250 Volts

The bracket has a threaded chain guide with a knurled nut.

Punch a hole in the rim of the canopy, insert the chain guide from the inside and secure it by screwing on the nut from the outside.

The canopy must be rigid when this switch is used.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
662	H	10	100	29	\$.75



No. 663 Bryant High Capacity Canopy Pull Switches

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

The bracket is a clamp which secures the switch to a pipe in a vertical position.

A hole must be punched in the bell of the canopy for the chain guide.

Standard finish, brush brass.

Undark luminous pendant furnished, 28 cents additional.

Separable chain guides, 10 cents each.

Cat. No.	Schedule	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
663	H	10	100	30	\$.75



Bryant Canopy Switches and Parts

Schedule H



B Lock Nuts

All switch stems are 3/8 inch outside diameter, 27 threads per inch. Each switch stem is fitted with two lock nuts, 3/16 inch diameter; the outer one 3/64 inch thick, the inner one 3/4 inch thick.

On special order switches will be furnished with the outer lock nut 7/32 inch thick without extra charge. To obtain this assembly add B after any of the following numbers. Also, on special order, switches will be supplied with both lock nuts 3/4 inch diameter, the outer one 1/4 inch thick, the inner one 3/4 inch thick, without extra charge. To obtain this assembly add C after any of the following numbers.

Handle stems are threaded 6x32; length of thread, 3/16 inch.

On special order, switches will be supplied with set screw which passes through the center of the handle stem to prevent the handle from unscrewing, at an additional price of five cents. To obtain this assembly, add A after any of the following catalogue numbers.

Standard finish is brush brass. Flash silver will be furnished when specified without extra charge.



C Lock Nuts

Canopy Switches with Binding Screw Terminals

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Cat. No.	Length Stem In.	Carton	*Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
451	3/16	10	100	8	\$.60
642	2/16	10	100	9	.65
452	7/16	10	100	9	.65
643	3/4	10	100	10	.69
No. 452 644	1	10	100	11	.70



No. 452

Canopy Switches with Wire Leads

3 Amperes, 125 Volts; 1 Ampere, 250 Volts

Regularly fitted with 6-inch leads of No. 18 B. & S. stranded rubber-covered wire, but can be fitted with leads up to 8 inches without extra charge. Longer than 8-inch leads, add 4 1/2 cents per foot each conductor.

For switches with wire leads omitted deduct 2 cents each.

With Wire Leads Entering Bottom

Cat. No.	Length Stem In.	Carton	*Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
491	3/16	10	100	10	\$.60
645	2/16	10	100	11	.65
492	7/16	10	100	11	.65
646	3/4	10	100	12	.69
647	1	10	100	13	.70



No. 647

With Wire Leads Entering Side

These switches are very thin and require only 1/16-inch clearance between front of canopy and wall to be easily accommodated.

Cat. No.	Length Stem In.	Carton	*Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
681	3/16	10	100	9	\$.60
682	2/16	10	100	10	.65
683	7/16	10	100	11	.65
No. 683 686	3/4	10	100	12	.69
687	1	10	100	13	.70



No. 683

Junior Canopy Switches with Wire Leads Entering Bottom

1/2 Ampere, 125 Volts

Regularly fitted with 6-inch leads of No. 18 B. & S. stranded rubber-covered wire, but can be fitted with leads up to 8 inches without extra charge. Longer than 8-inch leads, add 4 1/2 cents per foot each conductor.

For switches with wire leads omitted deduct 2 cents each.

Cat. No.	Length Stem In.	Carton	*Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
541	3/16	10	100	9	\$.60
542	7/16	10	100	10	.65



No. 541 Assembled and Exploded Views

*Canopy switches of all Cat. Nos. may be assorted to make up standard package quantities, provided carton quantities are not broken. Luminous inserts, 25 cents extra.

Bryant Porcelain Sub-bases

Schedule H

For Concealed Work

Cat. No.	DEVICE BASE, IN. DIAMETER		Screw Spacings	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Maxi-mum	Mini-mum					
2382	2 5/16	1 7/8	3/4 - 1 3/8	10	100	28	\$.06
2252	2 5/8	2 1/4	3/4 - 1 3/4	10	100	38	.08
2380	3 1/16	3	2 1/8 - 2 5/8	5	25	21	.15



Bryant Porcelain Sub-bases

Schedule H

For Molding Work



Cat. No.	DEVICE BASE, IN. DIAMETER		Screw Spacings	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Maxi-mum	Mini-mum					
2383	2 5/16	1 7/8	3/4 - 1 3/8	10	100	26	\$.06
2222	2 5/8	2 1/4	3/4 - 1 3/4	10	100	35	.08
2262	3 3/4	3	2 3/8 - 2 1/2	5	25	25	.15

Bryant Porcelain Sub-bases

Schedule H

For Molding Terminal

Cat. No.	DEVICE BASE, IN. DIAMETER		Screw Spacings	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Maxi-mum	Mini-mum					
2439	2 5/16	1 7/8	3/4 - 1 3/8	10	100	28	\$.06
2358	2 5/8	2 1/4	3/4 - 1 3/4	10	100	40	.08



Bryant Porcelain Sub-bases

Schedule H

For Surface Work



Cat. No.	DEVICE BASE, IN. DIAMETER		Screw Spacings	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Maxi-mum	Mini-mum					
2381	2 5/16	1 7/8	3/4 - 1 3/8	10	250	55	\$.06
2357	2 5/8	2 1/4	3/4 - 1 3/4	10	100	36	.08
2379	3 1/16	3	2 1/8 - 2 5/8	5	25	19	.15

No. 678 Bryant Feed Through Cord Switches

Schedule H



This is a composition device made of gum-moon with the same mechanism that is put in New Wrinkle push button sockets.

The wiring passages are made amply large for easy wiring.
10 in a carton.

Cat. No.	Lgth. In.	Width In.	Thick-ness In.	Lgth. Over Buttons In.	RATINGS VOLTS		Std. Pkg.	Wt. Lbs.	Price Each
					6-amp.	3-amp.			
678	2 1/4	1 3/8	1 5/16	1 3/4	125	250	50	15	\$.50

No. 2532 H & H Pendant Switches

Single-pole

6 Amperes, 125 Volts
3 Amperes, 250 Volts



Cat. No.	Description	Standard Package	Price Each
2532	With Pendant Cap	100	\$.50

Type O Perkins Pull Switches

Schedule H

125-250 Volts

With 3/8-inch Cap



The standard finish of metal covers is brush brass. For special finishes, except gold, add 10 cents each.

For small Undark luminous pendant, add 28 cents each.

Each switch is equipped with 10 feet small lincn cord and a small composition ball. Extra cord, 1 cent per foot; cord in bulk, 1 cent per foot, Schedule H, standard package quantity, 100 feet.

Extra composition balls, 6 cents each. Schedule H, standard package quantity, 250.

Single-pole

Cat. No.	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	125 V.	250 V.				
2473	10	5	10	30	18	\$.130

Double-pole

2478	10	5	10	10	5	\$.130
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Three-point

2474	10	5	10	10	5	\$.130
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Four-point

2475	5	2	10	10	5	\$.130
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Electrolier, Two-circuit

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V.	250V.				
2476	1-2-1 & 2-Off	5	2	10	10	5	\$.130

Electrolier, Three-circuit

2477	1-1 & 2-1 & 2 & 3-Off	5	2	10	10	5	\$.130
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Two-speed Motor Control

2479	1-2-Off	10	5	10	10	5	\$.130
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Three-speed Motor Control

2480	1-2-3-Off	10	5	10	10	5	\$.130
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Type O Perkins Push Switches

Schedule H

125-250 Volts

With Pendent Cap

The standard finish of metal cover is brush brass which will be furnished when no finish is specified.

For special finishes other than gold, add 10 cents to price each.



Single-pole

Cat. No.	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	125 V.	250 V.				
2440	10	5	10	30	18	\$.120

Double-pole

2421	10	5	10	10	5	\$.120
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Three-point

2417	10	5	10	10	5	\$.120
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Four-point

2418	5	2	10	10	5	\$.120
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Electrolier, Two-circuit

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V.	250V.				
2419	1-2-1 & 2-Off	5	2	10	10	5	\$.120

Electrolier, Three-circuit

2420	1-1 & 2-1 & 2 & 3-Off	5	2	10	10	5	\$.120
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Two-speed Motor Control

2422	1-2-Off	10	5	10	10	5	\$.120
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Three-speed Motor Control

2423	1-2-3-Off	10	5	10	10	5	\$.120
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Perkins Type T Pendent Switches



The standard finish of pendent switches is brush brass which will be shipped when the finish is not specified.

For switches in any other finish, add \$.10 to price.

No. 2572

Single-pole, Buttons at Side

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Sched-ule	Description	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2572	H	Pendent Cap.	10	100	20	\$.50	
2573	H	1/8-inch "	10	100	22	.50	
2574	H	3/8 " "	10	100	24	.60	

Self-restoring—Momentary Contact Buttons on Bottom

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

2786	H	Pend., S. P. Normally Open.	10	30	7	\$.70
2789	H	" S. P. " Closed.	10	30	7	.70

Single-pole, Buttons on Bottom

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Sched-ule	Description	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2370	H	Pendent Cap.	10	100	33	\$.50	
2250	H	1/8-inch "	10	100	36	.50	
2270	H	3/8 " "	10	100	40	.60	



No. 2370

Single-pole, Buttons at Bottom

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

2359	H	Pendent Cap.	10	100	46	\$.80
2353	H	1/8-inch "	10	100	48	.80
2354	H	3/8 " "	10	100	50	.90

Perkins Type T Straight-through Switches



The standard finish of these switches is polished nickel, which will be shipped when the finish is not specified.

For any other finish, except gold, add \$.10 to price.

Single-pole

6 Amperes, 125 Volts; 3 Amperes, 250 Volts

Cat. No.	Sched-ule	Description	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2592	H	Brass Shell 3/4 in. Cord hole.	10	50	14	\$.60	

Perkins Type O Straight Through Switches

Schedule H

The indication on Nos. 2490 and 2678 is obtained by a dial that is visible through a hole in the end of the button.

The standard finish is polished nickel which will be supplied when the finish is not specified.

For special finishes, except gold, add 10 cents.

Double-pole

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2454	Non-indicating	10	30	17	\$ 1.20	
2490	Indicating	10	30	17	1.30	

Single-pole

Series Parallel, Operating High, Medium, Low, Off 5 Amperes, 125 Volts; 2 Amperes, 260 Volts

2678	Indicating	10	10	5	\$ 1.30
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Perkins Ceiling Pull Switches

Schedule H

Standard finish of non-indicating metal covers is polished nickel. Special finishes, except gold, add 10 cents each cover.

Each switch supplied with 10 feet best quality linen cord and large black composition ball. Extra cord, 1 cent per foot. Cord in bulk, 1 cent per foot, Schedule H. standard package, 100 feet. Extra balls, 6 cents each, Schedule H, standard package quantity, 250. For Undark luminous pendant No. 2915, add 55 cents each.



No. 2387

Diameter of base, 2 3/8 inches. Height over cover, 2 3/8 inches. Supporting screw spacings, 1 3/4 inches.

Single-pole

Cat. No.	Description	AMPERES 125 V.	250 V.	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2387	Solid	10	5	10	30	22	\$ 1.00	
2309	Slotted	10	5	10	30	22	1.00	

Double-pole

2396	Solid	10	10	10	10	8	\$ 1.18
2314	Slotted	10	10	10	10	8	1.18

Three-point

2388	Solid	10	5	10	10	8	\$ 1.18
2310	Slotted	10	5	10	10	8	1.18

Four-point

2389	Solid	5	2	1	10	8	\$ 1.18
2311	Slotted	5	2	1	10	8	1.18

Electroliner, Two-circuit

Operating 1-2-1 & 2-off

2390	Solid	10	5	1	10	8	\$ 1.18
2312	Slotted	10	5	1	10	8	1.18

Electroliner, Three-circuit

Operating 1-1 & 2-1 & 2 & 3-off

2395	Solid	10	5	1	10	8	\$ 1.18
2313	Slotted	10	5	1	10	8	1.18

Three-speed Motor Control

Operating 1-2-3-off

2863	Solid	10	5	10	10	8	\$ 1.18
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Diameter of base, 2 1/4 in. Height over cover, 2 1/8 in. Supporting screw spacings, 1 3/8 in.

For 3 1/4-inch and 4-inch Standard Outlet Boxes

2769	Single-pole	10	5	1	10	20	\$ 1.25
2770	Double-pole	10	10	1	10	20	1.43

For Type 500 Adaptiboxes, Types GN, HM and W (Forms 5 and 10) Octagonal Unilets and Size 10 Round Opening Pipe Taplets

2694	Single-pole	10	5	10	20	15	\$ 1.00
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Diameter of base, 2 7/8 inches. Screw spacings, 2 5/8 inches.

Perkins Wall Pull Switches

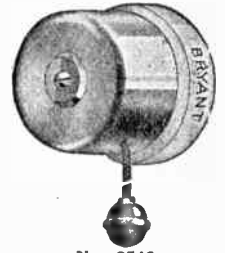
Schedule H

Standard finish of non-indicating metal covers is polished nickel. Special finishes, except gold, 10 cents extra.

Equipped with 10 feet best quality linen cord and black composition ball.

For Undark luminous pendant, add 55 cents. No. 2915.

Diameter of base, 2 3/8 inches. Height over cover, 2 3/8 inches. Supporting screw spacings, 1 3/4 inches.



No. 2546

Single-pole

Cat No.	Description	AMPERES 125 V.	250 V.	Car- ton	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
2546	Solid	10	5	10	30	22	\$ 1.00	
2547	Slotted	10	5	10	30	22	1.00	

Double-pole

2565	Solid	10	10	10	10	8	\$ 1.18
2566	Slotted	10	10	10	10	8	1.18

Three-point

2549	Slotted	10	5	10	10	8	\$ 1.18
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Four-point

2560	Slotted	5	2	1	10	8	\$ 1.18
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Electroliner, Two-circuit

Operating 1-2-1-2-off

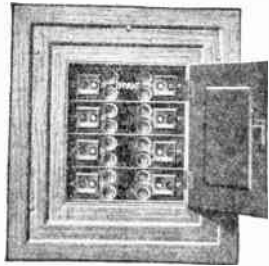
2562	Slotted	10	5	1	10	8	\$ 1.18
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Diameter of base, 2 3/8 inches. Height over cover, 2 1/8 inches. Supporting screw spacings, 1 3/4 inches.

**Perkins Push Panel Switches
Double-pole Fusing**

Each branch is fitted with a double pole switch, which is mounted on a separate base and may be removed without disturbing either main or branch connections.

These switches may be installed in any standard cabinet having a minimum depth of 3 inches. Gutter cabinets may be specified to the exact size of the switch bases as there is 1/2-inch of insulation outside of all current carrying parts.



The covers of these switches are steel, lined with insulating material. Each cover has an overhanging edge which engages with the cover of the adjoining switch, thereby effectively preventing accidental contact with any live parts.

Orders will be filled with switches having glossy black covers.

White enamel covers will be supplied when specified without extra charge. All other finishes on covers, add 50 cents to list.

Can be furnished with luminous button at an addition to list price of 25 cents for each switch button so fitted. Identical switches, regular and luminous, may be assorted.

**With Connections for Two-plug Fuses in Each Branch
With Safety Covers—Dead Front**



No. 2700

Cat. No.	Sched-ule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2698	H	6 5/8 x 3	1	10	31	\$2.25
2699	H	10 1/2 x 3	1	10	47	\$3.50
2700	H	11 5/8 x 3	1	10	50	\$3.75
2723	H	6 5/8 x 3	1	10	30	\$2.50
2724	H	10 1/2 x 3	1	10	47	\$4.00
2725	H	11 5/8 x 3	1	10	49	\$4.25

**With Connections for Two Cartridge Fuses in Each Branch
With Safety Covers—Dead Front**



No. 2685

Cat. No.	Sched-ule	Dimensions Inches	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2684	H	7 7/8 x 3	1	10	35	\$2.50
2685	H	12 7/8 x 3	1	10	59	\$4.75
2686	H	14 x 3	1	10	61	\$5.25
2726	H	7 7/8 x 3	1	10	35	\$2.50
2727	H	12 7/8 x 3	1	10	58	\$4.75
2728	H	14 x 3	1	10	60	\$5.25

**Double-pole Switch Mechanisms Only
For Push Panel Switches**

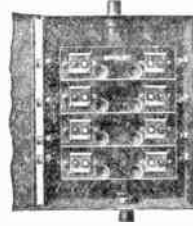
Nos. 2523 and 2729 are push-button type; Nos. 2526 and 2730 are push-lock type.

Cat. No.	Sched-ule	Amperes	Volts	Carton	*Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2523	H	10	250	10	50	12	\$.80
2729	H	20	250	10	50	12	1.05
2526	H	10	250	10	50	12	1.30
2730	H	20	250	10	50	12	1.55

*100 assorted also constitute a standard package.

Perkins Push Panel Switches

Single-pole Fusing—125-250 Volts



The catalogue numbers of panel switches with fuse omitted from one side of the line in each branch are the same as for similar panel switches with two fuses in each branch, except that the numeral 0 is added between the second and third figures to make a catalogue number with five figures instead of four figures.

With One Plug Fuse Receptacle in Each Branch

***With Safety Covers—Dead Front**



Cat. No.	Sched-ule	Dimen. In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
26098	II	6 5/8 x 3	1	10	31	\$2.25
26099	H	10 1/2 x 3	1	10	47	\$3.50
27000	II	11 5/8 x 3	1	10	50	\$3.75
27023	H	6 5/8 x 3	1	10	30	\$2.50
27024	H	10 1/2 x 3	1	10	47	\$4.00
27025	H	11 5/8 x 3	1	10	49	\$4.25

With Clips for One Cartridge Fuse in Each Branch

With Safety Covers—Dead Front



Cat. No.	Sched-ule	Dimen. In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
26084	H	7 7/8 x 3	1	10	35	\$2.50
26085	H	12 7/8 x 3	1	10	59	\$4.75
26086	II	14 x 3	1	10	61	\$5.25
27026	H	7 7/8 x 3	1	10	35	\$2.50
27027	H	12 7/8 x 3	1	10	58	\$4.75
27028	II	14 x 3	1	10	60	\$5.25

*The covers of these switches are steel, lined with insulating material. Each cover has an overhanging edge which engages with the cover of the adjoining switch, thereby effectively preventing accidental contact with any live parts. Covers are the same lengths as the bases.

Push-button switches can be converted into push lock switches by substituting, for No. 2523 or No. 2729 push-button mechanisms, No. 2526 or No. 2730 push lock mechanisms respectively.

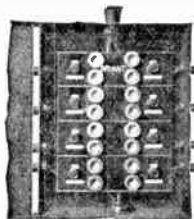
Orders will regularly be filled with switches having glossy black covers. White enamel covers will be supplied when specified without extra charge. For other finishes on covers, add to price \$.50 each.

†Can be furnished with luminous button at an addition to price of \$.25 for each switch button so fitted. Identical switches, regular and luminous, may be assorted.

**National Electrical Code Standard.

Perkins Rotary Panel Switches

Double-pole Fusing



These switches may be installed in any standard cabinet having a minimum depth of 3 inches. Gutter cabinets may be specified to the exact size of the switch bases, as there is 1/2 inch of insulation outside of all current carrying parts as required.

Can be converted into lock switches by substituting, for the handles No. 2384 Universal Lock Attachments.

With Connections for 2 Plug Fuses in Each Branch
*†With Safety Dead Front Covers and No. 2778

**Composition Handle
10 Amperes, 125 Volts**



No. 2600

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2598	II	6 5/8 x 3	1	10	31	\$2.00
2599	II	10 1/2 x 3	1	10	45	\$3.00
2600	II	11 5/8 x 3	1	10	50	\$3.25

With Open Fronts and White Enamel Switch Covers
With No. 2781 Porcelain Handle

10 Amperes, 250 Volts

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2400	H	6 5/8 x 3	1	10	30	\$1.60
2300	H	10 1/2 x 3	1	10	43	\$2.75
2360	H	11 5/8 x 3	1	10	47	\$3.00

With Connections for 2 Cartridge Fuses in Each Branch
*†With Safety Dead Front Covers and No. 2778

**Composition Handle
10 Amperes, 250 Volts**

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2687	H	7 7/8 x 3	1	10	40	\$2.25
2688	H	12 7/8 x 3	1	10	58	\$4.50
2689	II	14 x 3	1	10	63	\$5.00

With Open Fronts and White Enamel Switch Covers
With No. 2781 Porcelain Handle

10 Amperes, 250 Volts



No. 2535

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2534	H	7 7/8 x 3	1	10	35	\$2.00
2535	II	12 7/8 x 3	1	10	56	\$3.75
2536	II	14 x 3	1	10	59	\$4.25

*The covers of these switches are steel, lined with insulating material. Each cover has an overhanging edge which engages with the cover of the adjoining switch.

†Orders will regularly be filled with switches having glossy black covers. White enamel covers will be supplied, when specified, without extra charge. All other finishes on covers, add to price, 50 cents each.

Double-pole Switch Mechanisms Only

Indicating, for Rotary Panel Switches
20 Amperes, 125 Volts
10 Amperes, 250 Volts



No. 2595

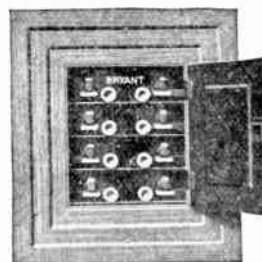
Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2595	H	....	10	10	4	\$7.1
2794	H	....	10	10	4	\$1.01

Perkins Rotary Panel Switches

Single-pole Fusing

Each branch is fitted with a double-pole switch, which is mounted on a separate base and may be removed without disturbing either main or branch connections. On special order, switches will be fitted with expulsion type mechanisms for inductive loads at an additional list price of 30 cents per branch.

These switches may be installed in any standard cabinet having a minimum depth of 3 inches. Gutter cabinets may be specified to the exact size of the switch bases, as there is 1/2 inch of insulation outside of all current carrying parts as required.



One plug fuse receptacle or clips for one cartridge fuse are omitted from one side of the line in each branch. This unfused side should always be the grounded side of the line.

The catalogue numbers of panel switches with fuse omitted from one side of the line in each branch, are the same as similar panel

switches with two fuses in each branch, except that the numeral 0 is added between the second and third figures.

Can be converted into lock switches by removing the handles and substituting Cat. No. 2384 universal rotary switch lock attachment.

With One Plug Fuse Receptacle in Each Branch
*†With Safety Dead Front Covers and No. 2778

**Composition Handle
10 Amperes, 125 Volts**



No. 26000

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
25098	H	6 5/8 x 3	1	10	31	\$2.00
25099	H	10 1/2 x 3	1	10	45	\$3.00
26000	H	11 5/8 x 3	1	10	50	\$3.25

With Open Fronts and White Enamel Switch Covers
With No. 2781 Porcelain Handle

10 Amperes, 125 Volts

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
24000	H	6 5/8 x 3	1	10	30	\$1.50
23000	II	10 1/2 x 3	1	10	43	\$2.75
23060	II	11 5/8 x 3	1	10	47	\$3.00

With Clips for One Cartridge Fuse in Each Branch
*†With Safety Dead Front Covers and No. 2778

**Composition Handle
10 Amperes, 250 Volts**

Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
26087	II	7 7/8 x 3	1	10	40	\$2.25
26088	H	12 7/8 x 3	1	10	58	\$4.50
26089	H	14 x 3	1	10	63	\$5.00

With Open Fronts and White Enamel Switch Covers
with No. 2781 Porcelain Handle

10 Amperes, 250 Volts



No. 25035

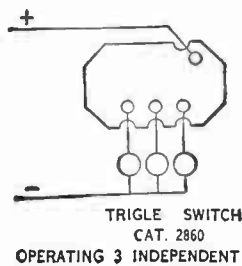
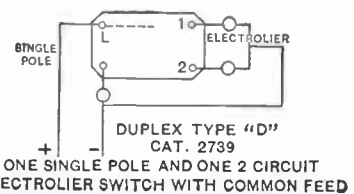
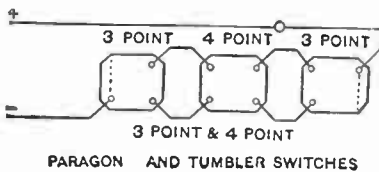
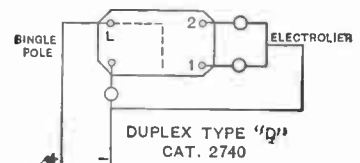
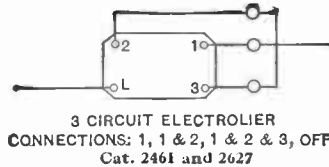
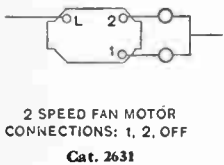
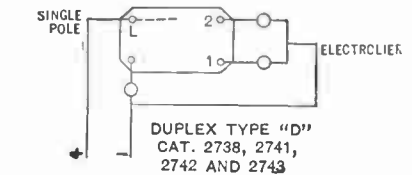
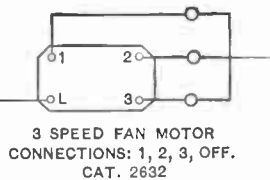
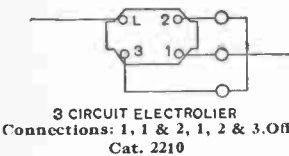
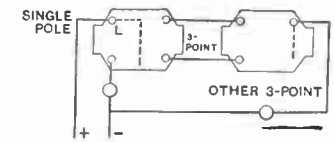
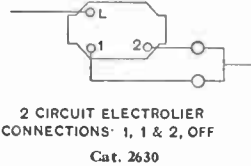
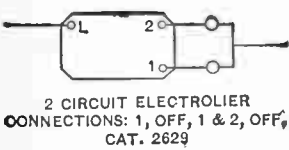
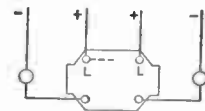
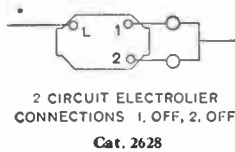
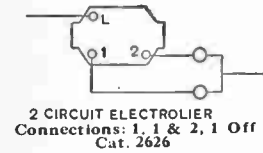
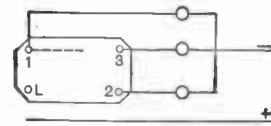
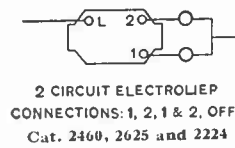
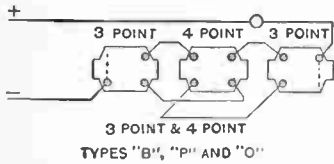
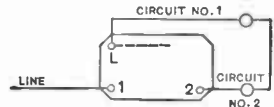
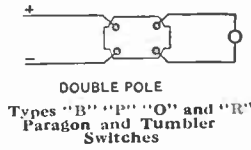
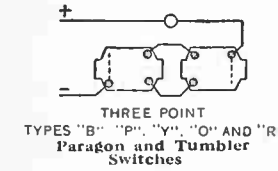
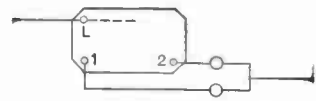
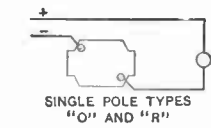
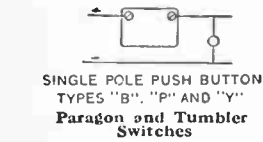
Cat. No.	Schedule	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
25034	II	7 7/8 x 3	1	10	35	\$2.00
25035	II	12 7/8 x 3	1	10	56	\$3.75
25036	II	14 x 3	1	10	59	\$4.25

*The covers of these switches are steel, lined with insulating material. Each cover has an overhanging edge which engages with the cover of the adjoining switch.

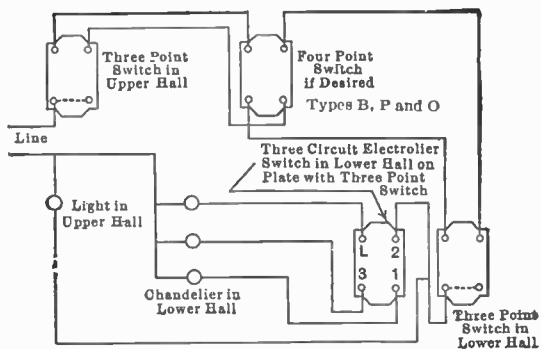
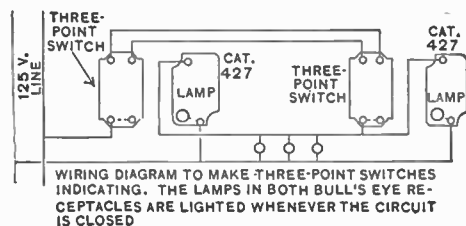
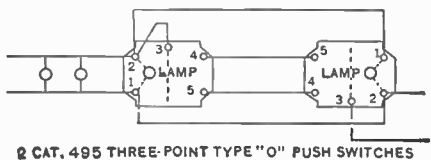
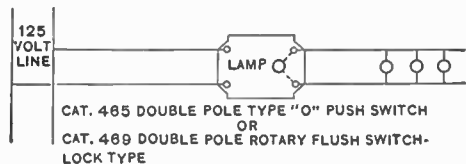
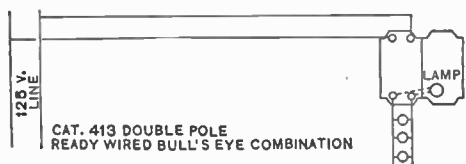
†Orders will regularly be filled with switches having glossy black covers. White enamel covers will be supplied, without extra charge. All other finishes on covers, add to price, 50 cents each.

Bryant Wiring Diagrams for Flush Switches

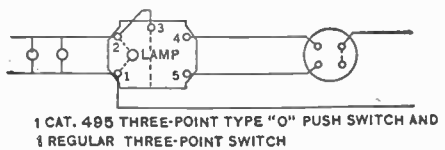
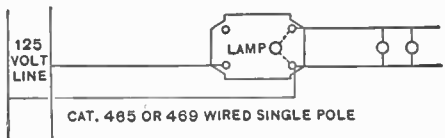
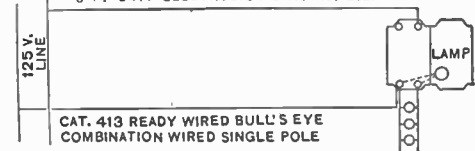
Bryant Wiring Diagrams for Flush Switches



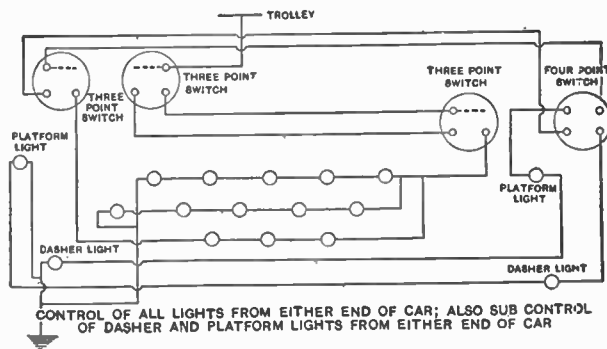
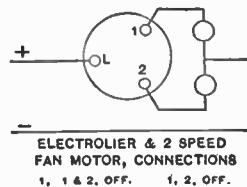
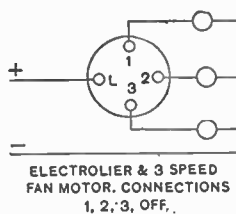
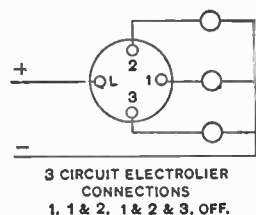
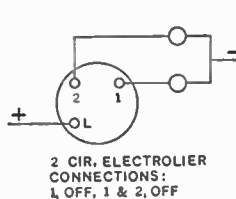
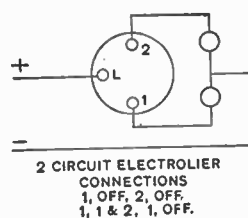
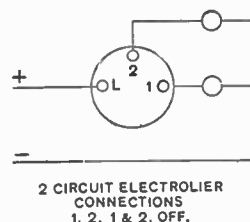
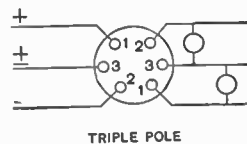
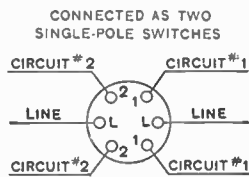
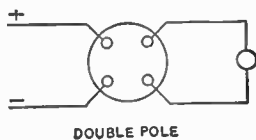
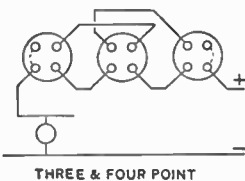
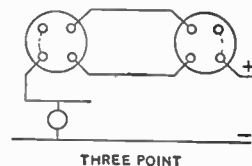
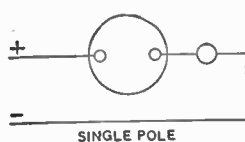
Bryant Wiring Diagrams for Flush Switches



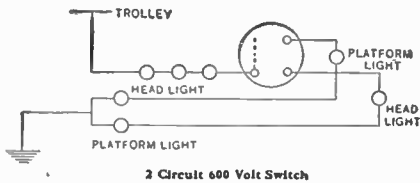
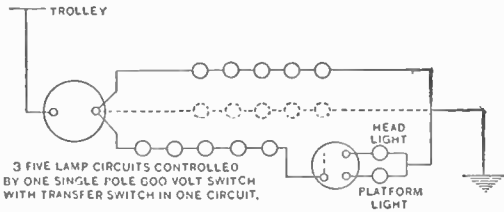
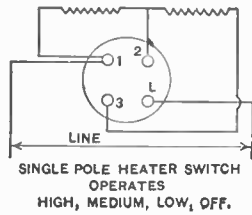
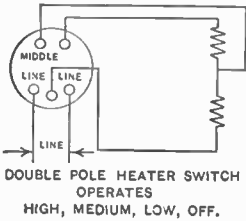
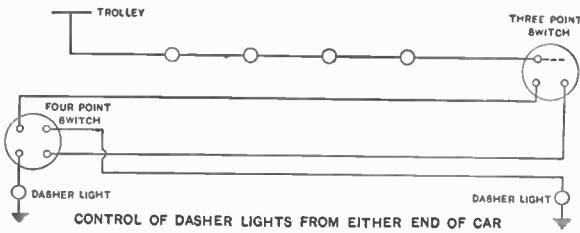
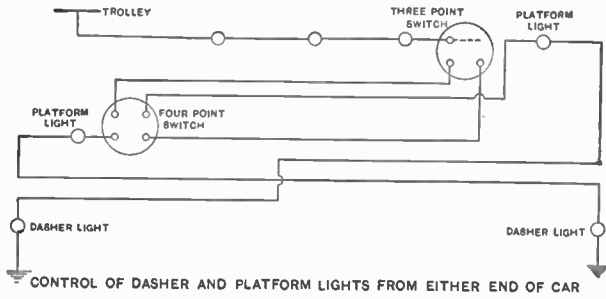
ELECTROLIER OPERATION OF LIGHTS THAT ARE CONTROLLED FROM TWO OR MORE POINTS
3 CIRCUIT ELECTROLIER CAT. No. 2627



Bryant Wiring Diagrams for Surface Switches



Bryant Wiring Diagrams for Surface Switches



Hubbell Toggle Flush Switches

Schedule F



When ordering Toggle Switches to be used with specially finished plates, care should be taken to specify the finish for Toggle handles of the switches.

For switches with luminous tipped handles, add 25 cents to price.

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		125 V.	250 V.				
8121	Single Pole	10	5	10	50	25	\$.72
8122	Doub. "	..	10	10	10	8	.88
8132	"	..	20	10	10	8	1.40
8123	Three-way	10	5	10	30	15	.88
8124	Four-way	5	2	10	10	8	2.00

Hubbell Shallow Flush Toggle Switches

With Porcelain Base and Black Bakelite Handle

Schedule F



No. 8641

Will fit in 1 1/2-inch switch boxes. White dot on handle of Nos. 8641 and 8642 indicates when current is on or off.

Supporting screw holes spaced 3 3/8 inches and 2 1/8 inches on centers.

These switches cannot be furnished with luminous tips.

Cat. No.	Description	AMPERES		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		125 V.	250 V.				
8641	Single-pole	10	5	10	100	25	\$.45
8642	Double "	..	10	10	50	15	.70
8643	3-way	10	5	10	50	15	.70
8644	4 "	..	5	2	10	8	2.00

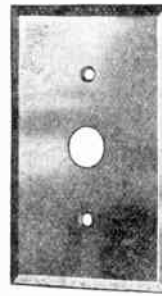
Hubbell Brass Flush Plates

For Toggle Switches

Schedule F

Struck-up, .040-inch Metal

Brush Brass



Cat. No.	Description	Dimens. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8652	2-gang	4 1/2 x 1 9/16	*	**	28	.28
8653	3 "	4 1/2 x 6 3/8	*	**	26	.42
8654	4 "	4 1/2 x 8 3/16	*	**	24	.88
Lacco						
8661	Single	4 1/2 x 2 3/4	20	100	30	\$.10
8662	2-gang	4 1/2 x 1 9/16	*	**	28	.20
8663	3 "	4 1/2 x 6 3/8	*	**	26	.30
8664	4 "	4 1/2 x 8 3/16	*	**	24	.72

Struck-up, .060-inch Metal

Brush Brass

Cat. No.	Description	Dimens. Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8292	2-gang	4 1/2 x 4 9/16	*	**	30	.36
8293	3 "	4 1/2 x 6 3/8	*	**	28	.54
8294	4 "	4 1/2 x 8 3/16	*	**	26	1.04

Solid Brass, .100-inch Metal

Brush Brass

8301	Single	4 1/2 x 2 3/4	20	100	35	\$.34
8302	2-gang	4 1/2 x 4 9/16	*	**	33	.68
8303	3 "	4 1/2 x 6 3/8	*	**	31	1.02
8304	4 "	4 1/2 x 8 3/16	*	**	29	1.36
8305	5 "	4 1/2 x 10	*	**	27	2.00
8306	6 "	4 1/2 x 11 9/16	*	**	25	2.40
8307	7 "	4 1/2 x 13 5/8	*	**	23	2.80
8308	8 "	4 1/2 x 15 7/16	*	...	21	3.20

**A standard package consists of 100 single plates or equivalent in gangs.

*One-fifth standard package or 20 gangs will be considered a carton quantity.

Plates in brush brass, Lacco or special finishes may be assorted to make standard package or carton quantity.

Hubbell Toggle Surface Switches

Schedule F

5 Amperes, 125 Volts, 3 Amperes, 250 Volts
Black porcelain base. Screw holes elongated, spacings 1½ to 1⅝ inches. Outside diameter of base, 2¼ inches.

Single-pole

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8171	Solid	10	100	35	\$.32
8191	Slotted	10	100	35	\$.32

Three-way

8173	Solid	10	100	35	\$.56
8193	Slotted	10	100	35	\$.56



No. 8171

Hubbell Toggle Switches

Schedule F

Single-pole

10 Amperes, 125 Volts; 5 Amperes, 250 Volts

Black porcelain base. Elongated screw holes accommodate boxes with screw spacings 1½ to 1⅝ inches. Outside diameter of base, 2¼ inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8421	Solid	10	100	35	\$.48
8431	Slotted	10	100	35	\$.48



No. 8421

Double-pole

10 Amperes, 250 Volts

Black porcelain base. Screw holes spaced, 1⅝ to 1⅞ inches. Outside diameter of base, 2⅞ inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8112	Solid	10	100	40	\$.76
8162	Slotted	10	100	40	\$.76



No. 8112

Three-way

10 Amperes, 250 Volts

Black porcelain base. Screw holes are spaced 1⅝ to 1⅞ inches on centers. Outside diameter of base, 2⅞ inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8153	Solid	10	50	20	\$.76
8233	Slotted	10	50	20	\$.76



No. 8153

Hubbell Toggle Battery Switches

Schedule S



No. 8051



No. 8071



No. 8076

Switches with Steel Sub-plate but without Face Plates

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8051	Single-pole Switch, 1⅜-inch Screw Spacings	25	100	15	\$.60
8066	" " " 2⅜ " " " "	25	100	15	\$.60
8053	3-way Switch, 1⅜-inch Screw Spacings	25	100	15	\$.90
8067	" " " 2⅜ " " " "	25	100	15	\$.90
8055	Momentary Contact Switch	25	100	15	\$.60

Separate Face Plates

8071	Single Plate, Square Corners and Beveled Edges, 1⅜-inch Screw Spacings	25	100	4	\$.20
8068	Single Plate, Square Corners and Beveled Edges, 2⅜-inch Screw Spacings	25	100	4	\$.20
8076	Single Plate, Round Corners and Edges, 1⅜-inch Screw Spacings	50	100	4	\$.20
8072	2-gang Plate	10	50	4	\$.40
8073	3 " " "	10	35	4	\$.60
8074	4 " " "	10	25	4	\$.80
8075	5 " " "	1	20	4	1.00

Hubbell Toggle Appliance Switches

3 Amperes, 250 Volts

Schedule F

These appliance switches are suitable for use with all kinds of electrically operated apparatus.

When installed, only the short Toggle handle and lock nuts are visible, the switch being suspended from the metal surface of appliance or apparatus and held in place by 2 lock washers, making a decidedly neat, convenient and effective switch.

Depth of switch base, ¾ inch; diameter, 1¼ inches.



No. 8650

Standard finishes are brush brass or polished nickel. Brush brass furnished unless otherwise specified.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8650	Composition	25	50	4	\$.45
8656	" with Long Neck	25	50	4	\$.50

Hubbell Toggle Battery Switches

With Flush Plate

20 Watts

Schedule S



No. 8250

Standard finishes for plates and toggle handles: Polished nickel, satin nickel and black enamel. Polished nickel furnished unless otherwise specified.

Supporting screw holes spaced 1½ inches on centers.

Depth of Barrel, ⅝ inch; diameter, ⅝ inch.



No. 8251

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8250	Single-pole Switch	25	100	3	\$.35
8253	3-way Switch	25	100	3	\$.56
8251	Single Brass Plate, 1⅞x1 Inches	25	100	2	\$.15

Hubbell Toggle Battery Switches

With Recessed Plates

20 Watts

Schedule S

Recessed Switches without Face Plate



No. 8091



No. 8081



Nos. 8091 and 8081 Assembled

Standard finishes for plates and toggle handles: Polished nickel, satin nickel and black enamel. Polished nickel furnished unless otherwise specified.

Cat. No.	Description	Screw Spacings Inches	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
8090	Single-pole	2⅜	25	100	15	\$.80
8091	"	1⅝	25	100	15	\$.80
8093	3-way	1⅝	25	100	15	1.10

Recessed Face Plates

8081	Single-plate	1⅝	25	100	2	\$.40
8092	2-gang	"	25	50	2	\$.80

Hubbell Flush Plates

Flush Plates with Round Corners and Round Edges

Plates with round corners and round edges will be furnished at the price of solid plates plus 15 cents list for single plates and 5 cents for each additional gang.

Plates with Round Corners and Beveled Edges

Plates with round corners and beveled edges will be furnished at the price of solid plates plus 15 cents list for each plate.

Plates with Extension Edges

Plates with extension edges to cover a device not flush with the wall can be furnished in solid metal at a net price of \$1.00 for a single plate and 50 cents net for each additional gang in addition to the price of the standard plate. For extension edges deeper than 1/2 inch, special prices will apply.

Plates with Square Corners and Square Edges (Not Beveled)

Plates with square corners and square edges (not beveled) will be sold at list price of 10 cents per square inch, except when spacings and dimensions are standard, in which case solid plates will be furnished and there will be no extra charge.

Special Size Plates—Solid Brass

Plates of special size or spacings in standard finishes will be furnished at a list price of 7 cents per square inch in addition to the list price of corresponding solid plate. Standard package consists of 10 plates of a size or kind. This list on plates smaller than a single standard will be computed at the same rate using as a basis the area of a single standard plate. For special size combinations having double hinge cover, add 75 cents list extra for each lift cover.

Orders for special size plates should always be accompanied by a plainly marked sketch giving the dimensions; and for special finish plates, should be accompanied by a sample of the desired finish.

When special size plates are not rectangular in shape, the charge will be for a plate the size of the smallest rectangular piece from which the specified plate can be cut. In no case shall a special plate sell at a price less than the corresponding standard plate.

Receptacle Plate Screws

Receptacle plate screws, size 3/8 inch, when bought separately, 75 cents list per 100 in brush brass or Lacco finishes. Standard package, 100. Schedule H. Special length plate screws, \$1.00 per 100.

Engraving

Flush plates will be stamped with words or numbers at a list price of 10 cents per letter or numeral; standard package, 100.

Plate Dimensions

No. of Gangs	INCHES		No. of Gangs	INCHES	
	Vertical	Horizontal		Vertical	Horizontal
1	4 1/2	2 3/4	7	4 1/2	13 5/8
2	4 1/2	5 9/16	8	4 1/2	15 7/16
3	4 1/2	6 3/8	9	4 1/2	17 1/4
4	4 1/2	8 3/16	10	4 1/2	19 1/16
5	4 1/2	10	11	4 1/2	20 7/8
6	4 1/2	11 13/16	12	4 1/2	22 11/16

For plates beyond 12 gangs, add 1 1/8 inches per gang.

Vertical Gangs—Tandem

No. of Gangs	INCHES		No. of Gangs	INCHES	
	Vertical	Horizontal		Vertical	Horizontal
2	8 1/2	2 3/4	4	15 3/8	2 3/4
3	11 3/4	2 3/4	5	19	2 3/4

For plates beyond 5 gangs, add 3 5/8 inches per gang.

Spacings

Plates for push button switches, toggle switches, convenience outlets, 10 and 20-ampere polarized receptacles, flush door and 3-wire receptacles, also lift cover plates, have screw holes spaced 2 3/8 inches on centers.

Plates for attaching directly to outlet boxes have screw holes spaced 3 1/2 inches on centers.

Gang plates are spaced 1 3/8 inches on centers horizontally, and 3 3/8 inches on centers vertically.

Hubbell Special Finishes Plug Material and Flush Plates

Description	METAL COVERED ATTACHMENT PLUG CAPS		BRASS FLUSH PLATES FOR RECEPTACLES AND SWITCHES		
	Std. 10-amp. Caps	Large and Polarized 10 and 20-ampere Plug Covers	Nos. 5615 2 1/2 and 3 1/4-inch Round Plates	No. 5580 Double Hinged Cover Plate (e)	(d) Standard Flush Door and Single Hinge Cover Plates (First Gang)
Barff, Bauer, (Lacquer)	\$.04	\$.08	\$.10	\$.15	\$.10
(a) Brass, Brush	...	...	...	...	...
" Flemish	.08	.15	.15	.20	.15
" Lemon	.04	.08	.10	.15	.10
" Oxidized	.08	.15	.15	.20	.15
" Polished	.04	.08	.10	.15	.10
" Polished (not Lacquered)	.04	.08	.10	.15	.10
Brass, Sand Blast, Antique	.12	.25	.30	.35	.30
" " Brush	.08	.16	.25	.30	.25
Bronze, Brush	.08	.15	.15	.20	.15
" Japanese (Dark)	.08	.15	.15	.20	.15
" Polished	.08	.15	.15	.20	.15
" Statuary (Light)	.08	.15	.15	.20	.15
" Sand Blast, Antique	.12	.25	.30	.35	.30
Copper, Antique	.10	.19	.20	.25	.20
" Brush	.08	.15	.15	.20	.15
" Mottled	.08	.15	.15	.20	.15
" Oxidized	.08	.15	.15	.20	.15
" Polished	.08	.15	.15	.20	.15
Enamel, White, (Lacquer)	.04	.08	.10	.15	.10
Gilt, Rich	.04	.08	.10	.15	.10
(c) Gold	...	...	...	...	...
Gun Metal	.08	.15	.15	.20	.15
Nickel, Dull	.08	.15	.15	.20	.15
" Polished	.08	.15	.15	.20	.15
" Sand Blast	.12	.25	.30	.35	.30
Silver, Butler's (Brushed)	.14	.27	.45	.50	.45
" Oxidized	.14	.27	.45	.50	.45
" Polished	.14	.27	.45	.50	.45
" Satin	.14	.27	.45	.50	.45
Verde, Antique	.04	.08	.10	.15	.10

(a) Standard finish is Brush Brass which will be furnished on all orders where no finish is specified.

(c) All finishes not listed above, including Gold, prices on application. Sample should be submitted with inquiry.

(d) These prices should be added to Brush Brass prices and not "Lacco."

(e) List prices applying to finishes on Plates are based on single plates. When ordering in gangs, add 10 cents for each gang beyond the first, regardless of finish except gold.

The above prices for special finishes apply to small lots. When ordering in quantity lots of one finish, one shipment, one catalogue number, they are reduced as follows:

- 100 to 499 gangs or caps, list price reduced 10%.
- 500 to 999 gangs or caps, list price reduced 20%.
- 1000 gangs or caps and over, list price reduced 50%.

These deductions should be made from the list prices of finishes before trade discounts are figured.

Unfinished devices (except flush plates) or devices polished but not lacquered will be supplied at same list price as devices in standard finish.

Unfinished flush plates, that are polished and buffed, will be supplied at same list price as brush brass plates.

Unfinished flush plates, not polished or buffed, (in rough state) will be furnished at same list price as "Lacco" finish plates.

"Lacco" finish is a durable sprayed-on lacquer coating resembling Brush Brass.

Diamond H Single-pole Surface Switches



These switches may be converted into lock switches by removing the handle and using lock attachments.

Nickel plated switch covers and black rubber handles furnished as standard.

5 Amperes, 125 Volts—3 Amperes, 250 Volts

Diam. base, 2 3/16 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
220	Solid	Plain	10	100	35	\$.36
D-220	"	Indicating	10	100	35	.40
2200	Slotted	Plain	10	100	35	.36
D-2200	"	Indicating	10	100	35	.40

10 Amperes, 125 Volts—5 Amperes, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
221	Solid	Plain	10	100	50	\$.48
D-221	"	Indicating	10	100	50	.54
2210	Slotted	Plain	10	100	50	.48
D-2210	"	Indicating	10	100	50	.54

20 Amperes, 125 Volts

Diam. base, 3 3/8 in. Screws spaced 2 1/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
321	Solid	Plain	3	30	25	\$.90
D-321	"	Indicating	3	30	25	1.00
3210	Slotted	Plain	3	30	25	.90
D-3210	"	Indicating	3	30	25	1.00

30 Amperes, 125 Volts

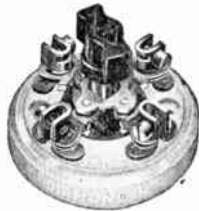
Diam. base, 3 5/8 in. Screws spaced 2 1/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
421	Solid	Plain	1	30	32	\$ 1.40
D-421	"	Indicating	1	30	32	1.50
4210	Slotted	Plain	1	30	32	1.40
D-4210	"	Indicating	1	30	32	1.50

Diamond H Double-pole Surface Switches

These switches may be converted into lock switches by removing the handle and using lock attachments.

Nickel-plated switch covers and black rubber handles furnished as standard.



5 Amperes, 250 Volts

Diam. base, 2 5/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
122	Solid	Plain	10	100	40	\$.56
D-122	"	Indicating	10	100	40	.64
1220	Slotted	Plain	10	100	40	.56
D-1220	"	Indicating	10	100	40	.64

10 Amperes, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
222	Solid	Plain	10	100	50	\$.66
D-222	"	Indicating	10	100	50	.76
2220	Slotted	Plain	10	100	50	.66
D-2220	"	Indicating	10	100	50	.76

20 Amperes, 250 Volts

Diam. base, 3 3/8 in. Screws spaced 2 1/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
322	Solid	Plain	3	30	25	\$ 1.40
D-322	"	Indicating	3	30	25	1.50
3220	Slotted	Plain	3	30	25	1.40
D-3220	"	Indicating	3	30	25	1.50

30 Amperes, 250 Volts

Diam. base, 3 5/8 in. Screws spaced 2 1/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
422	Solid	Plain	1	30	44	\$ 1.70
D-422	"	Indicating	1	30	44	1.80
4220	Slotted	Plain	1	30	44	1.70
D-4220	"	Indicating	1	30	44	1.80

Diamond H Electroliner Surface Switches



These switches may be converted into lock switches by removing the handle and using lock attachments.

Nickel-plated covers and black rubber handles furnished as standard.

Two-point

3 Amperes, 125 Volts—1 Ampere, 250 Volts

Diam. base, 2 5/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
125	Solid	Plain	10	30	17	\$.50
D-125	"	Indicating	10	30	17	.54
1250	Slotted	Plain	10	30	17	.60
D-1250	"	Indicating	10	30	17	.64

Three-point

3 Amperes, 125 Volts—1 Ampere, 250 Volts

Diam. base, 2 5/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
126	Solid	Plain	10	30	17	\$.76
D-126	"	Indicating	10	30	17	.86
1260	Slotted	Plain	10	30	17	.76
D-1260	"	Indicating	10	30	17	.86

Two-point

5 Amperes, 125 Volts—1 Ampere, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
225	Solid	Plain	10	30	20	\$.76
D-225	"	Indicating	10	30	20	.86
2250	Slotted	Plain	10	30	20	.76
D-2250	"	Indicating	10	30	20	.86

Three-point

5 Amperes, 125 Volts—2 Amperes, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
226	Solid	Plain	10	30	20	\$.90
D-226	"	Indicating	10	30	20	1.00
2260	Slotted	Plain	10	30	20	.90
D-2260	"	Indicating	10	30	20	1.00

Diamond H Three and Four-way Surface Switches

These switches may be converted into lock switches by removing the handle and using lock attachments.

Nickel-plated covers and black rubber handles furnished as standard.



Three-way

5 Amperes, 115 Volts—3 Amperes, 250 Volts

Diam. base, 2 5/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
123	Solid	Plain	10	100	37	\$.56
1230	Slotted	"	10	100	37	.56

10 Amperes, 125 Volts—5 Amperes, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
223	Solid	Plain	10	50	40	\$.76
2230	Slotted	"	10	50	40	.76

20 Amperes, 125 Volts

Diam. base, 3 3/8 in. Screws spaced 2 1/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
323	Solid	Plain	1	10	14	\$ 1.50
3230	Slotted	"	1	10	14	1.50

Four-way

3 Amperes, 125 Volts—1 Ampere, 250 Volts

Diam. base, 2 5/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
124	Solid	Plain	10	10	7	\$.76
1240	Slotted	"	10	10	7	.76

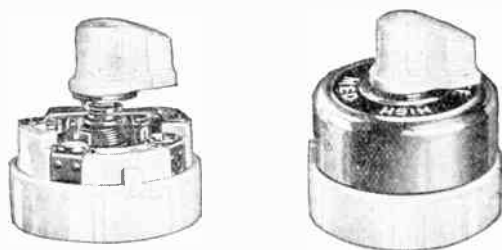
5 Amperes, 125 Volts—2 Amperes, 250 Volts

Diam. base, 2 7/32 in. Screws spaced 1 7/16 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
224	Solid	Plain	10	10	7	\$.86
2240	Slotted	"	10	10	7	.86

Diamond H Reciprocating Type Heater Switches

With Round Porcelain Base, Porcelain Handle and Insulated Nickel Silver Cover



Cat. No. 1899

Single Pole—Series Parallel
Operating: High, Medium, Low, Off

Cat. No.	Diam. Base Inches	Over All Dimension Inches	Supporting Screw Spacings Inches		AMPERE RATING		Car-ton	Wt. Lbs. per 100	Price Each
			125 V.	250 V.	125 V.	250 V.			
1897	2 1/4	2 11/16	1 7/16	8	4	10	30	\$.86	
1898	2 9/16	2 11/16	1 11/16	12	6	10	37	1.00	
1899	2 3/8	3 1/16	1 11/16	18	9	10	45	1.10	
1896	3	3 1/16	2 1/8	24	12	3	65	1.30	
1895	3 3/8	3 3/16	2 1/8	30	15	3	125	1.60	
1894	3 5/8	3 11/16	2 3/8	36	18	1	180	1.90	
1893	4	3 3/4	2 5/8	42	21	1	225	2.40	

Single Pole—On and Off

1892	2 1/4	2 11/16	1 7/16	8	4	10	30	\$.70
1891	2 9/16	2 11/16	1 11/16	12	6	10	37	.84
1890	2 3/8	3 1/16	1 11/16	18	9	10	45	.94
1889	3	3 1/16	2 1/8	24	12	3	65	1.14
1888	3 3/8	3 3/16	2 1/8	30	15	3	125	1.44
1887	3 5/8	3 11/16	2 3/8	36	18	1	180	1.74
1886	4	3 3/4	2 5/8	42	21	1	225	2.24

Double Pole—On and Off

1885	2 1/4	2 11/16	1 7/16	8	4	10	30	\$.86
1884	2 9/16	2 11/16	1 11/16	12	6	10	37	1.00
1883	2 3/8	3 1/16	1 11/16	18	9	10	45	1.10
1882	3	3 1/16	2 1/8	24	12	3	65	1.30
1881	3 3/8	3 3/16	2 1/8	30	15	3	..	1.60
1880	3 5/8	3 11/16	2 3/8	36	18	1	..	1.90
1879	4	3 3/4	2 5/8	42	21	1	..	2.40

Single Pole—2-circuit Multiple Switch
Operating: High, Medium, Low, Off

1878	2 1/4	2 11/16	1 7/16	8	4	10	..	\$.86
1876	2 9/16	2 11/16	1 11/16	12	6	10	..	1.00
1875	2 3/8	3 1/16	1 11/16	18	9	10	..	1.10
1874	3	3 1/16	2 1/8	24	12	3	..	1.30
1873	3 3/8	3 3/16	2 1/8	30	15	3	..	1.60
1872	3 5/8	3 11/16	2 3/8	36	18	1	..	1.90
1871	4	3 3/4	2 5/8	42	21	1	..	2.40

Two Pole—Series Parallel
Operating: High, Medium, Low, Off

1870	3 3/8	3 11/16	..	36	18	1	..	\$2.60
1869	4	3 3/4	..	42	21	1	..	3.10

Diamond H 600-volt Surface Switches
For Electric Railway Use



Similar to 250-volt switches except that the switch blades are longer, giving the switch a longer and quicker break. Porcelain covers and handles can be furnished at 12 cents additional list.

Single-pole

3 Amperes, 600 Volts

Diam. base, 2 1/2 in. Screws spaced, 1 5/8 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
501	Solid	Plain	10	50	26	\$.54
D-501	"	Indicating	10	50	26	.60
5010	Slotted	Plain	10	50	26	.54
D-5010	"	Indicating	10	50	26	.60

Three-way

3 Amperes, 600 Volts

Diam. base, 2 1/2 in. Screws spaced, 1 5/8 in.

503	Solid	Plain	10	50	27	\$.76
5030	Slotted	"	10	50	27	.76

Two-circuit

3 Amperes, 600 Volts

Diam. base, 2 1/2 in. Screws spaced, 1 5/8 in.

506	Solid	Plain	10	50	27	\$.90
D-506	"	Indicating	10	50	27	1.00
5060	Slotted	Plain	10	50	27	.90
D-5060	"	Indicating	10	50	27	1.00

Three-circuit

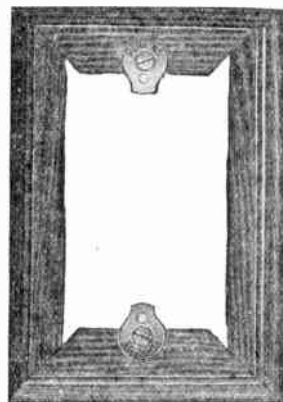
3 Amperes, 600 Volts

Diam. base, 2 1/2 in. Screws spaced, 1 5/8 in.

507	Solid	Plain	10	50	27	\$.90
D-507	"	Indicating	10	50	27	1.00
5070	Slotted	Plain	10	50	27	.90
D-5070	"	Indicating	10	50	27	1.00

Wood Mats

Schedule H



For flush switches and flush receptacles. May be used either with or without outlet boxes.

Quartered Oak, Varnished and Rubbed

Cat. No.	No. of Switches	DIMEN., IN.		Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		Vert.	Horiz.				
2361	1	5 1/2	3 3/4	10	*	32	\$.50
2362	2	5 1/2	5 9/16	5	*	24	.70
2363	3	5 1/2	7 3/8	5	*	16	.90
2364	4	5 1/2	9 3/16	5	*	14	1.10

White Wood, Unfinished

Suitable for finishing to match any desired wood.

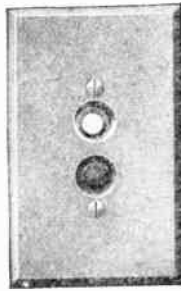
2371	1	5 1/2	3 3/4	10	*	27	\$.50
2372	2	5 1/2	5 9/16	5	*	19	.70
2373	3	5 1/2	7 3/8	5	*	11	.90
2374	4	5 1/2	9 3/16	5	*	9	1.10

*A standard package of wood mats consists of a sufficient number assorted from all of these listed, to accommodate 100 switches.

Diamond H Push Button Switches
Standard Type



No. 050 Switch



No. 050 Switch with No. 111 Plate

Can be furnished with luminous buttons. Add to list price of any switch 25c per switch list. For switches with buttons longer than regular add to list price 40c per switch. White or red ivory switch buttons 50c per button list extra.

Cat. No.	Description	-CAP. AMP.-		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V	250V				
050	Single Pole	10	5	1	100	60	\$.45
060	Double "	10	10	1	50	30	.70
070	Three-way	10	5	1	50	30	.70
080	Four "	5	2	1	10	8	2.00

Diamond H Momentary Contact Switches

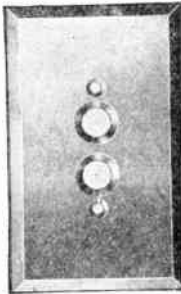
This is a special push button switch for use in connection with remote control switches. The mechanism is similar to that of the regular diamond H push button switch and is so arranged that a snap contact is made by pressing either of the buttons and a quick break is obtained when the button is released. Both buttons cannot be pressed at the same time. This switch fits all standard conduit boxes and uses a regular Diamond H push button plate. It can be fitted with a lock attachment, if desired.



Can be furnished with luminous buttons. Add to list price of any switch 25c per switch list. For switches with buttons longer than regular add to list price 40c per switch. White or red ivory switch buttons 50c per button list extra.

Cat. No.	Description	Cap. Amp.		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V	250V				
090	For Remote Control Sw.	10	5	10	25	22	\$2.40
091	1 Button Normally Open ...	10	5	10	25	22	2.40
092	1 " " Closed ...	10	5	10	25	22	2.40
093	1 Side Open, 1 Side Closed ...	10	5	10	25	22	2.40
094	2 Circuit Normally Closed ...	10	5	10	25	22	2.40
096	2 " " Open ...	10	5	10	25	22	2.40
097	1 Button Double Pole ...	10	5	10	25	22	2.40
095	No. 090 Lock Type ...	10	5	10	25	22	2.85

Diamond H Push Button Switch Plates



Single Plate Solid Brass

Cat. No.	Description	DIMENS. INCHES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		Vert.	Horiz.				
111	1 Gang	4 1/2	2 3/4	20	*	41	\$.34
112	2 "	4 1/2	4 9/16	10	*	39	.68
113	3 "	4 1/2	6 3/8	10	*	31	1.02
114	4 "	4 1/2	8 3/16	1	*	27	1.36
115	5 "	4 1/2	10	1	*	26	2.00

Struck-up Brass .060 Inch

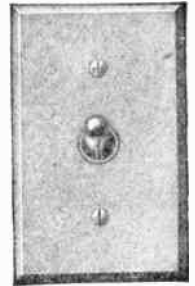
1111	1 Gang	4 1/2	2 3/4	20	*	32	\$.18
1112	2 "	4 1/2	4 9/16	10	*	30	.36

*Standard package, 100 gangs.

Diamond H Lever Flush Switches



No. 1500 Switch



No. 1500 Switch with Plate

These switches can be furnished with luminous tips. Add to list price of any switch 25c. per switch list.

Cat. No.	Description	CAP AMP.		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V	250V				
1500	Single Pole	10	5	10	100	60	\$.45
1502	Double "	10	10	10	50	30	.70
1503	Three Way	10	5	10	50	30	.70
1504	Four "	10	5	10	10	8	2.00

Plates for Lever Flush Switches
Solid Brass

Cat. No.	Description	DIMENS. INCHES		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		Vert.	Horiz.				
1513	1 Gang	4 1/2	2 3/4	20	*	41	\$.34
1514	2 "	4 1/2	4 9/16	10	*	39	.68
1515	3 "	4 1/2	6 3/8	10	*	31	1.02
1516	4 "	4 1/2	8 3/16	1	*	27	1.36
1517	5 "	4 1/2	10	1	*	26	2.00

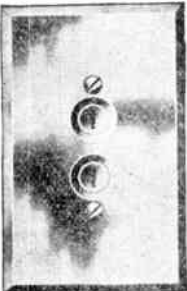
Struck-up Brass
.040 Inch

1510	1 Gang	4 1/2	2 3/4	20	*	25	\$.14
1511	2 "	4 1/2	4 9/16	10	*	26	.28
1512	3 "	4 1/2	6 3/8	5	*	18	.42

Struck-up Brass
.060 Inch

1525	1 Gang	4 1/2	2 3/4	20	*	32	\$.18
1526	2 "	4 1/2	4 9/16	10	*	30	.36

*Standard package, 100 gangs.



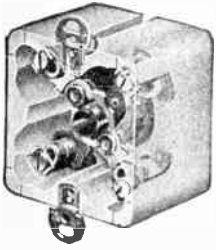
Diamond H Lock Type Push Button Switches

Lock attachments are permanently attached to the switches and cannot be substituted for the push buttons on regular switches.

Keys are furnished with these switches when ordered. No. 255 key is used with these switches; price each, 10 cents, list.

Cat. No.	Description	-CAP. AMP.-		Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		125V	250V				
055	Single Pole	10	5	1	100	60	\$1.06
065	Double "	10	10	1	50	30	1.30
075	Three-way	10	5	1	50	30	1.30
085	Four "	5	2	1	10	8	2.50

Diamond H 20-ampere Rotary Flush Switches



No. 1322 Switch

The 20-ampere Flush Switches have the same mechanism as the 20-ampere surface type which is enclosed in a heavy porcelain base which is practically unbreakable. They are made in both single and double pole types, either with or without indicating dial, as may be desired.

Single pole, 20 amperes, 125 volts.
Double pole, 20 amperes, 250 volts.
Base 3 inches x 2½ inches deep.
Supporting screw holes 3½ inches center to center.

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
1321	Single Pole	1	30	40	\$1.20
1322	Double	1	30	45	1.60
1323	D. P. Hobart Type	1	30	45	1.80

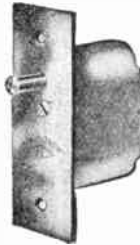
Plates for Rotary Flush Switches

Cat. No.	Description	Car- ton	Std. Pkg.	Wt. Lbs.	Price Each
1330	Indicating	1	*	39	\$1.00
1331	Plain	1	*	39	.80
1335	Rotary Switch Plate Pull Attachment	1	10	..	1.80

*100 single plates or assorted in gangs equivalent to a standard package.

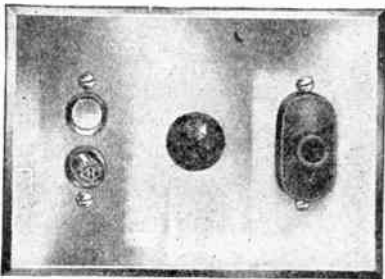
Diamond H Automatic Door Switches

Made in two types, No. 601 light on with door open and No. 602 light off with door open. Strike plates for door switches are made of hard brass ⅜ inch thick. The conduit box for door switches is made of cold rolled steel .085 of an inch thick, galvanized or black enamel finish. It is furnished with a clamping device suitable for use with all kinds of flexible conduit. A liberal number of knock-outs is provided. Regular plate dimensions are 1¼x4½ inches. Special size plates can be furnished to order.



Cat. No.	Description	Car- ton	Switch only		Price Each
			Pkg.	Std. Pkg.	
601	Light On with Door Open	5	25	19	\$2.25
602	" " " Closed	5	10	19	2.25
603	No. 601 Door Sw. without Plate	5	25	12	1.80
604	" 602 " " " "	5	10	12	1.80
681	Black Japan Conduit Box	5	25	12	.40

Diamond H Combination Plates



Combination plates are made in both horizontal and tandem styles, and can be furnished in a number of different combinations and finishes. Special combination made on short notice. Twenty-five units assorted in standard package. Solid brass plates only. Switches, receptacles, etc., not included in the price of combination plates.

Cat. No.	Description	Price Each
1460	Push Button Switch and Bulls Eye	\$1.75
1461	Rotary Switch and Bulls Eye	1.85
1462	Receptacle, Bulls Eye and Push Button Switch	2.65
1463	Bulls Eye Plate Only	1.25
1464	Receptacle and Push Button Switch	1.40
1466	Bulls Eye and Receptacle Tandem	2.10
1468	2 Push Button and Bulls Eye	2.25

Diamond H Remote Control Switches

A Remote Control or magnetically operated switch is used where it is desired to control a certain load from a remote point, so remote that it would be inexpedient and expensive to run the heavy mains from the load to the point of control and return. This would mean an unnecessary loss of voltage and a heavy expenditure for copper and conduit.

A Remote Control Switch is installed as near the load as practicable and three small wires, for moderate distances No. 14, are run from this switch to the manual momentary contact switch located at the desired point of control.

By extending these control wires and connecting in momentary contact switches, the points of control may be increased to any desired number.

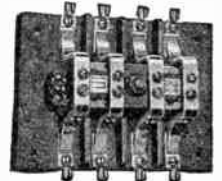
The momentary contact switch is normally in an open position and connects the common control wire alternately with the other two which are in series with the opening and closing coils respectively of a Remote Control Switch.

The principal use of the Remote Control Switch is for the control of large groups of lights in public buildings, theatres, train sheds, isolated sections of plants or docks, individual buildings, etc.

Type F Single Throw

For Potential Not Exceeding 250 D. C. Volts or 440 Volts A. C.

Type F Remote Control Switches consist of the required number of contacts mounted on a slate base. Switches of this type are used extensively with auxiliary switches, tank switches, pressure gauges, thermostats, momentary contact switches, etc., to control small motors which can be thrown directly on the line.



Cat. No. 610

Type F Remote Control Switches will operate directly across the line without the use of any other series resistance for the coils. Three control wires are required between the remote control point and the Type F switch.

A 2-button push button switch of the momentary contact type is used as control; one button to open, and one button to close the Remote Control Switch.

Single-pole

Cat. No.	Capacity Amperes	Shipping Weight Pounds	Price
716	30	15	\$30.00
717	60	17	43.00
718	75	20	55.00
719	100	24	88.00
723	150	28	100.00
724	200	33	112.00
725	300	37	165.00
726	400	47	192.00

Double-pole

730	30	16	\$36.00
740	60	18	48.00
750	75	22	60.00
760	100	25	93.60
770	150	30	108.00
780	200	34	122.40
781	300	40	186.00
782	400	44	216.00

3-pole

790	30	17	\$43.20
800	60	19	54.00
810	75	23	67.20
820	100	26	108.00
830	150	32	124.80
840	200	35	139.20
850	300	40	214.00
860	400	46	248.00

4-pole

610	30	18	\$54.00
620	60	20	68.00
630	75	24	112.00
640	100	27	128.00
650	200	40	168.00

6-pole

960	30	20	\$86.40
961	60	23	108.00
962	75	29	134.00
963	100	31	216.00
964	200	46	260.00

Diamond H Remote Control Switches

Type A Single Throw, No Voltage, Release

For Potential Not Exceeding 250 Volts D. C. or 440 Volts A. C.



Cat. No. 630

In the Type A switch, the closing coil is of comparatively low resistance and requires current only while the switch is closing, being automatically cut out the instant the switch locks in the closed position. The high resistance coil takes but a small fraction of an ampere and is in circuit while the switch remains closed. An interruption of this circuit either from failure of current supply, or by the opening of the control switch, allows the armature, which this high resistance coil holds suspended, to drop, releasing the ball-locking device of the main armature and allowing the switch to open by gravity. The manual control is effected by a single-pole switch, or when more than one point of control is desired, by 3 and 4-way switches. Switches are furnished for either alternating or direct current, but with different windings. It is necessary, therefore, to specify the type of service on which the switch is to be used. This switch is particularly desirable where the service is subject to interruption. Upon the failure of the service, the switch automatically opens and prevents injury to the device controlled by the switch in case of sudden resumption of service. In many cases, however, it is desired and can be furnished if specified, that the switch will close upon resumption of service.

The Type A switch is suitable for intermittent service, such as vacuum cleaners. One pair of wires and single-pole switches of any type at each point of control can be used, instead of three wires and the more expensive momentary contact switches. When so wired, the switch closes on completion of the circuit by any of the single-pole switches. The switch may be also controlled by the use of 3 and 4-way switches, in which case it can be thrown on at any point of control or off at any other point of control.

Single-pole

Cat. No.	Capacity Amperes	Shipping Weight Pounds	Price Each
4351	30	20	\$40.00
5351	60	22	48.00
5361	75	26	62.00
6351	100	34	84.00

Double-pole

4352	30	20	\$48.00
5352	60	22	54.00
5362	75	26	70.00
6352	100	34	98.00

3-pole

4353	30	21	\$60.00
5353	60	23	68.00
5363	75	27	78.00
6353	100	35	108.00

H & H 4-way Surface Switches

Schedule S

May be converted into lock switches by removing handle and using a lock attachment.

**5 Amperes, 125 Volts
2 Amperes, 250 Volts**

Screw holes spaced 1 3/4 inches. Base, 2 1/2 inches.

Plain Nickered Cover

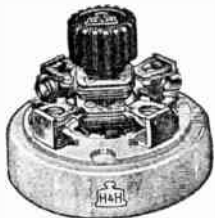
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
24	Solid	10	30	17	\$.86
124	Slotted	10	30	17	.86

**10 Amperes, 125 Volts
5 Amperes, 250 Volts**

Screws, 2 3/8 inches.

Plain Nickered Cover

2959	Solid	1	10	9	\$1.90
2960	Slotted	1	10	9	1.90



H & H Single-pole Surface Switches

Schedule S

Furnished with nickeled cover.

May be converted into lock switch by the use of the lock attachment.



5 Amperes, 125 Volts—3 Amperes, 250 Volts

Small Size

Screw holes spaced 1 1/2 inches. Base, 2 inches.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2148	Solid	Plain	10	250	69	\$.28
2161	Slotted	"	10	250	69	.28
2162	Solid	Indicating	10	250	69	.32
2163	Slotted	"	10	250	69	.32

Large Size

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
120	Solid	Plain	10	100	31	\$.36
220	Slotted	"	10	100	31	.36
320	Solid	Indicating	10	100	31	.40
320	Slotted	"	10	100	31	.40

10 Amperes, 125 Volts—5 Amperes, 250 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
21	Solid	Plain	10	100	50	\$.48
121	Slotted	"	10	100	50	.48
221	Solid	Indicating	10	100	50	.54
321	Slotted	"	10	100	50	.54

10 Amperes, 250 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2983	Solid	Plain	10	100	50	\$.66
2984	Slotted	"	10	100	50	.66
2985	Solid	Indicating	10	100	50	.76
2986	Slotted	"	10	100	50	.76

20 Amperes, 125 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
31	Solid	Plain	1	10	15	\$.90
131	Slotted	"	1	10	15	.90
231	Solid	Indicating	1	10	15	1.00
331	Slotted	"	1	10	15	1.00

30 Amperes, 125 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
640	Solid	Plain	1	10	15	\$ 1.40
641	Slotted	"	1	10	15	1.40
642	Solid	Indicating	1	10	15	1.50
643	Slotted	"	1	10	15	1.50

H & H Three-way Surface Switches

Schedule S

Furnished with nickeled cover.

May be converted into lock switch by removing the handle and using a lock attachment.



Three-way switches are used for controlling lights from two points.

3 Amperes, 125 Volts—1 Ampere, 250 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2152	Solid	Plain	10	100	31	\$.48
2153	Slotted	"	10	100	31	.48

5 Amperes, 125 Volts—3 Amperes, 250 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2089	Solid	Plain	10	100	33	\$.56
2090	Slotted	"	10	100	33	.56

10 Amperes, 125 Volts—5 Amperes, 250 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
23	Solid	Plain	10	50	27	\$.76
123	Slotted	"	10	50	27	.76

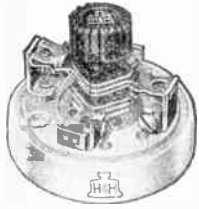
20 Amperes, 125 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
33	Solid	Plain	1	10	13	\$ 1.50
133	Slotted	"	1	10	13	1.50

30 Amperes, 125 Volts

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
43	Solid	Plain	1	10	17	\$ 1.80
143	Slotted	"	1	10	17	1.80

H & H Double-pole Surface Switches



Schedule S

Furnished with nickeled cover.
May be converted into lock switch by removing the handle and using a lock attachment.

5 Amperes, 250 Volts

Screw holes spaced $1\frac{1}{8}$ inches. Base, $2\frac{1}{8}$ inches.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2085	Solid	Plain	10	100	33	\$.56
2086	Slotted	"	10	100	33	.56
2087	Solid	Indicating	10	100	33	.64
2088	Slotted	"	10	100	33	.64

10 Amperes, 250 Volts

Screw holes spaced $1\frac{3}{4}$ inches. Base, $2\frac{1}{2}$ inches.

22	Solid	Plain	10	100	50	\$.66
122	Slotted	"	10	100	50	.66
222	Solid	Indicating	10	100	50	.76
322	Slotted	"	10	100	50	.76

20 Amperes, 250 Volts

Screw holes spaced $2\frac{1}{2}$ inches. Base, $3\frac{1}{8}$ inches.

32	Solid	Plain	1	30	30	\$ 1.40
132	Slotted	"	1	30	30	1.40
432	Solid	Indicating	1	30	30	1.50
532	Slotted	"	1	30	30	1.50

30 Amperes, 250 Volts

Screw holes spaced $2\frac{5}{8}$ inches. Base, $3\frac{1}{2}$ inches.

644	Solid	Plain	1	30	44	\$ 1.70
645	Slotted	"	1	30	44	1.70
646	Solid	Indicating	1	30	44	1.80
647	Slotted	"	1	30	44	1.80

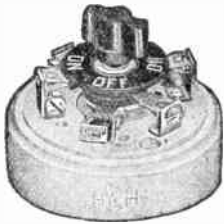
50 Amperes, 250 Volts

Screw holes spaced $3\frac{1}{8}$ inches. Base, $4\frac{1}{4}$ inches.

3613	Solid	Plain	1	10	25	\$ 3.00
3614	Slotted	"	1	10	25	3.00
3615	Solid	Indicating	1	10	25	3.10
3616	Slotted	"	1	10	25	3.10

H & H Triple-pole Surface Switches

Schedule S



10 Amperes, 250 Volts

Screws spaced $2\frac{1}{8}$ inches. Base, $2\frac{1}{8}$ inches.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
26	Solid	1	10	10	\$ 1.90	
126	Slotted	1	10	10	1.90	

Indicating Nickeled Cover

226	Solid	1	10	10	\$ 2.00
326	Slotted	1	10	10	2.00

20 Amperes, 250 Volts

Screws spaced $2\frac{3}{32}$ inches. Base, $3\frac{27}{32}$ inches.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
8511	Solid	1	10	25	\$ 2.40	
8512	Slotted	1	10	25	2.40	

Indicating Nickeled Cover

8513	Solid	1	10	25	\$ 2.50
8514	Slotted	1	10	25	2.50

30 Amperes, 250 Volts

Screws spaced $3\frac{3}{8}$ inches. Base, $4\frac{1}{4}$ inches.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2655	Solid	1	10	25	\$ 2.90	
2656	Slotted	1	10	25	2.90	

Indicating Nickeled Cover

2657	Solid	1	10	25	\$ 3.00
2658	Slotted	1	10	25	3.00

H & H 3-circuit Electrolrier Switches

Schedule S

Connections: 1, 1 & 2, 1 & 2 & 3, Off

5 Amp., 125 V.—2 Amp., 250 V.

Screws spaced $1\frac{3}{4}$ in. Base, $2\frac{1}{2}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
25	Solid	10	10	9	\$.90	
125	Slotted	10	10	9	.90	

Indicating Nickeled Cover

225	Solid	10	10	9	\$ 1.00
325	Slotted	10	10	9	1.00

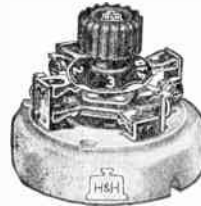
20 Amp., 125 V.—10 Amp., 250 V.

Screws spaced $2\frac{5}{8}$ in. Base, $3\frac{1}{8}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2501	Solid	1	10	13	\$ 1.40	
2502	Slotted	1	10	13	1.40	

Indicating Nickeled Cover

2503	Solid	1	10	13	\$ 1.50
2504	Slotted	1	10	13	1.50



No. 325 Cover Removed

H & H 3-circuit Electrolrier Switches

Schedule S

Connections: 1, 2, 3, Off

5 Amp., 125 V.—2 Amp., 250 V.

Screws spaced $1\frac{3}{4}$ in. Base, $3\frac{1}{8}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2615	Solid	10	10	9	\$.90	
2616	Slotted	10	10	9	.90	

Indicating Nickeled Cover

2617	Solid	10	10	9	\$ 1.00
2618	Slotted	10	10	9	1.00

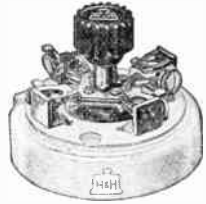
20 Amp., 125 V.—10 Amp., 250 V.

Screws spaced $2\frac{5}{8}$ in. Base, $3\frac{1}{8}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2725	Solid	1	10	13	\$ 1.40	
2726	Slotted	1	10	13	1.40	

Indicating Nickeled Cover

2727	Solid	1	10	13	\$ 1.50
2728	Slotted	1	10	13	1.50



No. 2615 Cover Removed

H & H 2-circuit Electrolrier Switches

Schedule S

Connections: 1, Off, 2, Off

5 Amp. 125 V.—2 Amp. 250 V.

Screws spaced $1\frac{3}{4}$ in. Base, $2\frac{1}{2}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2721	Solid	10	10	9	\$.90	
2722	Slotted	10	10	9	.90	

Indicating Nickeled Cover

2723	Solid	10	10	9	\$ 1.00
2724	Slotted	10	10	9	1.00

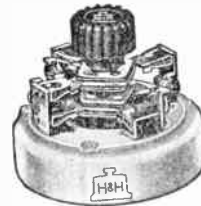
20 Amp. 125V.—10 Amp. 250 V.

Screws spaced $2\frac{5}{8}$ in. Base, $3\frac{1}{8}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2594	Solid	1	10	13	\$ 1.40	
2595	Slotted	1	10	13	1.40	

Indicating Nickeled Cover

2596	Solid	1	10	13	\$ 1.50
2597	Slotted	1	10	13	1.50



No. 2721 Cover Removed

H & H 2-circuit Electrolrier Switches

Schedule S

Connections: 1, 2, 1 & 2, Off

5 Amp., 125 V.—2 Amp., 250 V.

Screws spaced $1\frac{3}{4}$ in. Base, $2\frac{1}{2}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2661	Solid	10	10	9	\$.76	
2662	Slotted	10	10	9	.76	

Indicating Nickeled Cover

2663	Solid	10	10	9	\$.86
2664	Slotted	10	10	9	.86

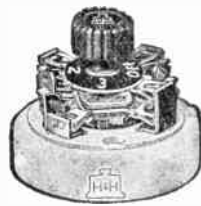
20 Amp., 125 V.—10 Amp., 250 V.

Screws spaced $2\frac{5}{8}$ in. Base, $3\frac{1}{8}$ in.

Plain Nickeled Cover						
Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
2669	Solid	1	10	13	\$ 1.40	
2670	Slotted	1	10	13	1.40	

Indicating Nickeled Cover

2671	Solid	1	10	13	\$ 1.50
2672	Slotted	1	10	13	1.50



No. 2663 Cover Removed

H & H Electrolier 2-circuit Switches

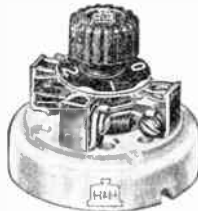
Schedule S
Connections: 1, 1 & 2, 1, Off

5 Amp., 125 V.—2 Amp., 250 V.
Screws spaced 1 3/4 in. Base, 2 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
29	Solid	10	10	9	\$.90
129	Slotted	10	10	9	.90
Indicating Nickeled Cover					
229	Solid	10	10	9	\$1.00
329	Slotted	10	10	9	1.00

20 Amp., 125 V.—10 Amp., 250 V.
Screws spaced 2 5/16 in. Base, 3 1/16 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2505	Solid	1	10	13	\$1.40
2506	Slotted	1	10	13	1.40
Indicating Nickeled Cover					
2507	Solid	1	10	13	\$1.50
2508	Slotted	1	10	13	1.50



No. 329
Cover
Removed

H & H Single-pole Surface Switches

With Porcelain Covers and Handles

Schedule S
5 Amps., 125 V.—3 Amps., 250 V.
Screws spaced 1 7/8 in. Base, 2 5/8 in.

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2625	Slotted	1	100	45	\$.32
2626	Solid	1	100	45	.32
Indicating Porcelain Cover					
2627	Solid	1	100	45	\$.36
2628	Slotted	1	100	45	.36

10 Amps., 125 V.—5 Amps., 250 V.
Screws spaced 1 3/4 in. Base, 2 5/8 in.

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2231	Solid	1	30	23	\$.56
2232	Slotted	1	30	23	.56
Indicating Porcelain Cover					
2205	Solid	1	30	23	\$.62
2206	Slotted	1	30	23	.62



No. 2627
Cover
Removed

H & H 2-circuit Electrolier Switches

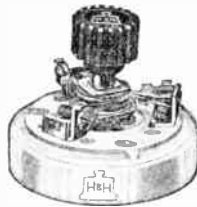
Schedule S
Connections: 1, 2, Off

10 Amp. 125 V.—5 Amp. 250 V.
Screws spaced 1 3/4 in. Base, 2 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2611	Solid	10	10	9	\$.90
2612	Slotted	10	10	9	.90
Indicating Nickeled Cover					
2613	Solid	10	10	9	\$1.00
2614	Slotted	10	10	9	1.00

20 Amp. 125 V.—10 Amp. 250 V.
Screws spaced 2 9/16 in. Base, 3 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2496	Solid	1	10	13	\$1.70
2497	Slotted	1	10	13	1.70
Indicating Nickeled Cover					
2498	Solid	1	10	13	\$1.80
2499	Slotted	1	10	13	1.80



No. 2611
Cover
Removed

H & H Double-pole Surface Switches

With Porcelain Covers and Handles

Schedule S
5 Amperes, 250 Volts
Screws spaced 1 7/8 in. Base, 2 5/8 in.

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2629	Solid	1	10	8	\$.60
2630	Slotted	1	10	8	.60
Indicating Porcelain Cover					
2631	Solid	1	10	8	\$.68
2632	Slotted	1	10	8	.68

10 Amperes, 250 Volts
Screws spaced 1 3/4 in. Base, 2 5/8 in.

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2244	Solid	1	10	10	\$.74
2245	Slotted	1	10	10	.74
Indicating Porcelain Cover					
2207	Solid	1	10	10	\$.84
2208	Slotted	1	10	10	.84



No. 2630
with
Cover

H & H 2-circuit Electrolier Switches

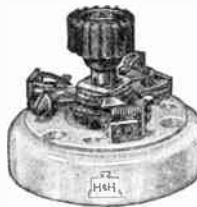
Schedule S
Connections: 1, 1 & 2, Off

10 Amp. 125 V.—5 Amp. 250 V.
Screws spaced 1 3/4 in. Base, 2 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2602	Solid	10	10	9	\$.90
2603	Slotted	10	10	9	.90
Indicating Nickeled Cover					
2604	Solid	10	10	9	\$1.00
2605	Slotted	10	10	9	1.00

20 Amp. 125 V.—10 Amp. 250 V.
Screws spaced 2 9/16 in. Base, 3 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2482	Solid	1	10	13	\$1.70
2483	Slotted	1	10	13	1.70
Indicating Nickeled Cover					
2484	Solid	1	10	13	\$1.80
2485	Slotted	1	10	13	1.80



No. 2602
Cover
Removed

H & H Three-way Surface Switches

With Porcelain Covers and Handles

Schedule S
May be converted into lock switches by removing handle and using a lock attachment.

5 Amperes, 125 Volts
3 Amperes, 250 Volts
Screws spaced 1 7/8 in. Base, 2 5/8 in.

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2633	Solid	1	10	8	\$.60
2634	Slotted	1	10	8	.60

10 Amperes, 125 Volts
5 Amperes, 250 Volts
Screws spaced 1 3/4 in. Base, 2 5/8 in.

2209	Solid	1	10	10	\$.84
2210	Slotted	1	10	10	.84



No. 2634
with
Cover

H & H 2-circuit Electrolier Switches

Schedule S
Connections: 1 & 2, 1, Off

10 Amp. 125 V.—5 Amp. 250 V.
Screws spaced 1 3/4 in. Base, 2 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2607	Solid	10	10	9	\$.90
2608	Slotted	10	10	9	.90
Indicating Nickeled Cover					
2609	Solid	10	10	9	\$1.00
2610	Slotted	10	10	9	1.00

20 Amp. 125 V.—10 Amp. 250 V.
Screws spaced 2 9/16 in. Base, 3 1/2 in.

Cat. No.	Plain Nickeled Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2486	Solid	1	10	13	\$1.70
2487	Slotted	1	10	13	1.70
Indicating Nickeled Cover					
2488	Solid	1	10	13	\$1.80
2489	Slotted	1	10	13	1.80



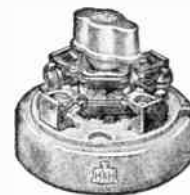
No. 2609
with
Cover

H & H Four-way Surface Switches

Schedule S

With Porcelain Covers and Handles
5 Amperes, 125 Volts—2 Amperes, 250 Volts

Cat. No.	Plain Porcelain Cover		Std. Pkg.	Wt., Lbs.	Price Each
	Style Base	Car-ton			
2234	Solid	1	10	8	\$.94
2235	Slotted	1	10	8	.94



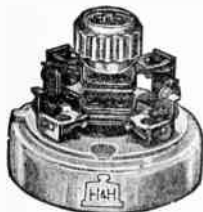
H & H Three-circuit Electrolier Switches

Schedule S

With Porcelain Covers and Handles
5 Amperes, 125 Volts—2 Amperes, 250 Volts

Screws, spaced 1 3/4 inches. Base, 2 5/8 inches.

Connections: 1, 2, 3, Off
Plain Porcelain Cover



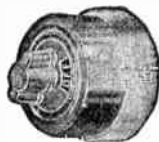
No. 2240
Cover
Removed

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs.	Price Each
2747	Solid	1	10	10		\$.98
2748	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2749	Solid	1	10	10		\$1.08
2750	Slotted	1	10	10		1.08
Connections: 1, 1 & 2, 1 & 2 & 3, Off						
Plain Porcelain Cover						
2240	Solid	1	10	10		\$.98
2241	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2242	Solid	1	10	10		\$1.08
2243	Slotted	1	10	10		1.08

H & H Heater Switches

Schedule S

Single-pole, Series Parallel



No. 2592, Regular
Dial Type



No. 8092, Angle
Dial Type



No. 8769, Pointer
Ratchet Handle Type

Nickel plated covers and porcelain handles.

Indicator Reads: High, Medium, Low, Off

OPERATION.—1st snap, 2 coils in multiple; 2nd snap, 1 coil cut out; 3rd snap, 2 coils in series; 4th snap, all off.

*2 Amperes, 250 Volts—5 Amperes, 125 Volts

Diameter, 2 1/8 inches. Supporting screws spaced 1 7/8 inches on centers. Height over all, 2 inches.

CATALOGUE NUMBERS

Regular Dial	Angle Dial	Pointer Ratchet Handle	Style of Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2720	8576	....	Solid	10	100	30	\$.68
2305	8577	....	Slotted	10	100	30	.68

*5 Amperes, 250 Volts—10 Amperes, 125 Volts

Diameter, 2 1/2 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/4 inches.

2592	3611	8761	Solid	10	100	52	\$.84
2578	3612	8762	Slotted	10	100	52	.84

10 Amperes, 250 Volts—15 Amperes, 125 Volts

Diameter, 2 3/8 inches. Supporting screws spaced 2 1/8 inches on centers. Height over all, 2 1/2 inches.

2981	8092	8765	Solid	10	10	14	\$1.00
2982	8095	8766	Slotted	10	10	14	1.00

20 Amperes, 250 Volts

Diameter, 3 1/8 inches. Supporting screws spaced 2 5/8 inches on centers. Height over all, 2 3/4 inches.

3799	3835	†8769	Solid	10	10	15	\$1.50
3800	3836	†8770	Slotted	10	10	15	1.50

†Price of Nos. 8769 and 8770, \$1.60.

30 Amperes, 250 Volts

Diameter, 3 7/8 inches. Supporting screws spaced 2 3/4 inches on centers. Height over all, 3 1/8 inches.

3801	8097	†8783	Solid	10	10	25	\$1.80
3802	8098	†8784	Slotted	10	10	25	1.80

†Price of Nos. 8783 and 8784 is \$1.90.

Indicator Reads: Low, Medium, High, Off

OPERATION.—1st snap, 2 coils in series; 2nd snap, 1 coil cut off; 3rd snap, 2 coils in multiple; 4th snap, all off.

*2 Amperes, 250 Volts—5 Amperes, 125 Volts

CATALOGUE NUMBERS

Regular Dial	Angle Dial	Pointer Ratchet Handle	Style of Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3803	8559	....	Solid	10	100	30	\$.68
3804	8560	....	Slotted	10	100	30	.68

Diameter, 2 1/8 inches. Supporting screws spaced 1 7/8 inches on centers. Height over all, 2 inches.

*5 Amperes, 250 Volts—10 Amperes, 125 Volts

Diameter, 2 1/2 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/4 inches.

3805	3609	8763	Solid	10	100	52	\$.84
3806	3610	8764	Slotted	10	100	52	.84

10 Amperes, 250 Volts—15 Amperes, 125 Volts

Diameter, 2 3/8 inches. Supporting screws spaced 2 1/8 inches on centers. Height over all, 2 1/2 inches.

3807	8568	8767	Solid	10	10	14	\$1.00
3808	8569	8768	Slotted	10	10	14	1.00

20 Amperes, 250 Volts

Diameter, 3 1/8 inches. Supporting screws spaced 2 5/8 inches on centers. Height over all, 2 3/4 inches.

3809	3833	†8781	Solid	10	10	15	\$1.50
3810	3834	†8782	Slotted	10	10	15	1.50

†Price of Nos. 8781 and 8782 is \$1.60.

30 Amperes, 250 Volts

Diameter, 3 7/8 inches. Supporting screws spaced 2 3/4 inches on centers. Height over all, 3 1/8 inches.

3811	8547	†8785	Solid	10	10	25	\$1.80
3812	8548	†8786	Slotted	10	10	25	1.80

†Price of Nos. 8785 and 8786 is \$1.90.

*Can be furnished with porcelain cover and handle.

H & H Two-circuit Electrolier Switches

Schedule S

With Porcelain Covers and Handles

5 Amperes, 125 Volts—2 Amperes, 250 Volts

Screws spaced 1 3/4 inches. Base, 2 5/8 inches.

Connections: 1, 2, 1 & 2, Off

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs.	Price Each
2673	Solid	1	10	10		\$.84
2674	Slotted	1	10	10		.84
Indicating Porcelain Cover						
2675	Solid	1	10	10		\$.94
2676	Slotted	1	10	10		.94
Connections: 1, 1 & 2, 1, Off						
Plain Porcelain Cover						
2236	Solid	1	10	10		\$.98
2237	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2238	Solid	1	10	10		\$1.08
2239	Slotted	1	10	10		1.08



No. 2676
with
Cover

H & H Two-circuit Electrolier Switches

Schedule S

With Porcelain Covers and Handles

5 Amperes, 125 Volts—2 Amperes, 250 Volts

Screws spaced 1 3/4 inches. Base, 2 5/8 inches.

Connections: 1, 1 & 2, 2, Off

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs.	Price Each
2246	Solid	1	10	10		\$.98
2247	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2248	Solid	1	10	10		\$1.08
2249	Slotted	1	10	10		1.08
Connections: 1, Off, 2, Off						
Plain Porcelain Cover						
2743	Solid	1	10	10		\$.98
2744	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2745	Solid	1	10	10		\$1.08
2746	Slotted	1	10	10		1.08



No. 2246
Cover
Removed

H & H Two-circuit Electrolier Switches

Schedule S

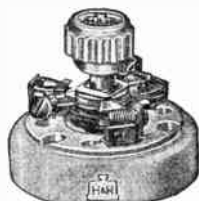
With Porcelain Covers and Handles

5 Amperes, 125 Volts—2 Amperes, 250 Volts

Screws spaced on circle, 1 3/4-in. diam. Base, 2 1/2 in.

Connections: 1, 2, Off

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt. Std. Pkg.	Lbs.	Price Each
2739	Solid	1	10	10		\$.98
2740	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2741	Solid	1	10	10		\$1.08
2742	Slotted	1	10	10		1.08
Connections: 1, 1 & 2, Off						
Plain Porcelain Cover						
2731	Solid	1	10	10		\$.98
2732	Slotted	1	10	10		.98
Indicating Porcelain Cover						
2733	Solid	1	10	10		\$1.08
2734	Slotted	1	10	10		1.08



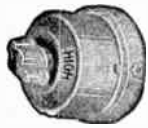
No. 2731
Cover
Removed

H & H Heater Switches
Reciprocating Type

Schedule S
Single-pole, Series Parallel

Nickeled covers and porcelain handles.
 Diameter, 2⁷/₁₆ inches. Supporting screws spaced 1³/₄ inches on centers. Height over all, 2⁵/₁₆ inches.

Indicator Reads: High, Medium Low, Off



No. 3829, Angle Dial

OPERATION.—1st snap, 2 coils in multiple; 2nd snap, 1 coil cut out; 3rd snap, both coils in series; 4th snap, all off.

5 Amperes, 250 Volts—10 Amperes, 125 Volts

CATALOGUE NUMBERS							
Regular Dial	Angle Dial	Pointer Ratchet Handle	Style of Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
....	3829	8578	Solid	10	100	50	....
....	3830	8579	Slotted	10	100	50	....

Indicator Reads: Low, Medium, High, Off

OPERATION.—1st snap, 2 coils in series; 2nd snap, 1 coil cut off; 3rd snap, 2 coils in multiple; 4th snap, all off.

5 Amperes, 250 Volts—10 Amperes, 125 Volts

....	3854	8564	Solid	10	100	50	....
....	3855	8565	Slotted	10	100	50	....

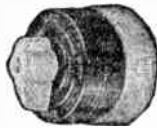
H & H Heater Switches
Schedule S
Double Pole, Series Parallel



No. 2860, Regular Dial Type



No. 8459, Angle Dial Type



No. 8797, Pointer Ratchet Handle

Nickeled covers and porcelain handles.

Indicator Reads: High, Medium, Low, Off

OPERATION.—1st snap, 2 coils in series; 2nd snap, 1 coil cut out; 3rd snap, both coils in series; 4th snap, all off.

10 Amperes, 250 Volts

Diameter, 3¹/₈ inches. Supporting screws spaced 2³/₁₆ inches on centers. Height over all, 2⁷/₈ inches.

CATALOGUE NUMBERS							
Regular Dial	Angle Dial	Pointer Ratchet Handle	Style of Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2860	8074	8469	Solid	1	10	15	\$1.30
2861	8554	8470	Slotted	1	10	15	1.30

20 Amperes, 250 Volts

Diameter, 3¹/₈ inches. Supporting screws spaced 2³/₁₆ inches. Height over all, 3¹/₈ inches.

2762	8366	†8797	Solid	1	10	15	\$2.50
2763	8367	†8798	Slotted	1	10	15	2.50

†Price of Nos. 8797 and 8798 is \$2.60.

35 Amperes, 250 Volts

Diameter, 3⁷/₁₆ inches. Supporting screws spaced 2³/₁₆ inches. Height over all, 3¹/₂ inches.

2764	8364	†8771	Solid	1	10	25	\$3.00
2765	8365	†8772	Slotted	1	10	25	3.00

†Price of Nos. 8771 and 8772 is \$3.10.

Indicator Reads: Low, Medium, High, Off

OPERATION.—1st snap, both coils in series; 2nd snap, 1 coil cut out; 3rd snap, 2 coils in multiple; 4th snap, all off.

10 Amperes, 250 Volts

Diameter, 3¹/₈ inches. Supporting screws spaced 2³/₁₆ inches on centers. Height over all, 3¹/₈ inches.

2160	8449	8787	Solid	1	10	15	\$1.30
2857	8450	8788	Slotted	1	10	15	1.30

20 Amperes, 250 Volts

Diameter, 3¹/₈ inches. Supporting screws spaced 2³/₁₆ inches on centers. Height over all, 3¹/₈ inches.

160	8459	†8789	Solid	1	10	15	\$2.50
2761	8460	†8790	Slotted	1	10	15	2.50

†Price of Nos. 8789 and 8790 is \$2.60.

35 Amperes, 250 Volts

Diameter, 3⁷/₁₆ inches. Supporting screws spaced 2³/₁₆ inches on centers. Height over all, 3¹/₂ inches.

2582	8549	†8773	Solid	1	10	25	\$3.00
2589	8550	†8774	Slotted	1	10	25	3.00

†Price of Nos. 8773 and 8774 is \$3.10.

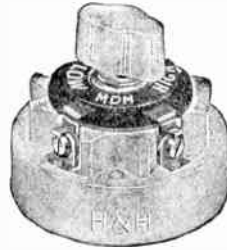
H & H Single-pole Multiple Heater Switches

Schedule S

Indicator Reads: Low, Medium, High, Off

Operation: 1st snap, small coil on. 2nd snap, large coil on. 3rd snap, both coils on. 4th snap, all off.

Nickeled covers and porcelain handles.



15 Amperes, 250 Volts

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3787	Solid	10	10	9	....
3788	Slotted	10	10	9	....

20 Amperes, 250 Volts

Cat. No.	Style Base	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
581	Solid	1	10	15	....
582	Slotted	1	10	15	....

H & H Double-pole, Double-throw Switches

Schedule S

10 Amperes, 250 Volts

These switches give the same control of circuits as double-pole double-throw knife switches. They are particularly well suited for motor circuits.



Connections: 1, Off, 2, Off

Operation: 1st snap, circuit No. 1. 2nd snap, off. 3rd snap, circuit No. 2. 4th snap, off.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2621	Solid	Plain	1	10	10	\$2.40
2622	Slotted	"	1	10	10	2.40
2623	Solid	Indic.	1	10	10	2.50
2624	Slotted	"	1	10	10	2.50

Connections: 1, 2, Off

Operation: 1st snap, circuit No. 1. 2nd snap, circuit No. 2. 3rd snap, off.

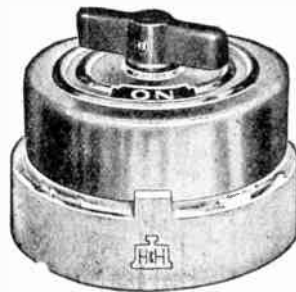
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3025	Solid	Plain	1	10	10	\$2.40
3026	Slotted	"	1	10	10	2.40
3027	Solid	Indic.	1	10	10	2.50
3028	Slotted	"	1	10	10	2.50

H & H Reciprocating Switches

Schedule S

20 Amperes, 250 Volts

Reciprocating switches are arranged so that the handle can be turned backward or forward. For instance, when the switch has been turned to low speed or heat, it can be turned to high, or back to off without going through high.



Double Pole, Double Throw

Connection: 1, 2, Off, 1, 2, Off—Or Reverse

Dials furnished: Slow, fast, off, or start, run, off or arc, inc., off.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3051	Solid	Indic.	..	..	..	....
3052	Slotted	"	..	..	..	....

Double Pole

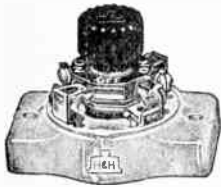
Connections: On, Off, Off, On, Off, Off

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3005	Solid	Indic.	..	..	..	....
3006	Slotted	"	..	..	..	....

Three Way

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3007	Solid	Plain	..	..	..	....
3008	Slotted	"	..	..	..	....

H & H Tri-Use Surface Switches
For Pipe Taplets, Wood and Metal Molding
Schedule S



Designed for use on 1/2, 3/4, and 1 1/4-inch standard oblong type of pipe taplets.

May also be mounted on V. V. Fittings, with rectangular openings, by the use of V. V. Cover No. 43SS.

For wood molding, the switch is wired and mounted on the molding. The molding capping is then cut off square and butted up against the ends of the switch.

For National Metal Molding, Paiste Adapter No. 4075 is required.

Single Pole—5 Amperes, 125 Volts; 3 Amperes, 250 Volts
Screw holes spaced 2 5/16 inches. Height, 2 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
2541	Plain	10	100	43	\$.36
2542	Indicating	10	100	43	.40

Single-pole—Quadruple Break, 5 Amperes, 250 Volts
Screw holes spaced 2 5/16 inches. Height, 2 1/8 inches.

2855	Plain	10	100	43	\$.66
2856	Indicating	10	100	43	.76

Double-pole—5 Amperes, 250 Volts
Screw holes spaced 2 5/16 inches. Height, 2 1/8 inches.

2543	Plain	10	100	43	\$.66
2544	Indicating	10	100	43	.76

Three-way—5 Amperes, 125 Volts; 3 Amperes, 250 Volts
Screw holes spaced 2 5/16 inches. Height, 2 1/8 inches.

2545	Plain	10	100	43	\$.66
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Two-circuit Electroliner—Connections: 1, 1 & 2, 1, Off
5 Amperes, 125 Volts; 2 Amperes, 250 Volts

2547	Plain	10	10	9	\$.90
2548	Indicating	10	10	9	.90

Three-circuit—Connections: 1, 1 & 2, 1 & 2 & 3, Off
5 Amperes, 125 Volts; 3 Amperes, 250 Volts

2549	Plain	10	10	9	\$.90
2550	Indicating	10	10	9	.90

H & H Surface Switches

For Metal Molding

Schedule S

For switches to be mounted on metal molding by using the Paiste Adapter for National Metal Molding, see Tri-Use switches.



These switches may be converted into lock switches by removing the handle and using a lock attachment.

Single-pole—5 Amperes, 125 Volts; 3 Amperes, 250 Volts
Screw holes spaced 1 3/8 inches. Height, 2 1/4 inches.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
2291	Single End, Plain	10	100	43	\$.36
2391	" " Indicating	10	100	43	.40
2292	Double " Plain	10	100	43	.36
2392	" " Indicating	10	100	43	.40

Single-pole—10 Amperes, 125 Volts; 5 Amperes, 250 Volts
Screw holes are spaced 1 3/4 inches. Height, 2 1/2 inches.

2351	Single End, Plain	10	100	62	\$.58
2352	" " Indicating	10	100	62	.64
2353	Double " Plain	10	100	62	.58
2354	" " Indicating	10	100	62	.64

Double-pole—5 Amperes, 250 Volts
Screw holes are spaced 1 7/8 inches. Height, 2 1/4 inches.

2296	Single End, Plain	10	100	43	\$.66
2396	" " Indicating	10	100	43	.76
2297	Double " Plain	10	100	43	.66
2397	" " Indicating	10	100	43	.76

Double-pole—10 Amperes, 250 Volts
Screw holes spaced 1 3/4 inches. Height, 2 1/2 inches.

2355	Single End, Plain	10	100	62	\$.76
2356	" " Indicating	10	100	62	.86
2357	Double " Plain	10	100	62	.76
2358	" " Indicating	10	100	62	.86

Three-way—5 Amperes, 125 Volts; 3 Amperes, 250 Volts
Screw holes spaced 1 7/8 inches. Height, 2 1/4 inches.

2298	Single End, Plain	10	100	43	\$.66
2299	Double " " " " " "	10	100	43	.66

H & H Small Size 600-volt Switches



The switches listed below are the 600-volt switches that were marketed before the barrier switches were developed. They are conservatively rated and are mechanically strong, though not as efficient as the barrier switches.

Single-pole—3 Amperes, 600 Volts

Screws spaced 1 3/4 inches. Base, 2 3/8 inches.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
201 1/2	Solid	Plain	10	50	26	\$.54
1201 1/2	Slotted	"	10	50	26	.54
2201 1/2	Solid	Indic.	10	50	26	.60
3201 1/2	Slotted	"	10	50	26	.60

Three-way—1 Ampere, 600 Volts

Screws holes spaced 1 3/4 inches. Base, 2 3/8 inches.

231 1/2	Solid	Plain	10	50	27	\$.70
1231 1/2	Slotted	"	10	50	27	.70

Two-circuit—3 Amperes, 600 Volts

Connections: 1, Off, 2, Off
Screw holes spaced 1 3/4 inches. Base, 2 3/8 inches.

27	Solid	Plain	10	50	27	\$.76
127	Slotted	"	10	50	27	.76
227	Solid	Indic.	10	50	27	.86
327	Slotted	"	10	50	27	.86

H & H Single-pole 600-volt Barrier Switches

Schedule S

For Electric Railway Use

Made especially for use on electric railway cars, to control the air brake, headlight, heater and incandescent circuits.



Single-pole—5 Amperes, 600 Volts

Screw holes spaced 1 25/32 inches. Base, 2 13/32 inches.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
501 1/2	Solid	Plain	1	50	34	\$.66
1501 1/2	Slotted	"	1	50	34	.66
2501 1/2	Solid	Indic.	1	50	34	.76
3501 1/2	Slotted	"	1	50	34	.76

10 Amperes, 600 Volts

Screw holes spaced 2 1/8 inches. Base, 3 3/8 inches.

576	Solid	Plain	1	50	64	\$ 1.60
577	Slotted	"	1	50	64	1.60
578	Solid	Indic.	1	50	64	1.70
579	Slotted	"	1	50	64	1.70

20 Amperes, 600 Volts

Screw holes spaced 2 7/8 inches. Base, 3 7/8 inches.

2411 1/2	Solid	Plain	1	50	73	\$ 1.90
3411 1/2	Slotted	"	1	50	73	1.90
4411 1/2	Solid	Indic.	1	50	73	2.00
5411 1/2	Slotted	"	1	50	73	2.00

H & H Double-pole 600-volt Barrier Switches

Schedule S

For Electric Railway Use

5 Amperes, 600 Volts

Screws spaced 1 25/32 in. Base, 2 13/32 in.

Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt. Lbs.	Price Each
3015	Solid	Plain	1	50	32	\$.90
3016	Slotted	"	1	50	32	.90
3017	Solid	Indic.	1	50	32	1.00
3018	Slotted	"	1	50	32	1.00

10 Amperes, 600 Volts

Screws spaced 2 7/8 in. Base, 3 3/8 in.

2168	Solid	Plain	1	50	64	\$ 1.80
2169	Slotted	"	1	50	64	1.80
2170	Solid	Indic.	1	50	64	1.90
2171	Slotted	"	1	50	64	1.90



H & H 600-volt Barrier Switches

Schedule S

For Electric Railway Use

Designed for use in controlling air brake, headlight, heater and incandescent circuits.

Every part has been mechanically strengthened to withstand the severe wear of railway service.



Three-way—5 Amperes, 600 Volts

Screws spaced 1 3/8 in.		Base, 2 1/8 in.		Height, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
53 1/2	Solid	Plain	1	50	34	\$.90
153 1/2	Slotted	"	1	50	34	.90

Three-way—10 Amperes, 600 Volts

Screws spaced 2 7/8 in.		Base, 3 3/8 in.		Height, 2 7/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
2172	Solid	Plain	1	50	64	\$1.70
2173	Slotted	"	1	50	64	1.70

Triple-pole—10 Amperes, 600 Volts

Screws spaced 3 3/8 in.		Base, 4 1/4 in.		Height, 3 1/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
3838	Solid	Plain	1	10	25	\$2.90
3839	Slotted	"	1	10	25	2.90
3316	Solid	Indic.	1	10	25	3.00
3837	Slotted	"	1	10	25	3.00

H & H Two-circuit 600-volt Barrier Switches

Schedule S

For Electric Railway Use

These two-circuit barrier switches are frequently used to control combination arc and incandescent headlights, giving the connections: "Arc," "Off," "Incandescent," "Off."

They are also used to alternately throw the headlights and tail lights into circuit, and for similar combinations of lights.



5 Amperes, 600 Volts

Screws spaced 1 3/8 in.		Base, 1 3/8 in.		Height, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
572	Solid	Plain	1	50	34	\$.90
573	Slotted	"	1	50	34	.90
574	Solid	Indic.	1	50	34	1.00
575	Slotted	"	1	50	34	1.00

10 Amperes, 600 Volts

Screws spaced 2 7/8 in.		Base, 3 3/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2174	Solid	Plain	1 50 64	\$1.70
2175	Slotted	"	1 50 64	1.70
2176	Solid	Indic.	1 50 64	1.80
2177	Slotted	"	1 50 64	1.80

H & H Fused 600-volt Barrier Switches

Schedule S

Porcelain cover, base and handle. Fuses not included but will be furnished at prices below, unless otherwise specified. Screw holes spaced 3 1/4 inches.



5 Amps., 600 V.—Slotted Base

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Single Pole, Indicating				
2335	1	25	..	\$1.50
Double Pole, Indicating				
2340	1	25	50	\$1.50
Three-way, Plain				
2336	1	25	50	\$1.50
Two-circuit, Indicating				
2338	1	25	50	\$1.50
Fuses Only, 5 Amps., 500 V.				
2319	10	100	8	\$.40
Fuses Only, 3 Amps., 600 V.				
3705	10	100	8	\$.30

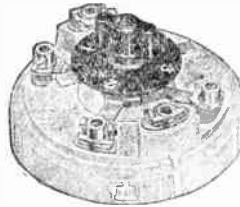
H & H 600-volt Switches

Schedule S

For Electric Railway Use

Three degrees of heat can be secured from one point of control when two electric heaters are used on a circuit.

OPERATION.—1, 2, 1 & 2 (Parallel), Off.



Three-heat, Barrier Type, 10 Amperes, 600 Volts

Screws spaced, 2 7/8 in.		Base, 3 3/8 in.		Height, 3 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
2193	Solid	Plain	1	50	64	\$1.70
2194	Slotted	"	1	50	64	1.70
2195	Solid	Indic.	1	50	64	1.80
2196	Slotted	"	1	50	64	1.80

Three-heat, 15 Amperes, 600 Volts

Not a Barrier Switch

Screws spaced, 3 1/2 in.		Base, 4 5/8 in.		Height, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	
799	Solid	Plain	1	10	25	\$3.00
800	"	Indic.	1	10	25	3.10

Three-heat, Reciprocating, Barrier Type

35 Amperes, 600 Volts

Can be snapped in either direction, backward or forward. Screws spaced 4 1/2 in. Base, 5 5/8 in. Height, 4 in.

162	Solid	Indic.	1	10	72	\$10.00
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H & H 600-volt Barrier Switches

Schedule S

With Porcelain Covers and Handles

These switches may be converted into lock switches by removing the handle and using a Block attachment.



No. 2515 with Cover

Single-pole—5 Amperes, 600 Volts

Screws spaced 1 3/8 in.		Base, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2421	Solid	Plain	1 10 11	\$.74
2422	Slotted	"	1 10 11	.74
2423	Solid	Indic.	1 10 11	.84
2424	Slotted	"	1 10 11	.84

Single-pole—10 Amperes, 600 Volts

Screws spaced 2 7/8 in.		Base, 3 3/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2511	Solid	Plain	1 10 18	\$1.68
2512	Slotted	"	1 10 18	1.68
2513	Solid	Indic.	1 10 18	1.78
2514	Slotted	"	1 10 18	1.78

Double-pole—10 Amperes, 600 Volts

Screws spaced 2 7/8 in.		Base, 3 3/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2517	Solid	Plain	1 10 18	\$1.96
2518	Slotted	"	1 10 18	1.96
2519	Solid	Indic.	1 10 18	2.06
2520	Slotted	"	1 10 18	2.06

Three-way—5 Amperes, 600 Volts

Screws spaced 1 3/8 in.		Base, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2425	Solid	Plain	1 10 11	\$.98
2426	Slotted	"	1 10 11	.98

Three-way—10 Amperes, 600 Volts

Screws spaced 2 7/8 in.		Base, 3 3/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2515	Solid	Plain	1 10 18	\$1.86
2516	Slotted	"	1 10 18	1.86

Two-circuit—5 Amperes, 600 Volts

Screws spaced 1 3/8 in.		Base, 2 5/8 in.		Price Each
Cat. No.	Style Base	Style Cover	Wt., Lbs. Std. Pkg.	
2427	Solid	Plain	1 10 11	\$1.00
2428	Slotted	"	1 10 11	1.00
2429	Solid	Indic.	1 10 11	1.10
2430	Slotted	"	1 10 11	1.10

H & H Wall Case Screw Extensions

Schedule S



No. 3691

These are hollow studs used to bring up the switch flush with the wall where the wall case is set too far back from the surface of the wall. They are tapped for 3/8-inch supporting screws.



No. 3692

Price, No. 3691, Length 1/4-inch per 100 \$1.60
 " " 3692, " 3/4 " " 100 2.10

H & H Lock Attachments

Schedule S



Any rotary switch, either surface or a flush, can be made a lock switch by removing handle and screwing on lock attachment. Special plate or cover not required.

In ordering switches with lock attachments, either surface or flush switches, add the word "lock" to the catalogue number.

For 3, 5 and 10-ampere, 125-250-volt Switches
For 3 and 5-ampere, 600-volt Switches

Cat. No.	Description	Std. Pkg.		Wt. Lbs.		Price Each
		Pkg.	Std.	Pkg.	Std.	
5001	Attachments Only.....	100	3			\$.16

For 20-ampere, 125-250-volt Switches
For 15 and 20-ampere, 600-volt Switches

5010	Attachments Only.....	100	3			\$.16
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For 30-ampere, 125-250-volt Switches
For 10-ampere, 600-volt Switches

5009	Attachments Only.....	100	3			\$.16
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H & H Keys for Lock Attachment

Schedule S

No. 5002 key is designed to fit all sizes of lock attachments.

The use of this key, in connection with the lock attachments, prevents unauthorized persons from tampering with the lights. Standard package, 100. Weight, 3 pounds. Price, No. 5002.....each \$.10



H & H Switch Handles

Schedule S



Composition Wing Handle



Porcelain Wing Handle



Composition Round Handle

For 3, 5 and 10-ampere, 125-250-volt Switches
For 3 and 5-ampere, 600-volt Switches

Cat. No.	Description	Std. Pkg.		Wt. Lbs.		Price Each
		Pkg.	Std.	Pkg.	Std.	
5004	Composition Wing Handle.....	100	2			\$.06
2910	" Round ".....	100	2 1/4			.06
2156	Porcelain Wing Handle.....	100	3			.06
5011	" Round ".....	100	3			.06

For 20-ampere, 125-250-volt Switches
For 15 and 20-ampere, 600-volt Switches

5005	Composition Wing Handle.....	100	3 1/2			\$.06
2157	Porcelain ".....	100	5			.06

For 30-ampere, 125-250-volt Switches
For 10-ampere, 600-volt Switches

4242	Composition Wing Handle.....	100	4			\$.06
2218	Porcelain ".....	100	5			.06

H & H Unremovable or Clutch Handles

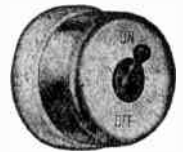
A handle called a clutch handle can be supplied on 5 and 10-ampere, 125-250-volt switches, except on switches with porcelain covers. It can also be supplied on 3 and 5-ampere, 600-volt switches. The clutch handle is turned in the regular way to operate the switch, but can be turned backward without dropping off and cannot be removed until a small screw is taken out. Clutch handles can be attached to switches only at the factory at an extra charge of 5 cents and must be plainly specified on orders.

H & H Surface Type Tumbler Switches

Schedule S



No. 3775



No. 8410

Single Pole, 5 Amp., 125 V.; 3 Amp., 250 V.

Cat. No.	Description	Std. Pkg.		Price Each
		Pkg.	Std. Pkg.	
3775	Solid Base.....	100	35	\$.32
3774	Slotted Base.....	100	35	.32

Diameter of base, 2 1/4 inches. Supporting screws spaced 1 1/2 inches on centers. Height over all, 1 3/4 inches.

Three-way, 5 Amp., 125 V.; 3 Amp., 250 V.

3777	Solid Base.....	100	35	\$.56
3776	Slotted Base.....	100	35	.56

Diameter of base, 2 1/4 inches. Supporting screws spaced 1 1/2 inches on centers. Height over all, 1 3/4 inches.

Single Pole, 10 Amp., 125 V.; 5 Amp., 250 V.

8410	Solid Base, Indic. Cover.....	100	53	\$.48
8411	Slotted Base, Indic. Cover.....	100	53	.48

Diameter of base, 2 3/8 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/2 inches.

Double Pole, 10 Amperes, 250 Volts

8412	Solid Base, Indic. Cover.....	100	56	\$.76
8413	Slotted Base, Indic. Cover.....	100	56	.76

Diameter of base, 2 3/8 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/2 inches.

Three-way, 10 Amp., 125 V.; 5 Amp., 250 V.

8414	Solid Base.....	50	30	\$.76
8415	Slotted Base.....	50	30	.76

Diameter of base, 2 3/8 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/2 inches.

Four-way, 10 Amp., 125 V., 5 Amp., 250 V.

8416	Solid Base.....	10	10	\$ 1.90
8417	Slotted Base.....	10	10	1.90

Diameter of base, 2 3/8 inches. Supporting screws spaced 1 3/4 inches on centers. Height over all, 2 1/2 inches.

Standard finish on covers is Old Brass. All other finishes are special.

H & H Flush Type Tumbler Switches

Schedule S



No. 8401

With Porcelain Base
Standard Base, Depth 1 1/8 Inches

Cat. No.	Description	RATING, AMPS.		Std. Pkg.		Price Each
		125 Volts	250 Volts	Pkg.	Std. Pkg.	
8401	Single Pole.....	10	5	100	60	\$.45
8402	Double Pole.....	10	5	50	35	.70
8403	Three-way.....	10	5	50	35	.70
8404	Four-way.....	10	5	10	10	2.00
8432	Double Pole.....	20	10	10	10	.80

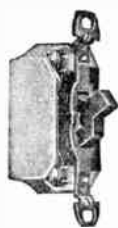
With Composition Base
Standard Base, Depth 1 1/8 Inches

8491	Single Pole.....	10	5	50	35	\$.72
8492	Double Pole.....	10	10	10	10	.88
8493	Three-way.....	10	5	20	22	.88
8495	Double Pole.....	20	10	10	10	1.40

Can be supplied with radio luminous levers, and assorted to make standard package quantities. Prefix the letters RB (radio button) to catalogue number and add 25 cents to above price when ordering.

**H & H Square Handle Shallow
Tumbler Switches**

Schedule S



No. 8601

Square handles are now optional with H & H Shallow Tumbler Switches. Made in 3 styles, regular, luminous and lock in either porcelain or composition bases.

Base, 1 inch shallow. Inside and outside screw hole spacings are standard.

Standard package assortments in carton quantities may be made of regular, luminous or lock square handle tumbler switches of the same type.

With Porcelain Base

Regular Type

Cat. No.	Description	CAP., 125 V.	AMP. 250 V.	Car- ton	Std. Pkg.	Wt., Lbs.	Price Each
8601-Sqr.	Single-pole.....	10	5	10	100	36	\$.35
8602-Sqr.	Double ".....	10	10	10	50	21	.70
8642-Sqr.	" ".....	20	10	20	13		.80
8603-Sqr.	3-way.....	10	5	10	50	21	.50
8604-Sqr.	4 ".....	10	5	10	11		2.00

With Luminous Jewel in Lever

RB8601	Single-pole.....	10	5	10	100	36	\$.60
RB8602	Double ".....	10	10	10	50	21	.95
RB8642	" ".....	20	10	20	13		1.05
RB8603	3-way.....	10	5	10	50	21	.75
RB8604	4 ".....	10	5	10	11		2.25

Lock Type

8601-L	Single-pole.....	10	5	10	100		\$.90
8602-L	Double ".....	10	10	10	50		1.15
8642-L	" ".....	20	10	20			1.45
8603-L	3-way.....	10	5	10	50		1.15
8604-L	4 ".....	10	5	10			2.45

5003 Key for Lock Switches... .. 100 .. .10

With Composition Base

Regular Type

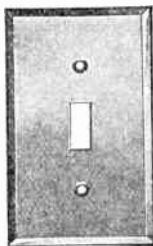
8901	Single-pole.....	10	5	10	50	35	\$.72
8902	Double ".....	10	10	10	11		.88
8909	" ".....	20	10	10	11		1.40
8903	3-way.....	10	5	10	20	22	.88
8904	4 ".....	10	5	10	11		2.00

With Luminous Jewel in Lever

RB8901	Single-pole.....	10	5	10	50	35	\$.97
RB8902	Double ".....	10	10	10	11		1.13
RB8909	" ".....	20	10	10	11		1.65
RB8903	3-way.....	10	5	10	20	22	1.13
RB8904	4 ".....	10	5	10	11		2.25

**H & H Plates for
Square Handle Tumbler
Switches**

Schedule S



No. 8841

Struck-up, .040-inch Brass

For No. of Switches	Ht. In.	Lgth. In.	OLD BRASS		DUPROPLATE	
			Car- ton	Price Each	Cat. No.	Price Each
1	4 1/2	2 3/4	25	8841	8841-D	\$.10
2	4 1/2	4 9/16	10	8842	8842-D	.20
3	4 1/2	6 3/8	5	8843	8843-D	.30
4	4 1/2	8 3/16	1	8844	8844-D	.72
5	4 1/2	10	1	8845	8845-D	.90
6	4 1/2	11 13/16	1	8846	8846-D	1.08
7	4 1/2	13 5/8	1	8847	8847-D	1.26
8	4 1/2	15 7/16	1	8848	8848-D	1.44

Struck-up, .060-inch Brass

1	4 1/2	2 3/4	25	8861	8861-D	\$.14
2	4 1/2	4 9/16	10	8862	8862-D	.28
3	4 1/2	6 3/8	5	8863	8863-D	.42
4	4 1/2	8 3/16	1	8864	8864-D	.88
5	4 1/2	10	1	8865	8865-D	1.10
6	4 1/2	11 13/16	1	8866	8866-D	1.32
7	4 1/2	13 5/8	1	8867	8867-D	1.54
8	4 1/2	15 7/16	1	8868	8868-D	1.76

H & H Tumbler Switch Plates

Schedule S



The standard package is 100 single plates or the equivalent in gangs.

On horizontal gang plates, switches are spaced 1 1/8 on centers; on tandem gang plates, switches are spaced 3 1/8 inches on centers.

The standard finish is old or brush brass, all other finishes are special.

Struck-up Plates, .040 Brass

Horizontal Gangs

Cat. No.	No. of Switches	Height In.	Length In.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8441	1	4 1/2	2 3/4	25	..	23	\$.14
8442	2	4 1/2	4 9/16	10	..	20	.28
8443	3	4 1/2	6 3/8	5	..	19	.42
8444	4	4 1/2	8 3/16	1	..	15	.88
8445	5	4 1/2	10	1	..	15	1.10
8446	6	4 1/2	11 13/16	1	..	15	1.32
8447	7	4 1/2	13 5/8	1	..	15	1.54
8448	8	4 1/2	15 7/16	1	..	15	1.76

Solid Brass Plates

Horizontal Gangs

8451	1	4 1/2	2 3/4	25	..	38	\$.34
8452	2	4 1/2	4 9/16	10	..	30	.88
8453	3	4 1/2	6 3/8	5	..	31	1.02
8454	4	4 1/2	8 3/16	1	..	28	1.36
8455	5	4 1/2	10	1	..	28	2.30
8456	6	4 1/2	11 13/16	1	..	27	2.40
8457	7	4 1/2	13 5/8	1	..	32	2.80
8458	8	4 1/2	15 7/16	1	..	25	3.20

Tandem Style

8462	2	8 1/8	2 3/4	1	..	36	\$.80
8463	3	11 3/4	2 3/4	1	..	35	1.20
8464	4	15 9/8	2 3/4	1	..	34	1.60
8465	5	19	2 3/4	1	..	33	2.00
8466	6	22 5/8	2 3/4	1	..	32	2.40

H & H Gold Star Push Switches

Schedule S

The switches have a composition base and a gold star button insert of 14-karat gold leaf.

The action is exceptionally smooth and easy.



Cat. No.	Description	CAP., 125 Volts	AMP., 250 Volts	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8421	Single-pole	10	5	10	50	35	\$.72
8422	Double "	..	10	10	10	11	.88
8423	Three-way	10	5	10	20	22	.88
8424	Four "	10	5	10	10	11	2.00
8425	Double-pole	..	20	10	10	11	1.40

Lock Type

8421L	Single-pole	10	5	10	50	35	\$1.17
8422L	Double "	..	10	10	10	11	1.33
8423L	Three-way	10	5	10	20	22	1.33
8424L	Four "	10	5	10	10	11	2.45
8425L	Double-pole	..	20	10	10	11	1.85

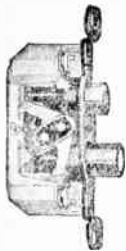
H & H Silver Star Push Switches

Schedule S

These switches have a radio-luminous star insert in the button.

Cat. No.	Description	CAP., 125 Volts	AMP., 250 Volts	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8426	Single-pole	10	5	10	50	35	\$.97
8427	Double "	..	10	10	10	11	1.13
8428	Three-way	10	5	10	20	22	1.38
8429	Four "	10	5	10	10	11	2.50
8430	Double-pole	..	20	10	10	11	1.65

H & H Nutmeg Type Push Button Switches



Shallow Base
Schedule S

Especially adapted for installation in 2-inch partitions, with a shallow wall case.

Outside supporting screw holes are spaced $3\frac{3}{32}$ inches on centers; inside supporting screw holes, $2\frac{3}{16}$ inches on centers.

Depth of switch, 1 inch.

Cat. No.	Description	Cap. Amps. 125 V.	Cap. Amps. 250 V.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4401S	Single-pole	10	5	10	100	38	\$.35
4402S	Double "	10	10	10	50	21	.70
4403S	3-way	10	5	10	50	21	.50
4404S	4 "	10	5	10	10	21	2.00

H & H Nutmeg Switches

Schedule S



Designed to meet the demand for low priced switches on certain kinds of work. The bevelled ends and narrow base give large wiring space.

Depth of switch without plate, $1\frac{5}{8}$ inches.

Outside supporting screw holes spaced $3\frac{3}{32}$ inches on centers; inside supporting screw holes, $2\frac{3}{16}$ inches on centers.

Single Pole

Cat. No.	Capacity, Amperes 125 V.	Capacity, Amperes 250 V.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4401	10	5	10	100	56	\$.35

Three-way

4403	10	5	10	50	32	\$.50
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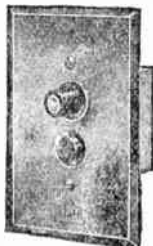
H & H Push-button Switches

Schedule S

Standard Type

Switch blades are the heavy knife type and never break. Contacts are of phosphor bronze. Working parts are case-hardened. Button with pearl center indicates current on.

Depth of switch without plate, $1\frac{3}{4}$ inches. Outside supporting screw holes spaced $3\frac{3}{32}$ inches on centers; inside supporting screw holes, $2\frac{3}{16}$ inches on centers.



Cat. No.	Description	Capacity, Amps. 125 V.	Capacity, Amps. 250 V.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2081	Single Pole	10	5	10	100	49	\$.45
2082	Double "	10	10	10	50	29	.70
3778	" "	20	20	10	20	13	.80
2083	Three-way	10	5	10	50	29	.70
2084	Four-way	10	5	10	10	9	2.00

H & H Electrolier Switches

Schedule S

10 Amperes, 125 Volts—5 Amperes, 250 Volts

Depth of switch without plate, $1\frac{1}{16}$ inches. Outside supporting screws are spaced $3\frac{3}{32}$ inches on centers, inside supporting screws, $2\frac{3}{16}$ inches.

Connections: 1, Off, 1 & 2, Off, 1 & 2 & 3 Off

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2967	Indic.	10	10	9	\$ 1.15
3511	Plain	10	10	9	1.05

Connections: 1, Off, 1 & 2, Off

2968	Indic.	10	10	9	\$ 1.15
3512	Plain	10	10	9	1.05

Connections: 1, Off, 2, Off 1 & 2, Off

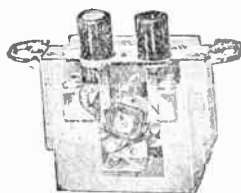
3264	Indic.	10	10	9	\$ 1.15
3513	Plain	10	10	9	1.05



H & H Momentary Contact Switches

Schedule H

6 Amperes, 250 Volts



Pressure on the button of these switches closes the circuit as long as the button is held in. Releasing the button opens the circuit with a quick snap. The two-circuit type has two separate, single-pole switches, each controlling a separate circuit. Both buttons cannot be operated at the same time. This

switch is often connected as follows: Pressure on one button closes and pressure on the other button opens the remote-control switch. The single-circuit type is often used on bell circuits. These switches are $2\frac{3}{16}$ inches deep and can be installed in regular deep-wall case No. 3031. The two-circuit type takes regular push-button flush plate. For single-circuit type use plate No. 3515.

Depth of switch, without plate, is $2\frac{3}{16}$ inches. Outside supporting screw holes spaced $3\frac{3}{32}$ inches on centers. Inside supporting screw holes $2\frac{3}{16}$ inches on centers.

Deep Type—Circuit Normally Open

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2061	Two-circuit	10	10	11	\$ 2.40
2061-L	" " Lock	10	10	11	2.85
2179	Single-circuit	10	10	11	1.90
2179-L	" " Lock	10	10	11	2.35

Deep Type—Circuit Normally Closed

3660	Two-circuit	10	10	11	\$ 2.40
3660-L	" " Lock	10	10	11	2.85
3661	One " "	10	10	11	1.90
3661-L	" " Lock	10	10	11	2.35

Shallow Type—Circuit Normally Closed—No Rating

No. 2063 is a smaller switch that does not have the same quickness of snap or length of break as the No. 2061. On battery circuits of low potential, the No. 2063 can be used in the same manner as the No. 2061.

It can also be used on lighting circuits, provided that the remote-control switch itself opens the solenoid-energizing circuit when it operates. Standard switch plates are used.

Depth of switch No. 2063 is $1\frac{1}{2}$ inches. Outside supporting screw holes spaced $3\frac{3}{32}$ inches on centers. Inside supporting screw holes $2\frac{3}{16}$ inches on centers.

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
*2063	Two-circuit ($1\frac{1}{2}$ inches deep)	10	10	9	\$ 1.50

*Not National Electrical Code Standard.

H & H Automatic Door Switches

Schedule S

For automatically operating a light upon the opening and closing of a door. All H & H door switches have a roller-tip plunger, which rolls across the edge of the door as it closes, and prevents friction and strain on the switch mechanism.

Each door switch is enclosed in a rolled steel base, which eliminates the trouble resulting from broken and chipped bases, as frequently occurs when door switches with porcelain bases are used.

With every switch is furnished a small round plate with screw, for placing on the edge of door, where plunger strikes it. The shell of the switch is of sheet steel .081 inch in thickness. Dimensions of plate, $3\frac{3}{4} \times 1\frac{1}{4}$ inches. Opening required, $2\frac{5}{8} \times 1\frac{1}{16}$ inches. Depth, $1\frac{3}{4}$ inches.

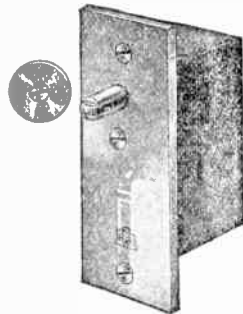
Single Pole—6 Ampere, 125 Volts; 3 Ampere, 250 Volts

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2022	Light on when Door is Open.	10	25	20	\$ 2.25
2023	" " " " Closed	10	10	10	2.25

Iron Boxes for Door Switches

Dimensions, $1\frac{1}{4} \times 2\frac{1}{8} \times 2\frac{3}{4}$ inches; $\frac{5}{8}$ and $\frac{7}{8}$ -inch knock-outs on ends and bottom.

3047	For One Door Switch.....	1	25	21	\$ 4.40
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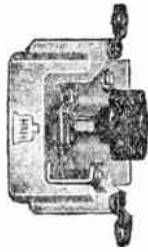


H & H Flush Switches

Schedule S



No. 600 with No. 4067 Plate



No. 601

Outside supporting screw holes $3\frac{5}{8}$ inches on centers. Inside supporting screw holes $2\frac{9}{16}$ inches on centers.

Depth of switches without plates: No. 600, $1\frac{1}{8}$ inches; No. 2263, $1\frac{3}{8}$ inches. All others $1\frac{17}{32}$ inches.

When specified, switches will be furnished with round handles without extra charge.

Single-pole

Cat. No.	Description	RATING, AMP. 125V. 250V.	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Price Each
600	Plain	5 3	10	100	59	\$.62
601	"	10 5	10	50	30	.71
2881	Indicating	10 5	10	50	30	.81

Double-pole

602	Plain	10 10	10	50	30	\$1.05
2882	Indicating	10 10	10	50	30	1.15

Three-way

2263	Plain	5 3	10	50	30	\$.82
603	"	10 5	10	50	30	1.05

Four-way

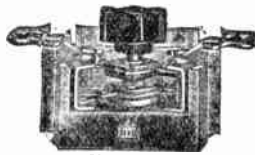
604	Plain	5 2	10	10	8	\$1.05
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H & H Electrolier Rotary Flush Switches

Schedule S



No. 2886



No. 2681

Depth of electrolier type switches, without plates, $1\frac{17}{32}$ inches.

Supporting screw holes are spaced $3\frac{5}{8}$ inches on centers, outside; $2\frac{9}{16}$ inches on centers, inside.

May be converted into lock switches by the use of lock attachments. When specified, round handles will be furnished without extra charge.

Connections: 1, 1 & 2, 1, Off

Cat. No.	Description	RATING, AMPS.		Car-ton	Std. Pkg.	Wt., Lbs. Std.	Price Each
		125 Volts	250 Volts				
609	Plain	5	2	10	10	8	\$1.05
2886	Indicating	5	2	10	10	8	1.15

Connections: 1, 1 & 2, 2, Off

619	Plain	5	2	10	10	8	\$1.05
2887	Indicating	5	2	10	10	8	1.15

Connections: 1, 2, 1 & 2, Off

2681	Plain	10	5	10	10	8	\$1.05
2888	Indicating	10	5	10	10	8	1.15

Connections: 1, 1 & 2, 1 & 2 & 3, Off

605	Plain	5	2	10	10	8	\$1.05
2885	Indicating	5	2	10	10	8	1.15

Connections: 1, 2, 3, Off

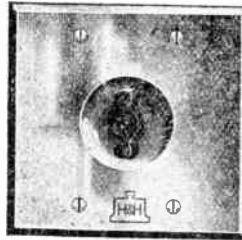
3055	Plain	5	2	10	10	8	\$1.05
2980	Indicating	5	2	10	10	8	1.15

H & H 30-ampere Rotary Flush Switches

Schedule S

Designed for heavy duty.

These switches require a two-gang wall case, No. 902. Outside supporting screw holes spaced $3\frac{3}{4}$ inches on centers. Inside supporting screw holes spaced $2\frac{9}{16}$ inches on centers. Depth of switches without plate, $1\frac{7}{8}$ inches.



Single-pole

Cat. No.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std.	Price Each
3061	Plain	1	10	16	\$1.90
3108	Indicating	1	10	16	2.00

Double-pole

3004	Plain	1	10	16	\$1.90
3107	Indicating	1	10	16	2.00

H & H Plates for Rotary Switches

Schedule S

Struck-up Brass Plates



No. 4067 plate is stamped from .040-inch rolled brass, and has re-enforced edges to make it strong. The screw holes are deeply countersunk so that the plate will not dip in under pressure of the screws.

Cat. No.	No. of Switches	Dimens. of Plate, In.	Std. Pkg.	Wt., Lbs. Std.	Price Each
4067	1	$4\frac{1}{2} \times 2\frac{3}{4}$	*	23	\$.20

Standard Size Solid Plain Plates

Switches are spaced $1\frac{1}{8}$ inches between centers.

Cat. No.	No. of Switches	Dimensions of Plate, In.	Std. Pkg.	Wt., Lbs. Std.	Price Each
4031	1	$4\frac{1}{2} \times 2\frac{3}{4}$	*	40	\$.40
4032	2	$4\frac{1}{2} \times 4\frac{9}{16}$	*	31	.80
4033	3	$4\frac{1}{2} \times 6\frac{3}{8}$	*	31	1.20
4034	4	$4\frac{1}{2} \times 8\frac{3}{16}$	*	29	1.60
4035	5	$4\frac{1}{2} \times 10$	*	27	2.30
4036	6	$4\frac{1}{2} \times 11\frac{9}{16}$	*	29	2.76
4037	7	$4\frac{1}{2} \times 13\frac{3}{8}$	*	28	3.22
4038	8	$4\frac{1}{2} \times 15\frac{1}{16}$	*	28	3.68

Standard Size Solid Indicating Plates

Switches are spaced $1\frac{1}{8}$ inches between centers.

2891	1	$4\frac{1}{2} \times 2\frac{3}{4}$	*	36	\$.40
2892	2	$4\frac{1}{2} \times 4\frac{9}{16}$	*	29	.80
2893	3	$4\frac{1}{2} \times 6\frac{3}{8}$	*	29	1.29
2894	4	$4\frac{1}{2} \times 8\frac{3}{16}$	*	27	1.60
2895	5	$4\frac{1}{2} \times 10$	*	27	2.30
2896	6	$4\frac{1}{2} \times 11\frac{9}{16}$	*	27	2.76
2897	7	$4\frac{1}{2} \times 13\frac{3}{8}$	*	26	3.22
2898	8	$4\frac{1}{2} \times 15\frac{1}{16}$	*	26	3.68

Tandem Solid Plain Plates

Switches are spaced $3\frac{5}{8}$ inches between centers.

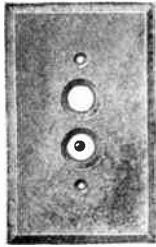
4062	2	$8\frac{1}{4} \times 2\frac{3}{4}$	*	36	\$.92
4063	3	$11\frac{3}{4} \times 2\frac{3}{4}$	*	37	1.38
4064	4	$15\frac{3}{8} \times 2\frac{3}{4}$	*	34	1.84
4065	5	$19 \times 2\frac{3}{4}$	*	33	2.30
4066	6	$22\frac{5}{8} \times 2\frac{3}{4}$	*	32	2.76

Solid Plates for 30-ampere, 250-volt Switches

3054	1	$4\frac{1}{2} \times 4\frac{9}{16}$	10	8	\$1.00
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*100 single plates, or the equivalent in gangs is a standard package.

H & H Struck-up Brass Push Switch Plates



Edges are swedged to a greater thickness than face, thereby strengthening plate. Screw holes are deeply counter-sunk so as to allow edge of screw hole to rest on crossbar of switch. Will not dip under pressure of the screws.

The standard finish on all plates except where noted, is old or brush brass which will be supplied unless otherwise specified. Finish is attractive.

Standard package, 100 gangs. All plates for push switches may be assorted.

Struck-up Plates—.020-inch Brass

Cat. No.	Duro-plate Finish	No. Switches	Dimensions In.	Car-ton	Wt. Lbs. Std. Pkg.	Old Brass Finish	PRICE, EACH	Duro-plate Finish
8551	8551-D	1	4 1/2 x 2 3/4	25	13		\$.11	\$.07

Struck-up Plates—.030-inch Brass

8561	8561-D	1	4 1/2 x 2 3/4	25	18		\$.125	\$.085
8562	8562-D	2	4 1/2 x 4 9/16	10	17		.25	.17
8563	8563-D	3	4 1/2 x 6 3/8	5	20		.375	.255

Struck-up Plates—.040-inch Brass

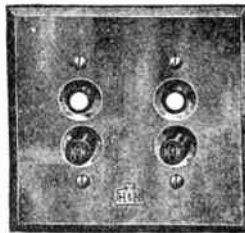
4077	4077-D	1	4 1/2 x 2 3/4	25	23		\$.10	\$.10
4078	4078-D	2	4 1/2 x 4 9/16	10	20		.28	.20
4079	4079-D	3	4 1/2 x 6 3/8	5	19		.42	.30
1154	1154-D	4	4 1/2 x 8 3/16	1	18		.88	.72
1155	1155-D	5	4 1/2 x 10	1	16		1.10	.90
1156	1156-D	6	4 1/2 x 11 1/16	1	15		1.32	1.08
1157	1157-D	7	4 1/2 x 13 3/8	1	14		1.54	1.26
1158	1158-D	8	4 1/2 x 15 1/16	1	13		1.76	1.44

Struck-up Plates—.060-inch Brass

2301	2301-D	1	4 1/2 x 2 3/4	25	30		\$.18	\$.14
2302	2302-D	2	4 1/2 x 4 9/16	10	26		.36	.28
8613	8613-D	3	4 1/2 x 6 3/8	5	36		.54	.42

H & H Solid Brass Push Switch Plates

Made of highest grade rolled brass. On horizontal gang plates switches are spaced 1 1/16 inches on centers; on tandem plates, 3 3/8 inches. Tandem plates fit standard wall cases. Standard package, 100 gangs. Plates for push switches may be assorted.



Solid Brass Plates

Cat. No.	Duro-plate Finish	No. Switches	Dimensions In.	Car-ton	Wt. Lbs. Std. Pkg.	Old Brass Finish	PRICE, EACH	Duro-plate Finish
4051	4051-D	1	4 1/2 x 2 3/4	25	38		\$.34	\$.30
4052	4052-D	2	4 1/2 x 4 9/16	10	30		.68	.60
4053	4053-D	3	4 1/2 x 6 3/8	5	31		1.02	.90
4054	4054-D	4	4 1/2 x 8 3/16	1	28		1.36	1.20
4055	4055-D	5	4 1/2 x 10	1	28		2.00	1.80
4056	4056-D	6	4 1/2 x 11 1/16	1	27		2.40	2.16
4057	4057-D	7	4 1/2 x 13 3/8	1	32		2.80	2.52
4058	4058-D	8	4 1/2 x 15 1/16	1	25		3.20	2.88

Solid Brass Plates—Tandem Gangs

4072	4072-D	2	8 x 2 3/4	1	36		\$.80	\$.72
4073	4073-D	3	11 3/4 x 2 3/4	1	35		1.20	1.08
4074	4074-D	4	15 3/8 x 2 3/4	1	34		1.60	1.44
4075	4075-D	5	19 x 2 3/4	1	33		2.00	1.80
4076	4076-D	6	22 5/8 x 2 3/4	1	32		2.40	2.16

H & H Struck-up Brass Plates

Schedule H

Blank Plates, .040-inch Metal



Cat. No.	No. of Switches	Dimensions Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4068	1	4 1/2 x 2 3/4	*	24	\$.18
4084	2	4 1/2 x 4 9/16	*	21	.36
4085	3	4 1/2 x 6 3/8	*	28	.54

Blank Plates, .060-inch Metal

3736	1	4 1/2 x 2 3/4	*	33	\$.22
3737	2	4 1/2 x 4 9/16	*	27	.44
3738	3	4 1/2 x 6 3/8	*	37	.66

One-gang Telephone Plates, .040-inch Metal

Cat. No.	Description	Dimens. Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3144	One Hole	4 1/2 x 2 3/4	†	24	\$.20
3244	Two Holes	4 1/2 x 2 3/4	†	23	.24

One-gang Telephone Plates, .060-inch Metal

3739	One Hole	4 1/2 x 2 3/4	†	33	\$.24
3740	Two Holes	4 1/2 x 2 3/4	†	32	.28



No. 3244

H & H Solid Brass Plates

Schedule H

Blank Plates

Cat. No.	No. of Switches	Dimens. Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4069	1	4 1/2 x 2 3/4	*	40	\$.38
4070	2	4 1/2 x 4 9/16	*	35	.76

Bell Push Plates

3141	For Battery Circuits	4 1/2 x 2 3/4	100	24	\$.84
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Telephone Plates

3246	One Hole	4 1/2 x 2 3/4	†	40	\$.40
3686	Two Holes	4 1/2 x 2 3/4	†	39	.44

All telephone plates are furnished complete with 3/8-inch rubber bushings.

*100 single blank plates or the equivalent in gangs.

†100 single telephone plates or the equivalent in gangs.

Plates for H & H Flush Switches
Solid Plates with Round Corners and Round Edges

Will be furnished at 15 cents list extra for a single plate, and 5 cents list extra for each additional switch or receptacle in gang plates.

Solid Plates with Round Corners and Beveled Edges

Will be furnished at 15 cents list extra per plate.

Special Sized Plates

Bear a list price of 7 cents per square inch plus the list price of nearest regular plate, in lots of less than 100 and 8 cents per square inch in lots of 100 or more separate plates of one size and type. When plates are not rectangular in shape, the charge will be for a plate the size of the smallest rectangular piece from which the specified plate can be cut. In no case shall any special plate sell at a price less than that of the corresponding standard plate.

Always send a clear sketch giving all dimensions and detailed specifications.

Small Sized Plates

Both rotary flush plates and push button plates are made in two sizes, standard size and small size (except in tandem gangs).

Blank Plates

These are plates used to cover an unused outlet. Unless otherwise specified, they will be furnished with two screw holes, spaced 3 1/4 inches between centers, to fit standard outlet boxes.

Engraving

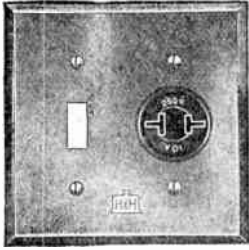
The lettering is deeply etched in block design and can be made to any desired height. For engraving on plates, the charge is 10 cents list, per letter.

Finishes

Flush plates for rotary, push button switches and receptacles are furnished in old or brush brass. All other finishes are special. For special finishes, except gold and silver, add to the list price per switch, 10 cents.

Regular and special finishes of one manufacturer's number may be assorted to make up quantity.

H & H Brass 2-gang Combination Plates



For Square Handle Tumbler Switch and Single Receptacle

Schedule S

Prices given are for standard old brass finish, which is furnished unless otherwise specified.

Duroplate finish, deduct 4 cents per gang.

Cat. No.	Thickness Metal		Dimensions Inches	Std. Pkg.	Wt., Lbs.		Price Each
	Inches	Inches			Std. Pkg.	Std. Pkg.	
IF-40	.040		4 1/2 x 4 9/16	10	4		\$.38
IF-60	.060		4 1/2 x 4 9/16	10	5		.46
IF	Solid		4 1/2 x 4 9/16	10	6 1/2		.88

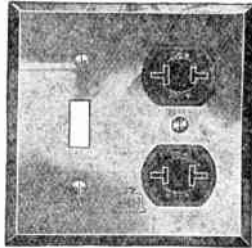
H & H Brass 2-gang Combination Plates

For Square Handle Tumbler Switch and Duplex Receptacle

Schedule S

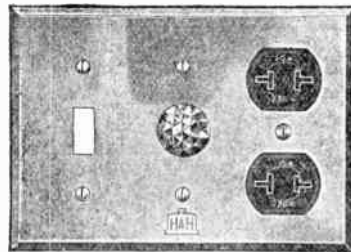
Prices given are for standard old brass finish, which is furnished unless otherwise specified.

Duroplate finish, deduct 4 cents per gang.



Cat. No.	Thickness Metal		Dimensions Inches	Std. Pkg.	Wt., Lbs.		Price Each
	Inches	Inches			Std. Pkg.	Std. Pkg.	
ID-40	.040		4 1/2 x 4 9/16	10	4		\$.38
ID-60	.060		4 1/2 x 4 9/16	10	5		.46
ID	Solid		4 1/2 x 4 9/16	10	6 1/2		.88

H & H Brass 3-gang Combination Plates



For Square Handle Tumbler Switch, Bulls Eye and Single or Duplex Receptacles

Schedule S

Prices given are for standard old brass finish, which is furnished unless otherwise specified.

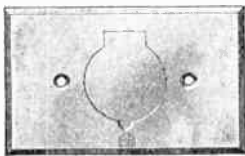
Duroplate finish, deduct 4 cents per gang.

Cat. No.	Thickness Metal		Dimensions Inches	Std. Pkg.	Wt., Lbs.		Price Each
	Single Receptacle	Duplex Receptacle			Std. Pkg.	Std. Pkg.	
IBF-40	IBD-40	.040	4 1/2 x 6 3/8	10	4 1/2		\$1.23
IBF-60	IBD-60	.060	4 1/2 x 6 3/8	10	6		1.35
IBF	IBD	Solid	4 1/2 x 6 3/8	10	8 3/4		1.98

No. 1181 H & H Horizontal Lid Plates

Schedule K

.040-inch Struck-up Brass



For narrow baseboards and wiring convenience, the No. 1181 Horizontal Lid Plate is especially desirable.

Size, 2 3/4 inches high, and 4 1/2 inches long.

The hinge is accurately adjusted for tension so that the lid will stay in any position. Only

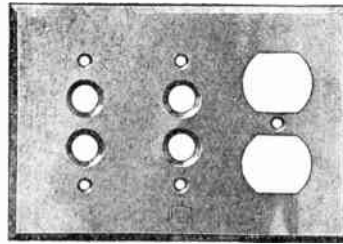
one hand is needed to open lid and insert the plug. Sharp bevel edges and countersunk screw holes. Edges reinforced to resist buckling.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1181	25	100	24	\$.19

H & H 3-gang Combination Plates

Schedule S

.040-inch Brass



No. PPD-40

Size, 4 1/2 inches high and 6 3/8 inches long.

Standard finish is old or brush brass and will be shipped unless Duroplate or some other finish is specified.

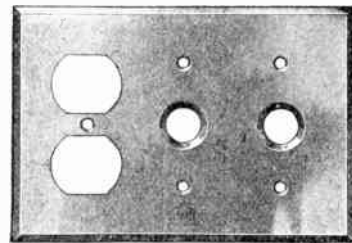
The order in which symbol letters appear from left to right in catalogue numbers is the order of the gangs or units of the plate as explained below.

Explanation of Symbol Letters

- P—For Push Switch
- T—For Tumbler Switch
- D—For Duplex Receptacle
- F—For Single Receptacle
- E—Lid Receptacle Plate

For 2 Push Switches and Duplex Receptacle

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, EACH	
			Old Brass	Duro-plate
PPD-40	10	4 1/2	\$.57	\$.45
DPP-40	10	4 1/2	\$.57	\$.45
PDP-40	10	4 1/2	\$.57	\$.45
FPP-40	10	4 1/2	\$.57	\$.45
PPF-40	10	4 1/2	\$.57	\$.45
FPF-40	10	4 1/2	\$.57	\$.45
EPP-40	10	4 1/2	\$.62	\$.50
PPE-40	10	4 1/2	\$.62	\$.50
PEP-40	10	4 1/2	\$.62	\$.50
PEE-40	10	4 1/2	\$.67	\$.55
EPE-40	10	4 1/2	\$.67	\$.55



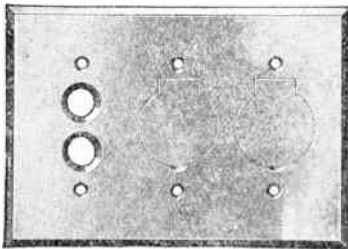
No. DTT-40

TTD-40	10	4 1/2	\$.57	\$.45
DTT-40	10	4 1/2	\$.57	\$.45
TDT-40	10	4 1/2	\$.57	\$.45
FTT-40	10	4 1/2	\$.57	\$.45
TTF-40	10	4 1/2	\$.57	\$.45
TFT-40	10	4 1/2	\$.57	\$.45
ETT-40	10	4 1/2	\$.62	\$.50
TTE-40	10	4 1/2	\$.62	\$.50
TEE-40	10	4 1/2	\$.67	\$.55
EET-40	10	4 1/2	\$.67	\$.55

H & H 3-gang Combination Plates

Schedule S

.060-inch Brass



No. PEE-60

Size, 4½ inches high and 6¾ inches long.

Standard finish is old or brush brass and will be shipped unless Duroplate or some other finish is specified.

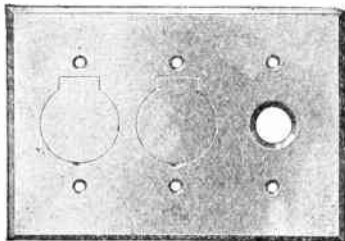
The order in which symbol letters appear from left to right in catalogue numbers is the order of the gangs or units of the plate as explained below.

Explanation of Symbol Letters

- P—For Push Switch
- T—For Tumbler Switch
- D—For Duplex Receptacle
- F—For Single Receptacle
- E—Lid Receptacle Plate

For 2 Push Switches and Duplex Receptacle

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price, Each—	
			Old Brass	Duroplate
PPD-60	10	4½	\$.69	\$.57
For Duplex Receptacle and 2 Push Switches				
DPP-60	10	4½	\$.69	\$.57
For Push Switch, Duplex Receptacle and Push Switch				
PDP-60	10	4½	\$.69	\$.57
For Single Receptacle and 2 Push Switches				
FPP-60	10	4½	\$.69	\$.57
For 2 Push Switches and Single Receptacle				
PPF-60	10	4½	\$.69	\$.57
For Push Switch, Single Receptacle and Push Switch				
PPF-60	10	4½	\$.69	\$.57
For Lid Receptacle Plate and 2 Push Switches				
EPP-60	10	4½	\$.74	\$.62
For 2 Push Switches and Lid Receptacle Plate				
PPE-60	10	4½	\$.74	\$.62
For Push Switch, Lid Receptacle Plate and Push Switch				
PEP-60	10	4½	\$.74	\$.62
For Push Switch and 2 Lid Receptacle Plates				
PEE-60	10	4½	\$.79	\$.67
For 2 Lid Receptacle Plates and Push Switch				
EPE-60	10	4½	\$.79	\$.67



No. EET-60

For 2 Tumbler Switches and Duplex Receptacle				
TTD-60	10	4½	\$.69	\$.57
For Duplex Receptacles and 2 Tumbler Switches				
DTT-60	10	4½	\$.69	\$.57
For Tumbler Switch, Duplex Receptacle and Tumbler Switch				
TDT-60	10	4½	\$.69	\$.57
For Single Receptacle and 2 Tumbler Switches				
FTT-60	10	4½	\$.69	\$.57
For 2 Tumbler Switches and Single Receptacle				
TTF-60	10	4½	\$.69	\$.57
For Tumbler Switch, Single Receptacle and Tumbler Switch				
TFT-60	10	4½	\$.69	\$.57
For Lid Receptacle Plate and 2 Tumbler Switches				
ETT-60	10	4½	\$.74	\$.62
For 2 Tumbler Switches and Lid Receptacle Plate				
TTE-60	10	4½	\$.74	\$.62
For Tumbler Switch and 2 Lid Receptacle Plates				
TTE-60	10	4½	\$.79	\$.67
For 2 Lid Receptacle Plates and Tumbler Switch				
EET-60	10	4½	\$.79	\$.67

Trumbull Telephone or Battery Switches
25 Amperes—Porcelain Base—Front Connections



No. 707 No. 709 No. 710

Fitted with return bend, self-adjusting clip. Projections on posts prevent turning on bases.

Cat. No.	Style	SIZE OF BASE, INCHES		Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		Length	Width				
707	S.P., S.T.	2 7/8	1 1/4	10	150	48	\$.20
708	S.P., D.T.	3 5/8	1 3/16	5	100	45	.32
709	D.P., S.T.	2 1/8	x 2	10	100	50	.35
710	D.P., D.T.	3 5/8	x 2	5	50	46	.50
711	3P., S.T.	2 7/8	x 3 1/4	5	50	45	.56
712	3P., D.T.	3 5/8	x 3 1/4	5	50	67	.90

Trumbull Telephone or Battery Switches

25 Amperes—Slate Base—Front Connections



No. 14

All the telephone or battery switches are fitted with the return bend, self-adjusting type of clip, which is unusualy suitable for this type of switch. Projections on posts prevent turning on bases.

Cat. No.	Style	SIZE OF BASE, INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		Length	Width			
14	D.P., S.T.	2 1/2	x 2	50	30	\$.45
15	D.P., D.T.	3 7/8	x 2	25	22	.75
16	3P., S.T.	2 1/8	x 3 1/4	50	40	.66
17	3P., D.T.	3 5/8	x 3 1/4	25	30	1.10
18	4P., S.T.	2 1/8	x 1 1/2	25	30	1.00
19	4P., D.T.	3 5/8	x 1 1/2	10	20	1.70

Trumbull Telephone or Battery Switches

25 Amperes—Fiber Base—Front Connections



No. 7 No. 11

Fitted with return bend self-adjusting clip. Projections on posts prevent turning on bases.

With Composition Handle

Cat. No.	Style	Carton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8	S.P., D.T.	10	100	30	.34
9	D.P., S.T.	10	100	41	.42
10	D.P., D.T.	10	50	36	.80
40	3P., S.T.	10	50	35	.75
41	3P., D.T.	10	25	20	1.25
42	4P., S.T.	10	25	20	1.10
43	4P., D.T.	10	10	10	1.75

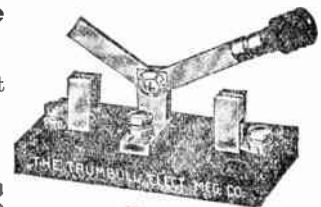
With Black Enameled Handle

11	S.P., S.T.	20	200	34	\$.20
13	S.P., D.T.	10	100	29	.32

Trumbull Gas Engine Switches
25 Amperes

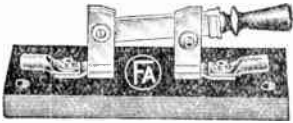
For changing from one set of batteries to another.

Cat. No.	Style	Size of Base	Car. ton	Std. Pkg.	Std. Pkg.	Price Each
984	D. P.	4x4	5	25	35	1.40



No. 980

FA Type F Knife Switches



Punched Clip
Single-pole—Unfusible
Front Connection—Plain Finish
 250 Volts D. C.
 or
 500 Volts A. C.

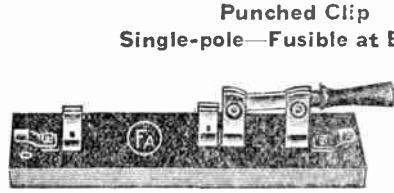
Single-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310	30	1½	\$.90
F 3510	30	2	1.40
F 6310	60	2½	1.60
F10310	100	4	3.20
F20310	200	7	5.70

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3310T	30	3	\$1.60
F 3510T	30	3½	2.45
F 6310T	60	4½	2.75
F10310T	100	6¼	6.20
F20310T	200	12½	10.25

FA Type F Knife Switches



Punched Clip
Single-pole—Fusible at Bottom
Front Connection—Plain Finish
 250 Volts D. C.
 or A. C.

Single-throw

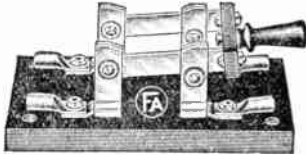
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311	30	2¾	\$1.50
F 6311	60	4½	3.60
F10311	100	7¾	5.00
F20311	200	11¾	9.25

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3311T	30	5¼	\$3.25
F 6311T	60	7¾	5.00
F10311T	100	12½	10.90
F20311T	200	20	20.60

FA Type F Knife Switches

Punched Clip
Double-pole—Unfusible
Front Connection—Plain Finish
 250 Volts D. C.
 or
 500 Volts A. C.



Single-throw

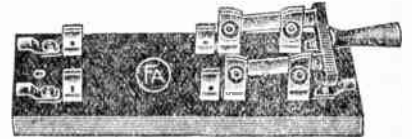
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320	30	2½	\$1.45
F 3520	30	3½	2.25
F 6320	60	4¼	2.60
F10320	100	8½	5.30
F20320	100	15½	9.50

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3320T	30	4¾	\$2.45
F 3520T	30	6	3.60
F 6320T	60	7¾	4.20
F10320T	100	13	9.50
F20320T	200	25	15.80

FA Type F Knife Switches

Punched Clip
Double-pole—Fusible at Bottom
Front Connection—Plain Finish
 250 Volts D. C.
 or A. C.



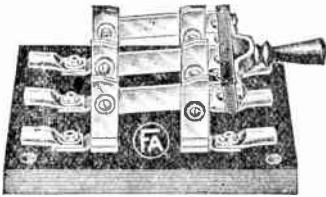
Single-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322	30	4½	\$2.25
F 6322	60	7½	3.80
F10322	100	13½	7.70
F20322	200	25	14.20

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3322T	30	8¾	\$4.55
F 6322T	60	12½	7.15
F10322T	100	26½	15.55
F20322T	200	37½	27.30

FA Type F Knife Switches



Punched Clip
Three-pole—Unfusible
Front Connection—Plain Finish
 250 Volts D. C.
 or
 500 Volts A. C.

Single-throw

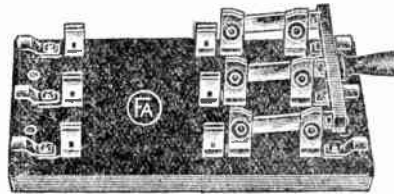
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330	30	3¾	\$2.15
F 3530	30	6¼	3.40
F 6330	60	6¼	3.90
F10330	100	11½	7.90
F20330	200	22½	14.20

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3330T	30	7	\$3.80
F 3530T	30	11½	5.60
F 6330T	60	11½	6.55
F10330T	100	17½	14.50
F20330T	200	32	24.40

FA Type F Knife Switches

Punched Clip
Three-pole—Fusible at Bottom
Front Connection—Plain Finish
 250 Volts D. C.
 or A. C.



Single-throw

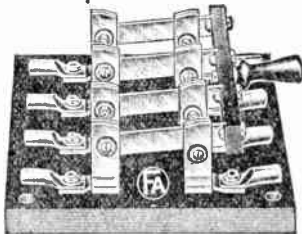
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333	30	6½	\$3.40
F 6333	60	11	5.70
F10333	100	19½	11.60
F20333	200	35	21.30

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3333T	30	13	\$7.40
F 6333T	60	18½	11.45
F10333T	100	37½	24.90
F20333T	200	59½	43.70

FA Type F Knife Switches

Punched Clip
Four-pole—Unfusible
Front Connection—Plain Finish
 250 Volts D. C.
 or
 500 Volts A. C.



Single-throw

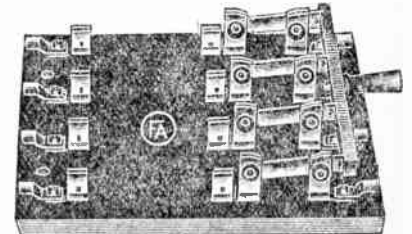
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340	30	6½	\$2.90
F 3540	30	11¾	4.50
F 6340	60	12	5.15
F10340	100	19½	10.50
F20340	200	32½	18.90

Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*F 3340T	30	11½	\$5.40
F 3540T	30	19½	8.10
F 6340T	60	20	9.25
F10340T	100	29	20.66
F20340T	200	45½	32.60

FA Type F Knife Switches

Punched Clip
Four-pole Fusible at Bottom
Front Connection—Plain Finish
 250 Volts D. C.
 or A. C.



Single-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344	30	9	\$4.50
F 6344	60	17	7.60
F10344	100	32½	15.35
F20344	200	57	28.40

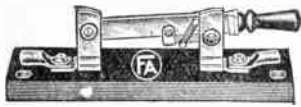
Double-throw

Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3344T	30	18	\$10.20
F 6344T	60	30	15.70
F10344T	100	67½	34.20
F20344T	200	97	55.90

NOTE.—Double throw switches will be furnished with fuse connections at both ends.

*For 250 volts D. C. only.

FA Type F Knife Switches
Punched Clip, Unfusible

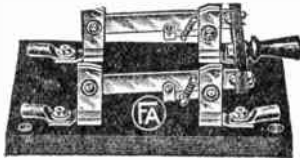


Single-pole
Front Connection
Plain Finish

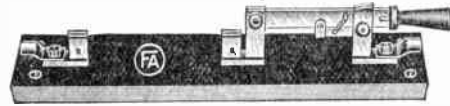
600 Volts D. C. or A. C.

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3610Q	30	3 1/4		\$2.30
F 6610Q	60	3 1/2		2.55
F10610Q	100	7 3/4		4.55
F20610Q	200	10		8.85
Without Quick Break Blades				
F 3610	30	3 1/4		\$1.70
F 6610	60	3 1/2		2.00
F10610	100	7 3/4		4.00

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3610QT	30	6 1/2		\$5.55
F 6610QT	60	7		5.80
F10610QT	100	10 1/2		8.60
F20610QT	200	16		13.90
Without Quick Break Blades				
F 3610T	30	4 1/2		\$3.50
F 6610T	60	5 1/2		4.00
F10610T	100	11		8.20



FA Type F Knife Switches
Punched Clip, Fusible at Bottom

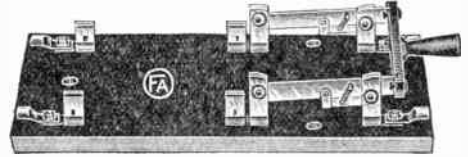


Single-pole
Front Connection
Plain Finish
600 Volts D.C. or A.C.

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3611Q	30	4 1/2		\$3.60
F 6611Q	60	6		4.15
F10611Q	100	12		7.60
F20611Q	200	23 1/2		13.70
Without Quick Break Blades				
F 3611	30	4 1/2		\$2.95
F 6611	60	6		3.60
F10611	100	12		6.85

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3611QT	30	13		\$7.90
F 6611QT	60	17		8.60
F10611QT	100	23		14.45
F20611QT	200	35		22.00
Without Quick Break Blades				
F 3611T	30	13		\$6.95
F 6611T	60	17		7.90
F10611T	100	24		15.80

Double-pole
Front Connection
Plain Finish
600 Volts D.C. or A.C.



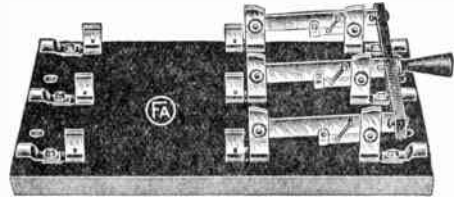
Double-pole
Front Connection
Plain Finish
600 Volts D. C. or A. C.

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3620Q	30	7 1/4		\$3.80
F 6620Q	60	8		4.20
F10620Q	100	13		7.60
F20620Q	200	20		14.70
Without Quick Break Blades				
F 3620	30	7 1/4		\$2.85
F 6620	60	8		3.40
F10620	100	13		6.65

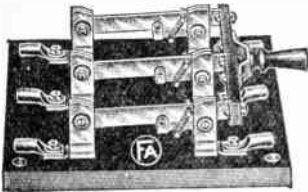
Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3620QT	30	11 1/2		\$10.00
F 6620QT	60	12		10.50
F10620QT	100	17 3/4		15.55
F20620QT	200	26 1/2		25.20
Without Quick Break Blades				
F 3620T	30	13 3/4		\$4.65
F 6620T	60	15 1/2		5.50
F10620T	100	20		10.95

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3622Q	30	10 1/2		\$5.50
F 6622Q	60	12 1/2		6.30
F10622Q	100	26		11.60
F20622Q	200	45		21.00
Without Quick Break Blades				
F 3622	30	10 1/2		\$4.65
F 6622	60	12 1/4		5.50
F10622	100	26		10.50

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3622QT	30	21 1/2		\$14.20
F 6622QT	60	28		15.55
F10622QT	100	38		26.30
F20622QT	200	58		39.90
Without Quick Break Blades				
F 3622T	30	22		\$9.25
F 6622T	60	28		10.50
F10622T	100	40		21.00



Three-pole
Front Connection
Plain Finish
600 Volts D.C. or A.C.



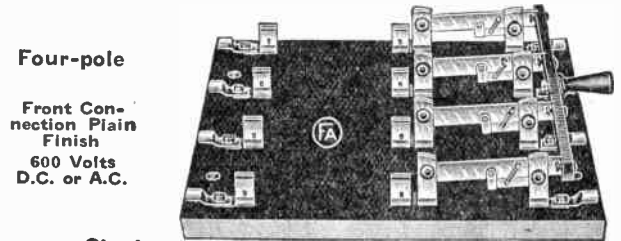
Three-pole
Front Connection
Plain Finish
600 Volts D. C. or A. C.

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3630Q	30	6 1/2		\$5.90
F 6630Q	60	8 1/2		6.55
F10630Q	100	19 1/2		11.80
F20630Q	200	25 1/2		22.80
Without Quick Break Blades				
F 3630	30	8 3/4		\$4.45
F 6630	60	10		5.30
F10630	100	33 1/2		10.30

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3630QT	30	17 1/2		\$16.05
F 6630QT	60	18		16.80
F10630QT	100	26 1/2		24.80
F20630QT	200	39 1/2		40.35
Without Quick Break Blades				
F 3630T	30	20		\$7.80
F 6630T	60	22		9.05
F10630T	100	32		18.10

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3633Q	30	19		\$8.75
F 6633Q	60	20		10.10
F10633Q	100	40 1/2		18.50
F20633Q	200	62 1/2		33.60
Without Quick Break Blades				
F 3633	30	19		\$7.40
F 6633	60	20		8.75
F10633	100	39		16.80

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3633QT	30	32		\$22.80
F 6633QT	60	42		24.90
F10633QT	100	57		42.00
F20633QT	200	87		63.85
Without Quick Break Blades				
F 3633T	30	33		\$15.25
F 6633T	60	42		17.35
F10633T	100	60		34.70



Four-pole
Front Connection
Plain Finish
600 Volts D.C. or A.C.

Four-pole
Front Connection
Plain Finish
600 Volts D. C. or A. C.

Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3640Q	30	14 1/2		\$8.00
F 6640Q	60	16 1/2		8.85
F10640Q	100	29 1/4		15.80
F20640Q	200	49		30.90
Without Quick Break Blades				
F 3640	30	14 1/2		\$5.90
F 6640	60	16 1/2		6.95
F10640	100	29 1/4		13.90

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3640QT	30	23 1/2		\$22.10
F 6640QT	60	24		23.10
F10640QT	100	35 1/2		34.20
F20640QT	200	53		55.45
Without Quick Break Blades				
F 3640T	30	29 1/4		\$10.50
F 6640T	60	32 1/2		12.60
F10640T	100	49		25.20

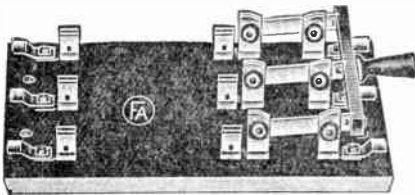
Single-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3644Q	30	29 1/2		\$12.00
F 6644Q	60	32 1/2		13.90
F10644Q	100	62		25.20
F20644Q	200	99		46.20
Without Quick Break Blades				
F 3644	30	29 1/2		\$10.20
F 6644	60	32 1/2		12.00
F10644	100	60 1/2		23.10

Double-throw				
With Quick Break Blades				
Cat. No.	Cap. Amp.	Wt., Lbs.	Each	Price Each
F 3644QT	30	43		\$31.35
F 6644QT	60	56		34.20
F10644QT	100	76		57.80
F20644QT	200	116		87.80
Without Quick Break Blades				
F 3644T	30	52		\$21.00
F 6644T	60	56		24.20
F10644T	100	104		48.30

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

FA Type F Knife Switches

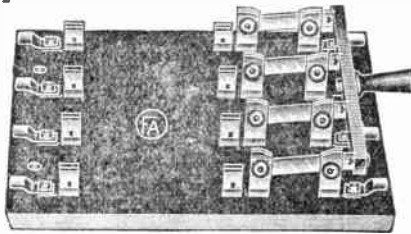
Punched Clip
Three-pole—Fusible at Bottom



Front Connection
Plain Finish
500 Volts A.C.
with 600-volt
Fuse Connection

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3533	30	11½	\$5.90	F 3533T	30	20	\$12.60
F 6533	60	15	7.40	F 6533T	60	20½	15.50
F10533	100	23	14.70	F10533T	100	38	29.40
F20533	200	35½	25.60	F20533T	200	61	45.20

Four-pole
Front Connection
Plain Finish
500 Volts A.C.
with 600-volt
Fuse Connection

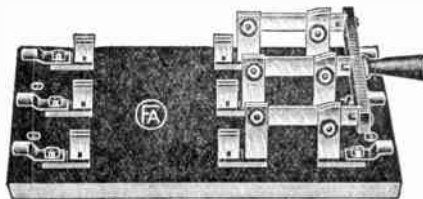


Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
F 3544	30	20	\$7.80	F 3544T	30	34½	\$16.80
F 6544	60	29½	10.10	F 6544T	60	52	20.60
F10544	100	44	19.50	F10544T	100	94½	39.10
F20544	200	70	34.00	F20544T	200	117	60.10

Single and double-pole switches. Price on application.
NOTE.—Double-throw switches will be furnished with fuse connectors at both ends.

FA Type A Knife Switches

Fusible at Bottom



Front Connection
Satin Finish
500-volts A.C.
with 600-volt
Fuse Connection

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3533	30	13¾	\$9.00	A 3533T	30	31	\$16.88
A 6533	60	15½	10.36	A 6533T	60	41	20.26
A 10533	100	25	18.46	A 10533T	100	43	36.00
A 20533	200	36	29.48	A 20533T	200	71	52.88
A 40533	400	72½	64.12	A 40533T	400	135	108.00
A 60533	600	94	90.00	A 60533T	600	184	162.00
A 80533	800	157	139.50	A 80533T	800	235	248.00
A100533	1000	174	157.50	A100533T	1000	255	270.00
A120533	1200	188	189.00	A120533T	1200	275	315.00

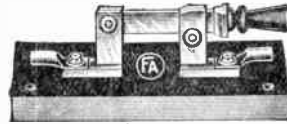
Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3544	30	17½	\$12.02	A 3544T	30	42	\$22.50
A 6544	60	27½	13.82	A 6544T	60	55	27.00
A 10544	100	39	24.62	A 10544T	100	87	47.76
A 20544	200	61	39.34	A 20544T	200	107	70.48
A 40544	400	105	85.50	A 40544T	400	184	135.00
A 60544	600	132	120.02	A 60544T	600	214	216.00
A 80544	800	203	186.04	A 80544T	800	304	329.98
A100544	1000	225	210.02	A100544T	1000	348	360.00
A120544	1200	247	252.00	A120544T	1200	392	419.98

For polished finish 30 to 200-ampere add 30%, over 200-ampere, 20%. For fuse at handle end, add 25%.
For double break switches add 50%.

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

FA Type A Knife Switches

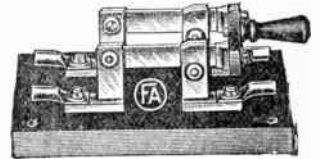
Front Connection—Satin Finish
Unfusible



Single-pole
250 Volts D. C. or
500 Volts A. C.

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3310	30	3	\$1.80	*A 3310T	30	3	\$2.56
A 3510	30	2½	2.56	A 3510T	30	4	3.56
A 6310	60	3	2.70	A 6310T	60	5	3.92
A 10310	100	4½	5.06	A 10310T	100	7	7.52
A 20310	200	8	7.84	A 20310T	200	10	12.02
A 40310	400	15½	18.32	A 40310T	400	20	28.22
A 60310	600	23	25.96	A 60310T	600	30	39.02
A 80310	800	37	45.00	A 80310T	800	47½	63.00
A100310	1000	40½	51.04	A100310T	1000	52	71.28
A120310	1200	45	61.52	A120310T	1200	54½	90.00
A150310	1500	39	92.26	A150310T	1500	69	141.04
A200310	2000	55	123.04	A200310T	2000	89	180.00

Double-pole
250 Volts D. C. or
500 Volts A. C.



Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3320	30	3¾	\$2.70	*A 3320T	30	5	\$3.96
A 3520	30	4	3.70	A 3520T	30	7	5.08
A 6320	60	5	4.00	A 6320T	60	8	5.86
A 10320	100	8¾	7.60	A 10320T	100	11½	11.26
A 20320	200	16	11.70	A 20320T	200	17	18.00
A 40320	400	29	27.46	A 40320T	400	33½	42.30
A 60320	600	37	38.92	A 60320T	600	50	58.50
A 80320	800	63	67.50	A 80320T	800	79	94.50
A100320	1000	69	76.50	A100320T	1000	87	106.88
A120320	1200	76½	92.26	A120320T	1200	91	135.00
A150320	1500	87	138.50	A150320T	1500	115	211.50
A200320	2000	127	184.50	A200320T	2000	248	270.00

Three-pole
250 Volts D. C. or
500 Volts A. C.



Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3330	30	4½	\$4.06	*A 3330T	30	7½	\$5.94
A 3530	30	7½	5.58	A 3530T	30	12	7.66
A 6330	60	7½	6.04	A 6330T	60	12	8.78
A 10330	100	12½	11.44	A 10330T	100	18	16.88
A 20330	200	22½	17.56	A 20330T	200	25	27.00
A 40330	400	43½	41.18	A 40330T	400	50	63.46
A 60330	600	51	58.42	A 60330T	600	75	87.78
A 80330	800	84	101.26	A 80330T	800	118	142.76
A100330	1000	94	114.76	A100330T	1000	130	160.32
A120330	1200	109	138.38	A120330T	1200	136	202.50
A150330	1500	125	207.56	A150330T	1500	173	317.06
A200330	2000	152	276.76	A200330T	2000	222	205.00

Four-pole
250 Volts D. C. or 500 Volts A. C.

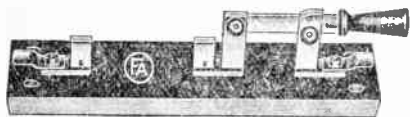
Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
*A 3340	30	6	\$5.40	*A 3340T	30	10	\$7.92
A 3540	30	13	7.42	A 3540T	30	16	10.36
A 6340	60	13	8.02	A 6340T	60	16	11.70
A 10340	100	20¼	15.22	A 10340T	100	23	22.50
A 20340	200	33	18.20	A 20340T	200	34	36.00
A 40340	400	56	58.36	A 40340T	400	67	84.60
A 60340	600	78	82.76	A 60340T	600	100	117.00
A 80340	800	124	135.00	A 80340T	800	158	189.00
A100340	1000	137	153.00	A100340T	1000	174	213.76
A120340	1200	157	184.50	A120340T	1200	182	270.00
A150340	1500	180	276.76	A150340T	1500	230	423.00
A200340	2000	220	753.50	A200340T	2000	296	540.00

*For 250 volts, D. C. only.
For polished finish, 30 to 200 amperes, add 30%; above 200 amperes, 20%. For double break switches add 50%.

FA Type A Knife Switches

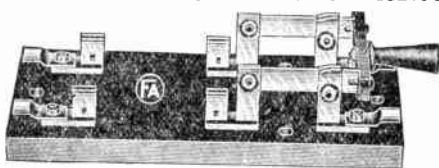
Front Connection—Satin Finish

Fusible at Bottom

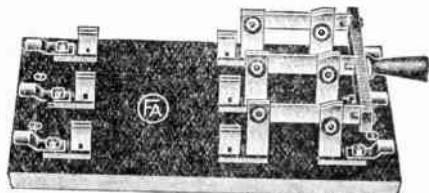


Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each
A 3311	30	3	\$2.66	A 3311T	30	5 1/4	\$5.14
A 6311	60	6	3.92	A 6311T	60	8	6.94
A 10311	100	8 1/2	7.52	A 10311T	100	13 1/2	13.96
A 20311	200	18	11.56	A 20311T	200	22 1/2	21.02
A 40311	400	25	26.20	A 40311T	400	43	42.04
A 60311	600	34 1/2	36.76	A 60311T	600	59	62.28
A 80311	800	56	59.26	A 80311T	800	66	96.04
A100311	1000	62 1/2	68.26	A100311T	1000	70	114.04
A120311	1200	70	80.28	A120311T	1200	73	132.04

Double-pole
250 Volts D. C.
or A. C.



Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each
A 3322	30	5	\$3.96	A 3322T	30	8 3/4	\$7.66
A 6322	60	8 1/4	5.86	A 6322T	60	13 1/2	10.36
A 10322	100	14	11.26	A 10322T	100	22 1/2	20.92
A 20322	200	26	17.32	A 20322T	200	34	31.50
A 40322	400	44 1/2	39.28	A 40322T	400	72	63.00
A 60322	600	67	55.12	A 60322T	600	99	93.38
A 80322	800	99	88.88	A 80322T	800	110	144.00
A100322	1000	110	102.38	A100322T	1000	117	171.00
A120322	1200	122	120.38	A120322T	1200	122	198.00



Three-pole
250 Volts D. C.
or A. C.

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each
A 3333	30	7 1/2	\$5.94	A 3333T	30	13	\$11.48
A 6333	60	12 3/4	8.78	A 6333T	60	20	15.52
A 10333	100	20	16.88	A 10333T	100	33	31.42
A 20333	200	35	26.02	A 20333T	200	51	47.26
A 40333	400	69 1/2	58.96	A 40333T	400	108	94.50
A 60333	600	87	82.68	A 60333T	600	148	140.06
A 80333	800	145	133.32	A 80333T	800	165	216.00
A100333	1000	160	153.56	A100333T	1000	175	256.50
A120333	1200	177	180.56	A120333T	1200	183	297.00

Four-pole
250 Volts D. C. or A. C.

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs.	Price Each
A 3344	30	10	\$7.92	A 3344T	30	17 1/2	\$15.30
A 6344	60	18	11.70	A 6344T	60	27	20.70
A 10344	100	34	22.50	A 10344T	100	45	41.86
A 20344	200	60	34.66	A 20344T	200	68	63.00
A 40344	400	109	83.48	A 40344T	400	144	126.00
A 60344	600	144	117.14	A 60344T	600	198	186.76
A 80344	800	212	177.76	A 80344T	800	220	288.00
A100344	1000	235	204.66	A100344T	1000	234	342.00
A120344	1200	265	240.76	A120344T	1200	244	396.00

For polished finish, 30 to 200 amperes, add 30%; over 200 amperes, 20% or fuse at handle end, add 25%. For double break switches add 50%.

NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

FA Type A Knife Switches

With or without Quick Break—Unfusible

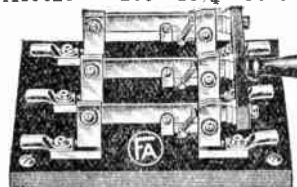


Single-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3610Q	30	3 3/4	\$3.38
A 6610Q	60	4	3.60
A10610Q	100	6	6.22
A20610Q	200	10	9.90
A40610Q	400	15 1/2	21.06
A60610Q	600	22	27.86

Double-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3620Q	30	8	\$6.12
A 6620Q	60	8 3/4	6.52
A10620Q	100	13 3/4	11.26
A20620Q	200	22 1/2	18.00
A40620Q	400	40	38.26
A60620Q	600	49	50.62



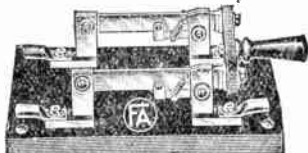
Three-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3630Q	30	10	\$9.86
A 6630Q	60	11 1/2	10.44
A10630Q	100	21	18.00
A20630Q	200	36	28.80
A40630Q	400	65 1/4	61.20
A60630Q	600	78 1/2	81.00

Four-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3640Q	30	16	\$13.54
A 6640Q	60	18	14.36
A10340Q	100	33	24.76
A20640Q	200	54	39.60
A40640Q	400	98	84.16
A60640Q	600	117	111.38

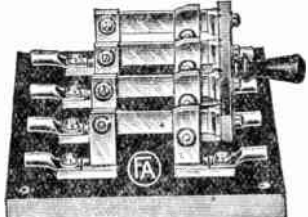
For polished finish, 30 to 200 amperes, add 30%; over 200, add 20%. For double break switches, add 50%.



Double-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3610QT	30	6 1/2	\$5.94
A 6610QT	60	7	6.22
A10610QT	100	10 1/2	9.18
A20610QT	200	16	14.86
A40610QT	400	27	30.96
A60610QT	600	34	39.60

Double-throw
Without Quick Break Blades

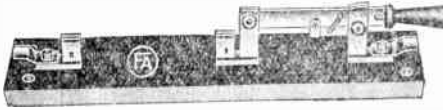
Double-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3620QT	30	15	\$10.72
A 6620QT	60	17	11.26
A10620QT	100	23	16.66
A20620QT	200	34	27.00
A40620QT	400	58	56.26
A60620QT	600	76	72.00



Double-throw			
Cat. No.	With Quick Break Blades		Price Each
	Cap. Amp.	Wt. Lbs.	
A 3630QT	30	22	\$17.20
A 6630QT	60	23 1/4	18.00
A10630QT	100	35	26.64
A20630QT	200	55	43.20
A40630QT	400	98 1/2	90.00
A60630QT	600	116	115.20

Without Quick Break Blades

FA Type A Knife Switches
With or Without Quick Break
Fusible at Bottom



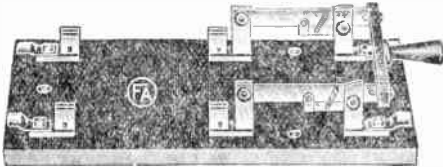
Single-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw

Double-throw

With Quick Break Blades				Without Quick Break Blades			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3611Q	30	5½	\$4.90	A 3611QT	30	14¾	\$8.42
A 6611Q	60	7	5.26	A 6611QT	60	17	9.18
A10611Q	100	13¼	8.78	A10611QT	100	23	15.48
A20611Q	200	26½	13.86	A20611QT	200	35	23.54
A40611Q	400	43¾	29.12	A40611QT	400	65½	44.56
A60611Q	600	56	39.02	A60611QT	600	82½	66.82

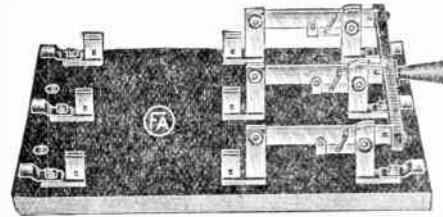
Double-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.



Single-throw

Double-throw

With Quick Break Blades				Without Quick Break Blades			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3622Q	30	13½	\$8.82	A 3622QT	30	23	\$15.16
A 6622Q	60	14½	9.58	A 6622QT	60	28	16.66
A10622Q	100	29	16.02	A10622QT	100	46	28.12
A20622Q	200	49	25.20	A20622QT	200	76½	42.76
A40622Q	400	75	52.88	A40622QT	400	113	81.00
A60622Q	600	95	70.88	A60622QT	600	138	121.50



Three-pole
Front Connection
Satin Finish
600 Volts D. C.
or A. C.

Single-throw

Double-throw

With Quick Break Blades				Without Quick Break Blades			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3633Q	30	22	\$14.18	A 3633QT	30	32	\$24.40
A 6633Q	60	23	15.34	A 6633QT	60	42	26.64
A10633Q	100	45	25.56	A10633QT	100	75½	45.00
A20633Q	200	69½	40.32	A20633QT	200	110	68.40
A40633Q	400	105	84.60	A40633QT	400	145	129.60
A60633Q	600	130	113.40	A60633QT	600	189	194.40

Four-pole

Single-throw

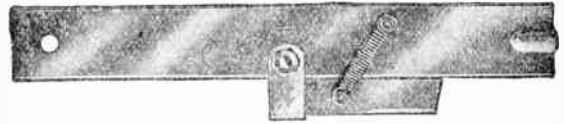
Double-throw

With Quick Break Blades				Without Quick Break Blades			
Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt., Lbs. Each	Price Each
A 3644Q	30	32½	\$19.48	A 3644QT	30	57	\$33.58
A 6644Q	60	34	21.10	A 6644QT	60	62	36.64
A10644Q	100	67	35.14	A10644QT	100	114	61.88
A20644Q	200	104	55.44	A20644QT	200	189	94.06
A40644Q	400	156	116.32	A40644QT	400	225	178.20
A60644Q	600	196	155.72	A60644QT	600	286	267.30

For polished finish, 30 to 200 amperes, add 30%; over 200 amperes, 20%. For double break switches, add 50%. For fuse at handle end, add 25%.
NOTE.—Double-throw switches will be furnished with fuse connections at both ends.

FA Quick Break Attachments

For Any FA Type A and B 250 or 600-volt Knife Switches



Auxiliary break or the equivalent are recommended for switches designed for over 300 volts and less than 100 amperes, and will be required on switches designed for use in breaking current greater than 100 amperes at a pressure of more than 300 volts.

Price Each Blade in Addition to List Price of Switch

	AMPERES					
	60a	100a	200a	300a	400a	600a
Single Throw						
Plain	\$.86	.90	1.04	1.44	1.80	2.08
Satin Finish	1.12	1.26	1.54	1.98	2.52	2.38
Double Throw						
Plain	\$1.72	1.84	2.12	2.88	3.60	4.14
Satin Finish	2.26	2.48	3.06	3.96	5.04	5.76

Prices on quick break attachments for larger switches on application.

FA Spade Handles

Polished Black Finish
With Straight Brackets



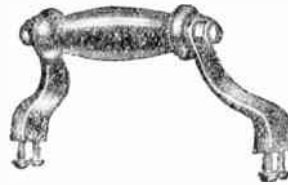
Type CS



Type BS

Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
30CS	30	\$.78	30BS	30	\$.78
60CS	60	1.08	60BS	60	1.08
120CS	100, 200	1.68	120BS	100, 200	1.68
340CS	300, 400	2.70	340BS	300, 400	2.70
560CS	500, 600	4.50	560BS	500, 600	4.50
800CS	800 and up	5.62	800BS	800 and up	5.62

With Angle Brackets



Type CA



Type BA

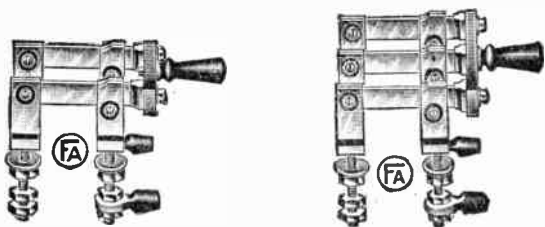
Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
30CA	30	\$.78	30BA	30	\$.78
60CA	60	1.08	60BA	60	1.08
120CA	100, 200	1.68	120BA	100, 200	1.68
340CA	300, 400	2.70	340BA	300, 400	2.70
560CA	500, 600	4.50	560BA	500, 600	4.50
800CA	800 and up	5.62	800BA	800 and up	5.62

NOTE.—All above prices are in addition to regular prices of switches.

FA Type B Knife Switches

Unfusible

Back Connection—Satin Finish—Unmounted
[250 Volts D. C. or 500 Volts A. C.]



For switches mounted on slate or wood templates, add 50% up to 200 amperes, and 25% for everything over.

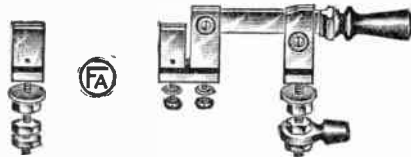
For polished finish, add 10% only.

Unless otherwise specified, all switches will be furnished for 1 1/2-inch panel mounting.

FA Type B Knife Switches

Fusible at Bottom

Back Connection—Satin Finish—Unmounted



Single-pole

250 Volts D. C. or A. C.

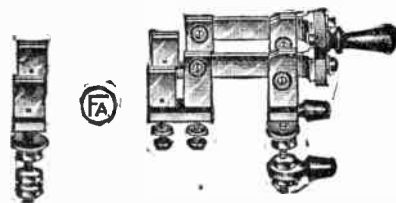
For switches on slate or wood templates, add 50%. For polished finish, add 10%. For double break switches add 50%. Unless otherwise specified, all switches furnished for 1 1/2-inch panel mounting.

Single-throw				Single-pole				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
*B 3310	30	1	\$2.16	*B 3310T	30	1 1/4	\$3.10	B 3311	30	1	\$2.80
B 3510	30	1 1/4	3.24	B 3510T	30	1 1/2	4.32	B 6311	60	1 1/2	4.24
B 6310	60	1 1/4	3.38	B 6310T	60	1 1/2	4.60	B 10311	100	3	7.92
B 10310	100	2 1/2	5.72	B 10310T	100	3	7.92	B 20311	200	5 1/2	11.98
B 20310	200	4 1/2	8.78	B 20310T	200	5 1/2	12.60	B 40311	400	11 1/2	25.38
B 40310	400	9 1/2	19.08	B 40310T	400	11 1/2	27.86	B 60311	600	18	36.82
B 60310	600	15	27.46	B 60310T	600	19	39.02	B 80311	800	27 1/2	60.88
B 80310	800	18	48.28	B 80310T	800	23	69.30	B100311	1000	30 1/2	68.80
B100310	1000	20	52.60	B100310T	1000	26	76.72	B120311	1200	44 1/2	82.94
B120310	1200	26 1/2	65.34	B120310T	1200	41	96.52	B200310T	2000	80 1/2	178.20
B150310	1500	31	86.62	B150310T	1500	61	128.70	†B250310T	2500	127	533.25
B200310	2000	47	118.80	B200310T	2000	80 1/2	178.20				
†B250310	2500	89	238.50	†B250310T	2500	127	533.25				

Single-throw					Double-throw				
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each		
B 3311	30	1	\$2.80	B 3311T	30	1 1/4	\$5.94		
B 6311	60	1 1/2	4.24	B 6311T	60	1 3/4	6.94		
B 10311	100	3	7.92	B 10311T	100	3 3/4	12.38		
B 20311	200	5 1/2	11.98	B 20311T	200	8	19.30		
B 40311	400	11 1/2	25.38	B 40311T	400	15	41.50		
B 60311	600	18	36.82	B 60311T	600	23	56.44		
B 80311	800	27 1/2	60.88	B 80311T	800	33	96.52		
B100311	1000	30 1/2	68.80	B100311T	1000	36	109.54		
B120311	1200	44 1/2	82.94	B120311T	1200	65	128.70		

Double-pole

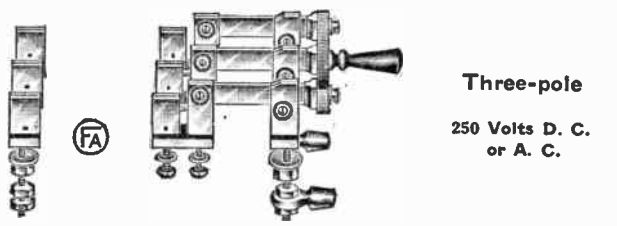
250 Volts D. C. or A. C.



Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
*B 3320	30	1 1/2	\$3.92	*B 3320T	30	1 3/4	\$5.62
B 3520	30	2	5.80	B 3520T	30	2 1/2	7.78
B 6320	60	2	6.08	B 6320T	60	2 1/2	8.32
B 10320	100	4	10.36	B 10320T	100	5	14.40
B 20320	200	7 1/2	15.98	B 20320T	200	9	22.96
B 40320	400	16	34.66	B 40320T	400	19	50.62
B 60320	600	25	49.96	B 60320T	600	32	71.02
B 80320	800	30	87.76	B 80320T	800	38	126.00
B100320	1000	33	95.62	B100320T	1000	43	139.50
B120320	1200	44	118.80	B120320T	1200	68	175.50
B150320	1500	52	157.50	B150320T	1500	102	234.00
B200320	2000	78	216.00	B200320T	2000	134	324.00
†B250320	2500	148	427.50	†B250320T	2500	212	630.00

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
B 3322	30	1 3/4	\$5.04	B 3322T	30	2	\$10.80
B 6322	60	2 1/2	7.70	B 6322T	60	3	12.60
B 10322	100	5 1/4	14.40	B 10322T	100	6 1/4	22.50
B 20322	200	9	21.74	B 20322T	200	13	35.10
B 40322	400	19	46.12	B 40322T	400	25	75.38
B 60322	600	30	66.92	B 60322T	600	39	102.60
B 80322	800	46	110.70	B 80322T	800	55	175.50
B100322	1000	51	125.10	B100322T	1000	61	199.12
B120322	1200	74	150.76	B120322T	1200	109	234.00

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
*B 3330	30	2 1/4	\$5.86	*B 3330T	30	2 1/2	\$8.44
B 3530	30	3	8.78	B 3530T	30	3 3/4	11.70
B 6330	60	3	9.14	B 6330T	60	3 3/4	12.52
B 10330	100	6	15.52	B 10330T	100	7 1/2	21.60
B 20330	200	11	23.98	B 20330T	200	13 1/2	34.48
B 40330	400	24	51.93	B 40330T	400	28 1/2	75.94
B 60330	600	37	74.92	B 60330T	600	48	106.32
B 80330	800	45	131.42	B 80330T	800	57	189.00
B100330	1000	50	143.44	B100330T	1000	65	209.26
B120330	1200	66	178.20	B120330T	1200	102	263.26
B150330	1500	79	236.26	B150330T	1500	153	351.00
B200330	2000	116	324.00	B200330T	2000	200	486.00
†B250330	2500	222	639.00	†B250330T	2500	318	954.00



Three-pole

250 Volts D. C. or A. C.

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
*B 3340	30	3	\$7.84	*B 3340T	30	4 1/2	\$11.26
B 3540	30	4	11.70	B 3540T	30	5	15.76
B 6340	60	4	12.16	B 6340T	60	5	16.66
B 10340	100	8	20.70	B 10340T	100	10	37.60
B 20340	200	15	31.96	B 20340T	200	18	45.90
B 40340	400	32	67.62	B 40340T	400	38	101.26
B 60340	600	50	106.16	B 60340T	600	64	141.76
B 80340	800	60	175.50	B 80340T	800	76	252.00
B100340	1000	66	191.26	B100340T	1000	86	279.00
B120340	1200	88	237.60	B120340T	1200	136	351.00
B150340	1500	104	315.00	B150340T	1500	204	468.00
†B200340	2000	156	432.00	†B200340T	2000	268	648.00

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
B 3333	30	2 3/4	\$7.56	B 3333T	30	3	\$16.20
B 6333	60	3 1/2	11.56	B 6333T	60	4 1/2	18.90
B 10333	100	8	21.60	B 10333T	100	9 1/2	33.76
B 20333	200	13 1/2	32.62	B 20333T	200	19 1/2	52.66
B 40333	400	28 1/2	69.18	B 40333T	400	37	113.06
B 60333	600	45	100.40	B 60333T	600	59	153.90
B 80333	800	69	166.06	B 80333T	800	82	263.26
B100333	1000	76	187.66	B100333T	1000	91	298.68
B120333	1200	111	226.12	B120333T	1200	163	351.00

Four-pole
250 Volts D. C. or A. C.

Single-throw				Double-throw			
Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each	Cat. No.	Cap. Amp.	Wt. Lbs. Each	Price Each
B 3344	30	2 1/2	\$10.08	B 3344T	30	4	\$21.60
B 6344	60	5	15.40	B 6344T	60	6	25.20
B 10344	100	10 1/2	28.80	B 10344T	100	12 1/2	45.00
B 20344	200	18	43.48	B 20344T	200	26	70.20
B 40344	400	38	98.02	B 40344T	400	50	150.76
B 60344	600	60	142.20	B 60344T	600	78	205.20
B 80344	800	92	221.40	B 80344T	800	110	351.00
B100344	1000	102	250.20	B100344T	1000	122	398.26
B120344	1200	148	301.50	B120344T	1200	218	468.00

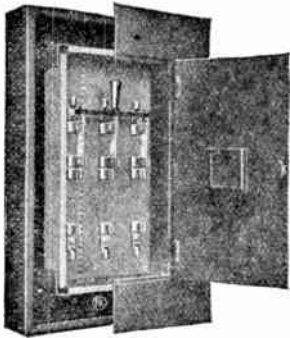
*For 250 volts only.

†Send size wire used so that we can send proper size lugs.

FA Service Knife Switches

With Steel Gutter Box, Slate Barrier and Steel Front

For 250 Volts



The combination of code thickness steel box, slate base knife switch with slate barriers and all steel front.

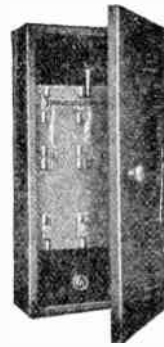
The top and bottom of box fitted with adapter plate punched for 1/2, 3/4, 1 or 1 1/4-inch conduit, larger holes will be punched if specified on order.

Prices up to and including 200 amperes, include Type F switch; 400 amperes and over, Type A.

FA Service Knife Switches

With Steel Box and Flanged Door

For 250 Volts



The combination of code thickness steel box with flanged hinged door and slate base knife switch plain finish.

The top and bottom of box fitted with FA adapter plate punched for 1/2, 3/4, 1 or 1 1/4-inch conduit, larger holes will be punched if specified on order.

Prices up to and including 200 amperes include Type F switch; 400 amperes and over, Type A.

Fusible at Hinge End Double-pole

Cat. No.	Cap. Amp.	Width	Height	OUTSIDE DIMEN., IN. Depth	Code Gauge Steel	Price Each
B 32P	30	14	19	4 1/2	16	\$35.00
B 62P	60	14	23	4 1/2	16	38.50
B 102P	100	14	27	4 1/2	14	45.50
B 202P	200	16	33	6	14	58.50
B 402P	400	20	41	8	12	109.50
B 602P	600	25	50	8 1/2	12	153.00
B 802P	800	31	52	9	10	206.00
B1002P	1000	35	55	9	10	233.00

Three-pole

B 33P	30	16	19	4 1/2	16	\$37.50
B 63P	60	17	23	4 1/2	14	43.50
B 103P	100	18	27	4 1/2	14	52.00
B 203P	200	20	33	6	14	68.00
B 403P	400	24	41	8	12	131.00
B 603P	600	30	50	8 1/2	10	192.00
B 803P	800	37	52	9	10	261.50
B1003P	1000	42	55	9	10	294.00

Four-pole

B 34P	30	18	19	4 1/2	16	\$39.00
B 64P	60	20	23	4 1/2	14	47.00
B 104P	100	21	27	4 1/2	14	57.50
B 204P	200	24	33	6	14	78.00
B 404P	400	29	41	8	12	163.00
B 604P	600	35	50	8 1/2	10	237.00
B 804P	800	44	52	9	10	390.00
B1004P	1000	50	55	9	10	429.00

Fusible at Handle End Double-pole

T 32P	30	14	19	4 1/2	16	\$35.00
T 62P	60	14	21	4 1/2	16	37.50
T 102P	100	14	24	4 1/2	14	44.50
T 202P	200	16	30	6	14	57.00
T 402P	400	20	36	8	14	95.00
T 602P	600	25	46	8 1/2	12	149.50
T 802P	800	31	46	8	12	202.00
T1002P	1000	35	50	9	10	229.00

Three-pole

T 33P	30	16	19	4 1/2	16	\$37.50
T 63P	60	17	21	4 1/2	14	42.00
T 103P	100	18	24	4 1/2	14	50.50
T 203P	200	20	30	6	14	66.00
T 403P	400	24	36	8	14	116.50
T 603P	600	30	46	8 1/2	12	181.00
T 803P	800	37	46	9	10	253.50
T1003P	1000	42	50	9	10	287.00

Four-pole

T 34P	30	18	19	4 1/2	16	\$39.00
T 64P	60	20	21	4 1/2	14	45.00
T 104P	100	21	24	4 1/2	14	55.50
T 204P	200	24	30	6	14	75.50
T 404P	400	31	38	8	12	159.50
T 604P	600	37	48	8 1/2	10	232.50
T 804P	800	46	48	9	10	383.00
T1004P	1000	50	50	9	10	418.00

Fusible at Hinge End Double-pole

Cat. No.	Amp. Cap.	Width	Height	OUTSIDE DIMEN., IN. Depth	Code Gauge	Price Each
B 32F	30	6 1/2	13 1/2	4	16	\$14.80
B 62F	60	7 1/2	16 1/2	4 1/2	16	16.90
B 102F	100	8 1/2	21	4 1/2	16	21.60
B 202F	200	9 1/2	24 1/2	6	14	30.30
B 402F	400	12	33	7 1/2	14	61.20
B 602F	600	13 1/2	39 1/2	8 1/2	12	108.70
B 802F	800	16	42	8 1/2	12	143.50
B1002F	1000	18 1/2	46 1/2	8 1/2	12	161.30

Three-pole

B 33F	30	9	13 1/2	4	16	\$16.00
B 63F	60	10 1/2	16 1/2	4 1/2	16	19.40
B 103F	100	11 1/2	21	4 1/2	16	26.40
B 203F	200	13 1/2	24 1/2	6	14	39.50
B 403F	400	16 1/2	33	7 1/2	14	83.10
B 603F	600	18 1/2	39 1/2	8 1/2	12	138.70
B 803F	800	22 1/2	42	8 1/2	12	195.80
B1003F	1000	26	46 1/2	9	12	228.70

Four-pole

B 34F	30	11 1/2	13 1/2	4	16	\$17.70
B 64F	60	14	16 1/2	4 1/2	16	21.90
B 104F	100	15	21	4 1/2	16	30.90
B 204F	200	17	24 1/2	6	14	47.50
B 404F	400	21	33	7 1/2	14	108.80
B 604F	600	23 1/2	39 1/2	8 1/2	12	178.20
B 804F	800	29	42	9	12	253.80
B1004F	1000	33 1/2	46 1/2	9	10	296.60

Fusible at Handle End Double-pole

T 32F	30	6 1/2	15 1/2	4	16	\$15.20
T 62F	60	7 1/2	19	4 1/2	16	17.30
T 102F	100	8 1/2	24	4 1/2	16	22.50
T 202F	200	9 1/2	28 1/2	6	14	31.00
T 402F	400	12	36	7 1/2	14	61.50
T 602F	600	13	43	8 1/2	12	110.00
T 802F	800	16	43 1/2	8 1/2	12	143.70
T1002F	1000	18 1/2	46 1/2	8 1/2	12	161.80

Three-pole

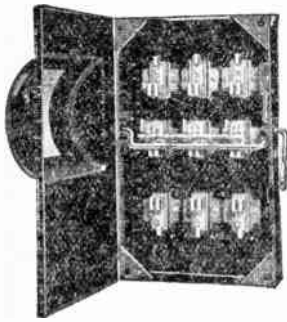
T 33F	30	9	15 1/2	4	16	\$16.50
T 63F	60	10 1/2	19 1/2	4 1/2	16	20.00
T 103F	100	11 1/2	24	4 1/2	14	27.50
T 203F	200	13 1/2	28 1/2	6	14	40.00
T 403F	400	16 1/2	36 1/2	7 1/2	14	83.80
T 603F	600	18 1/2	43	8 1/2	12	140.50
T 803F	800	22 1/2	43 1/2	9	12	196.00
T1003F	1000	26	46 1/2	9	12	228.70

Four-pole

T 34F	30	11 1/2	15 1/2	4	16	\$18.20
T 64F	60	14	19	4 1/2	16	22.50
T 104F	100	15	24	4 1/2	14	32.10
T 204F	200	17	28 1/2	6	14	46.70
T 404F	400	21	36	7 1/2	14	105.50
T 604F	600	23 1/2	43	8 1/2	12	179.70
T 804F	800	29	43 1/2	9	12	253.80
T1004F	1000	33 1/2	46 1/2	9	10	296.60

Square D Safety Switches

Positive Quick Make and Break



Equipped with a Square D cover control, which makes it impossible to open the box cover while the switch is on and prevents operation of the switch when the cover is open. By means of a key, the box cover may be opened when the switch is on and the switch operated when the cover is open. The key will lock the cover permanently shut. One key fits all cover control switches. Keys are not furnished with each switch

as their distribution should be limited to authorized persons. Switch boxes are with solid ends. No end plates are required. Price, No. 70000 Cover Control Key.....each \$.50

Single-throw, Fused, Cover Control

250 Volts

Two-pole

Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each
*85251	30	10	5	\$6.20	86255	400	1	75	\$96.00
86252	60	5	14 1/4	15.30	*85255	400	1	75	76.00
86253	100	3	21	23.30	86256	600	1	115	140.00
86254	200	2	35	38.80	*85256	600	1	110	120.00

Three-pole

86355	400	1	105	\$105.00					
*85351	30	10	10	\$9.20	*85355	400	1	100	85.00
86352	60	5	17	18.90	86356	600	1	150	156.00
86353	100	3	32	31.10	*85356	600	1	150	136.00
86354	200	2	47	53.00					

Four-pole

86451	30	5	12	\$12.60	86454	200	1	60	\$90.00
86452	60	3	22	26.50	86455	400	1	125	180.00
86453	100	2	45	52.00		40	1		

500 Volts A.C.

Three-pole

86341	30	5	20	\$20.40	86345	400	1	105	\$120.00
86342	60	5	21	21.40	*85345	400	1	105	100.00
86343	100	3	33	32.00	86346	600	1	150	160.00
86344	200	1	48	55.50	*85346	600	1	150	140.00

Four-pole

86441	30	5	27	\$32.00	86444	200	1	66	\$100.00
86442	60	3	30	37.00	86445	400	1	125	185.00
86443	100	2	52	60.00					

Severe Service—250 Volts

Two-pole

Cat. No.	Amperes	Std. Pkg.	Weight Pounds	Price Each
80251	30	5	13 3/4	\$14.50

Three-pole

80351	30	5	16	\$18.00
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Four-pole

80451	30	2	21	\$26.00
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Single-throw, Not Fused, Cover Control

250 Volts D.C.—500 Volts A.C.

Two-pole

Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each
81242	30 & 60	5	12	\$14.90	*83245	400	1	55	\$60.00
81243	100	3	15	22.00	81246	600	1	110	106.00
81244	200	2	25	35.00	*83246	600	1	110	86.00
81245	400	1	40	80.00					

Three-pole

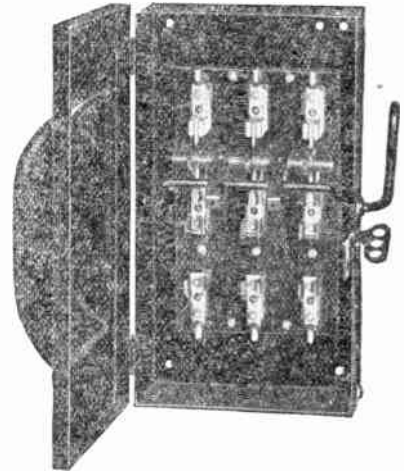
81342	30 & 60	5	16	\$16.20	*83345	400	1	80	\$72.00
81343	100	3	19	25.00	81346	600	1	139	129.00
81344	200	2	33	38.00	*83346	600	1	139	108.00
81345	400	1	60	92.00					

Four-pole

81442	30 & 60	2	18	\$30.00	81444	200	1	45	\$64.00
81443	100	2	24	40.00	81445	400	1	85	140.00

*Has no cover control.

Square D Safety Switches



Mounted in a heavy steel box with a hinged cover. Switch parts are mounted on individual bases of moulded insulating material. Quickly removed or replaced.

A lever which operates the switch extends outside the box so that the switch may be operated with absolute safety.

The box is electrically welded throughout and is of rigid construction. Square D boxes are made with solid ends. No end plates are required.

Single-throw, Fused 125 Volts—For Edison Plug Fuses

Two-pole

Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each
99211	30	5	4 1/2	\$2.10	97312	60	5	12	\$10.60
99311	30	5	4 3/4	3.30	97313	100	3	20	17.00
97311	30	5	4 3/4	3.30	97315	400	1	76	71.00

250 Volts—For N. E. C. S. Fuses at Bottom

Two-pole

99251	30	5	6	\$3.00	96255	400	1	78	\$65.00
90251	30	5	12	9.60	96256	600	1	100	94.00
96252	60	5	12	10.50	96257	800	1	125	178.00
96253	100	3	22	16.00	96258	1200	1	190	242.00
96254	200	2	41	30.50					

Three-pole

96351	30	5	8	\$5.70	96355	400	1	113	\$80.00
90351	30	5	18	13.00	96356	600	1	145	130.00
96352	60	5	20	14.00	96357	800	1	170	236.00
96353	100	3	30	24.00	96358	1200	1	375	332.00
96354	200	3	58	40.00					

Four-pole

96451	30	5	12	\$9.00	96454	100	1	...	\$52.80
96452	60	3	...	18.50	96455	400	1	...	110.00
96453	100	2	...	28.00					

Single-throw, Fused, Quick-break, 500 Volts A. C.

For N. E. C. S. Fuses at Bottom

Three-pole

96341	50	5	22	\$16.00	96344	200	2	132	\$46.00
96342	60	3	26	18.00	96345	400	1	132	96.00
96343	100	2	34	26.00	96346	600	1	145	136.00

Four-pole

96441	30	1	26	\$30.00	96444	200	1	75	\$64.00
96442	60	1	33	32.00	96445	400	1	110	150.00
96443	100	1	40	46.00					

Single-throw, Fused, Quick-break, 600 Volts

For N. E. C. S. Fuses

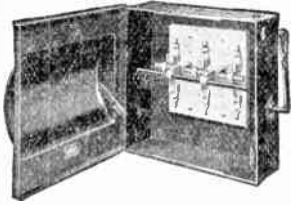
Two-pole

96261	30	5	21	\$16.00	96264	200	1	62	\$58.30
96262	60	3	21	17.00	96265	400	1	135	102.00
96263	100	2	42	31.20					

Three-pole

96361	30	5	30	\$21.00	96364	200	1	95	\$62.00
96362	60	3	30	21.90	96365	400	1	160	120.00
96363	100	2	67	36.20					

Square D Safety Switches
Single-throw, Unfused, Quick Break



Unfused switches are used where overload protection other than fuses is provided. This is the case with compensators equipped with overload relays. An unfused switch is used to disconnect the compensator so that repairs, etc., may be made.

Boxes are made with solid ends.

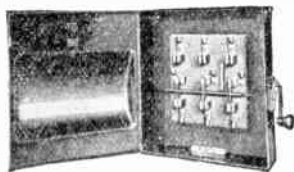
Cat. No.	Amperes	250 Volts Two-pole		Price Each
		Std. Pkg.	Wt. Lbs.	
91251	30	10	5	\$3.30
91351	30	10	5	4.40
91451	30	5	10	8.92

250 Volts D.C. and 500 Volts A.C.

Cat. No.	Amperes	250 Volts D.C. and 500 Volts A.C. Two-pole		Price Each
		Std. Pkg.	Wt. Lbs.	
91242	60	5	14	\$10.30
91243	100	3	16	13.80
91244	200	2	30	24.40
91245	400	1	52	48.00
91246	600	1	90	80.00
91247	800	1	110	160.00
91248	1200	1	240	220.00
Three-pole				
91342	60	5	16	\$12.60
91343	100	3	23	15.60
91344	200	2	56	27.00
91345	400	1	90	62.00
91346	600	1	140	104.00
91347	800	1	150	230.00
91348	1200	1	350	320.00
Four-pole				
91442	60	2	21	\$18.10
91443	100	2	27	24.20
91444	200	1	65	56.00
91445	400	1	90	96.00
600 Volts Two-pole				
91262	60	3	13	\$15.20
91263	100	2	20	22.80
91264	200	1	33	39.00
91265	400	1	62	94.00
Three-pole				
91362	60	3	23	\$16.30
91363	100	2	26	30.00
91364	200	1	56	57.00
91365	400	1	90	114.00

Square D Safety Switches
Double-throw, Unfused

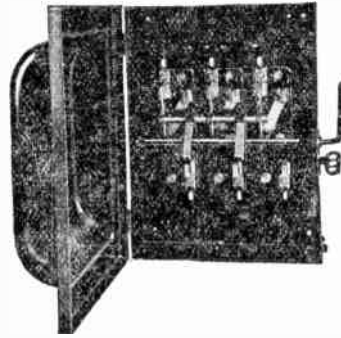
Designed to throw either of two services into a circuit or one source of current supply to either of two loads. These are also used as reversing switches. The switch is provided with a means of latching and if desired, locking the handle in the neutral position. Switch boxes are made with solid ends. No end plates are required.



250 Volts, 30 Amperes—Porcelain Base			
Cat. No.	No. of Poles	Price Each	Cat. No.
92251	2	\$14.50	92351
			3
			\$17.80
			92451
			4
			\$27.50

250 Volts D.C. and 500 Volts A.C.—Slate Base							
Two-pole				Three-pole			
Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.
92242	30-60	2	14	\$17.80	92244	200	1
92243	100	2	16	24.00	92245	400	1
							52
							100.00
92342	30-60	2	15½	\$22.00	92344	200	1
92343	100	2	23	35.00	92345	400	1
							56
							\$60.00
							90
							140.00
Four-pole							
92442	60	2	21	\$30.00	92444	200	1
92443	100	2	27	64.00	92445	400	1
							110
							214.00

No. 46000 Type Square D Safety Switches
3-pole, Single Throw, Fused, Quick Break



These switches are intended for use as entrance switches, disconnects or for any installation demanding infrequent operation.

Switches have Square D finish. Designed and built under careful standards and are subjected to rigid inspection. Infrequent operation does not require the same unusual strength found in the 80000 and the 90000 series making

it possible to produce the 46000 series at a lower cost.

Cat. No.	Amp.	250 Volts		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt. Lbs.		
46352	60	5	15	\$10.70	
46353	100	3	24	17.50	
46354	200	2	35	26.00	
500 Volts A. C.					
46341	30	5	16	\$10.70	
46342	60	3	16	11.70	
46343	100	2	26	18.50	
46344	200	1	45	35.70	

Square D Motor Starting Switches
Quick Make and Quick Break Straight Connected Single Throw

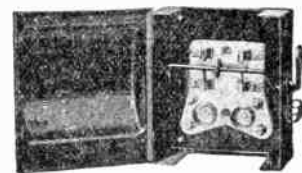
Mechanism is designed so that the action is very rapid, and once started is entirely automatic. This is accomplished by the use of heavy springs, and a cam and toggle action.



The Square D Cover Control makes it impossible for the box cover to be opened while the motor is running. Prevents operation of switch with the box cover open. Switch boxes are supplied with solid ends. No end plates are required.

250 Volts—For N. E. C. S. Fuses							
Cat. No.	No. of Poles	Amp.	Std. Pkg.	Wt., Lbs.	Price Each	Cat. No.	No. of Poles
76251	2	30	5	11	\$19.00	76451	4
76351	3	30	5	13	21.00	76452	4
76352	3	60	2	22	28.30		60
							1
							32
							40.00
500 Volts—For N. E. C. S. Fuses							
76341	3	30	5	22	\$28.30	76441	4
76342	3	60	2	29	36.00		30
							2
							32
							\$40.00
250 Volts—Without Cover Control							
69251	2	30	5	10	\$16.00	69351	3
							30
							5
							12
							\$16.00

Square D Meter Test Switches
Single Throw, Fused Bottom, 125 Volts

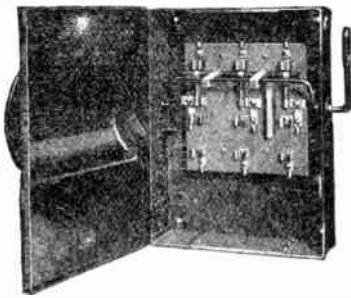


No. 78211

By means of this type switch, meters can be tested without interrupting the current supply.

Cat. No.	Amperes	No. of Poles	Weight Pounds	Price Each
78211	30	2	4½	\$3.30
78311	30	3	5	4.50

Square D Compensator and Meter Test Switches



The compensator provides 2 taps, one for a direct line circuit for starting, the other for a local fused circuit for running. The switch may be arranged to have the fuses on the line side of the switch or by removing links, on the compensator side, depending on the design of the compensator. The switch has a quick-break mechanism.

By removing the links the 78,000 line switch becomes a meter testing switch which consists of a cut-out and switch mounted on the same base. The line current is brought through the cut-out fuses to the meter, and thence to the switch and the load.

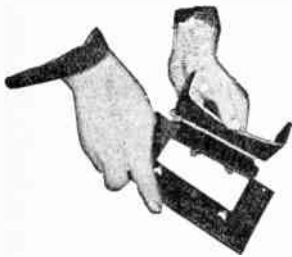
250 Volts—For N.E.C.S. Fuses

Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each
78351	30	5	22½	\$19.20	78354	200	1	64	\$52.80
78352	60	4	23	19.20	78355	400	1	95	84.00
78353	100	2	33	31.00					

500 Volts A.C.—For N.E.C.S. Fuses

Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each	Cat. No.	Amp.	Std. Pkg.	Wt. Lbs.	Price Each
78341	30	3	25	\$20.20	78343	100	2	35	\$33.00
78342	60	2	26	21.20	78344	200	1	65	56.00

Square D End Plates for Entrance Switches



Used with the 77000 and 78000 lines of entrance switches. Adapter end plates can be supplied which fit into the top opening of the switch box into which the meter trims fit.

Cat. No. 18483 is fitted with a Square D meter trim.

Cat. No.	Description	Wt. Lbs.	Price Each
18483	Adapter End Plate. Use with Meter Trims on 78341, 78342, 78343, 78351, 78352, 78353, 77351, 77352 and 77353	1½	\$.60
18583	Adapter End Plate. For 78344, 78354, 78355 and 77354	2	.70
19484	Compensator End Plate. For 78341, 78342, 78343, 78351, 78352, 78353, 77351, 77352, 77353	4	.60
19586	Compensator End Plate. For 78344, 78354, 78355 and 77354	5	.70

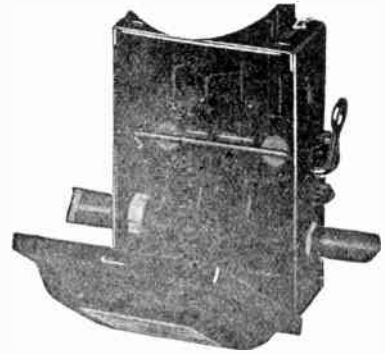
No. 18318 Square D Cabinet Connectors

Twin box connector No. 18318 is used to connect house service switches and branch cut-outs, also to connect 2 or more industrial switches where it is desired to run the feed wires through switches, arranged vertically.



Carton, 5; weight, 1½ pounds.
Price, No. 18318each \$.24

Square D Meter Switches



The adoption of a standardized system of service installation devices has extended into practically every section of the country. The Square D standardized line is built in sufficient sizes and types to meet every requirement of every standardized system. Such a system comprises an enclosed and externally operated safety switch, a device to completely enclose all connections between the switch and the meter, an enclosed cutout for branch circuits, and connecting troughs to enclose bus wires in banked installations.

Square D standardized switches and fittings are so designed that all meter connections and all fittings are interchangeable with those of the other manufacturers of standardized material.

Square D standardized switches provide complete enclosure and safety.

They permit meter testing without current interruption and with convenience, speed and safety.

Ample wiring space makes them easy to install. Provision is made for sealing or locking the cover shut, and, when desired, the current off.

Convenient means for grounding are provided.

Knockouts and U-shaped twistouts, placed in standard locations, make complete the interchangeability and ease of wiring standardized systems.

What had for some time retarded the movement toward defined service installations had been the great variety of switch types and fittings that were being marketed and the consequent need for the central station to carry and maintain a separate stock of meter protective devices for each different type of switch manufactured.

The standardized service system eliminates all these difficulties and simplifies the service installation situation for everyone concerned.

The standardized entrance switch is so designed that the meter end walls and all other accessories are interchangeable with like devices built by other manufacturers of standardized devices.

During the earlier stages of the development of the system it was necessary for the central station to stock a supply of meter end walls to fit the several different widths of standardized cabinets of 60 and 100-ampere capacities.

Through the development of the standard opening, the central station, instead of removing a whole end wall and substituting one of the several widths of meter end walls, merely removes a small blank shutter and inserts a meter shutter conforming to the configuration of the meter terminal chamber.

The opening is of standard dimensions, regardless of the width of the switch box. Since the adoption of the standard opening the central station is required to carry but one shutter for each meter, which can thus be set with any size switch.

Previous to the design of the standard opening and shutter idea, it was often difficult for the central station to insert the meter end walls into the cabinet ends. The installation of the conduit often distorted the side walls of the cabinet and made the top end opening either too small or too large for the meter end wall. With the shutter design, the end frame is secured to the cabinet with screws so that distortion is prevented and the shutter can be removed or inserted easily and with a perfect fit.

Square D Standardized Switches and Fittings



No. 53211

These switches and fittings are so designed that all meter connections and all fittings are interchangeable with those of the other manufacturers of standardized material.

These switches provide complete enclosure and safety. They permit meter testing without current interruption and with convenience, speed and safety.

Ample wiring space makes them easy to install. Provision is made for sealing or locking the cover shut and, when desired, the current off.

Convenient means for grounding are provided. Knockouts and U-shaped twistouts, placed in standard locations, make complete the interchangeability and ease of wiring standardized systems.

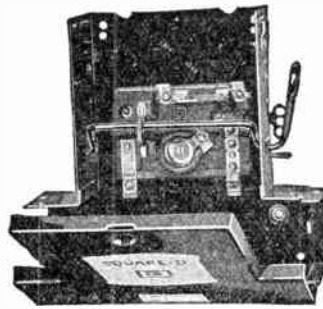
What had for some time retarded the movement toward defined service installations had been the great variety of switch types and fittings that were being marketed and the consequent need for the central station to carry and maintain a separate stock of meter protective devices for each different type of switch manufactured.

The Standardized Service System eliminates these difficulties and simplifies the service installation situation for everyone concerned.

All meter connections and fittings are interchangeable with those of other manufacturers of standardized material. They permit meter testing without current interruption.

Square D Ganging Type Switch and Distribution Boxes

30 Amperes, 125 Volts



Cat. No.	No. of Poles	Fuses	Wt. Lbs.	Price Each
*15211	2	1	7	\$4.71
*15311	3	2	7½	5.26
†18211	2	2	7	4.71
‡17311	3	2	7¾	5.46

*Fuses dead when switch is off; meter test blades.

†Straight, 2-pole.

‡Solid neutral.

No. 20533 Square D Trough Closing Plates

For Use with Gang Type Switches



Cat. No.	Description	Price Each
20533	Closes Trough Openings in Gang Type Boxes.....	\$.12

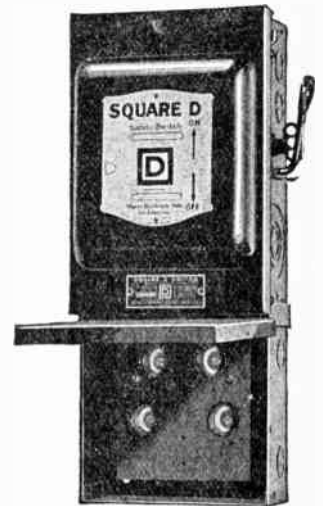
Square D Switch and Distribution Boxes

30 Amperes, 125 Volts

This box provides the switch and distribution box for branch circuits in one unit.

Cat. No. 38211 is a 2-wire solid neutral service switch with one blade and one fuse. It provides four 2-wire single fused branch circuits; 2 poles, 1 fuse.

Cat. No. 38311 is a 3-wire solid neutral service switch with 2 blades and 2 fuses. It provides four 2-wire single fused branch circuits; 3 poles, 2 fuses.



No. 38211 with Box Cover Open and Switch Cover Closed

Cat. No.	*Branch Circuits	Wt. Lbs.	Price Each
38211	4	10½	\$9.35
38311	4	11	9.35

*Single fused, 2-wire.

Square D Porcelain Switches

125 Volts, 30 Amperes



No. 1210

No. 1211 has a porcelain box so that no insulating base is required. The cover may be locked shut and the handle may be locked off.



No. 1211

There are four holes in top and bottom for opening wiring. For conduit wiring No. 1210 adapter should be used at top and bottom. No. 1210 adapter has six ½-inch knockouts and six ¾-inch knockouts. Standard package, 15.

Price, No. 1211 Switch, 2 Poles, Weight 5¾ Pounds each \$2.00
 Price, No. 1210 Conduit Adapter, Weight, ½ Pound each .18

30-ampere, 125-volt Plug Fuse Switches

Cat. No.	Poles	Fuses	Description	Price Each
55211	2	1	Fuses Dead when Switch is Off. Meter Test Blade	\$4.15
55311	3	2	Fuses Dead when Switch is Off. Meter Test Blades	4.70
58211	2	2	Straight Two-pole	3.70
57311	3	2	Solid Neutral	4.70
26311	3	1	" " Neutral Blade not Connected to Cross Bar	4.70
SK615	3	2	Solid Neutral. Neutral Blade Connected to Cross Bar. Not Meter Test Type	5.85

250-volt, Cartridge Fuse Switches

Cat. No.	Amp.	Poles	Fuses	Description	Price Each
58251	30	2	2	Straight Two-pole	\$4.15
28252	60	2	2	" " "	12.10
28253	100	2	2	" " "	19.80
26251	30	2	2	Fuses are Dead when the Switch is Off. Meter Test Blade	5.70
26351	30	2	3	Fuses are Dead when Switch is Off. Solid Neutral	5.85
27351	30	3	2	125-250-volt. Solid Neutral	4.70
27312	60	3	2	125-250 " " "	13.30
27313	100	3	2	125-250 " " "	21.80

Not Meter Test Type

SK659	30	3	2	Fused Bottom. Solid Neutral	\$5.85
SK660	60	3	2	" " " "	13.30
SK674	100	3	2	" " " "	21.80
SK671	30	3	3	" " " "	5.85
SK672	60	3	3	" " " "	13.30
SK673	100	3	3	" " " "	21.80

Square D Enclosed Double Branch Cutouts



Can be attached to any Square D Safety Switch either above or below with special end plate No. 18318. Removable link allows connections for either 3-wire or 2-wire service or distribution. 30-amp.

Cat. No.	Wt. Lbs.	Price Each
35211	4	\$2.60

Square D Plug Receptacles and Attachment Plugs
250 Volts, 30 Amperes



With Plug Inserted



Interior View

All live parts of the receptacle are contained in sheet steel box. Fuses and terminals are mounted on porcelain. Receptacle may be fused up to 30 amperes, 250 volts. Attachment plug is of the polarity type, shaped so that it cannot be reversed when inserting in receptacle. Cable or flexible cord passes through handle and is fastened to terminals at either side of plug by means of contact screws.

Plug Receptacles

Cat. No.	No. of Poles	Amps.	Volts	Wt., Lbs.	Price
5001	2	30	250	4 1/4	\$6.20

Attachment Plugs

5021	2	30	250	1/4	\$2.00
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Square D Test Plugs and Sockets

Designed to facilitate keeping a record of the rate of power consumption of each motor without loss of production.

To make test, instrument is plugged in, at top and bottom of switch, and switch thrown off. Current is then caused to flow through meter.

Test Plugs

Cat. No.	Amps.	Car-ton	Std. Pkg.	Price Each
70123	30-100	10	100	\$3.76
70124	200	5	50	5.64
70126	400-600	1	5	9.40

Test Sockets

70632	30-60	50	500	.74
70633	100	50	500	.74
70644	200	25	250	1.12
70665	400	5	5	2.34
70666	600	5	5	2.34

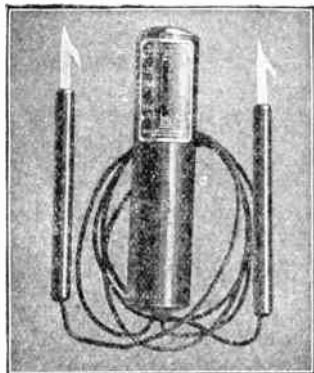


No. 5000 Wigginton Voltage Testers

This voltage tester requires no lamps, and consequently is less expensive to use than a pigtail socket and an ordinary lamp. Enclosed in fiber and withstands rough usage.

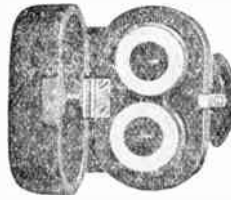
Indicates voltage on any line up to 550 volts and whether current is A.C. or D.C.

Used to locate open circuits, blown fuses and motors running single phase. May be used in phasing out transformers.



Price, No. 5000..... each \$10.20

Square D Cabinet Supported Fuse Blocks



The cabinet supported fuse block is a double-pole cutout for Edison plug fuses. It provides accessible branch fuses and fits into the U-shaped twistout openings in the side of the standardized cabinet. Each switch may be fitted with one or two fuse blocks. The cover of the block is kept closed by means of a spring.

Fuse blocks may be fitted not only to 30-ampere cabinets, but by using locking plate Cat. No. 20531 will fit both 60 and 100-ampere Square D cabinets.

Cat. No.	Amp.	Poles	Volts	Price Each
1021	30	2	125	\$1.40

Square D Connecting Troughs

Connecting troughs are used to connect standardized switches in gang installations. The trough fits into the U-shaped opening in the side of the cabinet and affords an easy and convenient method of enclosing the bus wires.



The use of troughs eliminates the need for conduit, lock washers and bushings.

Cat. No.	Length In.	Price Each	Cat. No.	Length In.	Price Each
20733	3 1/2	\$.75	20738	8 1/2	\$.50

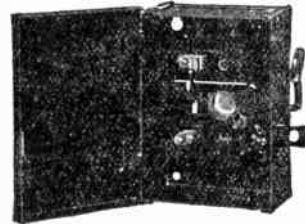
Square D Locking Plates



Used with connecting troughs and fuse blocks with 60 and 100-ampere standardized switches. The locking plate fits over the trough closing the opening left in the switch box and is locked in place by the cover.

Price, Cat. No. 20531.....each \$.40

No. 97211 Square D Entrance Switches
2-pole, Unfused Neutral
125 Volts



This switch has but one fuse and one blade, with solid neutral. Designed for use on grounded neutral A. C. or D. C. Removable ends make wiring convenient and easy.

No.	Amp.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
97211	30	10	3 1/2	\$2.10

Square D Special End Plates



Slotted fibre-bushed end plates are required for bottoms of Star-Deita Motor Starters and Compensator Type Switches so that extra leads will pass through easily. Standard conduit or open-wiring end plates should be ordered only for tops of these switches.

No. 18318 is a twin box connector, used to connect house service switches and branch cutouts, also to connect two or more industrial switches where it is desired to run main feed wires through several switches, arranged vertically.

Catalogue No.....	19484	19586	18318
Price.....	each \$.60	.70	.24

**Square D Standardized Meter Service Switches
Universal Type**



Universal Type Switch for Services Requiring Four Branch Fuses

This new standardized switch combines in one device the service entrance unit (switch and cutout) and an enclosed dead front cutout for branch circuit distribution. The Universal Type Standardized Switch is built in the same dimensions as the other types of standardized switches and consequently takes all the standard end walls and fittings.

Made only in the 30-ampere size and for plug fuses. There are several arrangements providing for different main service and branch circuit connections, including two or three wire services with two or three wire branch circuits. The devices provide for two branch circuits, single fused or double fused, and for four branch circuits single fused.

The porcelain switch base is supported on brackets in the side walls of the cabinet. The main switch is on the rear face of this base. The main fuses are on the upper edge of the base. The branch fuses are on the front face of the base. The branch fuses fit tightly into an opening in the closed cabinet cover, making them accessible without permitting access to the inside of the cabinet. Another hinged cover encloses the accessible branch fuses.

Cabinet is of 30-ampere standardized dimensions and takes 30-ampere end walls and accessories. Provided with twist-outs to permit the use of troughs in ganged installations.

The Square D Universal Type Standardized Switch affords economy in time and labor installation. The main service and the branch circuits are enclosed in one device, eliminating the need for separate installation of each device and the requirements for connecting and wiring them.

The arrangement of terminals simplifies wiring. The lower edge of the base has all the service-side connections, while the upper edge of base has all the meter connections.

The base is sufficiently small to provide ample cabinet room for making all connections and running bussing wires through the cabinet in gang installations.

Cat. No.	SERVICE SWITCH			BRANCH CIRCUITS			Price Each
	No. of Poles	No. of Blades	No. of Fuses	No. of Circuits	No. of Fuses in Each Circuit	No. of Fuses in Each Circuit	
*32211	2	1	1	2	2	1	\$5.30
*32311	3	2	2	2	2	1	6.30
*32311	3	2	2	1	2	2	6.30
*32311	2	2	2	1	2	2	6.30
*34211	2	1	1	4	4	1	8.60
*34311	3	2	2	4	4	1	8.60
*34311	2	2	2	2	4	2	8.60

*These switches are designed for any of the installations described under their respective catalogue Nos. Descriptive wiring diagrams covering the various types of installations will be furnished with each switch.

Square D Switch End Walls



Conduit End Wall

End walls are used to close the opening in the top of the standardized cabinet before the meter is set, or



Combination End Wall

when no meter is to be installed with the cabinet.

The end wall most commonly used, when a meter is to be installed, is the combination end wall—so called, because it consists of a frame, having an opening of standard dimensions, designed to be closed by a removable blank shutter.

Cat. No.	Description	Price, Ea.
*22331	Knockouts for Conduits.....	\$.40
*22329	Removable Shutter Type.....	.40
†22433	Knockouts for Conduits.....	.90
†22429	Removable Shutter Type.....	.90

*Used with 30-ampere switches.
†Used with 60 and 100-ampere switches.

**Square D Meter Trims
For Use with Meter Service Switches and Standardized Switches**

Use Locking Plate, Nos. 22363 and 24483 with Standardized Switches

For Fort Wayne Meters

Cat. No.	For Top or Bottom of Box	Type	Service	No. of Wires	Volts	Amps.	Price Each
11503	Top	K-5	S. Ph.	2&3	110-220	5-25	\$.33
11507	"	K-4 Form S. A. A.	S. Ph.	2	210	5-25	.51
11507	"	K-4 Form S. A. A.	S. Ph.	2&3	220	5-15	.51
11514	Bot.	K-3 Form S. B. A.	S. Ph.	2	100-625	5-50	1.75
11514	"	K-3 Form S. B. A.	S. Ph.	3	200-500	5-50	1.75
11518	"	K Form S. A. A.	S. Ph.	2	110	5-25	3.35
11512	"	K-5	S. Ph.	2&3	110-220	5-25	2.03
11524	Rev.	K-3 Form M. A. B.	3 Ph.	3&4	110	5-25	3.35

For General Electric Meters

11504	Top	I-10	S. Ph.	2	110-220	5-25	\$.57
11504	"	I-10	S. Ph.	3	110-220	5-15	.57
11503	"	I-14	S. Ph.	2&3	110-220	5-25	.33
11526	"	I-14	S. Ph.	2&3	110-220	50-75	.65
11512	Bot.	I-14	S. Ph.	2&3	110-220	5-25	2.03
11506	Rev.	I	S. Ph.	2	110-650	3-25	3.00
11506	"	I	S. Ph.	3	200-650	3-25	3.00
11510	"	I	S. Ph.	2	100-600	50-75	4.05
11510	"	I	S. Ph.	3	220	50-75	4.05
11515	"	C-6	D. C.	2	110-220	5-50	4.05
11515	"	C-6	D. C.	3	200	5-50	4.05
11516	"	C-7	D. C.	2	500-600	5-50	4.80
11513	"	D-3	2&3 Ph.	3	100-600	3-75	4.60
11513	"	D-3	2&3 Ph.	4	100-600	3-75	4.60
11525	"	D-6	2&3 Ph.	3&4	220-440	5-25	4.05
11529	Top	D-6	2&3 Ph.	3&4	110-550	50-75	4.60

For Sangamo Meters

11521	Top	H Model†	S. Ph.	2	110	5-15	\$.57
11505	"	H * Chamber 4 1/2 in. Wide	S. Ph.	2&3	110-550	5-15	.57
11528	"	H Model‡ Chamber 4 3/8 in. Wide	S. Ph.	2&3	110-550	5-15	.51
11528	"	H Model* Chamber 4 3/8 in. Wide	S. Ph.	2&3	110-550	25-100	.51
11532	"	H Model‡ Chamber 5 3/8 in. Wide	S. Ph.	2&3	110-550	25-100	.61
11523	"	D-5	D. C.	2	110-220	10-100	.51
11534	"	D-5	D. C.	3	110-220	10-100	1.75
11527	Rev.	H-2	Poly.	...	110-550	5-100	3.35

For Westinghouse Meters

11501	Top	O. A.	S. Ph.	2&3	100-200-400	5-10	\$.37
11523	"	O. A.	S. Ph.	2	100-400	5-10	.51
11523	"	O. A.	S. Ph.	3	100-200	5-10	.51
11511	"	O. A.	S. Ph.	2	100-200-400	15-75	.51
11511	"	O. A.	S. Ph.	3	100-200	15-50	.51
11511	"	O. A.	S. Ph.	2&3	100-400	5-75	.51
11522	"	O. A.	S. Ph.	2	100-400	15-80	.51
11522	"	O. A.	S. Ph.	3	100-200	15-60	.51
11519	Rev.	O. A.	2 Ph.	3&4	100-500	5-300	4.05
11519	"	O. A.	3 Ph.	3&4	100-500	5-300	4.05
11502	Bot.	C.	S. Ph.	2	100-500	5-20	.57
11520	Rev.	C.	2&3 Ph.	3	100-500	5-40	2.88
11520	"	C.	2&3 Ph.	4	100-500	5-40	2.88

*Serial Nos. 330000 to 2001000.

†Serial Nos. less than 330000.

‡Serial Nos. above 2001000.

Nos. 11501 and 11523 are similar except that No. 11501 is used with meter terminal cover and holding stud in place, while No. 11523 is used when terminal cover and holding stud are removed. Nos. 11511 and 11522 are similar; No. 11511 is used with cover and holding stud in place, while No. 11522 is used when terminal cover and holding stud are removed.

Square D Locking Plates

To Adapt Square D Meter Trims to Standardized Switches



No. 24352

The complete line of Square D meter trims, 11000 series, can be used with the standardized switches. This is accomplished by means of locking plates which fit into the standard opening in the combination type end wall, or in the case of locking plate, Cat. No. 22383, fit into the end opening of the switch.

The locking plates which make it possible to use the 11000 series meter trims on standardized switches, provide for the 30, 60 and 100-ampere switch installations when the combination end wall having the standard opening is used. On 30-ampere switch installations the end wall type locking plates fitting into the end opening of the switch are also provided.

For 30-ampere Switch Installations

Cat. No.	Description	Price Each
*24352	Shutter Type	\$.20
22383	End Wall Type	.40

*Used in combination end wall, Cat. No. 22329.

For 60 and 100-ampere Switch Installations

Cat. No.	Description	Price Each
*24483	Shutter Type	\$.30

*Used in combination end wall, Cat. No. 22429.

Square D Steel Meter End Walls

For 30-ampere Switches



When desired, meter end walls, which fit into the end opening of the standard switch, can be supplied. The terminal chamber of the meter sets down into the opening and the meter end wall is fitted over the terminal chamber. Meter end walls are furnished for each type of meter in common use. When this type meter wall is desired for Square D 60 or 100-ampere installations, the meter end designed for the 2-pole, 100-ampere switches of other manufacturers fits all Square D 60 and 100-ampere types.

Cat. No.	Meter	Service	No. Wires	Volts	Amps.	Price Each
*21301	West O. A.	S. Ph.	2-3	100-200-400	5-10	\$.40
21311	" O. A.	"	2-3	100-200-400	15-75	.40
*21323	" O. A.	"	2-3	100-200-400	5-10	.40
21303	G. E. I.-14	"	2-3	110-220	5-25	.40
21330	" C.-12	D.C.	2	100-250	5-25	.40
21330	" C.-12	"	3	200-500	5-25	.40
21303	Ft. W. K. 5	S. Ph.	2-3	110-220	5-25	.40
21305	San. H-2	"	2-3	110-550	5-15	.40
21331	Dun. M-2	"	2-3	100-600	5-25	.40
21331	" E.	D.C.	2-3	110-250	5-25	.40

*Cat. Nos. 21301 and 21323 are similar except that No. 21301 is used with meter terminal cover and holding stud in place, while No. 21323 is used with terminal cover and holding stud removed.

Square D Standardized Meter End Walls

Make of Meter	Type	Term. Chamber Width in Inches	Amp.	METER END WALL		
				USE WITH 30-AMP. SWITCHES	USE WITH 60-AMP. SWITCHES	
Cat. No.				Cat. No.	Price Each	
G. E.	I-14	...	5-25	...	09136	\$.90
"	I-14	...	30-75	...	09516	.90
"	I-10	...	5	09113	\$.40	...
West.	OAA	4 3/8	5-10	...	09146	.90
"	OAB	4 3/8	5-20	...	09146	.90
"	OAC	4 3/8	5	...	09146	.90
"	OAA	4 7/8	15-25	...	09536	.90
"	OAA	4 7/8	30-75	...	09536	.90
"	OAB	4 7/8	30-75	...	09536	.90
"	OAC	4 7/8	10-15	...	09536	.90
"	OAC	4 7/8	30-75	...	09536	.90
"	OAE	4 7/8	5-10	...	09536	.90
"	B	...	5	09263	.40	...
"	C	...	5-20	09163	.40	09166 .90
"	C 2 Wire	...	40-80	...	09656	.50
"	C 3	...	30-40	...	09656	.90
San.	H-1	3 3/8	5-15	09273	.40	...
"	H-1	4 1/2	30-100	...	09286	.90
"	H-2	4 1/2	5-15	09153	.40	...
"	H-2	4 5/8	25-100	09543	.40	09546 .90
"	H-2	5 3/8	25-100	09343	.40	09346 .90
"	D-5 2 Wire	...	0-100	09353	.40	09356 .90
Ft. W.	K-4 SAA	...	5-25	09363	.40	09366 .90
"	W. K-5 SAA	...	5-25	...	09136	.90
"	W. K-5 SAA	...	30-75	...	09516	.90
Dun.	M-2	...	5-25	...	09376	.90
"	E	...	...	...	09376	.90
"	M-2	...	50-75	...	09636	.90

Blank End Walls

2 Bushings 1/2 Inch, One 3/4x1 Inch K. O.	09123	\$.40	...
Four 1/2 Inch K. O.	09383	.40	...
One 1x1 1/4 Inch K. O.	09393	.40	...
One 1 Inch and One 1 1/4 Inch K. O.	...	...	09126 .90
Four 3/4x1 Inch K. O.	...	...	09386 .90
Adapter Coupling End Wall	09173	.40	09176 .90

Square D Steel Meter Shutters



Designed to enclose the meter terminal chamber and the conductors between the switch and the meter. Meter terminal chamber projects into opening at top of switch. With the adoption of the standard opening, all that is necessary is to remove the blank steel shutter, install the meter and insert a metal meter shutter into opening.

For Use with 30-ampere Switches

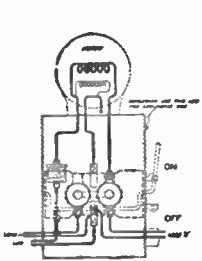
Cat. No.	Meter	Service	No. of Wires	Volts	Amp.	Price Each
24301	West O. A.	S. Ph.	2	100-200-400	5-10	\$.20
24301	West O. A.	S. Ph.	3	100-200	5-10	.20
24311	West O. A.	S. Ph.	2	100-200-400	15-75	.20
24311	West O. H.	S. Ph.	3	100-200	15-50	.20
24303	G. E. I.-14	S. Ph.	2-3	110-220	5-25	.20
24303	F.T.W.K-5	S. Ph.	2-3	110-220	5-25	.20
24305	San. H-2	S. Ph.	2-3	110-550	5-15	.20
24331	Dun. M-2	S. Ph.	2-3	110-600	5-25	.20
24331	Dun. E.	D. C.	2-3	110-250	5-25	.20
24338	Semco-I.	S. Ph.	2	110-220-440	5-25	.20
24338	Semco-I.	S. Ph.	2-3	110-220	5-25	.20

For Use with 60-100-ampere Switches

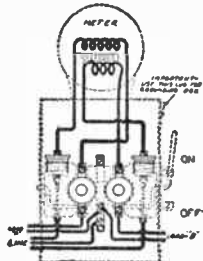
24411	West O. A.	S. Ph.	2	100-200-400	15-75	\$.30
24411	West O. A.	S. Ph.	3	100-200	15-50	.30
24403	G. E. I.-14	S. Ph.	2-3	110-220	5-25	.30
24426	G. E. I.-14	S. Ph.	2-3	110-220	50-75	.30
24403	Ft.W.K-5	S. Ph.	2-3	110-220	5-25	.30
24432	San. H-25	S. Ph.	2-3	110-550	25-100	.30
24405	San. H.	S. Ph.	2-3	110-550	5-15	.30
24439	Semco-I.	S. Ph.	2	110-220-440	15-75	.30
24439	Semco-I.	S. Ph.	2-3	110-220	15-75	.30

Square D Standardized Universal Type Service Switch Wiring Diagrams

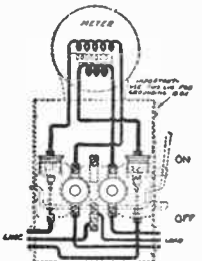
Bull Dog Safety Switches



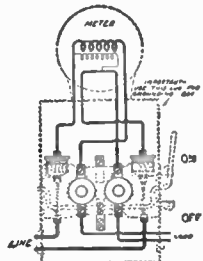
Cat. No. 32211
2-wire Solid Neutral
Switch—Two 2-wire
Branch Circuits



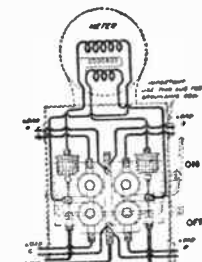
Cat. No. 32311
3-wire Solid Neutral
Switch—Two 2-wire
Branch Circuits



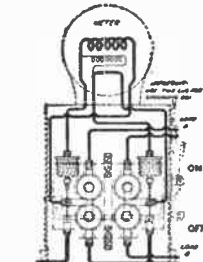
Cat. No. 32311
3-wire Solid Neutral
Switch—One 3-wire
Branch Circuit



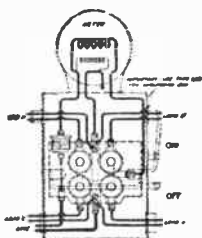
Cat. No. 32311
2-wire Fused Switch
One 2-wire Fused
Branch Circuit



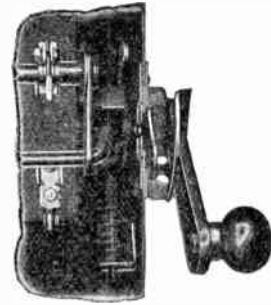
Cat. No. 34311
3-wire Solid Neutral
Switch—Four 2-wire
Branch Circuits



Cat. No. 34311
2-wire Fused Switch
Two 2-wire Fused
Branch Circuits



Cat. No. 34211
2-wire Solid Neutral
Switch—Four 2-wire
Branch Circuits



Interlocking mechanism is designed to permit accessibility for inspection to qualified persons. An inherent weakness of many enclosed switches is their inaccessibility to inspection, without disconnecting the load and shutting down production.

Bull Dog Safety Type Switches are so designed that the interlocks may be temporarily neutralized to permit of a thorough inspection of the switch in any position. This is very important—lack of inspection to any mechanical or electrical apparatus may result in dangerous conditions.

Springs where used, are designed so as to allow a wide factor of resiliency and to be normal when not functioning. Springs, however, are only an auxiliary. Bull Dog Safety Type Switches can be opened and closed even if the springs should break or be intentionally removed. Springs serve only to accelerate the action.

“Bull Dog” Safety Type Switches are quick (positive) make and quick-break.

After the action is started the opening and closing of the switch is beyond the control of the operator, on all sizes that may be used as operating switches. The opening and closing mechanism is independent of the springs, which are merely used to increase the speed of action, a highly desirable and necessary feature where safety type switches are opened and closed under load.

A few switches of the larger sizes and higher voltages, as well as all double throw switches, are listed without quick-make and quick-break features, since such switches are generally used for disconnecting purposes only—not under full load. If desired, however, they may be equipped with auxiliary quick-break attachments at a slight additional cost.

The switch may be removed from the box as a unit, without removing the operating mechanism or removing the cabinet from the wall. The inter-locking operating mechanism may be removed as a unit, without necessarily removing the switch from the box. Parts are standardized and made by dies designed for the particular part so that replacement parts can readily be secured, if required.

We have avoided barriers, shields and all features which would hide the operating parts of the switch, as the switch parts should be seen and immediately adjusted or repaired if required, at any time fuses are replaced.

When the switch parts are covered it is impossible of course to see and repair in time any defects which might possibly have developed, and these parts should be readily visible to the electrical maintenance man whenever cabinet is opened.

Bull Dog Safety Type Switches are not designed as to make it impossible for the experienced electrician to get in touch with live metal parts but are so designed that it is impracticable to come in contact with live metal parts, without intent.

The box dimensions were determined by actually wiring up the switches, taking time studies of the period required to properly connect them without subjecting the cable insulation to any undue strains.

All switch parts (except 30-amp. porcelain base switches) are built-up, milled, soldered and pinned. The jaws are flared to ensure easier entry of the blade and to eliminate arcing points from contact surfaces.

Bull Dog Safety Switches

Switch Blades and Crossbar Construction



Illustration shows the blade and crossbar construction used in 30, 60 and 100-ampere Bull Dog Safety Switches, while in 200, 400, 600, 800 and 1200-ampere switches heavier type blades are used.

The crossbar consists of a steel rod, insulated by a one-piece horn fibre tube. Each blade has a fibre bushing through which the insulated crossbar is inserted, thereby giving a double insulation

and making it impossible for any of the blades to become loosened from the crossbar. This is the only construction which assures the operator that all blades of the switch are Open when the handle indicates the Off position. The main function of a switch is to fully open and close a circuit. With Bull Dog blade and crossbar construction the performance of the function at all times is assured.

The blades of Bull Dog Safety Switches are reversible. Should any blade become injured, turn it over and a new perfect contact surface is available.

Specifications

STEEL BOX is made of high grade, Code Gauge Steel, baked black enamel finish.

OPERATING HANDLE is provided with stops for the On and Off position so that the switch cannot be forced beyond the established limits.

The box proper is provided with conduit knockouts to meet almost any condition.

Special drillings will be furnished, when specified on order at 50 cents net per hole.

SWITCH BASES are of highest grade electrical slate, exceptionally thick, to stand the heavy service required of them.

Where parts are fastened together with screws or bolts, lock washers are invariably used.

CASTINGS have been avoided and forged parts used instead.

All bearings and bearing points are of drawn steel, ensuring a wide bearing surface and preventing raw edges which would otherwise cut into and weaken the movable elements.

SWITCH COVERS are of highest grade steel with a drawn panel. The main object of the drawn panel is to make the box proper shallow, thereby making the switch more accessible.

Locking Features

Illustration shows Bull Dog Safety Switch Cabinet with the door locked and the Switch in the On position.

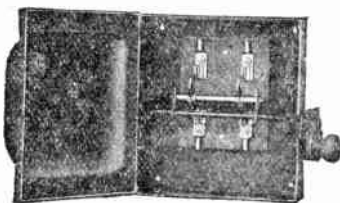
By using three different locks, it is possible for the foreman, electrical maintenance man and millwright to each separately lock the Switch Off—a most desirable safety feature while repairs or changes are being made by the electrical or millwright departments. It also makes it possible for the foreman to lock the Switch Off whenever required.



NOTE.—The same lock is ordinarily used to accomplish the two-fold purpose of locking the switch box closed and the switch Off. Should occasion require it is also possible to lock the switch in the Off position and leave the cover latch in neutral.

Bull Dog Type A Safety Switches

Quick Make, Quick Break, Not Fusible



All 250 and 500-volt switches, 600-ampere and over, and 600-volt switches, 400-ampere and over are for disconnecting only, not to be opened under full load but can be opened under light load.

Two-pole, Single Throw

250 Volts D. C., 500 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SN252	30 & 60	II	4	16 1/2	\$15.60
SN253	100	H	4	19	21.80
SN254	200	J	5	31	35.00
SN255	400	K	5	63	60.60
SN256	600	L	..	75	100.00
SN257	800	M	..	..	200.00
SN258	1200	M	..	..	275.00

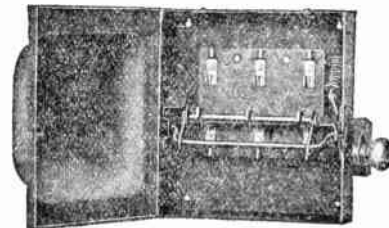
600 Volts D. C. and A. C.

SN262	30 & 60	HH	5	26	\$28.80
SN263	100	HHI	5	45	41.50
SN264	200	JJ	..	53	60.40
SN265	400	KK	..	77	150.00
SN266	600	LL	..	90	235.30
SN267	800	MM	..	..	294.10
SN268	1200	MM	..	..	441.20

Bull Dog Type A Safety Switches

Quick Make, Quick Break, Not Fusible

All 250 and 500-volt switches, 600-ampere and over and 600-volt switches, 400-ampere and over are for disconnecting only, not to be opened under full load but can be opened under light load.



Three-pole, Single Throw

250 Volts D. C., 500 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SN352	30 & 60	H	4	19	\$20.00
SN353	100	H	4	26 1/2	26.80
SN354	200	J	5	38	42.70
SN355	400	K	5	83	80.00
SN356	600	L	..	113	125.00
SN357	800	M	..	..	250.00
SN358	1200	M	..	..	375.00

600 Volts A. C.

SN362	30 & 60	HH	5	20	\$32.00
SN363	100	HHI	5	28	47.10
SN364	200	JJ	5	40	64.80
SN365	400	KK	5	86	145.60
SN366	600	LL	..	117	282.00
SN367	800	MM	..	..	411.00
SN368	1200	MM	..	..	558.00

Bull Dog Type A Safety Switches

**Quick Make,
Quick Break, Fusible
at Bottom for
N. E. C. Fuses**

All 250 and 500-volt switches, 600-ampere and over and 600-volt switches, 400-ampere and over are for disconnecting only, not to be opened under full load but can be opened under light load.



2-pole

Two-pole, Single Throw

250 Volts D. C. and A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF221	30	H	4	17½	\$14.30
SF222	60	II	4	18	17.80
SF223	100	II	4	28	26.80
SF224	200	J	5	46½	41.50
SF225	400	K	5	80	81.00
SF226	600	L	..	126	120.00
SF227	800	M	..	..	221.50
SF228	1200	M	..	..	300.00

600 Volts D. C. and A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF261	30	III	5	36	\$31.00
SF262	60	III	5	37	31.60
SF263	100	III	5	58	46.50
SF264	200	JJ	..	73½	80.00
SF265	400	KK	..	116	175.00
SF266	600	LL	..	130	300.00
SF267	800	MM	..	..	382.00
SF268	1200	MM	..	..	530.00

Three-pole, Single Throw

250 Volts D. C. and A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF321	30	II	4	21½	\$17.50
SF322	60	II	4	22	23.50
SF323	100	II	4	35	37.30
SF324	200	J	5	65	52.20
SF325	400	K	5	109	105.00
SF326	600	L	..	160	146.00
SF327	800	M	..	287	295.00
SF328	1200	M	..	346	412.00

500 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF351	30	II	4	30½	\$23.90
SF352	60	II	4	31	26.80
SF353	100	II	4	36	40.00
SF354	200	J	5	69	62.30
SF355	400	K	..	122	123.00
SF356	600	L	..	170	165.00
SF357	800	M	..	..	365.00
SF358	1200	M	..	..	520.00

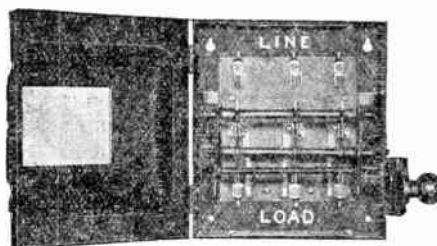
600 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF361	30	III	4	31	\$36.80
SF362	60	III	4	32	38.80
SF363	100	III	5	38	58.60
SF364	200	JJ	..	72	86.80
SF365	400	KK	..	126	206.00
SF366	600	LL	..	175	353.00
SF367	800	MM	..	..	471.00
SF368	1200	MM	..	..	647.00

Bull Dog Safety Motor Starting Switches

Quick Break, Fusible at Bottom for N. E. C. Fuses

Straight Connected



To connect up Bull Dog Safety Motor Starting Switches all that is necessary is to bring the line wires and connect to the terminals marked Line and the load wires to the terminals marked Load. With the three-

pole switch—three wires in and three wires out.

The throwing On of the switch is one operation, in one direction. All that is necessary is to hold the handle in the starting position, until the motor develops its speed. Then by taking the hand off the handle the switch automatically goes into the running position. The removal of the pressure of the hand from the handle releases the shunt blades and throws the fuses into circuit, thereby protecting the motors in the running position.

With the Bull Dog Safety Motor Starting Switch it is not necessary to over-fuse the motor, since the shunt blades carry the excess current required for the motor to attain normal speed.

Safety Features

The switch is provided with interlocks, so that the switch will not be thrown On when the door is open; and so that the door can not be opened when the switch is in the running position.

Means are provided so that a qualified electrician may inspect the switch in any position. (This avoids the necessity of shutting down the motor to inspect the switch or fuses.)

Switch blades and fuses are dead when the switch is in the Off position.

It is impossible for one blade to stay in when the switch is thrown to the Off position. All blades must come out.

The blades are doubly insulated with horn fibre. The blades are reversible. In event that a blade should become damaged, it can be turned over.

All switch parts may be removed from the cabinet, without disturbing the box or conduits.

Switch may be operated with all springs removed. This feature avoids shut-downs of production, and allows for the running of motors, until such time as the electrician can make necessary repairs.

Two-pole, Single-throw—250 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
MF221	30	N	4	20¾	\$24.95

Three-pole, Single-throw—250 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
MF321	30	N	4	22	\$23.70
MF322	60	N	4	26¾	32.60

Four-pole, Single-throw—250 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
MF421	30	NN	4	35	\$31.00
MF422	60	NN	4	36	40.90

Three-pole, Single-throw—500 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
MF351	30	N	4	30¾	\$33.00
MF352	60	N	4	30¾	39.30

Four-pole, Single-throw—500 Volts A. C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
MF451	30	NN	5	63	\$49.00

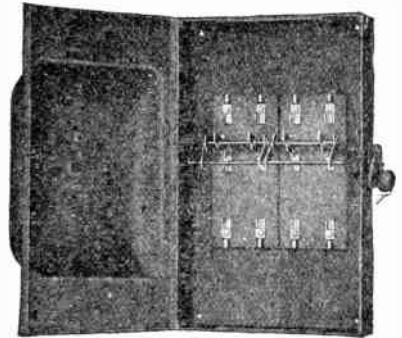
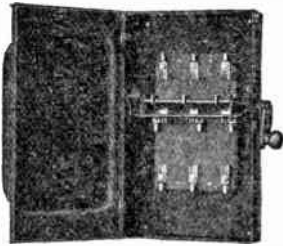
Switches listed on this page are for use with squirrel cage and induction type motors.

**Bull Dog Compensator Type
Safety Switches**

**Bull Dog Compensator Type
Safety Switches**

Three-pole, Single-throw Quick Make, Quick Break
Fusible at Bottom for N. E. C. Fuses

Quick-make, Quick-break, Fusible at Bottom
For N. E. C. Fuses, Four-pole, Single Throw



All 250 and 500-volt switches, 600-ampere and over and 600-volt switches, 400-ampere and over are for disconnecting only. not to be opened under full load but can be opened under light load.

All 250 and 500-volt switches, 600 amperes and over, and all 600-volt switches, 400 amperes and over, are for disconnecting only, not to be opened under full load but can be opened under light load.

250 Volts D.C. and A.C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF321C	30	H	4	22 1/2	\$24.80
SF322C	60	H	4	23	28.00
SF323C	100	H	4	36	44.70
SF324C	200	J	5	67	58.00
SF325C	400	K	5	111	131.00
SF326C	600	L	..	163	185.00
SF327C	800	M	..	290	411.00
SF328C	1200	M	..	350	589.00

250 Volts D.C. and A.C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet In.	Net Wt. Each Lbs.	Price Each
SF421C	30	HH	4	33	\$28.80
SF422C	60	HH	4	34	34.00
SF423C	100	HH	5	60	54.80
SF424C	200	JJ	5	90	80.00
SF425C	400	KK	5	129	173.60
SF426C	600	LL	.	200	290.00
SF427C	800	MM	.	...	530.00
SF428C	1200	MM	..	...	705.00

500 Volts A.C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF351C	30	H	4	31	\$28.60
SF352C	60	H	4	32	31.80
SF353C	100	H	4	40	46.60
SF354C	200	J	5	70	70.60
SF355C	400	K	..	125	147.00
SF356C	600	L	..	176	263.00
SF357C	800	M	..	...	475.00
SF358C	1200	M	..	...	705.00

500 Volts A.C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet In.	Net Wt. Each Lbs.	Price Each
SF451C	30	HH	4	40	\$34.00
SF452C	60	HH	4	41	38.80
SF453C	100	HH	5	72	57.00
SF454C	200	JJ	5	97	88.20
SF455C	400	KK	..	168	200.00
SF456C	600	LL	..	207	325.00
SF457C	800	MM	..	...	600.00
SF458C	1200	MM	..	...	790.00

600 Volts A.C.

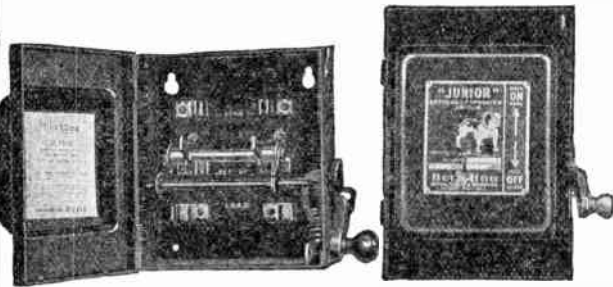
Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet Inches	Net Weight Each Lbs.	Price Each
SF361C	30	HH	4	32	\$42.00
SF362C	60	HH	4	33	44.00
SF363C	100	HH	5	42	73.60
SF364C	200	JJ	5	73	104.40
SF365C	400	KK	..	128	223.50
SF366C	600	LL	..	180	411.00
SF367C	800	MM	..	...	530.00
SF368C	1200	MM	..	...	736.00

600 Volts A.C.

Cat. No.	Cap. Amp.	Schedule	Depth of Cabinet In.	Net Wt. Each Lbs.	Price Each
SF461C	30	HH	5	41	\$53.60
SF462C	60	HH	5	43	58.60
SF463C	100	HH	5	75	83.60
SF464C	200	JJ	5	101	128.60
SF465C	400	KK	..	170	265.00
SF466C	600	LL	..	211	482.00
SF467C	800	MM	..	...	647.00
SF468C	1200	MM	..	...	853.00

Junior Type C Enclosed Switches

Quick Make, Quick Break, Single-throw, Two-pole

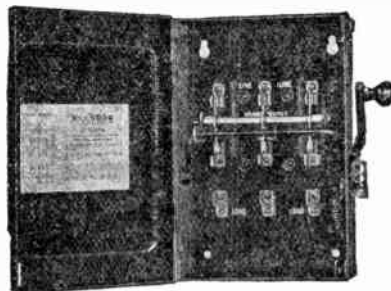


Open View

Closed View

Junior Type C Enclosed Switches

Quick Make, Quick Break, Single-throw, Three-pole



Junior Switches are designed for use where severe service conditions do not exist. In analyzing the enclosed switch field, there are many conditions where switches are infrequently operated and where the possibility of severe overloads cannot reasonably exist.

For such purposes, Junior Switches, enclosed and externally operated, but without interlocking features, meet the requirements. The fact that lighter parts can be used because of the lighter service requirements, together with the omission of interlocking features makes it possible to manufacture Junior Switches at considerably less cost and offer them to the trade at a figure which should materially increase the use of enclosed switches.

Designed so that positive make and break is assured at all times. It is impossible for any of the blades to become detached from the crossbar.

Only one spring is used to perform both the functions of quick make and quick break. The mechanism is so designed that in the event of breakage or removal of this spring, the switch may still be fully opened or closed. Stops are provided in both the open and closed position so that the switch cannot be forced beyond its established limits.

The 30-ampere sizes generally are provided with a heavy porcelain base reinforced to reduce breakage to a minimum. 60-ampere to 200-ampere inclusive, as well as some of the 30-ampere sizes are mounted on heavy high grade electrical slate bases.

The steel enclosing cabinets are of handsome design with drawn panels, black enamel or luminized finish. The switch can be locked in the open position, provision being made for three locks. The door can be locked closed. Many knock-outs are provided in the cabinets which are liberally proportioned to facilitate the making of adjustments which may become necessary but chiefly to allow access for quickly and safely wiring up the switch and thus reducing the cost installed.

Fusible

125 Volts (Porcelain Base)

Cat. No.	Amperes	Schedule	Std. Pkg.	Wt., Lbs. Each	PRICE, EACH	
					Solid End Boxes	*Open End Boxes
JF211S	30	H-1	5	5 1/2	\$4.50
JF211P	30	H-1	5	5 1/2	\$4.50

250 Volts (Porcelain Base)

JF221S	30	H-1	5	6	\$4.50
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250 Volts D. C. and A. C. (Slate Base)

JF221	30	H-1	5	16	\$7.00
JF222	60	H-1	5	18	12.50
JF223	100	H-1	3	28	18.00
JF224	200	H-1	2	46	32.00	.....

Not Fusible

250 Volts (Porcelain Base)

JN221S	30	H-1	10	5	\$5.00	.....
JN221P	30	H-1	10	5	.....	\$5.00

250 Volts D. C. 500 Volts A. C. (Slate Base)

JN251	30	H-1	5	16	\$11.50	.....
JN252	60	H-1	5	16	11.50	.....
JN253	100	H-1	3	19	15.50	.....
JN254	200	H-1	2	31	24.00	.....

Luminized finish furnished at the same price.

125 volts are arranged for Edison Plug Fuses at bottom.

250 volts are N. E. C. cartridge fusible at bottom.

Fuses are not included in prices.

Special conduit drilling at 50 cents net per hole.

*Switches in open end boxes will always be shipped with conduit end plates having three 1/2-inch knock-outs in top end plate of cabinet and three 1/2-inch knock-outs in bottom end plate, unless otherwise specified. Prices shown above include conduit type end plates.

Fusible

125 Volts (Porcelain Base)

Cat. No.	Amperes	Schedule	Std. Pkg.	Wt., Lbs. Each	PRICE, EACH	
					Solid End Boxes	*Open End Boxes
JF311S	30	H-1	5	6	\$6.50
JF311P	30	H-1	5	6	\$6.50

250 Volts (Porcelain Base)

JF321S	30	H-1	5	7	\$7.50
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250 Volts D.C. and A.C. (Slate Base)

JF322	60	H-1	5	22	\$13.50
JF323	100	H-1	3	35	25.00
JF324	200	H-1	2	65	40.00

500 Volts A. C. (Slate Base)

JF351	30	H-1	5	30	\$20.00	.....
JF352	60	H-1	3	31	22.00	.....
JF353	100	H-1	2	36	30.00	.....
JF354	200	H-1	2	69	50.00	.....

Grounded Neutral Unfused

125 Volts (Porcelain Base)

JF311SG	30	H-1	5	6	\$6.50
JF311PG	30	H-1	5	6	\$6.50

250 Volts (Porcelain Base)

JF321SG	30	H-1	5	7	\$7.50
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250 Volts D.C. and A.C. (Slate Base)

JF322G	60	H-1	5	22	\$13.50
JF323G	100	H-1	3	35	25.00
JF324G	200	H-1	2	65	40.00

Not Fusible

250 Volts (Porcelain Base)

JN321S	30	H-1	10	6	\$6.00	.....
JN321P	30	H-1	10	6	.....	\$6.00

250 Volts D. C. 500 Volts A. C. (Slate Base)

JN351	30	H-1	5	18	\$14.00	.....
JN352	60	H-1	5	18	14.00	.....
JN353	100	H-1	3	26	18.00	.....
JN354	200	H-1	2	38	33.00	.....

125 volts are arranged for Edison Plug fuses at bottom.

250 and 500 volts are N.E.C. cartridge fusible at bottom.

Luminized finish can be furnished at same price.

Fuses are not included in prices.

Special conduit drilling at 50 cents net per hole.

*Switches in open end boxes will always be shipped with conduit end plates having three 1/2-inch knock-outs in top end plate of cabinet and three 1/2-inch knock-outs in bottom end plate, unless otherwise specified.

Seco Meter Service Switches

Sealed Service Side Fuse Type

For Single-phase and Direct Current Service

30-ampere Capacity



No. 9523

The Seco Switch is a complete meter service unit of the switch-fuse-meter connected type and provides a main switch and cutout, service side fuses, full meter protection, and testing facilities, all sealed within the cabinet so that none but an authorized person may have access to them.

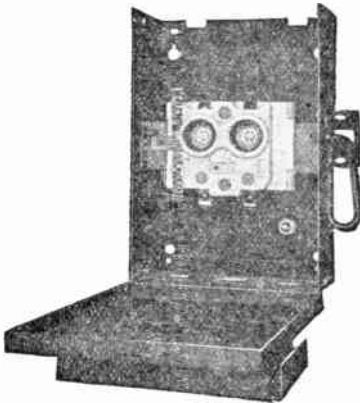
Cat. No.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	PRICE, EACH	
							Std. Pkg.	With Endwall Without Endwall
9523	125-250	3 2	Plug	2	Solid	2 10	\$5.10	\$4.70
9533	125-250	3 2	Encl.	2	"	2 10	5.85	5.45
9553	125	2 2	Plug	2	All Fused	1 10	4.80	4.40
9563	125 or 250	2 2	Encl.	2	"	1 10	5.55	5.15
9543	125	2 1	Plug	1	Solid	1 10	4.80	4.40

Acco Meter Service Switches

Accessible Service Side Fuse Type

For Single-phase and Direct Current Service

30-ampere Capacity



No. 9353

The Acco Switch provides a complete meter service unit including main switch and cutout, with meter protective and testing facilities. It is of the switch-fuse-meter connected type.

When the switch is at "Off" position, the slide cover may be opened and fuses removed with assurance that fuse contacts are Dead; the switch cannot again be moved to "On" until the slide is closed.

Cat. No.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	PRICE, EACH	
							Std. Pkg.	With Endwall Without Endwall
9323	125-250	3 2	Plug	2	Solid	2 10	\$7.00	\$6.60
9333	125-250	3 2	Encl.	2	"	2 10	7.75	7.35
9353	125	2 2	Plug	2	All Fused	1 10	6.70	6.30
9363	125 or 250	2 2	Encl.	2	"	1 10	7.45	7.05
9343	125	2 1	Plug	1	Solid	1 10	6.70	6.30

Seco and Acco Standardized Meter Service Switches

Service Switches

60-ampere Capacity

For Single-phase and Direct Current Service



No. 9536

Seco and Acco Meter Service Switches are of the switch-fuse-meter type. They are so constructed that the fuses and testing facilities are carried on the face and the switch on the back of the block. The switches comprise a complete meter service unit including main switch and cutout, service side fuses, full meter protection and testing facilities.

Seco Meter Service Switches—Sealed Fuse Type

Cat. No.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	PRICE, EACH	
							Std. Pkg.	With Endwall Without Endwall
9536	125-250	3 2	Encl.	2	Solid	2 4	\$22.50	\$21.60
9566	250	2 2	"	2	All Fused	1 4	21.50	20.60

Acco Meter Service Switches—Accessible Fuse Type

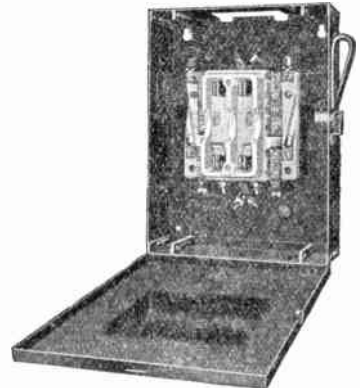
9336	125-250	3 2	Encl.	2	Solid	2 4	\$25.50	\$24.60
9366	250	2 2	"	2	All Fused	1 4	24.50	23.60

Seco and Acco Standardized Meter Service Switches

Service Switches

100-ampere Capacity

For Single-phase and Direct Current Service



No. 9531

Seco and Acco Meter Service Switches are of the switch-fuse-meter type. They are so constructed that the fuses and testing facilities are carried on the face and the switch on the back of the block. The switches comprise a complete meter service unit including main switch and cutout, service side fuses, full meter protection and testing facilities.

The operating handle in this capacity is equipped with a simple rugged quick-break mechanism.

Seco Meter Service Switches—Sealed Fuse Type

Cat. No.	Volts	Poles	Fusing	Switch Blades	Neutral	Test Blades	PRICE, EACH	
							Std. Pkg.	With Endwall Without Endwall
9531	125-250	3 2	Encl.	2	Solid	2 2	\$31.00	\$30.10
9561	250	2 2	"	1	All Fused	1 2	29.60	28.70

Acco Meter Service Switches—Accessible Fuse Type

9331	125-250	3 2	Encl.	2	Solid	2 2	\$36.00	\$35.10
9361	250	2 2	"	2	All Fused	1 2	34.60	33.70

Noark Standardized Meter Service Switches for Single-phase and Direct Current Service

2-wire

30, 60 and 100 Amperes

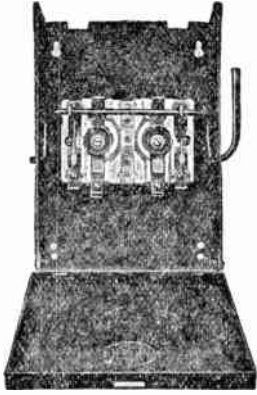
The Noark Service System is a complete line of standardized service installation devices which provides for all electrical service entrance and meter service requirements; single-phase, polyphase and direct current. All the control requirements and other essential features are embodied in a single, compact convenient unit arrangement. All live parts, such as switches, cutouts and contacts, and all connecting wires are entirely enclosed. Standardized fittings provide the flexibility necessary to care for any type of meter and for any combination of circuits.

The Noark Meter Service Switch provides all essential meter service requirements in a single unit which incorporates the following:

- 1.—Protection of life and property.
- 2.—Safety service switch, externally operated.
- 3.—Service cutout.
- 4.—Insurance against tampering and current theft.
- 5.—Meter-connection block.
- 6.—Meter-testing device.
- 7.—Lock-off, for Service Suspension.

A Noark Meter Switch includes the switch-out block with its switch, fuse receptacles, meter connections and testing contacts, mounted in and completely enclosed by the safety cabinet.

The cabinet has removable, interchangeable end-walls, which snap-lock into place. One of these carries hinged cover, the other has an opening through which the terminal chamber of the meter (either top or bottom connected) projects into the cabinet. For side-connected meters, simple adapter fittings are used.



No. 911123

Cat. No.	Poles	Volts	Amp.	STYLE		Kind of Fuse	Std. Pkg.	Price Each
				Switching	Fusing			
913123	2	125	30	Both Legs	Ungrounded Leg Only	Plug Enclosed	10	\$3.70
923123	2	125	30				4	12.10
923126	2	125	60				2	19.80
923121	2	125	100				10	3.70
911123	2	125	30	Both Legs	Both Legs	Plug Enclosed	10	4.15
921223	2	125	30				4	12.10
921226	2	125 or 250	60				2	19.80
921221	2	125 " 250	100				10	4.70
915333	3	125 to 250	30	Outside Legs Only— Neutral Link	Outside Legs Only	Plug Enclosed	10	5.10
925333	3	125 " 250	30				4	13.30
925336	3	125 " 250	60				2	21.80
925331	3	125 " 250	100					

End-walls are not included in above prices. Must be separately specified.

Noark Meter Service Switches for Polyphase Service

3-wire

30, 60 and 100 Amperes

Cat. No.	Poles	Volts	Amp.	STYLE		Kind of Fuse	Std. Pkg.	Price Each
				Switching	Fusing			
931233	3	125 or 250	30	Three Legs—Two Non-Switching Test Blades	Three Legs	Enclosed	10	\$10.20
931236	3	125 " 250	60				5	20.55
931231	3	125 " 250	100				2	26.95

End-walls are not included in above prices. It is necessary to order adapter and adapter-coupling end-walls.

These devices use wide cabinets.

Handle is uncoupled from fused switching blades when device is arranged for testing.

Fuse and switch ahead of meter. Non-switching testing blades after meter.

Noark End-walls for Polyphase 3-wire Meter Service Switches

Cat. No.	Description	Amperes	Std. Pkg.	Price Each
909233	Adapter-coupling End-wall	30	10	\$5.55
909236	" " "	60	5	1.10
909231	" " "	100	2	1.30
Blank End-walls				
909183	Two-bushing — 1/2-in. and 1 Double 3/4-in.—1-in. K.O.	30	10	\$5.55
909413	Four 1/2-in. K.O.	30	10	.55
909186	One 1-in. and 1 Double 1 1/4-in.—1 1/2-in. K.O.	60	5	1.10
909416	Four Double K.O. 3/4-in.—1-in.	60	5	1.10
909181	One 1 1/2-in. and 1 Double 2-in.—2 1/2-in. K.O.	100	2	1.30
909411	Four Double K.O. 3/4-in.—1-in.	100	2	1.30

Noark Meter Adapters and Back Plates for Polyphase Meter Service Switches

Make	FIT METERS— Type	Amperes	SINGLE METER— ADAPTERS			Description	METER ADAPTER— BACK PLATES		
			Cat. No.	Std. Pkg.	Price Each		Cat. No.	Std. Pkg.	Price Each
G-E	D-6	5-25	906553	10	\$4.05	Sealing Straps	907553	10	\$9.95
	D-6	50-75	906601	2	4.60	" "	907601	2	1.25
	D-6	100-150	906631	2	5.75	" "	907631	2	1.25
	O.A.	5-50	906566	5	4.05	" "	907566	5	1.00
Westinghouse	C	5-40	906546	5	4.05	" "	907546	5	1.00
	H	5-100	906571	2	3.45	" "	907571	2	.90
Sangamo	H	5-10	906961	2	1.75	" "	907691	2	1.50
	H (Horizontal)	5-100	906971	2	3.45	" "	907971	2	.95
Duncan	M2	5-100	906971	2	3.45	" "	907971	2	.95
Ft. Wayne	{ K-3, MAA, MAB, MAC, MAD, MAE, MAK, MAL }	5-50	906526	5	5.20	Sealing Straps	907526	5	1.10

Noark Standardized Shutter-type 2-piece End-walls for Single-phase and Direct Current Service Switches



Meter-protecting Shutter



Shutter-type End-wall with Blank Shutter



Adapter-coupling Shutter

These end-walls have an opening 5¼x2¼ inches, entirely closed by either a blank shutter or a meter protecting shutter and the meter terminal chamber. Regularly furnished with blank shutters. To adapt the end-wall for use with a given meter, any of the shutters listed below may be substituted for the blank shutter.

Cat. No.	Description	Std. Pkg.	Price Each
909443	30-ampere Shutter-type End-wall with Blank Shutter	10	\$.40

Shutters for 30-ampere Noark Shutter-type End-walls

FIT METERS				FIT METERS									
Cat. No.	Make	Type	Term. Chamb. Width, In.	Amperes	Std. Pkg.	Price Each	Cat. No.	Make	Type	Term. Chamb. Width, In.	Amperes	Std. Pkg.	Price Each
908273	G-E	I-14	...	5-25	10	\$.20	908163	San-gamo	H-1, O. S.	3¾	5-15	10	\$.20
908183		I-10	...	5	10	.20	908323		**H-2, Small	4 ¹⁵ / ₃₂	5-15	10	.20
908243	West-ing-house	*O. A-A	4 ³ / ₈	5-10	10	.20	908233	San-gamo	**H-2, Large Chamber	4 ⁵ / ₈	5-15	10	.20
908243		*O. A-B	4 ³ / ₈	5-20	10	.20	908063		**H-2, Small Chamber	4 ⁵ / ₈	25-100	10	.20
908243		*O. A-C	4 ³ / ₈	5	10	.20	908083	**H-2, Large Chamber	5 ³ / ₈	25-100	10	.20	
908023		*O. A-A	4 ⁷ / ₈	15-25	10	.20	908043	D5, D. C., 2-wire	...	0-100	10	.20	
908023	West-ing-house	*O. A-A	4 ⁷ / ₈	30-75	10	.20	908383	Pt. Wayne	K-5, SAA	...	5-25	10	.20
908023		*O. A-B	4 ⁷ / ₈	30-75	10	.20	908273		I-5, SAA	...	5-15	10	.10
908023		*O. A-C	4 ⁷ / ₈	10-15	10	.20	908253		M-5	...	5-25	10	.20
908023	West-ing-house	*O. A-C	4 ⁷ / ₈	30-75	10	.20	908233	Duncan	E (D.C.)	...	5-15	10	.20
908023		*O. A-E	4 ⁷ / ₈	5-10	10	.20	908113		Blank Shutter	...	...	10	.20
908283		B	...	5	10	.20	908093		Adapter Coupling Shutter	...	...	10	.20
908293	C	...	5-20	10	.20								

Noark Standardized 1-piece Walls for Single-phase and Direct Current Meters

Make	Type	Term. Chamb. Width, In.	Amperes	30-AMPERE			60-100-AMPERE		
				Cat. No.	Std. Pkg.	Price Each	Cat. No.	Std. Pkg.	Price Each
G-E	I-14	...	5-25	909133	10	\$.40	909131	4	\$.90
	I-14	...	30-75	.....	.....	.....	909511	4	.90
	I-10	...	5	909113	10	.40	.....	.....	.....
	C-12, D.C.	...	5-50	909433	10	.40	.....	.....	.....
	C-15	...	5-10	909843	10	.40	.....	.....	.....
	*O. A-A†	4 ³ / ₈	5-10	909143	10	.40	909141	4	.90
	*O. A-B†	4 ³ / ₈	5-20	909143	10	.40	909141	4	.90
	*O. A-C†	4 ³ / ₈	5	909143	10	.40	909141	4	.90
	*O. A-A	4 ⁷ / ₈	15-25	909533	10	.40	909531	4	.90
	*O. A-A	4 ⁷ / ₈	30-75	909533	10	.40	909531	4	.90
	*O. A-B	4 ⁷ / ₈	30-75	909533	10	.40	909531	4	.90
	*O. A-C	4 ⁷ / ₈	10-15	909533	10	.40	909531	4	.90
	*O. A-C	4 ⁷ / ₈	30-75	909533	10	.40	909531	4	.90
	*O. A-E	4 ⁷ / ₈	5-10	909533	10	.40	909531	4	.90
	O-B	5 ³ / ₈	5-20	909403	10	.40	909531	4	.90
B	...	5	909263	10	.40	909531	4	.90	
C	...	3 ⁵ / ₈	5-20	909163	10	.40	909161	4	.90
C, 2-wire	...	40-80	909163	10	.40	909651	4	.90	
C, 3	...	30-40	909163	10	.40	909651	4	.90	
H-1, Old Style	...	3 ¹⁵ / ₁₆	5-15	909273	10	.40	.....	.....	.....
H-1, " "	...	4 ²¹ / ₃₂	30-100	909273	10	.40	909281	4	.90
**H-2, Small Chamber	...	4 ¹⁵ / ₃₂	5-15	909153	10	.40	909281	4	.90
**H-2, Large " "	...	4 ⁵ / ₈	5-15	909293	10	.40	909281	4	.90
**H-2, Small " "	...	4 ⁵ / ₈	25-100	909543	10	.40	909541	4	.90
**H-2, Large " "	...	5 ³ / ₈	25-100	909343	10	.40	909341	4	.90
D5, D.C. 2-wire	...	0-100	909353	10	.40	909351	4	.90	
K-4, SAA	...	5-25	909364	10	.40	.....	.....	.....
K-5, SAA	...	5-25	909133	10	.40	909131	4	.90	
K-5, SAA	...	30-75	.....	.....	.....	909511	4	.90	
M-2	...	5-25	909373	10	.40	909371	4	.90	
E (D.C.)	...	5-15	909373	10	.40	909371	4	.90	
M-2	...	50-75	909373	..	.40	909631	4	.90	

Blank End-walls

Two-bushing, ½-in. and 1 Double ¾-in. and 1-in. K.O.	909123	10	\$.40	.....	.....
Four ½-in. K.O.	909383	10	.40	.....	.....
One 1-in. and 1 ½-in. K.O.	909393	10	.40	.....	.....
" 1 " " 1 Double 1 ½-in. and 1 ½-in. K.O.	.....	.....	.....	.....	.....
Four Double ¾-in. and 1-in. K. O.	909381	4	.90
One 1 ½-in. and 1 Double 2-in. and 2 ½-in. K. O.	909121	4	.90
Adapter Coupling End-wall	909173	10	.40	909171	4	.90

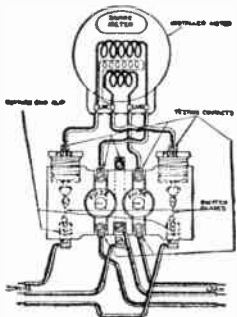
*Westinghouse O. A-A 5-10-ampere meter and Westinghouse O. A-E 5-10-ampere meter are in different size cases with different size terminal chamber widths. End-walls for these meters are listed separately as above. Be sure to note terminal chamber width given with each, and be sure it corresponds with the width of the terminal chamber of the Westinghouse meter with which end-wall is to be used.

**The terminal chamber width of Sangamo Type H-2 meters

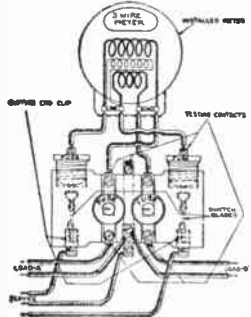
having serial numbers 2001000 and over has been increased in width over the width previously used on the same capacity Sangamo Type H-2 meters. In ordering, note terminal chamber width as given above with end-wall for these meters.

†When these meters are used without terminal chamber cover, end-wall is provided with terminal cover extension. Order catalogue No. 909773, price and standard package same as listed above.

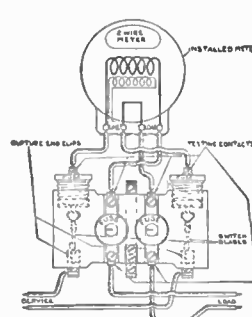
Noark Standardized Universal Service Switch Dimensions, Weights and Connections



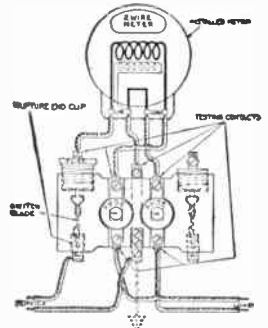
Catalogue No. 973333
Wired for 3-wire Main, Switch and Fuse in Ungrounded Legs; One 3-wire Branch Fused in Ungrounded Legs



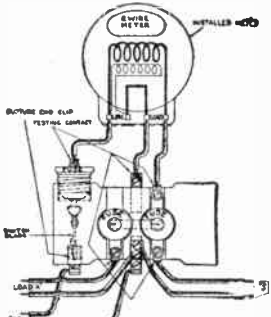
Catalogue No. 973333
Wired for 3-wire Main, Switch and Fuse in Ungrounded Legs; Two 2-wire Branches Fused in Ungrounded Leg



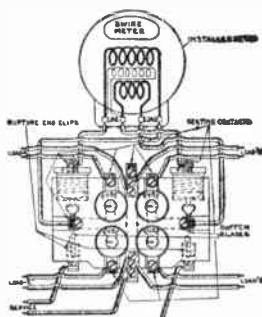
Catalogue No. 973333
Wired for 2-wire Main, Switch and Fuse Both Legs; One 2-wire Branch Fused Both Legs



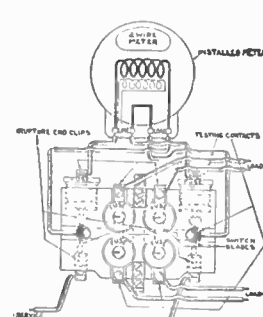
Catalogue No. 973333
Wired for 2-wire Main, Switch and Fuse Ungrounded Leg; One 2-wire Branch Fused Both Legs



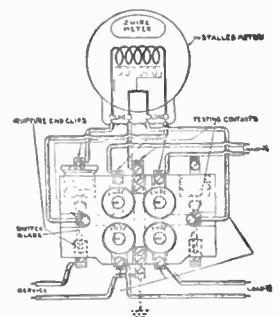
Catalogue No. 971123
Wired for 2-wire Main, Switch and Fuse in Ungrounded Leg; Two 2-wire Branches Fused in Ungrounded Legs



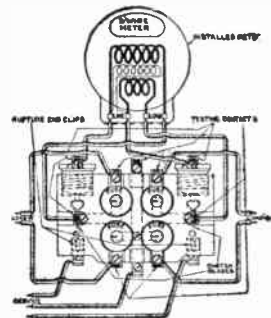
Catalogue No. 975333
Wired for 3-wire Main, Switch and Fuse in Ungrounded Legs; Four 2-wire Branches Fused in Ungrounded Leg



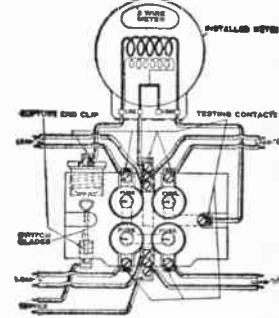
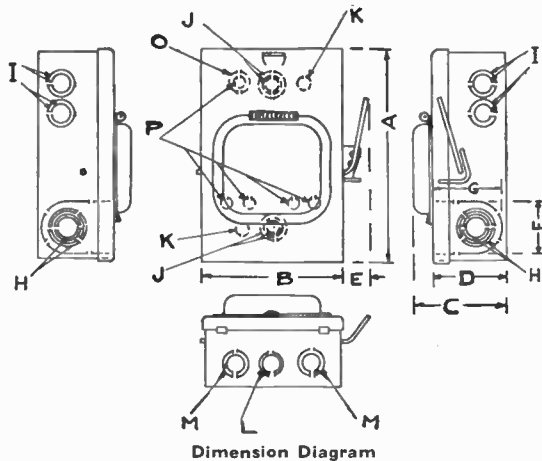
Catalogue No. 975333
Wired for 2-wire Main, Switch and Fuse in Both Legs; Two 2-wire Branches Fused in Both Legs



Catalogue No. 975333
Wired for 2-wire Main, Switch and Fuse Ungrounded Leg; Two 2-wire Branches Fused Both Legs



Catalogue No. 979333
Wired for 3-wire Main, Switch and Fuse Ungrounded Legs; Two 2-wire Branches Fused Both Legs



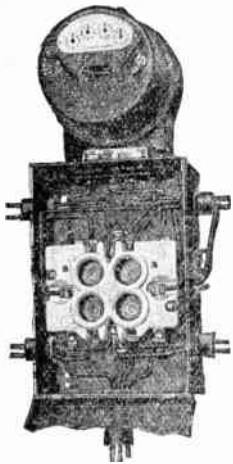
Catalogue No. 972123
Wired for 2-wire Main, Switch and Fuse Ungrounded Leg; Four 2-wire Branches Fused Ungrounded Leg

DIMENSIONS, INCHES														Wt. Shipping				
A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	Lbs. without Endwall	Lbs. End-wall	Lbs. without Endwall	Lbs. End-wall
10 1/8	6 3/8	4 3/8	3 3/8	1 3/8	2 1/2	3	1/2-3/4-1-1 1/4	1/2-3/4	1/2-3/4-1	1/2	3/4-1	1/2-1 5/8	1	1 1/2	7.1	3/5	8 3/5	

Noark Standardized Universal Service Switches

Accessible Branch Plug Fuses

For Single-phase or Direct Current Service



Noark Universal Service Switch for Services Requiring Not to Exceed 4 Branch-circuit Fuses

This switch which combines the service entrance and meter service switch with the branch-circuit distribution essentials, being of standardized construction, naturally uses all the standardized endwalls and accessories, such as adapters, troughs and bushings.

Provides everything that may be had with a Noark Standardized Meter Service Switch, namely:

1. Enclosure of all live parts for the protection of life and property.
2. Safety service switch externally-operated.
3. Service cutout.
4. Insurance against tampering and current theft.
5. Meter connection block.
6. Meter testing device.
7. Lock-off, for service suspension.
8. The distribution branch cut-out block.

9. Enclosure of all branch-circuit wire connections.
10. Enclosure with ready and safe accessibility of the branch-circuit fuses.

This switch is made only in the 30-ampere size and only for plug fuses. There are several arrangements providing the different main and branch-circuit combinations, including 2 or 3-wire branch-circuits. Some of the devices provide for up to 2 branch-circuits, single-fused or double-fused, others provide for up to 4 branch-circuits, single-fused.

The cabinet is of the standardized 30-ampere dimensions, and takes standardized 30-ampere endwalls. It is fitted with a flat main cover hinged to the cover-hinging endwall at the lower end of the cabinet. On the outside of the main cover is an auxiliary cover which encloses the branch or load-side fuses. The handle, operating the main service switch within the cabinet, is on the right-hand side. It may be locked on or off on the outside of the cabinet, by seal or padlock, through the medium of the On and Off stop projections secured to the side-wall of the cabinet.

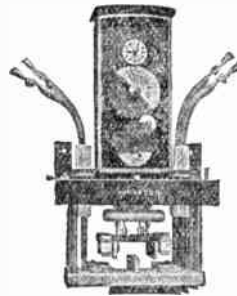
The porcelain base on which switch and fuse parts are mounted is supported on brackets projecting from each side-wall of the cabinet. The main switch is on the rear face of this base. The main fuses, connected on the service-side of the meter, are on the upper edge of the base. The branch or load-side fuses are on the front face of the base. When the main cover of the cabinet is closed, these outwardly facing branch fuses project through the opening in the main cover, which fits closely around the fuse receptacles so as to make it impossible to fish through into the cabinet from the outside when the main cover is sealed. Consequently, though the fuses connected to the service-side of the meter are sealed and inaccessible to anybody except authorized persons, the load-side branch-circuit fuses are at all times accessible to the consumer.

Cat. No.	SERVICE SWITCH			BRANCH CIRCUITS				PRICE, EACH		
	No. Poles	No. Blades	No. Fuses	No. Circuits	No. Fuses	No. Circuits	Std. Pag.	Switch without Endwall	Endwall Only	Switch Complete**
971123*	2	1	1	2	2	1	10	\$5.30	\$.40	\$5.70
972123	2	1	1	4	4	1	10	8.60	.40	9.00
973333	2	1	1	1	2	2	10	6.30	.40	6.70
973333	2	2	2	1	2	2	10	6.30	.40	6.70
973333	3	2	2	1	2	2	10	6.30	.40	6.70
973333	3	2	2	2	2	1	10	6.30	.40	6.70
975333	2	1	1	2	4	2	10	8.60	.40	9.00
975333	2	2	2	2	4	2	10	8.60	.40	9.00
975333	3	2	2	4	4	1	10	8.60	.40	9.00
979333	3	2	2	2	4	2	10	8.60	.40	9.00

*This switch may be used for either 2-branch (single-fuse), or 1-branch (single-fuse).

**When ordering complete with endwall, state type and catalogue number of endwall desired.

Anderson Type L Automatic Time Switches
Double or Triple-pole, High Tension, Oil Break



This type of switch is constructed for handling alternating current up to and including 6600 volts, and is furnished either two or three-pole. This apparatus is used in connection with small current transforming apparatus where the lamps can safely be connected to the secondary coil of transformer in its position of maximum voltage. Prices listed below are for complete apparatus, including oil chamber and sufficient oil to fill same to working level.

For Potentials Not Exceeding 3300 Volts

Cat. No.	Cap. Amps.	No. of Poles	High with Terminals	DIMENSIONS, INCHES			Ship. Wt., Lbs.	Price Each
				Width	Depth			
11039	25	2	20 1/2	11	7	83	\$120.00	
11040	50	2	20 1/2	11	7	83	130.00	
11043	25	3	21	14	7	102	144.00	
11044	50	3	21	14	7	102	160.00	

For Potentials Not Exceeding 6600 Volts

11080	25	2	20 1/2	11 1/2	8	94	\$200.00
11081	50	2	20 1/2	11 1/2	8	94	220.00
11084	25	3	22	19	8	129	240.00
11085	50	3	22	19	8	129	270.00

For the Sunday or holiday cut-out attachment installed in any of the above, add \$14.00 to price.

For the double daily operation attachment installed in any of the above, add \$14.00 to price.

For the time extension device installed in any of the above, add \$14.00 to price.

Type L Time Switches may have either the time extension or the double daily operation attachment, but cannot have both.

A 110-volt heating coil in switch tank only, is standard equipment in all the above. 220-volt coil supplied if so stated on order.

Anderson Type SL Automatic Time Switches
Double or Triple Pole, Oil Break
Electrically Wound

The Type SL is for controlling circuits up to 6600 volts. The switch is so designed that the current has a quick make and break and is opened and closed in a tank of oil.

Prices listed below are for complete apparatus, including oil chamber and sufficient oil to fill same to working level.

Specify on order full particulars of winding circuit.

For Potentials not Exceeding 3300 Volts

Cat. No.	Cap. Amp.	No. of Poles	High with Terminals	DIMENSIONS, INCHES			Ship. Wt., Lbs.	Price Each
				Wide	Deep			
11098	25	2	22	11	8	92	*\$250.00	
11099	50	2	22	11	8	92	*260.00	
11100	25	3	22 1/2	14	8 1/2	110	†274.00	
11101	50	3	22 1/2	14	8 1/2	110	†290.00	

For Potentials not Exceeding 6600 Volts

11102	25	2	22	11 1/2	9	102	†\$330.00
11103	50	2	22	11 1/2	9	102	†350.00
11104	25	3	23 1/2	19	9	137	†370.00
11105	50	3	23 1/2	19	9	137	†400.00

*One gallon of oil, included in list price, shipped with each switch.

†Two gallons of oil included in list price, shipped with each switch.

‡Three gallons of oil, included in list price, shipped with each switch.

The Sunday or holiday cut-out attachment, the double daily operation attachment and the time extension device cannot be put in any Type SL Electrically Wound Time switch.

A 110-volt heating coil in switch tank only, is standard equipment in all the above. 220-volt coil supplied if so stated on order.

For season changing device, add \$40.00 to price.

Wooden housings complete: For the 25 and 50-ampere, 2 and 3-pole 3300 volts, and the 2-pole 6600 volts add \$20.00 to list price; for the 3-pole 25 and 50-ampere 6600 volts add \$28.00 to list price.

Tork Clocks

For Turning Electric Lights On and Off Regularly



A Tork Clock is one of the simplest devices obtainable for automatically controlling the daily use of electric light with no other personal attention than a weekly winding. Simple to install. Simple to use.

Plain instructions for winding and setting are permanently and conveniently mounted in every Tork Clock.

Can be padlocked.

Once set and wound weekly, it turns the lights on and off at the same times every day. Switch may be turned on or off by hand without resetting the time motor. The time motor may be set on time without disturbing the times fixed for on and off operations.

10-day—On and Off Daily at Times Set

Cat. No.	Description	Price Each
15	15 Amperes, Single-pole, Indoor Type	\$20.00
215	15 " " " Outdoor "	25.00
130	30 " Double-pole Indoor "	25.00
230	30 " " " Outdoor "	30.00
166	15 " " Single-pole, Double Throw Indoor Type	25.00
266	15 Amperes, Single-pole, Double Throw Outdoor Type	30.00

Twice-a-day Attachment

TD Dial with Four Arms for Turning Lights On and Off Twice a Day with Tork Clock \$2.00

Standard package contains ten Tork Clocks, not assorted, and consists of five cartons of two Tork Clocks each.

Tork Clock Service

A Tork Clock has three principal parts: The case or housing, which once installed need never be disturbed.

The No. 10 time motor, the clock movement which is used in all Tork Clocks, which may be removed by loosening three screws without touching the electrical connections.

The switch unit, which may be removed by loosening one screw and removing the wires from the binding screws.

Time motors or switch units sent in for repair are systematically rebuilt, re-tested, any worn or damaged parts replaced, and re-timed as good as new. Time motors and switch units may be exchanged by mail or at any Tork Service Station for new units at the exchange price. In no event should the case be disturbed or shipped in.

Cat. No.	Parts Exchanged	Price Each
10	Time Motor Used in All Tork Clocks	\$4.00
SP	Switch Unit Used in Nos. 115 and 215 Clocks	6.00
DP	" " " " 130 " 230 "	8.00
SPDT	" " " " 166 " 266 "	8.00

Tork Service as a Guaranty

Motors are lubricated with a special oil which retains its lubricating properties at low temperatures. Any oil, however, will congeal in time, and Tork Time Motors should be exchanged every two years. Any parts which have given less than one year's service and which are claimed to be defective in any manner, may be exchanged at any Tork Service Station upon the payment of the exchange price as a deposit, which the Tork Service Station will agree to refund if the Service Department's report after examination of the part returned indicates such refund in order.

Tork Timers

No Winding—"On" and "Off" Whenever Set



Tork Timer Set for Automatic Operation



Tork Timer in Normal Position

Operates by setting the pointers and cocking the switch. The pointers are set at the hours at which the switch will automatically turn "On" and, later, "Off." The switch is cocked by turning it until the indicator shows red.

Pointers may be turned back to the normal position at any time if desired.

A Tork Timer turns "On" and "Off" (or "Off" only if desired) at any desired times within 12 hours after setting. Tork Timers do not tell time. The timer movement does not even run except while timing the automatic release of the switch, which may also be used constantly for any control.

A Tork Timer responds instantly at any time to any desire for any operation within these limits.

Simple to install and to operate.

10-ampere Tork Timers may be attached to an ordinary wall switch box or may be connected to conduits direct without additional junction box.

30-ampere Tork Timers may be connected to conduits direct without additional junction box, and are also adapted for making connections through back of case with installation on electric ranges and similar locations.

Tork Timers do not run the switch by the power of a clock movement and are guaranteed against defects in material and workmanship without time limit.

12-hour Tork Timers

Automatic within 12 Hours after Setting
Dial Markings Indicate 5-minute Intervals

Cat. No.	Switch	DIMENSIONS, IN					Std. Pkg.	Wt., Lbs. Each	Price Each
		Ht.	Width	Depth to Face of Dial	Car- ton	ton			
310	10 Amperes, Single-pole	9	4 1/4	3	2	10	4 3/4	\$18.00	
330	30 " Double-	9	4 1/4	3	2	10	5 1/4	25.00	

35-minute Tork Timers

Automatic within 35 Minutes after Setting
Dial Markings Indicate 15-second Intervals

Cat. No.	Switch	DIMENSIONS, IN					Std. Pkg.	Wt., Lbs. Each	Price Each
		Ht.	Width	Depth to Face of Dial	Car- ton	ton			
610	10 Amperes, Single-pole	9	4 1/4	3	2	10	4 3/4	\$18.00	
630	30 " Double-pole	9	4 1/4	3	2	10	5 1/4	25.00	

Sherman Soldering Lugs



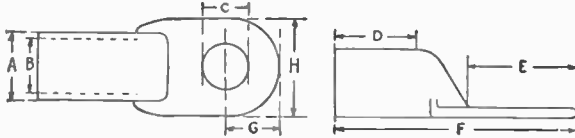
U. S. Pat. Reissue 14401

Lugs are seamless all around. The solder cannot leak out at the closed end. Also better conductivity is secured. Round end lugs in small sizes are recommended. These soldering lugs or drawn copper terminals are now approved and listed by the Underwriters' Laboratories. The requirements are very exacting, and the designs and dimensions have been very carefully worked out to secure rating as approved fittings.

Round End

Size Inches	Amp. Rubber Insul. Conductors N. E. C. Std.	Cap. B. and S. Gauges	Max. Stranded Wire	Approx. Weight Pounds per 1000	Size Inches	Amp. Rubber Insul. Conductors N. E. C. Std.	Cap. B. and S. Gauges	Max. Stranded Wire	Approx. Weight Pounds per 1000
3/16	25	10	4	1/2	125	0	29 1/4		
1/4	35	8	5 1/4	9/16	150	00	43 1/2		
5/16	50	6	9 1/4	5/8	175	000	51		
3/8	70	4	13 3/4	11/16	225	0000	65		
7/16	90	2	22 1/2	13/16	237	*250000	145		

Dimensions



Approximate Dimensions, Inches

A	B	C	D	E	F	G	H
3/16	.1368	3/32	3/8	13/32	15/16	7/32	1 1/4
1/4	.186	3/16	3/8	1 1/2	1 1/2	3/4	3/8
5/16	.232	3/16	3/8	1 3/4	1 3/4	3/4	3/8
3/8	.285	3/8	1/2	1 3/4	1 3/4	3/4	3/8
7/16	.336	3/8	1/2	1 3/4	1 3/4	3/4	3/8
9/16	.398	1/2	5/8	2	2 1/8	1 1/2	3/8
5/8	.461	1/2	5/8	2	2 1/8	1 1/2	3/8
11/16	.511	1/2	5/8	2	2 1/8	1 1/2	3/8
3/4	.559	1/2	5/8	2	2 1/8	1 1/2	3/8
7/8	.651	1/2	5/8	2	2 1/8	1 1/2	3/8

Square ends furnished in above sizes, if required. Bottom not seamless. Over all dimensions the same.

Square End

Size Inches	Amp. Rubber Insul. Conductors N. E. C. Std.	Cap. B. and S. Gauges	Max. Stranded Wire	Approx. Weight Pounds per 1000
3/16	325		*400000	190
1/4	362		*450000	275
5/16	400		*500000	315
3/8	450		*600000	375
7/16	550		*800000	640
9/16	650		*1000000	760
5/8	850		*1500000	1390
11/16	1050		*2000000	2450

Approximate Dimensions, Inches

A	B	C	D	E	F	G	H
3/16	.776	1/2	1 3/8	1 5/8	3 3/8	3/4	1 13/32
1/4	.82	1/2	1 1/4	1 3/4	3 7/16	3/4	1 11/16
5/16	.88	1/2	1 1/2	2 1/8	4 1/16	3/4	1 9/16
3/8	.943	1/2	1 5/8	2 1/4	4 7/16	1	1 11/16
7/16	1.084	1/2	2	2 1/2	5	1 1/8	1 15/16
9/16	1.21	1/2	2	2 1/2	5 3/8	1 3/16	2 1/8
5/8	1.46	1 1/2	2 3/8	3 1/8	6 5/8	1 7/16	2 5/8
11/16	1.66	1 3/2	2 5/8	3 5/8	7 1/2	1 5/8	3 1/16

*Circular mils.

Sizes 1/4 to 3/16 inch furnished round end, unless otherwise specified. Sizes 5/16 inch and larger furnished square end unless otherwise specified.

STUD HOLE.—Size or position of stud hole may be changed or lugs furnished without stud holes at no additional charge. Any variation should be carefully specified.

TINNING.—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

MARKING.—For identification, as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

To Select Terminals According to the

N. E. C. Ratings Governing Knife Switches, Use the Following Equivalents

Cap. Amp.	Size Lug In.	Cap. Amp.	Size Lug In.	Cap. Amp.	Size Lug In.	Cap. Amp.	Size Lug In.
30	1/4	100	1/2	400	1 1/2	800	1 3/4
60	3/8	200	5/8	600	1 5/8	1000	2 1/8

Sherman Soldering Lugs

Two-hole

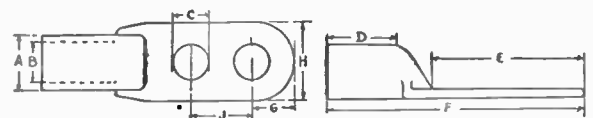


Two-hole lugs are made from seamless tubing and furnished square end, unless otherwise specified.

Flat portion (E) may be made to order either longer or shorter but tubular portion (D) cannot be changed.

Size Inches	Amp. Rubber Insul. Conductors N. E. C. Std.	Cap. B. and S. Gauges	Max. Stranded Wire	Approx. Weight Pounds per 1000
3/16	25	10	4	5 1/4
1/4	35	8	5 1/4	7 1/4
5/16	50	6	6	13 1/4
3/8	70	4	4	19 1/2
7/16	90	2	2	32
1/2	125	0	0	44
9/16	150	00	00	67
5/8	175	000	000	90
11/16	225	0000	0000	93
13/16	237	250000	e. m.	218
15/16	325	400000	"	255
1 1/16	400	500000	"	405
1 1/8	450	600000	"	475
1 1/4	550	800000	"	835
1 1/2	650	1000000	"	1030
1 3/4	850	1500000	"	1810
2 1/16	1050	2000000	"	3040

Dimensions



APPROXIMATE DIMENSIONS, INCHES

A	B	C	D	E	F	G	H	J
3/16	.1368	5/32	3/8	3/4	1 1/2	5/32	1 1/4	3/8
1/4	.186	7/32	3/8	7/8	1 3/2	3/16	1 1/4	1/2
5/16	.232	1/2	3/8	1 1/16	1 3/2	1/4	1 1/4	1/2
3/8	.285	1/4	7/16	1 1/4	1 3/2	5/16	1 1/4	5/8
7/16	.336	3/8	1/2	1 3/8	2 1/8	5/16	1 1/4	1 1/8
9/16	.398	1/2	5/8	1 1/16	2 5/8	3/8	1 1/4	1 1/8
5/8	.461	1/2	5/8	2	3 1/8	7/16	1 1/4	1
11/16	.511	1/2	5/8	2	3 3/8	7/16	1 1/4	1
3/4	.559	1/2	5/8	2 1/8	3 3/4	7/16	1 1/4	1
7/8	.651	1/2	5/8	2 5/8	4	7/16	1 1/4	1 1/4
1 1/16	.776	1 1/2	1 3/8	3 1/16	4 1/2	1 1/16	1 1/4	1 1/4
1 1/8	.88	1 1/2	1 1/2	3 1/4	5 1/16	1 1/16	1 1/4	1 1/2
1 1/4	.943	1 3/2	1 5/8	3 3/8	5 7/16	1 1/16	1 1/4	1 1/2
1 1/2	1.084	2	2	3 5/8	6 1/16	1 1/16	1 1/4	1 1/2
1 3/4	1.21	2 1/2	2	4 3/8	7 1/4	1 1/8	1 1/4	2
2 1/16	1.46	1 3/2	2 3/8	5 1/8	8 5/8	1 3/8	1 1/4	2 1/4
	1.66	1 3/2	2 5/8	5 3/8	9 1/4	1 1/2	1 1/4	2 1/4

TINNING.—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

MARKING.—For identification, as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

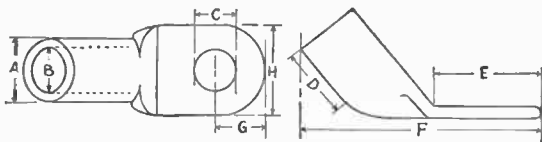
Sherman Soldering Lugs

45-degree



Size Inches	Amp. Cap. Rubber Insl. Conductors N. E. C. Std.	Max. Stranded Wire B. and S. Gauge	Approx. Weight Pounds per 1000
3/16	25	10	4
1/4	35	8	5 1/4
5/16	50	6	9 1/4
3/8	70	4	13 3/4
7/16	90	2	22 1/2
1/2	125	0	29 1/4
9/16	150	00	43 1/2
5/8	175	000	51
11/16	225	0000	65
13/16	237	250000 c. m.	145
15/16	325	400000	190
1	362	450000	275
1 1/16	400	500000	315
1 1/8	450	600000	375
1 1/4	550	800000	640
1 1/2	650	1000000	760
1 3/4	850	1500000	1390
2 1/16	1050	2000000	2450

Dimensions



APPROXIMATE DIMENSIONS, INCHES

A	B	C	D	E	F	G	H
3/16	.1368	9/32	3/8	1 1/2	1 1/8	7/2	1 1/4
1/4	.186	3/8	3/8	1 1/2	1 1/8	3 1/2	1 3/8
5/16	.232	3/8	3/8	1 1/2	1 1/8	1 1/4	1 3/8
3/8	.285	3/2	7/16	1 1/2	1 1/8	3/2	1 3/8
7/16	.336	3/2	1 1/2	3/4	1 1/8	1 1/2	1 3/8
1/2	.398	1 1/2	5/8	1 1/2	1 3/4	3/2	1 3/8
9/16	.461	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
5/8	.511	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
11/16	.559	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
13/16	.651	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
15/16	.776	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
1	.82	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
1 1/16	.88	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
1 1/8	.943	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
1 1/4	1.084	2	2	2 1/2	4 3/8	1	1 1/2
1 1/2	1.21	2	2	2 1/2	4 3/8	1	1 1/2
1 3/4	1.46	1 3/2	2 3/8	3 3/8	6 15/16	1 7/16	2 5/8
2 1/16	1.66	1 3/2	2 5/8	3 5/8	7 15/16	1 5/8	3 1/8

STUD HOLE.—Size or position of stud hole may be changed or lugs furnished without stud holes at no additional charge. Any variation should be carefully specified.

TINNING.—Lugs tinned inside of tubular portion will be furnished at extra charge, depending on size.

MARKING.—For identification as approved fittings, lugs will be marked with letter S and Underwriters' rating in amperes, placed crosswise of the flat portion at wire end.

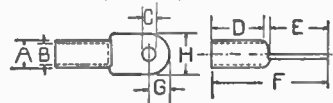
Sherman Drawn Copper Connectors



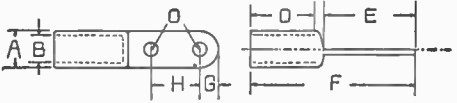
The connector consists of two seamless terminals, so constructed that when bolted together both halves are in perfect alignment, and no part projects beyond the circumference of the tubular portion, so that a piece of flexible conduit or fibre sleeve may be slipped over the entire connection for insulation.

While two pieces are required to make one complete connector, they are described and listed by single pieces. Connectors are not shipped assembled, as they cannot be applied in that way.

On account of its small size, only the 1/4-inch connector is made wider than tubular part.



Size Wire (A) In.	B & S Gauge	APPROXIMATE DIMENSIONS, INCHES						Approx. Wt., Lbs. per 1000	
		B	C	D	E	F	G	H	
1/4	8	.186	1 1/4	3/8	1 1/2	1 3/2	3/2	3/8	9



These sizes have two stud holes. Two bolts and nuts are required for each complete connector, consisting of two pieces.

Size (A) In.	Wire B & S Gauge	APPROXIMATE DIMENSIONS, INCHES						Approx. Wt., Lbs. per 1000	
		B	C	D	E	F	G	H	
3/8	4	.285	1 1/4	9/16	1 1/2	1 5/8	7/2	3/8	25
1/2	0	.398	1 1/4	3/4	1 1/4	2 3/16	3/2	5/8	52
5/8	000	.511	1 1/4	13/16	1 1/4	2 1/16	3/8	7/8	85
13/16	250000 CM	.651	1 1/4	1 1/2	2 1/16	3 5/8	1/2	1 1/8	223
15/16	400000 CM	.776	1 1/2	1 1/2	2 5/16	4	1/2	1 1/4	250
1	450000 CM	.82	1 1/2	1 1/2	2 7/16	4 3/16	1/2	1 1/4	310
1 1/16	500000 CM	.88	1 3/2	1 3/4	2 9/16	4 1/2	5/8	1 1/4	325
1 1/8	800000 CM	1.084	1 7/8	2	2 11/16	5	5/8	1 3/8	350
1 1/4	1500000 CM	1.46	1 3/2	2 3/8	3 3/8	6 3/8	3/4	1 3/4	625
1 1/2	2000000 CM	1.66	1 3/2	2 5/8	3 5/8	6 3/4	3/4	1 3/4	1350

Bolts and nuts will not be furnished unless specified. Can be furnished plain or coppered.

Nuts and Bolts

Size Connector Inches	Size Bolts Inches	No. in Standard Package	Approx. Wt., Lbs. per 1000
1/4, 3/8, 1/2	5/16 x 1/4	500	7
5/8, 13/16	1/4 x 3/8	200	17
15/16	5/16 x 5/8	100	....
1	5/8 x 3/4	100	....
1 1/16	3/8 x 3/4	50	....
1 1/8	1/2 x 1 1/8	100	....
1 1/4	1 1/2 x 1 1/8	100	....
1 1/2	5/8 x 1 1/8	50	....

Sherman Fixture Connectors



Made of heavy brass. Has two heavy non-removable head-end screws and a brass sleeve. The Sherman Fixture Connector cannot rust and assures high conductivity.

Will connect all wires up to No. 12 with a maximum of two No. 12 solid or three No. 14 in either end.

Packed in small containers, insuring neat shelf stock and safe deliveries.

Carton, 100 each. Standard package, 500. Standard package weight, 12 pounds.

Price.....per 100 \$10.00

Sherman Set Screw Connectors

Number Plainly Stamped on Each Connector. A great help in re-ordering and saves much time and possible mistakes in sorting small mixed stocks.

Screws Heavily Galvanized, Hence Rust-proof. This prevents rusting in dealer's stock, and enables consumer to use connectors over again when removed from temporary work.

Neatly Boxed and Plainly Labeled. Insuring neat shelf stock.

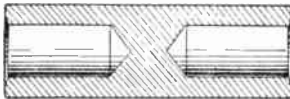
These connectors are made from solid brass rod; all dimensions and proportions are carefully held to accurate size.

Four-screw connectors are made also with hole clear through, and two-screw connectors can be furnished in divided wall style.

For Stranded Cable
With Divided Wall



No. 74 Connector



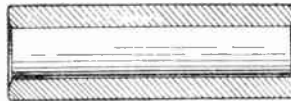
Showing Interior Construction

Cat. No.	Size Stranded Cable	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
60	12, 14	2	.110	1/4	1 1/4	200	4
61	10	2	.140	5/16	1 1/4	200	5 1/2
62	10	4	.140	5/16	1 1/2	200	7
63	8	2	.160	5/16	1 1/4	200	5 1/2
64	8	4	.160	5/16	1 1/2	200	6 1/2
65	6, 7	2	.209	3/8	1 1/4	150	5 1/2
66	6, 7	4	.209	3/8	1 1/2	150	7
67	4, 5	2	.265	7/16	1 1/2	100	6
68	4, 5	4	.265	7/16	1 7/8	100	7
69	2, 3	2	.312	1/2	1 1/2	100	6 1/2
70	2, 3	4	.312	1/2	1 7/8	100	9
71	0, 1	4	.390	5/8	2 1/4	50	5 1/2
72	00	4	.437	3/4	2 1/2	50	7 1/2
73	000	4	.500	3/4	2 7/8	25	6 1/2
74	0000	4	.562	7/8	2 7/8	25	9 1/4

For Solid and Stranded Cable
Wire Holes Extending Clear Through



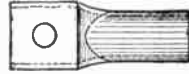
No. 5 Connector



Showing Construction

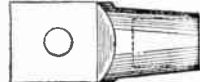
Cat. No.	Max. Solid	Wire Str.	Screws	Diam. Hole In.	Outside Diam. In.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.
0	12	....	2	.106	5/16	1 1/2	100	3 3/4
1	8	....	2	.147	1/2	1 1/2	100	3 1/2
2	6	8	2	.185	3/8	1 3/4	100	5
3	4	5	2	.228	7/16	1 7/8	100	7
4	2	3	2	3/32	1/2	1 7/8	100	8 1/2
5	0	2	2	11/32	9/16	1 7/8	50	5
6	00	1	2	8/32	5/8	1 7/8	50	6
7	4	5	4	.228	7/16	1 7/8	100	7 1/2
8	2	3	4	9/32	1/2	1 7/8	100	9
9	0	2	4	11/32	9/16	1 7/8	50	5 1/2
10	00	1	4	3/8	5/8	1 7/8	50	6 3/4
11	000	00	4	7/16	11/16	2	50	7 1/2
12	0000	000	4	1/2	3/4	2	50	8 1/2
13	....	0000	4	9/16	7/8	2 3/8	25	6 3/4

FA Type F Drawn Copper Lugs



Cat. No.	Cap. Amp.	Size of Wire Stranded	Size of Wire Hole Inches	Size of Bolt Hole Inches	Price Each
34	30	No. 6	1/4	1 1/4	\$.06
64	60	" 2	5/16	3/2	.14
104	100	" 2/0	7/16	1 1/4	.32
204	200	250000 C.M.	5/8	5/8	.54

FA Type A Cast Copper Lugs



Straight Lugs

Cat. No.	Cap. Amp.	Size of Wire Stranded	Size of Wire Hole Inches	Size of Bolt Hole Inches	Price Each
305	300	400000 C.M.	3/4	3 3/8	\$1.00
405	400	500000 C.M.	7/8	2 5/8	1.72
505	500	700000 C.M.	1	6 4/16	2.05
605	600	1000000 C.M.	1 1/4	1 7/8	2.38
805	800	1500000 C.M.	1 1/2	2 3/2	4.72
1005	1000	1750000 C.M.	1 5/8	3 1/2	5.40
1205	1200	2000000 C.M.	1 3/4	3 1/2	6.76

90° Lugs

Cat. No.	Cap. Amp.	Size of Wire Stranded	Size of Wire Hole Inches	Size of Bolt Hole Inches	Price Each
30590	300	400000 C.M.	3/4	3 3/8	\$2.00
40590	400	500000 C.M.	7/8	2 5/8	2.80
50590	500	700000 C.M.	1	6 4/16	3.30
60590	600	1000000 C.M.	1 1/4	1 7/8	3.88
80590	800	1500000 C.M.	1 1/2	2 3/2	7.66
100590	1000	1750000 C.M.	1 5/8	3 1/2	8.78
120590	1200	2000000 C.M.	1 3/4	3 1/2	11.26

FA Type B Drawn and Cast Copper Lugs



Straight Lugs

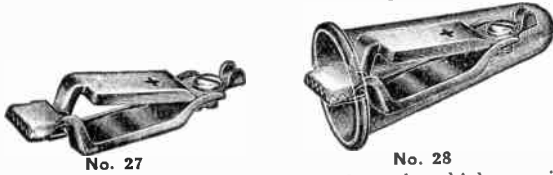
Cat. No.	Cap. Amp.	Size of Wire Stranded	Size of Wire Hole Inches	Size of Stud Hole Inches	Price Each
33 1/2	30	No. 6	1/4	9/32	\$.14
63 1/2	60	" 2	5/16	1 1/2	.18
103 1/2	100	" 2/0	7/16	3 3/2	.40
203 1/2	200	250000 C.M.	5/8	3 3/2	.68
303 1/2	300	400000 C.M.	13/16	11 1/16	1.20
403 1/2	400	500000 C.M.	7/8	13 1/16	2.02
503 1/2	500	700000 C.M.	1 1/16	15 1/16	2.70
603 1/2	600	1000000 C.M.	1 1/4	15 5/16	3.00
803 1/2	800	1500000 C.M.	1 1/2	11 1/16	5.92
1003 1/2	1000	1750000 C.M.	1 5/8	1 3/16	6.76
1203 1/2	1200	2000000 C.M.	1 3/4	1 5/8	10.12

90° Lugs

Cat. No.	Cap. Amp.	Size of Wire Stranded	Size of Wire Hole Inches	Size of Stud Hole Inches	Price Each
3390 1/2	30	No. 6	1/4	9/32	\$.18
6390 1/2	60	" 2	5/16	1 1/2	.30
10390 1/2	100	" 2/0	7/16	1 3/2	.58
20390 1/2	200	250000 C.M.	5/8	1 3/2	1.02
30390 1/2	300	400000 C.M.	13/16	11 1/16	1.92
40390 1/2	400	500000 C.M.	7/8	13 1/16	3.48
50390 1/2	500	700000 C.M.	1 1/16	15 1/16	4.06
60390 1/2	600	1000000 C.M.	1 1/4	15 5/16	4.84
80390 1/2	800	1500000 C.M.	1 1/2	1 1/16	9.56
100390 1/2	1000	1750000 C.M.	1 5/8	1 3/16	10.98
120390 1/2	1200	2000000 C.M.	1 3/4	1 5/8	16.88

NOTE.—On 30 to 200 ampere, drawn copper lugs will be regularly furnished, unless otherwise specified. Over 200 ampere, cast copper lugs will be supplied.

Universal Test Clips



This clip saves time in electrical work which requires quick temporary connections. Each clip can be used over and over again. For use with test sets, voltmeters, on shop testing devices, by telephone linemen, as a helix clip, by meter departments, by railway signal inspectors, in laboratories, in radio work, etc.

Copper Test Clips and Insulators

10 Amperes

Price, No. 27, Clip Only, 10 Amperes; Screw Connection; Spread of Jaws, 9/16 Inch. each \$.12 1/2
 Price, No. 28, Clip with Insulator, 10 Amperes, Screw Connection; Spread of Jaws, 9/16 Inch. each .20 1/2
 Price, No. 29, Insulator Only, for 10-ampere Size. " .08

25 Amperes

Price, No. 24, Clip Only, 25 Amperes; Screw Connection; Spread of Jaws, 1 inch each \$.17
 Price, No. 25, Clip with Insulator, 25 Amperes, Screw Connection; Spread of Jaws, 1 Inch each .32
 Price, No. 26, Insulator Only, for 25-ampere Size. " .15

50 Amperes

Price, No. 21, Clip Only, 50 Amperes; Screw Connection; Spread of Jaws, 1 1/2 Inches each \$.35
 Price, No. 22, Clip with Insulator, 50 Amperes, Screw Connection; Spread of Jaws, 1 1/2 Inches. each .60
 Price, No. 23, Insulator Only, for 50-ampere Size. " .25

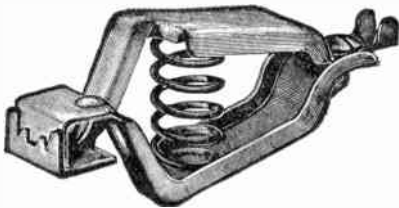
100 Amperes

Price, No. 11, Clip Only, 100 Amperes; Lug Connection; Spread of Jaws, 1 Inch. each \$.75
 Price, No. 12, Clip with Insulator, 100 Amperes; Lug Connection; Spread of Jaws, 1 Inch. each 1.03
 Price, No. 13, Insulator Only, for 100-ampere Size. " .28

200 Amperes

Price, No. 33, Clip Only, 200 Amperes; Lug Connection; Spread of Jaws, 2 Inches \$1.35
 Price, No. 34, Clip with Insulator, 200 Amperes; Lug Connection; Spread of Jaws, 2 Inches. each 2.15
 Price, No. 35, Insulator Only for 200-ampere Size " .80
 Price, No. 45, Pee Wee Clip Only, Nickel-plated, Screw Connection; Spread of Jaws, 1/2 Inch. each .05
 Price, No. 46, Pee Wee Clip With Insulator; Spread of Jaws, 1/2 Inch. each .09
 Price, No. 51, Telephone Test Clip with Replaceable Needle. . each .12 1/2
 Price, Extra Needle Springs only per 100 1.50

Universal Battery Clips



Battery clips are for use as a quick and ready means of connecting portable storage batteries for charging. They are lead coated to resist acid fumes.

No.	Description	Price Each
48B	Lead Plated B Battery Clip, Spread of Jaw 1/2-inch.	\$.07 1/2
24A	15-ampere, Spread of Jaws, 1-inch for Radio Batteries. . . . .	.12 1/2
21A	Clip only, 35-ampere, Spread of Jaws 1 1/2 Inches, for Automobile Batteries. . . . .	.20
11A	Clip only, 100-ampere, Spread of Jaws 1-inch, for Discharge Tests. . . . .	.65

No. 48B Universal Battery and Radio Clips



For use on B storage batteries. Made of steel, lead-plated. Lead coating protects the metal against acid. Has teeth on one jaw and notch on other.

Polarity indications; + for positive, plain for negative.

Cat. No.	Size Spring	Jaw Spread Inches	Length Inches	Price Each
48B	14-pound	3/8	1 3/4	\$1.15

No. 45 Pee Wee Universal Battery Clips



No. 45 is made of steel, nickel-plated finish.

Teeth on both jaws and 11-pound spring assures good contact.

Jaw spread, 3/8 inch.

For use on dry batteries and other points where lack of space is a factor.

Price, No. 45. each \$.10

No. 3 Assortment Sherman Wire Fittings

For Radio



This assortment includes only those articles which are in common use.

Packed in substantial and handsome boxes, arranged for counter display.

Consists of the following: 300 No. 19, 150 No. 20, 175 No. 22, 100 No. 23, 150 No. 34, 150 No. 35 and 50 No. 3 terminals; 50 No.

60 cord tips; 40 battery connectors; and 20 Sherman fixture connectors.

Size of box, 5 3/8 x 9 1/2 x 1 1/4 inches.

Weight, 2 1/4 pounds.

Price, No. 3 Complete. each \$12.00

No. 2527 Frankel Extension to Clips

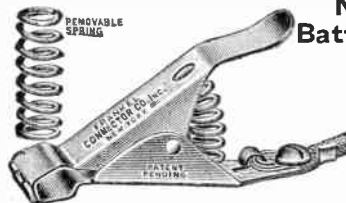
Brass, nickel-plated.

Extension attached to clip, to reach obstructed and crowded corners that are out of reach of the clip.



Price, No. 2527, Extension only. each \$.40

No. 2544 Frankel Battery Charging Clips



Heavy steel with rivet pin. Lead plated. Fits any terminal. Length, 4 inches.

Price, No. 2544. . . each \$.50
 " Springs only.05

No. 2535 Frankel Electric Testing Clips



Made of brass, nickel plated.
Flattened back with bolt and nuts to attach connector.

Price, No. 2535.....each \$.60

No. 2533 Frankel Electric Testing Clips

Made of brass, nickel-plated.
Tapped for set screw.
Drilled to slip 1/8 inch.



Price, No. 2533.....each \$.48

No. 2530 Frankel Electric Testing Clips



Brass, nickel-plated.
Especially adapted for fine wire or charging light batteries.

Price, No. 2530.....each \$.20

No. 2534 Frankel Electric Testing Clips

Brass, nickel-plated.
Drilled with 1/8-inch hole.
Has screw back.



Price, No. 2534.....each \$.48

No. 2539 Frankel Electric Testing Clips



Made of brass, nickel-plated.
This is a radio clip, especially designed for finest work.

Price, No. 2539.....each \$.14

No. 2542 Frankel Electric Testing Clips

Nickel silver.

The pin pierces the insulation and makes a positive connection. Use teeth for fine wires. Has nut, bolt and washer making an extra strong connection.



Price, No. 2542.....each \$.65

No. 2523 Frankel Electric Testing Clips

Brass, Nickel-plated

It has no pin to pierce the insulation. Used for charging light batteries, etc.



Price, No. 2523.....each \$.40

Frankel Electric Testing Clips

The pin pierces the insulation and makes a positive test connection. Use teeth for fine wires.

For electrical tests or temporary connections, requiring no skinning, no taping of wires.



Price, No. 2521, Brass, Nickel-plated.....each \$.40
" " 2538, Nickel Silver....." .50

Small Rectangular Connectors



1 7/8 x 1 1/16 x 7/16 Inches

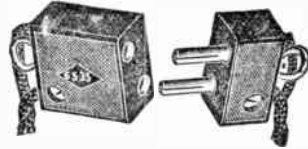
Convenient for making and breaking a circuit rapidly and frequently. Can be used on any battery circuit.

Price, No. 6536, Rectangular Connector Complete.....each \$.70

Medium Rectangular Connectors

1 7/8 x 1 1/4 x 3/4 Inches

For connecting portables, fans, small motors, etc. It is provided with two eye screws, one at each end, which can be used for anchoring the cord should it be deemed advisable to do so. Can also be looped together by this means, so that when separated the two parts can be located and connected without delay. Will make and break a circuit for any apparatus or lights using 15 amperes or less. Standard package, 200.



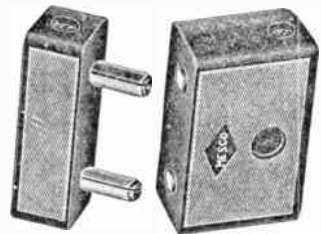
Price, No. 6535, Rectangular Connector Complete.....each \$.90

" " 6537, Plug Only....." .56

" " 6538, Receptacle Only....." .56

Large Rectangular Connectors

2 1/8 x 1 7/8 x 3/4 Inches



This connector can be used with safety for making and breaking 25 amperes on 125-volt circuits.

For experimental and demonstrative purposes.

For stage lighting, connecting motors and numerous other applications it will prove a reliable quick acting circuit controller.

A hole is provided in the larger part of the connector for tying the conducting cord, which eliminates all strain on the binding screws. The contact receptacles and plugs are separated by one inch of hard rubber composition, which makes a perfect insulation between the current carrying parts.

Price, No. 6540, Rectangular Connector Complete.....each \$1.20

" " 6539, Plug Only....." .75

" " 6543, Receptacle Only....." .75

Midget Separable Connectors—Small Size



The screw caps on each end are made of hard composition and will prevent shocks to the user, and also protect the connections of wires and binding posts, and prevent grounding or other troubles caused by exposed contacts and current-carrying parts.

This connector is used extensively on automobiles and launches, for connecting battery electric lamp circuits and other places where a quick connector is desired.

Price, No. 6501, Separable Connector Complete.....each \$.35

" " 6480, Plug Only....." .22

" " 6481, Receptacle Only....." .22

No. 3 Fahnestock Binding Posts



Will take No. 10 B. & S. Wire. Length over all, 1 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

Price, No. 3, Brass.....	each	\$.05
“ “ 3, Bronze.....	“	.06
“ “ 3, Nickeled Brass.....	“	.05
“ “ 3, Bronze.....	“	.06

No. 5 Fahnestock Binding Posts

Will take No. 10 B. & S. Wire. Has projecting lug to which can be soldered a wire. Length over all, not including soldering lug, 1 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

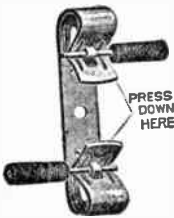
Price, No. 5, Brass.....	each	\$.07
“ “ 5, Bronze.....	“	.08
“ “ 5, Nickeled Brass.....	“	.07
“ “ 5, Bronze.....	“	.08



No. 9 Fahnestock Binding Posts

Will take No. 10 B. & S. Wire. Length over all, 2 1/8 inches. Width, 3/8 inch. Screw hole for No. 8 screw.

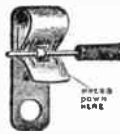
Price, No. 9, Brass.....	each	\$.08
“ “ 9, Bronze.....	“	.10
“ “ 9, Nickeled Brass.....	“	.08
“ “ 9, Bronze.....	“	.10



No. 24 Fahnestock Binding Posts

Will take No. 10 B. & S. Wire. Length over all, 1 7/8 inches. Width, 3/8 inch. Made with either 1/4 or 5/16-inch screw hole.

Price, No. 24, Brass.....	each	\$.08
“ “ 24, Bronze.....	“	.10
“ “ 24, Nickeled Brass.....	“	.08
“ “ 24, Bronze.....	“	.10



No. 30 Fahnestock Test Connectors

Made of special copper bronze spring metal. Two large clips riveted together. Both snap over the line. Made for different size wire. Used for test poles or for party line work. Length over all, 1 5/8 inches. Width, 5/8 inch. In ordering, state kind and size of wires to be connected.

Price, No. 30, Bronze.....	each	\$.15
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No. 31 Fahnestock Test Connectors

One large and one small clip riveted together. Large clip snaps over the line wire. The small clip does not snap over, and will take up to and including No. 10 B. & S. Used for attaching drop or jumper wires to line on junction poles or party lines. Length over all, 1 5/8 inches. Width, 5/8 inch. In ordering, state kind and size of wires to be connected.

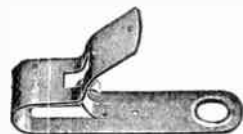
Price, No. 31, Bronze.....	each	\$.10
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No. 33 Fahnestock Test Connectors

Temporary connector for emergency work and test sets. Will snap over a No. 8 B. W. G. Wire.

Price, No. 33, Bronze.....	each	\$.15
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THIS END SNAPS OVER THE WIRE

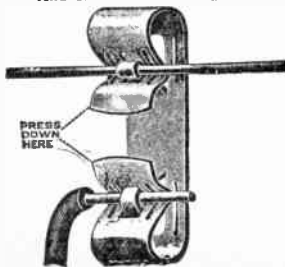
No. 34 Fahnestock Test Connectors

One end snaps over the line. Made in only one size. Snaps over a No. 12 B. W. G. Wire.

Other end does not snap over wire but will take any size wire up to No. 9 B. W. G.

Length over all, 2 3/4 inches. Width, 5/8 inch.

Price, No. 34, Bronze.....	each	\$.10
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Eby Binding Posts

Midget

Tapped base; size 5/16 x 3/8 inches. Slot will take No. 15 bus wire. 10 amperes.

Buddy

Solid stem 1/2 inch; size 3/8 x 1/2 inch. Slot will take No. 12 bus wire. 25 amperes.

Corporal

Tapped base; size 3/4 x 1/2 inch. Slot will take No. 12 bus wire. 25 amperes.



Corporal
Midget
Sergeant
Captain

Price, Midget.....	each	\$.08	Plain Brass	Tumble Nickel	Polished Nickel
“ Buddy.....	“	.10	.11	.12	
“ Corporal.....	“	.10	.11	.12	

Eby Metal Posts are scientifically right in design and attractive in appearance. The tops are non-removable and the patented sliding shoe operates parallel in the slot. This unique feature permits a fine wire to be firmly held without being damaged and the base being knurled, prevents turning.

Sergeant

Tapped base; size 1/2 x 5/8 inch. 50 amperes. The slot in this post is 1/8 inch, and it will readily accommodate a telephone cord terminal, also a No. 9 bare wire.



Sergeant
Buddy

Price, Sergeant.....	each	\$.14	Plain Brass	Tumble Nickel	Polished Nickel
			.15	.16	

Captain

Tapped base; size 5/8 x 1 inch. 100 amperes. The square slot in this post is 3/16 inch wide and will readily accommodate a No. 6 bare wire.



Ace

Price, Captain.....	each	\$.30	Plain Brass	Tumble Nickel	Polished Nickel
			.32	.35	

Ace

Size of Post Inches	Length of Stem Inches	Finish	Price Each
1/2 x 3/8	1/2	Black and Nickel	\$.10

Commander

Size of Post Inches	Length of Stem Inches	Finish	Price Each
5/8 x 3/4	3/4	Black	\$.20



Ensign
Commander

Ensign—Engraved

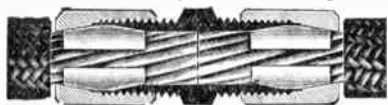
Size of Post Inches	Length of Stem Inches	Finish	Price Each
1/2 x 5/8	5/8	Black	\$.15
1/2 x 5/8	5/8	Black	\$.15



Ensign Engraved Posts

Dossert Solderless Connectors

Type A Two-way Connectors



Type A connector is for use on cable, stranded or solid wire rod and tubing. The connector should not

be used on a cable that is subjected to heavy strains. Sleeve is tapered at both ends and slotted lengthwise.

Type B Two-way Connectors

Is for use on stranded wire or cable only and is designed to make a joint which will withstand heavy tensile strains.



Type B connector is fitted with rings, one of which fits over bare cable, while the other is forced under first or second layer of strands, giving great tensile strength. Not made for conductors smaller than No. 0.

Type C Two-way Connectors



Type C two-way connector is furnished with round nuts and nipples which fit it for use on high-tension circuits. All connectors can be furnished

Type C in either Type A or B. When ordering state type desired, and give circular millage or gauge number of wire and state whether wire is solid or stranded. For example: 12 two-ways, Type C, Type A for 0000 stranded wire.

Reducers

Reducer is made in two-ways and three-ways. Illustration shows a Two-way Reducer. Used for connecting solid or stranded conductors of different diameters end to end. For cable it can be furnished either Type A or B.



When ordering reducers, state type desired, and give circular millage of cable or diameter of rod, or gauge number of wire and state whether wire is solid or stranded.

Elbows

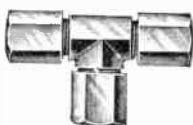


The elbow is used to connect conductors that are at right angles to each other. It consists of a right angle nipple, two compression nuts, and two tapered compression sleeves when Type A, or two sets of rings when Type B. The elbow can be

furnished for any two sizes of cable, wire, rod or combinations of same. When ordering, give same information as is required for Type A or B Two-way Connectors.

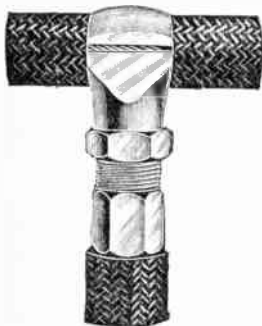
Three-way Connectors

The three-way connector is used to make a three-way splice when the cables are at right angles to each other, that is, to splice two main wires or cables in a straight line and at the same time connect a branch wire to the main.



Type A can be furnished to connect any three sizes of wire, cable, rod or combinations and Type B to connect any three sizes of cable.

Cable Taps



The cable tap is used to connect a branch wire, rod or bleeder to a main wire, rod or bleeder. It does not splice the main, but simply clamps on to it. Equalizers are combinations of two cable taps. They can be furnished to equalize the load on any two sizes of cable.

Front Lugs

The front-connected lug is used for connect-



ing wires and cables to flat bus bars or front-connected switches, and for terminals on large machines used in the generation and conversion of current such as rotary converters, etc. The wire end of lug is equipped with a tapered nut and sleeve, by means of which the cable is held in the lug and electrical contact secured.

Dossert Solderless Connectors

Type Y Connectors



Type Y connector is used to make a three-way splice when the cables are not at right angles to each other. It consists of the Y-shaped three-way nipple, three compression nuts, and three tapered compression sleeves when Type A, or three sets of rings when Type B. Branches are double prongs and stem single prong. The special Y is used to make a three-way

splice when all cables are parallel to each other. It consists of a U-shaped three-way nipple, three compression nuts, and three tapered compression sleeves when Type A, or three sets of rings when Type B.

Back Lugs

Back-connected lug is used to connect wire or cable to bolt or stud. Wire end of lug is equipped with tapered nut and sleeve, by which cable is held in lug and electrical contact secured. The lug is connected to stud or bolt in the usual manner by means of contact nuts.



Angle Lugs



Angle lug is furnished with rectangular or round contact surface, the dimensions of which correspond respectively with those of front or back-connected lugs for the corresponding sizes of wire or cable. Can be furnished to connect cable at any angle, but standard angles are 45 and 90 degrees. Contact surface is furnished undrilled, but, if desired, bolt holes will be drilled without extra charge.

Swivel Lugs

Swivel lug is used to connect two wires or cables at any angle to the same stud or bolt. It consists of two lugs with round contact surfaces, and with the wire hole (nut) of each lug offset to one side, thus permitting a swiveling motion. They can be furnished to connect any two sizes of wire or cable to the same stud or bolt. When ordering, give circular millage of wire, and state whether wire is solid or stranded.



Insulating Covers



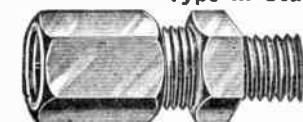
Insulating cover is furnished with Dossert Two-way Connectors in all sizes from 250000 C.M. to No. 14 inclusive. The sizes are No. 4 for all sizes of wires from No. 14 to 4, inclusive, solid and stranded, No. 1 for connector taking Nos. 1, 2 and 3 wires, No. 00 for No. 0 and 00 conductors, and the 250000 C.M. for 0000 and 250000 connectors.

Type F Stud Connectors

This stud connector consists of a nipple, which is equipped with a regular tapered nut and compression sleeve to take a certain size wire. The other end is tapped and threaded to receive the stud. In ordering give diameter and threads per inch of stud that connector is to be screwed onto, the gauge number of wire, and state whether wire is solid or stranded.



Type M Stud Connectors



This stud connector is used to connect wire or cable to flat strip or block. When ordering, give diameter and length of stud and number of threads per inch, circular millage of cable, and state whether wire is solid or stranded.

Type S Cable Anchors

Type S cable anchor is used to connect the end of cable to a strain insulator for the purpose of anchoring it, and can be used on stranded conductor only.



**Dossert Solderless Connectors
Type R Cable Anchors**



Type R cable anchor is used to anchor one cable and to take a branch wire off the anchored cable. It can be used on stranded conductor only. Consists of a Type B elbow and a clevis for the strain insulator, so arranged that the pull will be exerted on one cable only. It can be made for any two sizes

of stranded conductor. When ordering, give the circular millage of cable or gauge number of wire, and number of strands in conductor.

Type E Cable Anchors

Type E cable anchor is used to splice and anchor two cables that are at right angles to each other, and can be used on stranded conductor only. Consists of a Type B elbow and one eye for attaching the strain insulator by means of a guy rope. The eye is so arranged that both cables will be under tension when a strain is put on the guy rope. When ordering, give circular millage of cable or gauge number of wire, and number of wires in conductor.



Service Box Lugs

Used to connect wire to fuse. By the use of a sleeve with different size wire holes the same lug may be used for connecting all wires from a certain predetermined size down to the smallest size used. When ordering, give width of lug, diameter of binding screw, circular millage or gauge number of wire, and state whether wire is solid or stranded.



Service Box Plugs

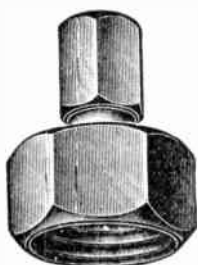
This Service box plug is furnished with a round shank for making connection to fuse. When ordering, give diameter and length of plug or shank, circular millage or gauge number of wire, and state whether wire is solid or stranded.



Grounding Caps

The grounding cap is used for connecting ground wires to the end of a pipe. One end of the cap is threaded to take a standard gas pipe, while the other end is fitted with a compression nut and tapered sleeve, by means of which wire is connected to cap.

When ordering, give size of gas pipe and circular millage or gauge number of wire, and state whether solid or stranded. Special sizes will be made according to specifications at reasonable prices.



How to Order Dossert Connectors

Use the proper name of connector desired.

In ordering Type A connectors for concentric laid cables, give circular millage of cable, or exact diameter of cable, or exact diameter of one wire, and number of wires. Type A for solid wires, rods and tubing; give gauge number of wire, or exact diameter of rod, wire or tube, or circular millage of rod. Type A, for rope laid and flexible cable; state if cable is rope laid or flexible and give circular millage or gauge number, or exact diameter, or send sample of cable. The diameter for given size of rope laid or flexible cable is considerably larger than that of the same size concentric laid cable.

For Type B it is necessary to know the number of wires in a cable in furnishing Type B connectors, for the reason that the diameter of the core over which the inner ring fits varies according to the number of wires in the cable.

Do not use the words T joints or tees. In ordering connectors of that character, state plainly three-way or cable taps.

In ordering the smaller sizes of connectors from No. 0000 down, please be sure and state whether for stranded or solid wire.

**Dossert Solderless Connectors
Types A, B and C**

Size of Conductor	PRICE, EACH			
	2 Ways and Elbows	Cable Taps	3 Ways and Y's	Lugs, Back Front, or Angle
14	\$.44	\$.66	\$.66	\$.33
12	.44	.66	.66	.33
10	.44	.66	.66	.33
8	.44	.66	.66	.33
6	.40	.60	.60	.30
4	.40	.60	.60	.30
3	.50	.75	.75	.38
2	.50	.75	.75	.38
1	.50	.75	.75	.38
0	.60	.90	.90	.45
00	.74	1.11	1.11	.56
000	.90	1.35	1.35	.68
0000	1.10	1.65	1.65	.83
250000	1.30	1.95	1.95	.98
300000	1.52	2.28	2.28	1.14
350000	1.74	2.61	2.61	1.31
400000	2.00	3.00	3.00	1.50
450000	2.30	3.45	3.45	1.73
500000	2.60	3.90	3.90	1.95
550000	2.90	4.35	4.35	2.18
600000	3.18	4.77	4.77	2.39
650000	3.44	5.16	5.16	2.58
700000	3.68	5.52	5.52	2.76
750000	3.92	5.88	5.88	2.94
800000	4.16	6.22	6.22	3.11
850000	4.40	6.60	6.60	3.30
900000	4.64	6.96	6.96	3.48
1000000	5.00	7.50	7.50	3.75
1100000	5.50	8.25	8.25	4.13
1200000	6.00	9.00	9.00	4.50
1250000	6.25	9.38	9.38	4.69
1300000	6.50	9.75	9.75	4.88
1400000	7.00	10.50	10.50	5.25
1500000	7.50	11.25	11.25	5.63
2000000	10.00	15.00	15.00	7.50

Type A connector furnished, unless otherwise specified. When ordering Type B give number of strands in cable. When made with round nipple and round nuts the connector styled Type C. Prices of Types A, B and C are the same.

Two-way Insulating Covers

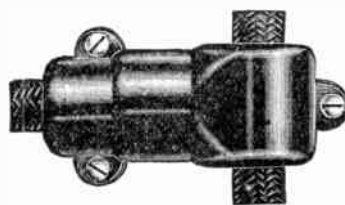
Cat. No.	For Use On	Price Each
4	All Sizes from Nos. 4 to 14 Incl.	\$.20
1	Connector Nos. 1, 2 and 3	.26
00	" " 0 and 00	.46
250000	" " 000 and 0000	.50

Cable Tap Insulating Covers

1	No. 1 Main and Branch	\$.60
00	" 00 " " "	.80
20000	" 000 " " "	1.00
250000	C. M. Main, No. 1 Branch	1.10
300000	" " " and Branch	1.30
500000	" " " No. 00 Branch	1.70
500000	" " " and Branch	2.00

Extra Sleeves

Dossert Connectors of a given size may be used on cable of a smaller size by changing the sleeves. For example: a connector for No. 4 stranded cable may be sleeved to take any smaller size down to No. 14, either solid or stranded, a different sleeve being used for each size of wire or cable.



Insulated Cable Tap Cover

Size of Nut	Size of Cable	Price per 100	Size of Nut	Size of Cable	Price per 100
4	4-14	\$8.00	000	000-12	\$16.00
1	1-12	9.00	0000	0000-000	20.00
0	0-12	12.00	0000	00-0	20.00
00	00-12	14.00	0000	1-12	20.00

Frankel Solderless Connectors

Frankel solderless connectors constitute a complete line of connectors for splicing either stranded or solid wire, without the use of solder.

As the compression nut is screwed on to the connector, the slotted jaw grips the cable firmly.

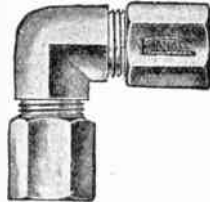
No. 2560 Two-way Connectors



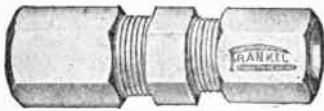
Two-way connectors are used to splice two conductors of the same size end to end.

No. 2562 Elbow Connectors

Elbow connectors are used to connect conductors at right angles, these conductors being of the same or any two different sizes.



No. 2586 Reducer Connectors

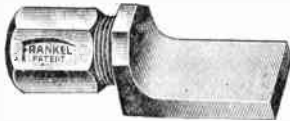


Reducers are used for connecting two conductors of different sizes of cable or solid wire. They are especially useful in connecting solid round buses on switch-

boards to feeder cables.

No. 2568 Front Connector Lugs

Front connector lugs are used for connecting solid wire or cable to generator terminals on large machines or to flat bus bars or front-connected switches. These connectors are made with rectangular contact surface undrilled, but will be furnished drilled when so specified, without addition to list price.



No. 2569 Back Connector Lugs

Back connector lugs are used for connecting solid wire or stranded cable to bolts or studs, and are made with round contact surface. Contact surfaces are undrilled, but where desired they will be furnished drilled when so specified, without addition to list price.



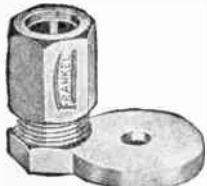
No. 2570 Angle Connector Lugs

Angle connector lugs are made with round or rectangular contact surface at an angle of 45 degrees to the connector. Contact surfaces are undrilled but where desired they will be furnished drilled without addition to list price.



No. 2572 Right Angle Connector Lugs

Right angle connector lugs are made with round or rectangular contact surface at an angle of 90 degrees to the connector. Contact surfaces are undrilled but where desired they will be furnished drilled when so specified, without addition to list price.



No. 2561 Three-way Connectors

Three-way connectors are used to make a main line splice that is on a straight line, and a branch splice off of the main. If the main does not have to be cut except to make this connection, use a cable tap as listed on another page. They can be furnished to connect any three sizes of solid wire or stranded cable.



Frankel Solderless Connectors

No. 2575 Cable Tap Connectors

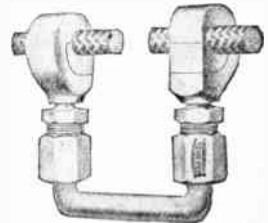
Cable taps are used to connect a branch of solid wire or stranded cable to main cable or wire. The tap consists of a hook for clamping on the main, and a connector attached to the shank of the hook for taking the branch. The hook is provided with an inner shoe, which can be adjusted by turning the shank or post of the tap.



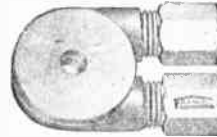
The cable is connected to the main by placing the hook over the wire or cable from which the insulation has been removed and then inserting the shoe and screwing up the post until contact is made. The branch is connected up by inserting the bared end of the wire or cable in the connector and tightening up the compression screw.

No. 2576 Equalizer Connectors

Equalizers are used to equalize the load on two power cables that run parallel or at right angles to each other. They are made by combining two cable taps and are installed in the same manner that a cable tap is connected to a main. Furnished with connecting rod straight or bent, as desired.



No. 2574 Swivel Lugs

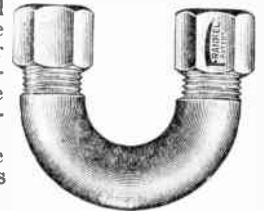


Swivel lugs are used to connect two parallel cables to the same stud or terminal. Also to provide a means of connecting two or more cables at any desired angle.

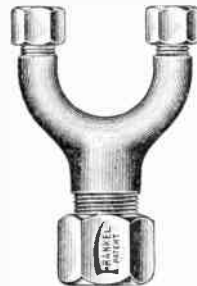
No. 2558 U Connectors

Frankel U connectors are used where it is desired to connect the ends of two parallel leads together such as resistance or heating element units. U connectors can be supplied with outlets of two different sizes if desired.

When ordering, specify distance between centers of outlets. Prices upon application.



No. 2559 Y Connectors



Frankel Y connector is used to make a three-way splice when the cables are not at right angles to each other.

This connector can be furnished to connect any three sizes of wire, cable or rod. When ordering, state sizes required and type of wire or cable.

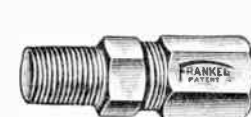
Prices of Y connector for different combinations on application.

No. 2563 Plug-stud Connectors

Plug-stud connectors are used for connecting stranded cable or solid wire to a threaded stud or rod.



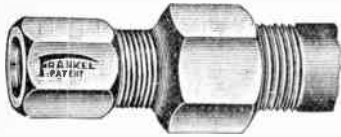
No. 2564 Stud Connectors



Stud connectors are used to connect wire or cable to block terminals by screwing the stud end of the connector into a threaded hole, or to strap terminals by inserting the stud end through a hole in the strap and clamping by a nut on the end of the stud.

Frankel Solderless Connectors

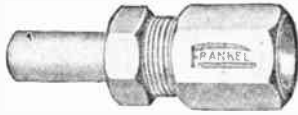
No. 2565 Grounding Tap Connectors



Used to connect wire or cable to a gas pipe for grounding a circuit. The pipe end of the connector is threaded.

No. 2566 Service Box Plugs

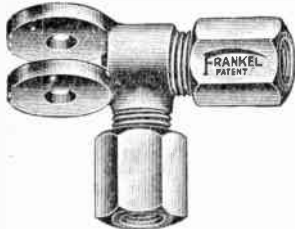
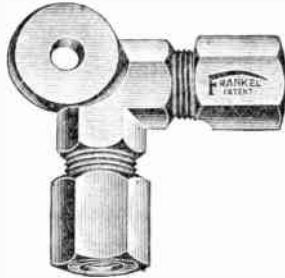
Used for making connections to fuses where a round stud is required on the connector for use in a screw clamp terminal.



No. 2587 Cable Anchors
Used to connect the end of a cable to a strain insulator for the purpose of anchoring it.

No. 2589 Cable Anchors

Used to splice and anchor 2 cables that are at right angles to each other. Consists of an elbow connector and one eye for attaching the strain insulator by means of a guy rope.



No. 2588 Cable Anchors

Used to anchor one cable and to take a branch wire off the anchored cable.

No. 2597 Collets

Frankel Collet consists of a threaded and split collar from which radiate 1, 2, 3, 5, 7, or 9 Frankel Fittings; particularly valuable for use with reactance coils.



Prices

For price of swivel lugs double price of lugs.

Equalizers are same price as 2-way connectors, plus special price of bar.

For price of special size cable tap, take two-thirds of price of larger end, plus one-third of price of small end.

Reducers are priced by taking one-half of each end, and adding.

3-ways are priced by taking one-third of each end, and adding.

Cable anchor style No. 2587 is same price as 2-way connector No. 2560.

Cable anchor style No. 2588 and No. 2589 are same price as 3-way connector No. 2561.

Collets are made in any combination of sizes. When ordering, specify size of center hole, size and kind of wire or cable, and number of outlets required. All collets are special.

Frankel Solderless Connectors

Specify type of conductor—solid, stranded, I.P.S. sizes, flexible, or special.

Size Solid or Stranded Wire	2-way Elbow Reducers		Back Lugs Front Lugs Angle Lugs	3-way Cable Taps	U Con-nectors	Y Con-nectors	Plug-studs and Studs
	Price Each	Price Each	Price Each	Price Each	Price Each	Price Each	Price Each
14-6	\$.35	\$.25	\$.55	\$.45	\$.60	\$.30	
5-3	.40	.30	.60	.50	.70	.35	
2	.45	.35	.70	.55	.80	.40	
1	.50	.40	.85	.65	.90	.45	
0	.60	.45	.90	.75	1.10	.50	
00	.75	.55	1.10	.95	1.30	.60	
000	.90	.65	1.35	1.15	1.60	.70	
0000	1.10	.80	1.65	1.40	2.00	.80	
100000 cm.	.60	.45	.90	....	....	....	....
150000 "	.90	.60	1.30	....	....	....	....
200000 "	1.05	.80	1.60	....	....	....	....
250000 "	1.30	.95	1.95	1.65	2.30	1.00	
300000 "	1.50	1.10	2.25	1.90	2.70	1.20	
350000 "	1.75	1.30	2.60	2.20	3.00	1.40	
400000 "	2.00	1.45	3.00	2.50	3.50	1.60	
450000 "	2.25	1.65	3.40	2.80	4.00	1.80	
500000 "	2.60	1.80	3.90	3.25	4.50	2.00	
550000 "	2.90	2.00	4.40	3.65	5.10	2.30	
600000 "	3.25	2.30	4.80	4.00	5.70	2.60	
650000 "	3.50	2.50	5.25	4.40	6.20	2.80	
700000 "	3.75	2.70	5.60	4.70	6.50	3.00	
750000 "	4.00	2.90	6.00	5.00	7.00	3.20	
800000 "	4.25	3.10	6.40	5.30	7.50	3.40	
850000 "	4.50	3.30	6.75	5.70	8.00	3.60	
900000 "	4.75	3.50	7.00	6.00	8.25	3.80	
950000 "	5.00	3.70	7.50	6.25	8.75	4.00	
1000000 "	5.25	3.90	7.80	6.60	9.25	4.20	
1100000 "	5.50	4.10	8.25	6.90	9.75	4.40	
1200000 "	5.75	4.30	9.00	7.20	10.00	4.60	
1300000 "	6.25	4.60	9.75	7.80	11.00	5.00	
1400000 "	7.00	4.90	10.50	8.75	12.50	5.60	
1500000 "	7.75	5.20	11.20	9.75	13.50	6.20	
1600000 "	8.50	5.60	12.00	10.60	15.00	6.40	
1700000 "	9.25	6.00	12.75	11.60	16.50	6.80	
1800000 "	10.00	6.50	13.50	12.50	17.50	7.20	
1900000 "	10.75	7.00	14.25	13.50	19.00	7.60	
2000000 "	11.50	7.50	15.00	14.50	20.25	8.00	
2500000 "	12.25	9.50	18.00	15.50	21.50	9.80	

Ground Taps

Size Solid or Stranded Wire	Size Std. Pipe In.	Price Each	Size Solid or Stranded Wire	Size Std. Pipe In.	Price Each
14-1	3/8	\$.40	0-0000	1/2	\$.75
14-1	1/2	.45	0-0000	3/4	.80
14-1	3/4	.60	0-0000	1	.85
14-1	1	.75	.....	...	...

Service Box Plugs

Size Solid or Stranded Wire	Size Plug Length	Size Plug INCHES Diam.	Price Each
14-4	5/8	3/8	\$.25
3-1	3/4	3/8	.30
0	3/4	3/8	.40
00	3/4	5/8	.50
000	1	1/2	.60
0000	1	1/2	.65

Service Box Lugs

Size Solid or Stranded Wire	Size Base Length	Size Base INCHES Width	Price Each
14-4	3/4	3/4	\$.25
3-1	3/4	3/4	.30
0	3/4	1	.40
00	7/8	1	.50
000	1	1 1/2	.60
0000	1	1 1/2	.70

List prices cover connectors with plain finish for solid wire, stranded or flexible cable. Connectors for special size rod, tube, flexible or rope laid cable, are priced on application.

To order, specify style number, B & S gauge number or circular millage of conductor, and state whether for solid or stranded cable.

Strain connectors are made by cutting grooves on inside of slotted jaw. Add 15 per cent for this type.

Extra charges for patterns and design in development work, of special connectors.

Dimensions on request.

Bryant Entrance Switches

**Double-pole for Two Plug Fuses
With Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1695	Top	5 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	180	\$.90
1981	Bottom	5 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	180	.90



Bryant Entrance Switches

**Double-pole for One Plug Fuse
with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
16095	Top	5 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	180	\$.90
19081	Bottom	5 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	180	.90

Bryant Entrance Switches

**Double-pole for Two Plug Fuses
With Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1692	Top	6 $\frac{1}{2}$ x3 $\frac{7}{8}$	1	100	244	\$1.00
1985	Bottom	6 $\frac{1}{2}$ x3 $\frac{7}{8}$	1	100	244	1.00



Bryant Entrance Switches

**Double-pole for One Plug Fuse
with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
16092	Top	6 $\frac{1}{2}$ x3 $\frac{7}{8}$	1	100	244	\$1.00
19085	Bottom	6 $\frac{1}{2}$ x3 $\frac{7}{8}$	1	100	244	1.00



Bryant Entrance Switches

**Triple-pole for Three Plug Fuses
With Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1693	Top	5 $\frac{1}{2}$ x5 $\frac{3}{8}$	1	50	156	\$1.40
1986	Bottom	5 $\frac{1}{2}$ x5 $\frac{3}{8}$	1	50	156	1.40



Bryant Entrance Switches

**Triple-pole for Two Plug Fuses
with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
16093	Top	5 $\frac{1}{2}$ x5 $\frac{3}{8}$	1	50	156	\$1.40
19086	Bottom	5 $\frac{1}{2}$ x5 $\frac{3}{8}$	1	50	156	1.40



Middle or neutral-wire fuse omitted.



Bryant Panel Switches

**Double-pole, Single-branch
For Two Plug Fuses in Branch
With Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1851	Top	6 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	228	\$1.50
1982	Bottom	6 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	228	1.50

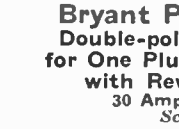


Bryant Panel Switches

**Double-pole, Single-Branch
for One Plug Fuse in Branch
with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
18051	Top	6 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	228	\$1.50
19082	Bottom	6 $\frac{1}{2}$ x3 $\frac{3}{8}$	1	100	228	1.50



Bryant Panel Switches

**Double-pole, Single-branch
For Two Plug Fuses in Branch
With Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1694	Top	7 $\frac{1}{8}$ x3 $\frac{7}{8}$	1	50	125	\$1.70
1987	Bottom	7 $\frac{1}{8}$ x3 $\frac{7}{8}$	1	50	125	1.70



Bryant Panel Switches

**Double-pole, Single-branch
for One Plug Fuse in Branch
with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	Location of Fuses	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
16094	Top	7 $\frac{1}{8}$ x3 $\frac{7}{8}$	1	50	125	\$1.70
19087	Bottom	7 $\frac{1}{8}$ x3 $\frac{7}{8}$	1	50	125	1.70



Bryant Panel Switches

**Double-pole, Double-branch
For Two Plug Fuses in Each
Branch, with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	For Mains	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1852	Vertical	10 $\frac{1}{8}$ x3 $\frac{3}{8}$	1	50	200	\$3.40
1983	Horizontal	10 $\frac{1}{8}$ x3 $\frac{3}{8}$	1	50	200	3.40

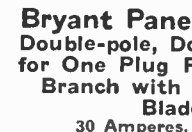


Bryant Panel Switches

**Double-pole, Double-branch
for One Plug Fuse in Each
Branch with Reversible
Blades**

30 Amperes, 125 Volts
Schedule J2

Cat. No.	For Mains	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
18052	Vertical	10 $\frac{1}{8}$ x3 $\frac{3}{8}$	1	50	200	\$3.40
19083	Horizontal	10 $\frac{1}{8}$ x3 $\frac{3}{8}$	1	50	200	3.40



Bryant Panel Switches

**Triple to Double-pole, Double-branch
For Two Plug Fuses in Each Branch**

30 Amperes, 125 Volts
Schedule J2



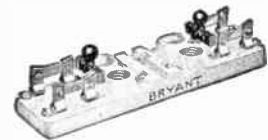
Of the dimensions, that given first is parallel to the blades.

Cat. No.	For Mains	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1947	Vertical	11 $\frac{7}{8}$ x3 $\frac{3}{8}$	1	50	230	\$3.60
1984	Horizontal	11 $\frac{7}{8}$ x3 $\frac{3}{8}$	1	50	232	3.60

Bryant Panel Switches

**Triple to Double-pole, Double-branch for One
Plug Fuse in Each Branch with Reversible Blades**

30 Amperes, 125 Volts
Schedule J2



The neutral main is connected to the unfused side in each branch.

The side of the line from which the fuse is omitted should always be the grounded side of the line.

Cat. No.	For Mains	Dimen. Base, In.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
19047	Vertical	11 $\frac{7}{8}$ x3 $\frac{3}{8}$	1	50	230	\$3.60
19084	Horizontal	11 $\frac{7}{8}$ x3 $\frac{3}{8}$	1	50	232	3.60

No. 62569 Bryant Plug Fuse Cut-out Bases



Single-pole, Main
30 Amperes, 125 Volts
Schedule J2

For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62569	2 3/4 x 1 1/2	10	150	65	\$.24

No. 62965 Bryant Plug Fuse Cut-out Bases

Double-pole, Main
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62965	2 5/8 x 2 9/8	10	150	100	\$.32

No. 61935 Bryant Plug Fuse Cut-out Bases

Double-pole, Single Branch
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61935	2 5/8 x 3 1/2	5	100	95	\$.35

No. 62587 Bryant Plug Fuse Cut-out Bases

Double-pole, Double-branch
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62587	2 5/8 x 5 3/8	5	100	144	\$.62

No. 62199 Bryant Plug Fuse Cut-out Bases

Triple to Double-pole
Double-branch
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62199	2 5/8 x 6 5/8	5	100	180	\$.68

No. 62165 Bryant Plug Fuse Cut-out Bases

Triple-pole, Main
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62165	2 9/8 x 4 1/8	5	100	100	\$.55

No. 8042 Bryant Plug Fuse Cut-out Bases

Triple-pole, Single-branch
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
8042	4 1/8 x 4 5/8	1	75	140	\$.70

No. 62135 Bryant Plug Fuse Cut-out Bases

Triple-pole, Double-branch
30 Amperes, 125 Volts
Schedule J2



For plug fuse in each side of line.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62135	4 7/8 x 6 5/8	1	50	140	\$.94

No. 62065 Bryant Plug Fuse Cut-out Bases

Double-pole, Main
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each double-pole main.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62065	2 5/8 x 2 9/8	10	150	100	\$.32

No. 61035 Bryant Plug Fuse Cut-out Bases

Double-pole, Single-branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each double-pole main or single-branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
61035	2 5/8 x 3 1/2	5	100	95	\$.35

No. 80020 Bryant Plug Fuse Cut-out Bases

Double-pole, Single or
Double Cross-over Branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each double-pole main or branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
80020	3 1/2 x 3 1/2	5	150	164	\$.36

No. 62087 Bryant Plug Fuse Cut-out Bases

Double-pole, Double-branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each double-pole main or branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62087	2 5/8 x 5 3/8	5	100	144	\$.62

No. 62099 Bryant Plug Fuse Cut-out Bases

Triple to Double-pole,
Double Branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each double or triple-pole main or branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62099	2 5/8 x 6 5/8	5	100	180	\$.68

No. 62066 Bryant Plug Fuse Cut-out Bases

Triple-pole, Main
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each triple-pole main.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62066	2 9/8 x 4 1/8	5	100	100	\$.55

No. 80042 Bryant Plug Fuse Cut-out Bases

Triple-pole, Single-branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each triple-pole main or branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
80042	4 1/8 x 4 5/8	1	75	140	\$.70

No. 62035 Bryant Plug Fuse Cut-out Bases

Triple-pole, Double Branch
30 Amperes, 125 Volts
Schedule J2



For one plug fuse omitted from each triple-pole main or double-branch.

Cat. No.	Dimensions Inches	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
62035	4 7/8 x 6 5/8	1	50	140	\$.94

Benjamin Convertible Cut-out Bases

With Flush Safety (Dead Front) Covers

30 Amperes, 125 Volts



No. 59904



No. 59804

Base is one-piece porcelain with 3-point support which insures safe mounting.

Two styles of covers—flush and overhanging.

Overhanging covers are for use with standard surface mounting or flush type cut-out boxes. They fit snugly to inside of cut-out boxes and form gutters.

Covers are made of sheet insulation. Removal of covers is easy; gives access to all connections.

The fuse receptacles are designed so that it is impossible to "substitute with a penny" when a fuse blows. The compact grouping of these receptacles produces bases of comparatively small area. Large binding screws insure permanent connection and easy installation.

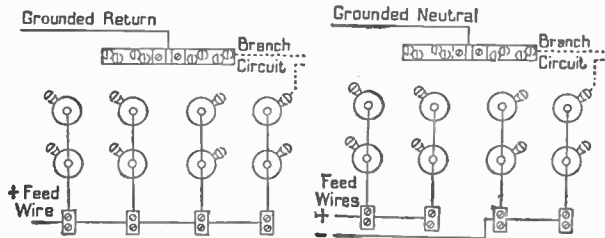
With Flush Safety Cover

Cat. No.	No. of Circuits		Size of Base Inches	Std. Pkg.	Net. Wt. Lbs., Ea.	Price Each
	Sgl. Pole Fusing	Dbl. Pole Fusing				
59904	4	2	3 7/8 x 4 3/4 x 2	4	1 5/8	\$1.65
59908	8	4	7 3/8 x 5 5/8 x 2	3	3 1/2	3.30
59912	12	6	7 3/8 x 7 7/8 x 2	2	5	5.00
59916	16	8	8 3/8 x 8 1/8 x 2	1	6	6.75

With Overhanging Safety Cover

Cat. No.	No. of Circuits		Size of Cut-out Box, Inches	Std. Pkg.	Net. Wt. Lbs., Ea.	Price Each
	Sgl. Pole Fusing	Dbl. Pole Fusing				
59804	4	2	6 x 8 x 3 1/2	4	1 3/4	\$1.80
59808	8	4	10 x 10 x 3 1/2	3	6 1/2	3.80
59812	12	6	10 x 12 x 3 1/2	2	5 3/4	5.60
59816	16	8	10 x 12 x 3 1/2	1	6 7/8	7.50

These cut-out bases can be easily converted into 4 ordinary circuits as illustrated below.

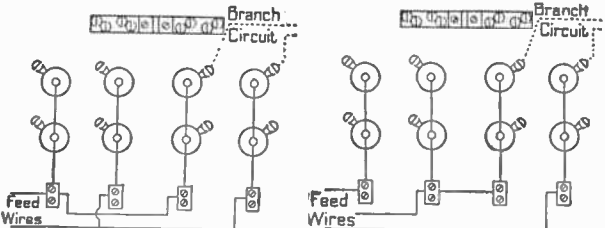


Single Fused Branches 2 to 2 Wire

Single Fused Branches 3 to 2 Wire

2 Wire, 125-volt Mains
2 Wire, 125-volt Branches
8 Single Fused Branches

3 Wire, 125, 250-volt Mains
2 Wire, 125-volt Branches
8 Single Fused Branches



Double Fused Branches 2 to 2 Wire

*Double Fused Branches 3 to 2 Wire

2 Wire, 125-volt Mains
2 Wire, 125-volt Branches
4 Double Fused Branches

3 Wire, 125, 250-volt Mains
2 Wire, 125-volt Branches
4 Double Fused Branches

*This diagram does not apply to Cat. Nos. 59904 and 59804.

In addition, these cut-outs can be used for 3-wire branch circuits and individual metering of branch circuits.

Bryant Pyrotite Mica Cap Plug Fuses

Enclosed, with Hexagonal Window in Cap

125 Volts, for 15 Amperes and Less

Cat. No.	Cap. Amps.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	Schedule J3
66327	3	50	500	44	\$.07	
66329	6	50	500	44	.07	
66331	10	50	500	44	.07	
66333	12	50	500	44	.07	
66335	15	50	500	44	.07	

No. 66335

Bryant Pyrotite Mica Cap Plug Fuses Enclosed, with Scalloped Edge Round Window in Cap

125 Volts, for More Than 15 Amperes—Schedule J3

Can be furnished with solid brass caps on special order at 1/2 cent each in addition to prices.



No. 66341

Cat. No.	Cap. Amps.	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
66337	20	50	500	44	\$.07
66339	25	50	500	44	.07
66341	30	50	500	44	.07

Clearsite Plug Fuses

Non-renewable

Clearsite Plug Fuses mount the fuse link within the fuse body, thereby giving clear vision of the link. The drop-out type of link is used which lessens the internal operating pressure. The fuse body is made of heat-resisting molded insulation, black in color.



Regular Packages

Cat. No.	Cap. Amps.	Car-ton	Price Each	Cat. No.	Cap. Amps.	*Ret. Pkg.	Car-ton	Price Each
4303	3	50	\$.07	5703	3	4	100	\$.07
4306	6	50	.07	5706	6	4	100	.07
4310	10	50	.07	5710	10	4	100	.07
4312	12	50	.07	5712	12	4	100	.07
4315	15	50	.07	5715	15	4	100	.07
4320	20	50	.07	5720	20	4	100	.07
4325	25	50	.07	5725	25	4	100	.07
4330	30	50	.07	5730	30	4	100	.07

*Carton contains 25 retail packages of 4 fuses each.

H & H Fuse Plugs

Schedule F

125 Volts



This Plug is renewable, it is only necessary to insert a new core. There is no metal to touch. As the old style flaring top has been done away with, there is plenty of room between the plugs to get a grip with the fingers. Std. pkg., 100.

COMPLETE PLUGS			RENEWABLE CORES		
Cat. No.	Capacity Amperes	Price Each	Cat. No.	Capacity Amperes	Price Each
66-327	3	\$.07	FC327	3	\$.04
66-329	6	.07	FC329	6	.04
66-331	10	.07	FC331	10	.04
66-333	12	.07	FC333	12	.04
66-335	15	.07	FC335	15	.04
66-337	20	.07	FC337	20	.04
66-339	25	.07	FC339	25	.04
66-341	30	.07	FC341	30	.04

D & W Plug Fuse Casings

1-60 Amperes, 125 Volts

Schedule F—Class 3

For use with N. E. C. S. type fuses.

Cat. No.	Cap. Amps.	Car-ton	Std. Pkg.	Price Each
190	1-30	10	100	\$.36
191	31-60	10	100	.72

Fuses for Plug Fuse Casings

Carrying Cap. Amp.	Std. Pkg.	Car-ton	Pkg., Wt. Lbs.	Price Each
4	100	20	14	\$.40
5	100	20	14	.40
6	100	20	14	.40
8	100	20	14	.40
10	100	20	14	.40
12	100	20	14	.40
15	100	20	14	.40
20	100	20	14	.40
25	100	20	14	.40
30	100	20	14	.40



FA Standard New Code Fuse Cutout Blocks

**Slate Base—Plain Finish
Single-pole**



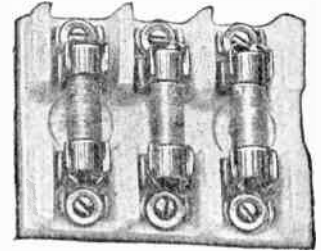
250 Volts			600 Volts		
Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
F 331	30	\$.64	F 361	30	\$.96
F 631	60	1.18	F 661	60	1.42
F 1031	100	1.90	F1061	100	2.78
A 2031	200	4.42	A2061	200	4.84
A 4031	400	11.02	A4061	400	12.60
A 6031	600	15.12	A6061	600	16.38
A 8031	800	23.94	.....	.....	.....
A10031	1000	30.88	.....	.....	.....

D & W Enclosed Fuse Cutouts

0-600 Amperes—250 Volts
Schedule FC—Class 1



No. 91101



No. 91103

FA Standard New Code Fuse Cutout Blocks

**Slate Base—Plain Finish
Double-pole**

250 Volts			600 Volts		
Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
F 332	30	\$1.36	F 362	30	\$2.08
F 632	60	2.52	F 662	60	3.06
F 1032	100	4.06	F1062	100	5.94
A 2032	200	9.46	A2062	200	10.36
A 4032	400	23.06	A4062	400	27.00
A 6032	600	30.94	A6062	600	35.10
A 8032	800	49.06	.....	.....	.....
A10031	1000	63.90	.....	.....	.....



Ferrule Contact, Porcelain Base

Cat. No.	Cap. Amps.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Lbs. Pkg.	Price Each
91101	0-30	Single-pole, Main Line	5	50	13		\$.80
91098	0-30	" " " "					
		with Barriers	2	50	37		.80
91102	0-30	Double-pole Main Line	5	50	37		1.13
91103	0-30	Triple " " "	5	50	51		1.60
91104	0-30	Double " Single Branch	5	50	60		1.40
91105	0-30	Triple-pole Single Branch	1	50	90		2.70
91106	0-30	Double-pole Double Branch	1	25	50		2.60
91100	0-30	Triple-pole Double Branch	1	25	91		4.50
91121	0-30	Three to Two-wire Double Branch	1	25	65		3.00
91107	31-60	Single-pole, Main Line	5	50	30		1.30
91108	31-60	Double " " "	1	50	81		2.80
91109	31-60	Triple " " "	1	50	117		4.00
91110	31-60	Double " Single Branch	1	50	121		3.50
91111	31-60	Triple-pole, Single Branch	1	50	250		6.00
91113	31-60	Double-pole, Double Branch	1	25	134		7.00
91123	31-60	Triple-pole, Double Branch	1	10	95		12.00
91124	31-60	Three to Two-wire Double Branch	1	25	158		8.40

FA Standard New Code Fuse Cut-out Blocks

**Slate Base—Plain Finish
Three-pole**

250 Volts			600 Volts		
Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
F 333	30	\$2.02	F 363	30	\$3.20
F 633	60	3.78	F 663	60	4.78
F 1033	100	6.08	F1063	100	9.00
A 2033	200	14.18	A2063	200	15.76
A 4033	400	34.88	A4063	400	40.50
A 6033	600	47.26	A6063	600	52.66
A 8033	800	74.26	.....	.....	.....
A10033	1000	95.62	.....	.....	.....



Knife Blade Contact, Porcelain Base

91114	61-100	Single-pole, Main Line	1	50	79		\$2.80
91119	61-100	Double " " "	1	50	156		5.60
91120	61-100	Triple " " "	1	25	117		8.00

Knife Blade Contact, Porcelain Base

91115	101-200	Single-pole, Main Line	1	25	84		\$4.20
91117	201-400	" " " "	1	10	138		10.50
91118	401-600	" " " "	1	5	93		14.40

FA Standard New Code Fuse Cut-out Blocks

**Slate Base—Plain Finish
Four-pole**

250 Volts			600 Volts		
Cat. No.	Cap. Amp.	Price Each	Cat. No.	Cap. Amp.	Price Each
F 334	30	\$2.70	F 364	30	\$4.14
F 634	60	5.04	F 664	60	6.12
F 1034	100	8.10	F1064	100	11.88
A 2034	200	18.90	A2064	200	20.70
A 4034	400	46.12	A4064	400	54.00
A 6034	600	61.88	A6064	600	70.20
A 8034	800	98.10	.....	.....	.....
A10034	1000	127.80	.....	.....	.....



NOTE.—Fuse blocks over 600 amperes are made with multiple parts for each pole.

D & W Enclosed Fuse Cutouts

0-600 Amperes, 600 Volts
Schedule FC—Class 1

Ferrule Contact, Porcelain Base

Cat. No.	Cap. Amp.	Description	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Lbs. Pkg.	Price Each
28074	0-30	Single-pole, with Barriers	5	50	70		\$1.20
28075	31-60	" " " "	1	50	140		1.80
28076	0-30	" " " "	5	50	48		1.20
28077	31-60	" " " "	5	50	54		1.80



28078	61-100	Single-pole	1	50	102		\$3.50
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Knife Blade Contact, Slate Base

28079	101-200	Single-pole	1	25	106		\$4.60
28080	201-400	" " " "	1	25	181		12.00
28081	401-600	" " " "	1	10	108		15.60

D & W Indicating Enclosed Fuses

Schedule F—Class 1

250 Volts

Ferrule Contact, 3-60 Amperes



Cat. No.	Cap. Amps	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each	Refill-ing Price Each
91125	3	10	100	4	\$.20	....
91126	4	10	100	4	.20	....
91127	5	10	100	4	.20	....
91128	6	10	100	4	.20	....
91130	7	10	100	4	.20	....
91131	8	10	100	4	.20	....
91132	9	10	100	4	.20	....
91133	10	10	100	4	.20	....
91134	12	10	100	4	.20	....
91135	15	10	100	4	.20	....
91136	20	10	100	4	.20	....
91137	25	10	100	4	.20	....
91138	30	10	100	4	.20	....
91139	35	10	100	10	.30	....
91140	40	10	100	10	.30	....
91141	45	10	100	10	.30	....
91143	50	10	100	10	.30	....
91146	55	10	100	10	.30	....
91147	60	10	100	10	.30	....

Knife Blade Contact, 65-100 Amperes



91149	65	5	50	14	\$.90	\$.60
91150	70	5	50	14	.90	.60
91151	75	5	50	14	.90	.60
91152	80	5	50	14	.90	.60
91154	90	5	50	14	.90	.60
91156	100	5	50	14	.90	.60

Knife Blade Contact, 110-600 Amperes



91157	110	1	25	18	\$2.00	\$.90
91158	120	1	25	18	2.00	.90
91161	125	1	25	18	2.00	.90
91162	150	1	25	18	2.00	.90
91163	175	1	25	18	2.00	.90
91164	200	1	25	18	2.00	.90
91165	225	1	10	40	3.60	1.50
91166	250	1	10	40	3.60	1.50
91167	275	1	10	40	3.60	1.50
91168	300	1	10	40	3.60	1.50
91169	325	1	10	40	3.60	1.50
91170	350	1	10	40	3.60	1.50
91171	375	1	10	40	3.60	1.50
91172	400	1	10	40	3.60	1.50
91173	450	1	5	28	5.50	2.00
91174	500	1	5	28	5.50	2.00
91175	550	1	5	28	5.50	2.00
91176	600	1	5	28	5.50	2.00

D & W Indicating Enclosed Fuses

Schedule F—Class 1

600 Volts

Ferrule Contact, 3-60 Amperes



Cat. No.	Cap. Amps.	Car-ton	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each	Refill-ing Price Each
28084	3	10	100	14	\$.40	....
28085	4	10	100	14	.40	....
28086	5	10	100	14	.40	....
28087	6	10	100	14	.40	....
28088	7	10	100	14	.40	....
28089	8	10	100	14	.40	....
28090	9	10	100	14	.40	....
28091	10	10	100	14	.40	....
28092	12	10	100	14	.40	....
28093	15	10	100	14	.40	....
28094	20	10	100	14	.40	....
28095	25	10	100	14	.40	....
28096	30	10	100	14	.40	....
28097	35	10	100	22	.60	....
28098	40	10	100	22	.60	....
28099	45	10	100	22	.60	....
28100	50	10	100	22	.60	....
28101	55	10	100	22	.60	....
28102	60	10	100	22	.60	....

Knife Blade Contact, 65-600 Amperes



28103	65	5	50	23	\$1.50	\$.80
28104	70	5	50	23	1.50	.80
28105	75	5	50	23	1.50	.80
28106	80	5	50	23	1.50	.80
28108	90	5	50	23	1.50	.80
28110	100	5	50	23	1.50	.80
28111	110	1	25	34	2.50	1.20
28112	120	1	25	34	2.50	1.20
28113	125	1	25	34	2.50	1.20
28114	150	1	25	34	2.50	1.20
28115	175	1	25	34	2.50	1.20
28116	200	1	25	34	2.50	1.20
28117	225	1	10	77	5.50	2.00
28118	250	1	10	77	5.50	2.00
28119	275	1	10	77	5.50	2.00
28120	300	1	10	77	5.50	2.00
28121	325	1	10	77	5.50	2.00
28122	350	1	10	77	5.50	2.00
28123	375	1	10	77	5.50	2.00
28124	400	1	10	77	5.50	2.00
28125	450	1	5	49	8.00	3.00
28126	500	1	5	49	8.00	3.00
28127	550	1	5	49	8.00	3.00
28128	600	1	5	49	8.00	3.00

D & W Non-indicating Enclosed Fuses

Schedule F—Class 1
250 Volts

Ferrule Contact, 1-60 Amperes



Cat. No.	Ampere Capacity	Carton	Standard Package	Price Each
91001	1	10	100	\$.20
91002	2	10	100	.20
1454	3	10	100	.20
1455	4	10	100	.20
1456	5	10	100	.15
1457	6	10	100	.15
1458	7	10	100	.15
1459	8	10	100	.15
1460	9	10	100	.15
1461	10	10	100	.15
1462	12	10	100	.15
1463	15	10	100	.15
1464	20	10	100	.15
1465	25	10	100	.15
1466	30	10	100	.15
1467	35	10	100	.30
1468	40	10	100	.30
1469	45	10	100	.30
1470	50	10	100	.30
1471	55	10	100	.30
1472	60	10	100	.30

Knife Blade Contact, 65-100 Amperes



Cat. No.	Ampere Capacity	Carton	Standard Package	Price Each	Reload Price
1473	65	5	50	\$.90	\$.60
1474	70	5	50	.90	.60
1475	75	5	50	.90	.60
1476	80	5	50	.90	.60
1477	90	5	50	.90	.60
1478	100	5	50	.90	.60

Knife Blade Contact, 110-600 Amperes



Cat. No.	Ampere Capacity	Carton	Standard Package	Price Each	Reload Price
1479	110	1	25	\$2.00	\$.90
1480	120	1	25	2.00	.90
1481	130	1	25	2.00	.90
1482	140	1	25	2.00	.90
1483	150	1	25	2.00	.90
1484	160	1	25	2.00	.90
1485	170	1	25	2.00	.90
1486	180	1	25	2.00	.90
1487	190	1	25	2.00	.90
1488	200	1	25	2.00	.90
1489	225	1	10	3.60	1.50
1490	250	1	10	3.60	1.50
1491	275	1	10	3.60	1.50
1492	300	1	10	3.60	1.50
1493	325	1	10	3.60	1.50
1494	350	1	10	3.60	1.50
1495	375	1	10	3.60	1.50
1496	400	1	10	3.60	1.50
1497	425	1	5	5.50	2.00
1498	450	1	5	5.50	2.00
1499	475	1	5	5.50	2.00
1500	500	1	5	5.50	2.00
1501	525	1	5	5.50	2.00
1502	550	1	5	5.50	2.00
1503	575	1	5	5.50	2.00
1504	600	1	5	5.50	2.00

D & W Non-indicating Enclosed Fuses

Schedule F—Class 1

600 Volts

Ferrule Contact, 1-60 Amperes



Cat. No.	Ampere Capacity	Carton	Standard Package	Price Each
28082	1	10	100	\$.40
28083	2	10	100	.40
1505	3	10	100	.40
1506	4	10	100	.40
1507	5	10	100	.40
1508	6	10	100	.40
1509	7	10	100	.40
1510	8	10	100	.40
1511	9	10	100	.40
1512	10	10	100	.40
1513	12	10	100	.40
1514	15	10	100	.40
1515	20	10	100	.40
1516	25	10	100	.40
1517	30	10	100	.40
1518	35	10	100	.60
1519	40	10	100	.60
1520	45	10	100	.60
1521	50	10	100	.60
1522	55	10	100	.60
1523	60	10	100	.60

Knife Blade Contact, 65-600 Amperes



Cat. No.	Ampere Capacity	Carton	Standard Package	Price Each	Reload Price
1524	65	5	50	\$1.50	\$.80
1525	70	5	50	1.50	.80
1526	75	5	50	1.50	.80
1527	80	5	50	1.50	.80
1528	90	5	50	1.50	.80
1529	100	5	50	1.50	.80
1530	110	1	25	2.50	1.20
1531	120	1	25	2.50	1.20
1532	130	1	25	2.50	1.20
1533	140	1	25	2.50	1.20
1534	150	1	25	2.50	1.20
1535	160	1	25	2.50	1.20
1536	170	1	25	2.50	1.20
1537	180	1	25	2.50	1.20
1538	190	1	25	2.50	1.20
1539	200	1	25	2.50	1.20
1540	225	1	10	5.50	2.00
1541	250	1	10	5.50	2.00
1542	275	1	10	5.50	2.00
1543	300	1	10	5.50	2.00
1544	325	1	10	5.50	2.00
1545	350	1	10	5.50	2.00
1546	375	1	10	5.50	2.00
1547	400	1	10	5.50	2.00
1548	425	1	5	8.00	3.00
1549	450	1	5	8.00	3.00
1550	475	1	5	8.00	3.00
1551	500	1	5	8.00	3.00
1552	525	1	5	8.00	3.00
1553	550	1	5	8.00	3.00
1554	575	1	5	8.00	3.00
1555	600	1	5	8.00	3.00

Economy Renewable Cartridge Fuses

Ferrule and Knife Types

The absence of powdered filler eliminates the uncertain performance and varying ratings found in fuses in which filling material is used.

There is nothing in the fibre shell except the drop-out renewal link. The air space provided permits of rapid gas expansion with low pressure on account of small amount of metal in the link.

These fuses are made in ferrule and knife blade types. In the knife blade type there are no end holes and thus the direct venting of fire is eliminated. Gases are retarded by resilient and metal end washers which close both ends of fuse; and gases escape through the provision made by the clearance of the threads by which the brass cap is fastened.

The centering washer aligns and centers the blade parts which permits flexibility, thus allowing the blades to be adjusted into the clips in which the fuse is inserted.

Economy Renewable Cartridge Fuses

Ferrule Type



3-30 Amperes, 250 Volts

Cat. No.	Cap. Amps	Length Inches	Diam. of Ferrule Inches	Diam. of Tube Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
F-325	3	2	9/16	1/2	100	5 1/4	\$.50
F-425	4	2	9/16	1/2	100	5 1/4	.50
F-525	5	2	9/16	1/2	100	5 1/4	.50
F-625	6	2	9/16	1/2	100	5 1/4	.50
F-825	8	2	9/16	1/2	100	5 1/4	.50
F-1025	10	2	9/16	1/2	100	5 1/4	.50
F-1225	12	2	9/16	1/2	100	5 1/4	.50
F-1525	15	2	9/16	1/2	100	5 1/4	.50
F-2025	20	2	9/16	1/2	100	5 1/4	.50
F-2525	25	2	9/16	1/2	100	5 1/4	.50
F-3025	30	2	9/16	1/2	100	5 1/4	.50

31-60 Amperes, 250 Volts

F-3525	35	3	13/16	3/4	100	13	1.00
F-4025	40	3	13/16	3/4	100	13	1.00
F-4525	45	3	13/16	3/4	100	13	1.00
F-5025	50	3	13/16	3/4	100	13	1.00
F-5525	55	3	13/16	3/4	100	13	1.00
F-6025	60	3	13/16	3/4	100	13	1.00

Carton quantity, 3 to 60 amperes, inclusive, 10.

Drop Out Renewal Links



For Small Capacities



For Capacities Greater than 15 Amperes

3-30 Amperes, 250 Volts

Cat. No.	Capacity Amperes	Std. Pkg.	Wt. Oz. Std. Pkg.	Price Each
R-203	3	100	3	\$.03
R-204	4	100	3	.03
R-205	5	100	3	.03
R-206	6	100	3	.03
R-208	8	100	3	.03
R-210	10	100	3	.03
R-212	12	100	3	.03
R-215	15	100	3	.03
R-220	20	100	3	.03
R-225	25	100	3	.03
R-230	30	100	3	.03

31-60 Amperes, 250 Volts

R-235	35	100	10	.05
R-240	40	100	10	.05
R-245	45	100	10	.05
R-250	50	100	10	.05
R-255	55	100	10	.05
R-260	60	100	10	.05

Economy Renewable Cartridge Fuses

Knife Blade Type



61-100 Amperes, 250 Volts

Cat. No.	Cap. Amps	Length Inches	Width of Blade Inches	Thickness of Blade Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
F-6525	65	5 7/8	3/4	1/8	50	19	\$2.00
F-7025	70	5 7/8	3/4	1/8	50	19	2.00
F-7525	75	5 7/8	3/4	1/8	50	19	2.00
F-8025	80	5 7/8	3/4	1/8	50	19	2.00
F-8525	85	5 7/8	3/4	1/8	50	19	2.00
F-9025	90	5 7/8	3/4	1/8	50	19	2.00
F-9525	95	5 7/8	3/4	1/8	50	19	2.00
F-10025	100	5 7/8	3/4	1/8	50	19	2.00

101-200 Amperes, 250 Volts

F-11025	110	7 1/8	1 1/8	3/16	25	24	\$4.00
F-12025	120	7 1/8	1 1/8	3/16	25	24	4.00
F-12525	125	7 1/8	1 1/8	3/16	25	24	4.00
F-15025	150	7 1/8	1 1/8	3/16	25	24	4.00
F-17525	175	7 1/8	1 1/8	3/16	25	24	4.00
F-20025	200	7 1/8	1 1/8	3/16	25	24	4.00

201-400 Amperes, 250 Volts

F-22525	225	8 5/8	1 5/8	1/4	10	20	\$7.50
F-25025	250	8 5/8	1 5/8	1/4	10	20	7.50
F-27525	275	8 5/8	1 5/8	1/4	10	20	7.50
F-30025	300	8 5/8	1 5/8	1/4	10	20	7.50
F-32525	325	8 5/8	1 5/8	1/4	10	20	7.50
F-35025	350	8 5/8	1 5/8	1/4	10	20	7.50
F-37525	375	8 5/8	1 5/8	1/4	10	20	7.50
F-40025	400	8 5/8	1 5/8	1/4	10	20	7.50

401-600 Amperes, 250 Volts

F-45025	450	10 3/8	2	1/4	5	17	\$11.00
F-50025	500	10 3/8	2	1/4	5	17	11.00
F-55025	550	10 3/8	2	1/4	5	17	11.00
F-60025	600	10 3/8	2	1/4	5	17	11.00

Carton quantity, 65 to 100 amperes, inclusive, 5; 110 to 600 amperes, inclusive, 1.

Drop Out Renewal Links



61-100 Amperes, 250 Volts

Cat. No.	Capacity Amperes	Std. Pkg.	Wt. Oz. Std. Pkg.	Price Each
R-265	65	50	6	\$.10
R-270	70	50	6	.10
R-275	75	50	6	.10
R-280	80	50	6	.10
R-285	85	50	6	.10
R-290	90	50	6	.10
R-295	95	50	6	.10
R-2100	100	50	6	.10

101-200 Amperes, 250 Volts

R-2110	110	25	7	\$.15
R-2120	120	25	7	.15
R-2125	125	25	7	.15
R-2150	150	25	7	.15
R-2175	175	25	7	.15
R-2200	200	25	7	.15

201-400 Amperes, 250 Volts

R-2225	225	25	15	\$.30
R-2250	250	25	15	.30
R-2275	275	25	15	.30
R-2300	300	25	15	.30
R-2325	325	25	15	.30
R-2350	350	25	15	.30
R-2375	375	25	15	.30
R-2400	400	25	15	.30

401-600 Amperes, 250 Volts

R-2450	450	10	11	\$.60
R-2500	500	10	11	.60
R-2550	550	10	11	.60
R-2600	600	10	11	.60

Economy Renewable Cartridge Fuses

Ferrule Type



3-30 Amperes, 600 Volts

Cat. No.	Cap. Amps.	Length Inches	Diam. of Ferrule Inches	Diam. of Tube Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
F- 305	3	5	13/16	3/4	100	15	\$1.10
F- 405	4	5	13/16	3/4	100	15	1.10
F- 505	5	5	13/16	3/4	100	15	1.10
F- 605	6	5	13/16	3/4	100	15	1.10
F- 805	8	5	13/16	3/4	100	15	1.10
F-1005	10	5	13/16	3/4	100	15	1.10
F-1205	12	5	13/16	3/4	100	15	1.10
F-1505	15	5	13/16	3/4	100	15	1.10
F-2005	20	5	13/16	3/4	100	15	1.10
F-2505	25	5	13/16	3/4	100	15	1.10
F-3005	30	5	13/16	3/4	100	15	1.10

31-60 Amperes, 600 Volts

F-3505	35	5 1/2	1 1/16	1	100	32	\$1.25
F-4005	40	5 1/2	1 1/16	1	100	32	1.25
F-4505	45	5 1/2	1 1/16	1	100	32	1.25
F-5005	50	5 1/2	1 1/16	1	100	32	1.25
F-5505	55	5 1/2	1 1/16	1	100	32	1.25
F-6005	60	5 1/2	1 1/16	1	100	32	1.25

Carton quantity, 3 to 60 amperes, inclusive, 10.

Drop Out Renewal Links



For Small Capacities



For Capacities Greater than 10 Amperes

3-30 Amperes, 600 Volts

Cat. No.	Capacity Amperes	Std. Pkg.	Wt., Oz. Std. Pkg.	Price Each
R-603	3	100	9	\$.05
R-604	4	100	9	.05
R-605	5	100	9	.05
R-606	6	100	9	.05
R-608	8	100	9	.05
R-610	10	100	9	.05
R-612	12	100	9	.05
R-615	15	100	9	.05
R-620	20	100	9	.05
R-625	25	100	9	.05
R-630	30	100	9	.05

31-60 Amperes, 600 Volts

R-635	35	100	25	\$.06
R-640	40	100	25	.06
R-645	45	100	25	.06
R-650	50	100	25	.06
R-655	55	100	25	.06
R-660	60	100	25	.06

Economy End Washers

For Knife Blade Type Fuses

When fuses are blown, the end washers may become damaged or bent to such an extent that replacement will be necessary before renewal can be made. A set of end washers consists of one metal and one of resilient material.

Price, No.	9201	for	65 to 100 Amps.	250 Volts.	per set	\$.02	
"	9202	"	101	"	200	"	.03
"	9203	"	201	"	400	"	.04
"	9204	"	401	"	600	"	.05
"	9601	"	65	"	100	"	.02
"	9602	"	101	"	200	"	.03
"	9603	"	201	"	400	"	.04
"	9604	"	401	"	600	"	.05

Standard package of above end washers is 50.

Economy Renewable Cartridge Fuses

Knife Blade Type



61-100 Amperes, 600 Volts

Cat. No.	Cap. Amps.	Length Inches	Width Blade Inches	Thick-ness Blade Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
F- 6505	65	7 7/8	3/4	1/8	50	32	\$3.00
F- 7005	70	7 7/8	3/4	1/8	50	32	3.00
F- 7505	75	7 7/8	3/4	1/8	50	32	3.00
F- 8005	80	7 7/8	3/4	1/8	50	32	3.00
F- 8505	85	7 7/8	3/4	1/8	50	32	3.00
F- 9005	90	7 7/8	3/4	1/8	50	32	3.00
F- 9505	95	7 7/8	3/4	1/8	50	32	3.00
F-10005	100	7 7/8	3/4	1/8	50	32	3.00

101-200 Amperes, 600 Volts

F-11005	110	9 5/8	1 1/8	3/16	25	38	\$5.00
F-12005	120	9 5/8	1 1/8	3/16	25	38	5.00
F-12505	125	9 5/8	1 1/8	3/16	25	38	5.00
F-15005	150	9 5/8	1 1/8	3/16	25	38	5.00
F-17505	175	9 5/8	1 1/8	3/16	25	38	5.00
F-20005	200	9 5/8	1 1/8	3/16	25	38	5.00

201-400 Amperes, 600 Volts

F-22505	225	11 5/8	1 5/8	1/4	10	31 1/2	\$11.00
F-25005	250	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-27505	275	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-30005	300	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-32505	325	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-35005	350	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-37505	375	11 5/8	1 5/8	1/4	10	31 1/2	11.00
F-40005	400	11 5/8	1 5/8	1/4	10	31 1/2	11.00

401-600 Amperes, 600 Volts

F-45005	450	13 3/8	2	1/4	5	27	\$16.00
F-50005	500	13 3/8	2	1/4	5	27	16.00
F-55005	550	13 3/8	2	1/4	5	27	16.00
F-60005	600	13 3/8	2	1/4	5	27	16.00

Carton quantity, 65 to 100 amperes, inclusive, 5; 110 to 600 amperes, inclusive, 1.

Drop Out Renewal Links



61-100 Amperes, 600 Volts

Cat. No.	Capacity Amperes	Std. Pkg.	Wt., Oz. Std. Pkg.	Price Each
R- 665	65	50	16	\$1.10
R- 670	70	50	16	.10
R- 675	75	50	16	.10
R- 680	80	50	16	.10
R- 685	85	50	16	.10
R- 690	90	50	16	.10
R- 695	95	50	16	.10
R-6100	100	50	16	.10

101-200 Amperes, 600 Volts

R-6110	110	25	23	\$.15
R-6120	120	25	23	.15
R-6125	125	25	23	.15
R-6150	150	25	23	.15
R-6175	175	25	23	.15
R-6200	200	25	23	.15

201-400 Amperes, 600 Volts

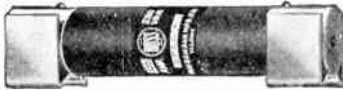
R-6225	225	25	47	\$3.00
R-6250	250	25	47	3.00
R-6275	275	25	47	3.00
R-6300	300	25	47	3.00
R-6325	325	25	47	3.00
R-6350	350	25	47	3.00
R-6375	375	25	47	3.00
R-6400	400	25	47	3.00

401-600 Amperes, 600 Volts

R-6450	450	10	30	\$1.60
R-6500	500	10	30	.60
R-6550	550	10	30	.60
R-6600	600	10	30	.60

Type C Buss Old Code Non-renewable Fuses

Straight Side Contact Type
1 to 125 Amperes, 250 Volts



For Noark Blocks

Cat. No.	Amp.	Length In.	Diam. In.	Price Each	Cat. No.	Amp.	Length In.	Diam. In.	Price Each
2401	1	3 3/4	29/32	.60	2414	35	3 3/4	29/32	.60
2403	3	3 3/4	29/32	.60	2415	40	3 3/4	29/32	.60
2405	5	3 3/4	29/32	.60	2416	45	3 3/4	29/32	.60
2406	6	3 3/4	29/32	.60	2417	50	3 3/4	29/32	.60
2407	8	3 3/4	29/32	.60	2418	60	4 1/8	1 1/32	.90
2408	10	3 3/4	29/32	.60	2419	70	4 1/8	1 1/32	.90
2409	12	3 3/4	29/32	.60	2420	75	4 1/8	1 1/32	.90
2410	15	3 3/4	29/32	.60	2421	80	4 1/8	1 1/32	.90
2411	20	3 3/4	29/32	.60	2422	90	4 1/8	1 1/32	.90
2412	25	3 3/4	29/32	.60	2423	100	4 1/8	1 1/32	.90
2413	80	3 3/4	29/32	.60	....	...	...	...	...

For D. & W. Blocks

Cat. No.	Amp.	Length In.	Diam. In.	Price Each	Cat. No.	Amp.	Length In.	Diam. In.	Price Each
66354	65	4 1/2	1 3/8	.90	66359	90	4 1/2	1 3/8	.90
66355	70	4 1/2	1 3/8	.90	66361	100	4 1/2	1 3/8	.90
66356	75	4 1/2	1 3/8	.90	66363	110	4 1/2	1 3/8	2.00
66357	80	4 1/2	1 3/8	.90	66367	125	4 1/2	1 3/8	2.00

1 to 125 Amperes, 600 Volts

For Noark Blocks

Cat. No.	Amp.	Length In.	Diam. In.	Price Each	Cat. No.	Amp.	Length In.	Diam. In.	Price Each
4300	1	6 1/4	1 3/16	\$1.50	4314	35	6 1/4	1 3/16	\$1.50
4302	3	6 1/4	1 3/16	1.50	4315	40	6 1/4	1 3/16	1.50
4304	5	6 1/4	1 3/16	1.50	4316	45	6 1/4	1 3/16	1.50
4305	6	6 1/4	1 3/16	1.50	4317	50	6 1/4	1 3/16	1.50
4306	8	6 1/4	1 3/16	1.50	4318	60	6 1/4	1 3/16	1.50
4307	10	6 1/4	1 3/16	1.50	4319	70	6 1/4	1 3/16	1.50
4308	12	6 1/4	1 3/16	1.50	4320	75	6 1/4	1 3/16	1.50
4309	15	6 1/4	1 3/16	1.50	4321	80	6 1/4	1 3/16	1.50
4311	20	6 1/4	1 3/16	1.50	4322	90	6 1/4	1 3/16	1.50
4312	25	6 1/4	1 3/16	1.50	4323	100	6 1/4	1 3/16	1.50
4313	30	6 1/4	1 3/16	1.50	....	...	...	...	...

For D. & W. Blocks

Cat. No.	Amp.	Length In.	Diam. In.	Price Each	Cat. No.	Amp.	Length In.	Diam. In.	Price Each
5065	65	6	1 3/8	\$1.50	5090	90	6	1 3/8	\$1.50
5070	70	6	1 3/8	1.50	5100	100	6	1 3/8	1.50
5075	75	6	1 3/8	1.50	5110	110	6	1 3/8	2.50
5080	80	6	1 3/8	1.50	5125	125	6	1 3/8	2.50

Fuses listed are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.

Buss Glass Tube Fuses

For Rosettes and Attachment Plugs; Also for Instrument Protection

1 to 3 Amperes, 250 Volts

1/4 x 1 1/16-inch



Cat. No.	Amp.	Car-ton	Std. Pkg.	Price Each
2701	1	10	100	\$.05
2702	2	10	100	.05
2703	3	10	100	.05

1 3/32 x 1 1/2-inch



Cat. No.	Amp.	Car-ton	Std. Pkg.	Price Each
5701	1	10	100	\$.10
5702	2	10	100	.10
5703	3	10	100	.10

Fuses listed are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.

Type A Buss Old Code Non-renewable Fuses

Screw Clamp Contact Type

1 to 100 Amperes, 2500 Volts



For Noark Blocks

Cat. No.	Amp.	Center to Center, In.	Price Each	Cat. No.	Amp.	Center to Center, In.	Price Each
6000	1	6 1/2	\$.50	6015	35	7 1/4	\$1.20
6002	3	6 1/2	.50	6016	40	7 1/4	1.20
6004	5	6 1/2	.50	6017	45	7 1/4	1.20
6005	6	6 1/2	.50	6018	50	7 1/4	1.20
6006	8	6 1/2	.50	6019	60	8 1/4	2.40
6007	10	6 1/2	.50	6020	70	8 1/4	2.40
6008	12	6 1/2	.50	6021	75	8 1/4	2.40
6009	15	6 1/2	.85	6022	80	8 1/4	2.40
6012	20	6 1/2	.85	6023	90	8 1/4	2.40
6013	25	6 1/2	.85	6024	100	8 1/4	2.40
6014	30	6 1/2	.85	....	...	...	....

For D. & W. Blocks

Cat. No.	Amp.	Center to Center, In.	Price Each	Cat. No.	Amp.	Center to Center, In.	Price Each
12001	1	6 1/2	\$.50	12035	35	7 1/4	\$1.20
12003	3	6 1/2	.50	12040	40	7 1/4	1.20
12005	5	6 1/2	.50	12045	45	7 1/4	1.20
12006	6	6 1/2	.50	12050	50	7 1/4	1.20
12008	8	6 1/2	.50	12060	60	7 1/4	1.20
12010	10	6 1/2	.50	12070	70	7 1/2	2.40
12012	12	6 1/2	.50	12075	75	7 1/2	2.40
12015	15	6 1/2	.50	12080	80	7 1/2	2.40
12020	20	6 1/2	.85	12090	90	7 1/2	2.40
12025	25	6 1/2	.85	12000	100	7 1/2	2.40
12030	30	6 1/2	.85	.....	...	...	....

Fuses listed are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.

Type A Buss Old Code Non-renewable Fuses

Knife Blade Type

1 to 100 Amperes, 2500 Volts



A.M.E.S. Standard

Cat. No.	Amp.	Center to Center, In.	Price Each	Cat. No.	Amp.	Center to Center, In.	Price Each
7001	1	9 7/8	\$1.75	7035	35	10 3/8	\$3.00
7003	3	9 7/8	1.75	7040	40	10 3/8	3.00
7005	5	9 7/8	1.75	7045	45	10 3/8	3.00
7006	6	9 7/8	1.75	7050	50	10 3/8	3.00
7008	8	9 7/8	1.75	7060	60	10 3/8	3.00
7010	10	9 7/8	1.75	7065	65	10 3/8	3.40
7012	12	9 7/8	1.75	7070	70	10 3/8	3.40
7015	15	9 7/8	1.75	7075	75	10 3/8	3.40
7020	20	9 7/8	2.60	7080	80	10 3/8	3.40
7025	25	9 7/8	2.60	7090	90	10 3/8	3.40
7030	30	9 7/8	2.60	7100	100	10 3/8	3.40

Buss Standard

Cat. No.	Amp.	Center to Center, In.	Price Each	Cat. No.	Amp.	Center to Center, In.	Price Each
7101	1	10 7/8	\$1.75	7120	20	10 7/8	\$2.60
7103	3	10 7/8	1.75	7125	25	10 7/8	2.60
7105	5	10 7/8	1.75	7130	30	10 7/8	2.60
7106	6	10 7/8	1.75	7135	35	10 7/8	3.00
7108	8	10 7/8	1.75	7140	40	10 7/8	3.00
7110	10	10 7/8	1.75	7145	45	10 7/8	3.00
7112	12	10 7/8	1.75	7150	50	10 7/8	3.00
7115	15	10 7/8	1.75	7160	60	10 7/8	3.00

Fuses listed are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.

Type B Buss Old Code Non-renewable Fuses

Ferrule Contact Type

1 to 60 Amperes, 2500 Volts



For Noark Blocks

Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each	Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each
6100	1	5 3/4	1/2	\$.46	6109	15	5 3/4	5/8	\$.60
6101	2	5 3/4	1/2	.46	6112	20	5 3/4	5/8	.60
6102	3	5 3/4	1/2	.46	6113	25	5 3/4	5/8	.60
6103	4	5 3/4	1/2	.46	6114	30	5 3/4	5/8	.60
6104	5	5 3/4	1/2	.46	6115	35	6 3/16	7/8	.75
6105	6	5 3/4	1/2	.46	6116	40	6 3/16	7/8	.75
6106	8	5 3/4	1/2	.46	6117	45	6 3/16	7/8	.75
6107	10	5 3/4	1/2	.46	6118	50	6 3/16	7/8	.75
6108	12	5 3/4	1/2	.46	....	..	..	..	..

For D. & W. Blocks

Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each	Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each
4101	1	5	5/8	\$.46	4110	10	5	5/8	\$.46
4102	2	5	5/8	.46	4112	12	5	5/8	.46
4103	3	5	5/8	.46	4115	15	5	5/8	.46
4104	4	5	5/8	.46	4120	20	5 9/16	7/8	.60
4105	5	5	5/8	.46	4125	25	5 9/16	7/8	.60
4106	6	5	5/8	.46	4130	30	5 9/16	7/8	.60
4108	8	5	5/8	.46	....	..	..	..	..

For Union Blocks

Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each	Cat. No.	Amp.	Length In.	Diam. Tube, In.	Price Each
10001	1	5 1/2	3/4	\$.46	10010	15	5 1/2	3/4	\$.46
10002	2	5 1/2	3/4	.46	10013	20	6	1	.60
10003	3	5 1/2	3/4	.46	10014	25	6	1	.60
10004	4	5 1/2	3/4	.46	10015	30	6	1	.60
10005	5	5 1/2	3/4	.46	10017	35	7 1/2	1	.75
10006	6	5 1/2	3/4	.46	10018	40	7 1/2	1	.75
10007	8	5 1/2	3/4	.46	10019	45	7 1/2	1	.75
10008	10	5 1/2	3/4	.46	10020	50	7 1/2	1	.75
10009	12	5 1/2	3/4	.46	10021	60	7 1/2	1	.75

Fuses are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.

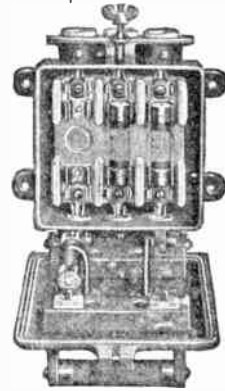
D & W Outlet Hoods
For D & W Service Switches
250-600 Volts
Schedule FC—Class 3
Straightway Type



Cat. No.	For Type	For Conduit, Size Inches	Std. Pkg.	Price Each
1940	I-6-A Boxes	1	20	\$ 9.90
1930	I-7-A "	1 1/2	10	1.10
1931	I-8-A and O-2 Boxes	1 1/2	10	1.60
1932	I-9-A "	2	10	2.30
1933	I-10-A Boxes	3	10	3.50
1934	I-11-A "	3 1/2	6	7.00
1941	I-O and I-O-A Boxes	1	20	1.00
1935	I and I-A Boxes	1 1/2	10	1.20
1936	I-2 and I-2 A and O-8 Boxes	1 1/2	10	1.65
1937	I-3 " I-3-A Boxes	2 1/2	6	2.50
1939	I-4 " I-4-A "	3	2	9.50
1851	O Boxes	1	10	1.05
1853	O- 3 Boxes	1 1/2	8	1.65
1854	O- 4 "	2	8	2.65
1855	O- 5 "	3	6	4.40
1856	O- 6 "	3 1/2	2	9.70
1857	O- 7 "	1	10	1.10
1859	O- 9 "	1 1/2	8	1.80
1860	O-10 "	3	8	3.00
1861	O-11, 1-5 and I-5-A Boxes	4	2	10.00
1862	O-12 Boxes	4 1/2	2	11.50

Outlet hoods can be furnished in the straightway type and for the various standard conduit sizes listed only. Straightway hoods can be adapted readily to side or back connection by use of a conduit elbow. If hoods are required for use with conduit other than the above standard sizes, the use of pipe reduction bushings is suggested as a ready means to adapt hoods to larger or smaller pipe.

D & W Service Switches
For N. E. C. S. Fuses
Schedule FC—Class 3
†250 Volts



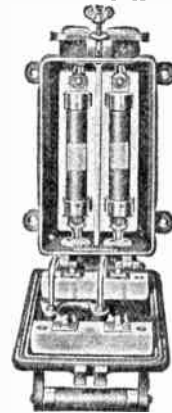
No. 1905

Cat. No.	Type		Amp.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Direct Current	Alternating Current					
1910	...	I- 6-A	0- 30	*Double	10	94	\$8.00
1900	...	I- 7-A	31- 60	"	5	98	11.00
1901	...	I- 8-A	61-100	"	5	125	18.50
1902	...	I- 9-A	101-200	"	5	160	23.00
1903	...	I-10-A	201-400	"	5	260	42.00
1904	...	I-11-A	401-600	"	3	230	70.00
1911	I-O	I- 0-A	0- 30	Triple	10	115	9.00
1905	I	I- A	31- 60	"	5	128	14.00
1906	I-2	I- 2-A	61-100	"	5	139	20.00
1907	I-3	I- 3-A	101-200	"	3	164	26.00
1908	I-4	I- 4-A	201-400	"	1	138	56.00
1909	I-5	I- 5-A	401-600	"	1	200	96.00

*Two-pole switches, Types I-6-A to I-11-A inclusive, are equipped with two hooks operated simultaneously by one lever, in conformance with ruling of Underwriters' Laboratories that it be impossible to open the circuit by pulling one fuse only. In ordering specify Cat. No. and Type.

†For direct-current 3-wire circuits, these switches are equipped with two hooks operated by single lever; multi-phase circuits with three hooks operated simultaneously by one lever. Direct-current 3-pole switches equipped with solid neutrals.

600 Volts



No. 1811

Cat. No.	Type	Amp.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1812	O- 2	31-60	"	5	125	17.50
1813	O- 3	61-100	"	4	160	20.00
1814	O- 4	101-200	"	4	200	35.00
1815	O- 5	201-400	"	3	200	80.00
1816	O- 6	401-600	"	1	125	133.00
1817	O- 7	0-30	Triple	5	125	16.25
1818	O- 8	31-60	"	5	140	20.00
1819	O- 9	61-100	"	4	175	23.00
1820	O-10	101-200	"	4	224	42.00
1821	O-11	201-400	"	1	173	102.00
1822	O-12	401-600	"	1	200	175.00

600-volt boxes supplied with all hooks operated by one lever.

Buss Open Link Fuses

The listing below covers all popular and necessary sizes and types and is simplified to aid in buying this material.

Buss open link fuses can be obtained with many other styles of terminals and in larger capacities. When in need of any open link fuses not listed below send sample or complete description.

Fuses listed are not standard stock material. Great care should therefore be exercised in ordering this material as it is not returnable.



110 to 1000 Amperes
Terminal Nos. 7, 16, 10 or 28

Amp.	STANDARD No.	TERMINAL Slot In.	Width In.	Other Terminals	Car-ton	Std. Pkg.	Price Each
1 to 30	1	3/16	3/8	0, 2, 3	20	100	\$.10
35 " 60	3	3/16	9/16	2, 5	20	100	.14
65 " 100	5	1/4	11/16	7	10	50	.20
110 " 200	7	1/4	3/4	12, 16	10	50	.30
225 " 400	16	7/16	1 1/2	10, 12, 18	10	50	.60
450 " 600	10	1/2	1 3/8	18, 25	5	25	1.20
650 " 1000	28	5/8	2 1/8	25, 30	5	25	2.00

In ordering, be sure to specify exact amperage and centers desired. Unless otherwise specified, standard terminals as listed above will be furnished. The terminals listed under heading Other Terminals can also be obtained without additional cost.

Standard Railway Link Fuses



Amp.	Center to Center, In.	Terminal Slot, In.	Car-ton	Std. Pkg.	Price Each
50 to 100	2 1/4	5/16	10	50	\$.20
110 " 150	2 1/4	5/16	10	50	.30

Type D Link Fuses



Amp.	Center to Center, In.	Terminal Slot, In.	Car-ton	Std. Pkg.	Price Each
50 to 300	2 7/8 to 2 5/8	1/4	10	50	\$.15

Large Open Link Fuses



Terminals of cold rolled copper, entirely flat, one edge being slotted to receive the fuse strip.

Amp.	No.	TERMINAL Size In.	Thickness In.	Car-ton	Std. Pkg.	Price Each
1 to 1500	51	2 1/2 x 2 1/2	1/4	2	10	\$12.00
1 " 2000	52	3 x 3	1/4	2	10	14.00
1 " 2000	53	3 x 3	3/8	2	10	16.00
1 " 2500	54	3 1/2 x 3 1/2	3/8	2	10	20.00
1 " 3000	55	4 x 4	3/8	2	10	24.00

When ordering, specify exact amperage, center to center dimensions and size of hole required. If more than one hole is desired a sketch of the fuse must be submitted and 50 cents added to price for each additional hole.

Buss Fuse Wire



Buss fuse wire and strip will carry indefinitely current 10 per cent in excess of the values shown under heading capacity and will open the circuit in one minute when subjected to 50 per cent overloads of such ratings.

This is based on a distance between contacts or terminals of 2 inches.

Standard package, 25 pounds.

Size Amperes	Diameter Inches	Carrying Capacity Amperes	Feet per Pound	Quantity on Spool	Price per Pound
1/4	.0045	.45	12920	250 Feet	\$100.00
1/2	.010	1.25	2616	1/2 Lb.	10.00
1	.016	2.2	1020	1/2 "	4.00
2	.025	4.3	420	1/2 "	3.50
3	.031	6	273	1/2 "	3.00
5	.039	8.6	172	1 "	2.25
6	.042	9.5	148	1 "	2.25
10	.055	14	87	1 "	2.00
15	.068	20	57	1 "	2.00
20	.082	27.5	39	1 "	1.50
25	.094	34	30	1 "	1.50
30	.103	39	25	1 "	1.50
40	.122	50	17.6	1 "	1.50
50	.137	60	14	1 "	1.50
60	.158	77	10.5	1 "	1.50
70	.170	87	9	1 "	1.50
75	.182	96	8	1 "	1.50
80	.189	102	7.3	1 "	1.50
90	.212	125	5.8	1 "	1.50
100	.226	137	5.1	1 "	1.50

Buss Fuse Strip

Packed in 5-pound cans. All in one piece. Each strip is marked at the inner end of the coil with the ampere rating.

Standard package, 25 pounds.

Size Amperes	Width Inches	Thickness Inches	Carrying Capacity Amperes	Feet per Pound	Price per Pound
100	1	.028	140	7.3	\$1.50
125	1	.035	170	5.8	1.50
150	1	.043	200	4.7	1.50
175	1	.051	225	4	1.50
200	1	.059	250	3.5	1.50
250	1	.075	305	2.7	1.50
300	1	.092	360	2.2	1.50
350	1	.110	415	1.9	1.50
400	1	.128	465	1.6	1.50
500	1	.166	570	1.2	1.50
600	1	.204	690	1	1.50

Bryant Neutral Wire Fuseless Plugs

30 Amperes, 125 Volts
Schedule II



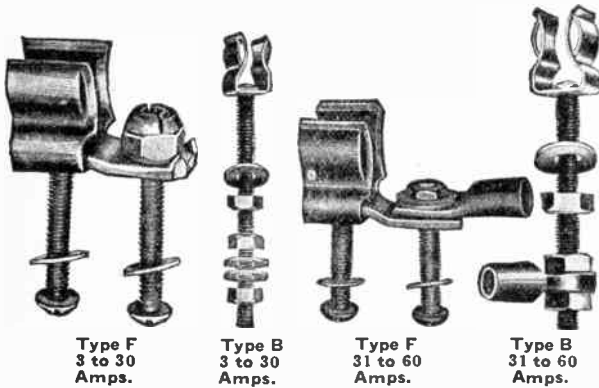
Can be inserted in neutral fuse receptacle of triple-pole cut-out base and soldered in place.

Designed to make possible compliance with the specifications of the National Electrical Code Rule which requires the omission of fuses from the grounded side of the line except at the cut-out base just preceding the lamp socket or other translating device.

Cat. No.	Car-ton	Std. Pkg.	Wt., Lbs.	Price Each
559	75	300	15	\$.05

FA Standard Fuse Terminals

For N.E.C. Fuses
250 and 600 Volts

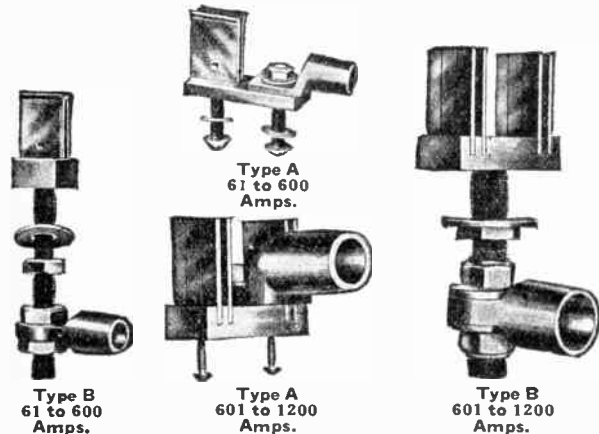


Cat. No.	Cap. Amp.	Volts	Plain Price Each	Satin Finish Price Each
F33	30	250	\$.46	\$.58
F63	60	250	.72	.90
F36	30	600	.52	.66
F66	60	600	.78	1.02

Front Connection

Cat. No.	Cap. Amp.	Volts	Plain Price Each	Satin Finish Price Each
B33	30	250	\$.46	\$.56
B63	60	250	.76	.90
B36	30	600	.52	.68
B66	60	600	.84	1.02

Back Connection



Cat. No.	Cap. Amp.	Volts	Plain Price Each	Satin Finish Price Each
A103	100	250 and 600	\$1.12	\$1.44
A203	200	250 " 600	1.80	2.26
A403	400	250 " 600	4.28	5.06
A603	600	250 " 600	5.62	6.52
A803	800	250 " 600	9.22	10.80
A1003	1200	250 " 600	11.82	14.06

Front Connection

Cat. No.	Cap. Amp.	Volts	Plain Price Each	Satin Finish Price Each
B103	100	250 and 600	\$1.80	\$2.02
B203	200	250 " 600	2.70	3.16
B403	400	250 " 600	6.20	7.20
B603	600	250 " 600	9.00	10.12
B803	800	250 " 600	16.88	18.46
B1003	1200	250 " 600	22.50	24.76

Front connected fuse terminals are furnished with short screws, requiring heads to be countersunk.

Back connected fuse terminals are furnished with studs long enough for 2-inch slate or marble mounting.

NOTE.—Plain finish will be sent unless otherwise specified.

Columbia Steel Cabinets

National Electrical Code Extract Regarding Cutout Boxes and Cabinets

Thickness of Metal

	No. 16 U. S. Gauge— $\frac{1}{16}$
	No. 14 U. S. Gauge— $\frac{3}{64}$
	No. 12 U. S. Gauge— $\frac{7}{64}$
	No. 10 U. S. Gauge— $\frac{3}{32}$

Cutout Boxes and Cabinets with Hinged Doors and Screw Covers Types A, AX, AG and Screw Cover Pull Boxes

No. 16 gauge is used where no surface area exceeds 360 square inches and if no single dimension is over 24 inches.

No. 14 gauge is used where no surface area exceeds 1000 square inches and if no single dimension is over 40 inches.

No. 12 gauge is used where no surface area exceeds 1500 square inches and if no single dimension is over 60 inches.

No. 10 gauge is used for any cabinet larger than noted above

Cutout Boxes and Cabinets with Removable Doors and Trims

No. 16 gauge box, No. 14 gauge trim, is required where no surface area exceeds 360 square inches and no single dimension is over 24 inches.

No. 14 gauge box, No. 12 gauge trim, is required where no surface area exceeds 1000 square inches and no single dimension is over 40 inches.

No. 12 gauge box, No. 12 gauge trim, is required where no surface area exceeds 1500 square inches and no single dimension is over 60 inches.

No. 10 gauge box, No. 10 gauge trim, is required for cabinets larger than noted above.

Hardware

The code requires that all cutout boxes and cabinets be provided with a catch. On the smaller Type A cabinets, a friction catch is permitted; on the smaller flush cabinets a turn catch is satisfactory, on the larger flush cabinets, a cupboard catch is best.

A lock may be used if desired but if furnished, must be in addition to the regular catch; a combined lock and catch may also be used in place of separate locks and catches.

Where single doors are over 48 inches high, they must have a three-point catch operated by a single knob or handle holding the doors closed at the center, top and bottom; where the door exceeds 24 inches in width, double doors must be provided, regardless of its height operated by a three-point catch.

Weatherproof Cabinets

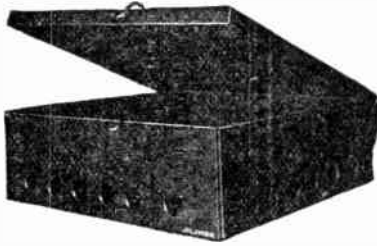
For wet location and outdoor service, cabinets and cutout boxes must be so designed and constructed that a beating rain or moisture running down conduits or wall will not allow water to enter. They must be provided with external fastenings for mounting. Hinges must be of cast metal or of sheet bronze. Threaded holes for conduits must be reinforced to provide metal at least $\frac{1}{4}$ inch in thickness. Bushed holes for open wiring must not be located either in the top or back except when special hood fittings are provided, and when located in the sides must be formed to provide a downward direction for wires leaving the cabinet. Devices made of sheet metal lighter than No. 10 U. S. gauge must be galvanized by the hot dip process after forming and assembly. Cabinets and cutout boxes made of sheets No. 10 U. S. gauge in thickness or heavier need not be galvanized after forming and assembly, provided galvanized sheets are used and all cut edges are painted. Other materials must be treated to give protection from corrosion.

Gutters—All Types

Cutout boxes or cabinets containing cutouts or panelboards require separate wiring gutters where more than four circuits are connected in the cabinet, unless the wires enter the cabinet directly opposite the terminals.

Columbia Type A Surface Cabinets

For Cut-outs, Service Switches and Panel Boards



CONDUIT DRILLING.—Cabinets are regularly furnished with knockouts for 1/2-inch conduit spaced evenly on all sides. Specify if boxes are wanted without knockouts. For special conduit drilling, a small extra charge is made.

Knockouts other than 1/2-inch can be supplied if required.
SIZES AND THICKNESS OF STEEL.—Cabinets are listed in standard sizes and gauges (thickness). Cabinets of any size and thickness of steel up to 3/16-inch thick can be made to order.
GALVANIZED CABINETS.—Type A Cabinets in any size can be furnished in galvanized steel. Add 50 per cent to prices.
WEATHERPROOF CABINETS.—These cabinets can be made with slant tops, rubber gaskets and solid brass catches, for exposure to the weather. Black japan or galvanized.
HOLES FOR CUT-OUT, SWITCHES, ETC.—Furnished at cost of one cent per hole per box. For tapped holes, add two cents per box.

BOXES WITHOUT COVERS.—If boxes are required without covers, deduct 20 per cent from prices. A flange will be supplied on front edges for mounting a wood trim or other cover if specified on order.

SCREW COVERS.—All cabinets will be furnished with screw covers at the same price, if so specified.

The boxes listed below are made of sheet steel of the required thickness to conform with Board of Underwriters' requirements, and bear the Underwriters' labels.

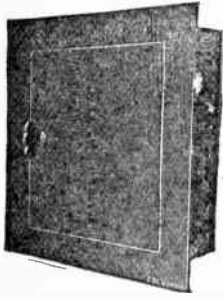
Columbia Type A Surface Cabinets

For Cut-outs, Service Switches and Panel Boards

Width Inches	Height Inches	PRICE, EACH DEPTH, INCHES				
		3	4	5	6	8
16	20	\$4.53	\$4.50	\$5.60	\$6.10	\$7.65
15	24	5.00	5.00	6.15	6.80	8.40
16	28	8.40	9.18	9.93	10.80	13.24
16	32	9.45	10.20	11.07	12.00	14.73
16	36	10.50	11.37	12.50	13.17	15.45
16	40	10.58	12.48	13.38	14.40	17.80
18	18	4.60	5.10	5.65	6.25	7.65
18	20	5.00	5.50	6.10	6.70	8.25
18	24	8.08	8.88	9.54	10.40	12.62
18	28	9.24	10.08	10.80	11.70	14.30
18	32	10.38	11.25	12.05	13.00	15.90
18	36	11.58	12.45	13.32	14.31	17.50
18	40	12.75	13.65	14.58	15.60	19.20
21	21	8.19	9.00	9.66	10.50	12.80
21	24	9.15	9.96	10.71	11.64	13.78
21	28	10.50	11.40	12.18	13.08	16.00
21	32	11.85	12.75	13.62	14.73	17.76
21	36	13.14	13.10	15.00	16.05	19.55
21	40	14.49	15.45	16.35	17.52	21.38
24	24	10.32	11.16	11.91	12.84	15.55
24	28	11.76	12.69	13.50	14.46	17.55
24	32	13.26	14.22	15.15	16.11	19.46
24	36	14.76	15.72	16.68	17.76	21.44
24	40	16.20	17.22	18.30	19.05	23.50
24	42	28.30	29.89	31.54	33.10	41.45
24	48	31.60	34.15	36.13	37.81	43.68
30	24	16.54	17.44	18.31	19.30	22.50
30	28	18.28	19.30	20.32	21.28	24.96
30	32	19.72	21.10	22.15	23.26	27.20
30	36	34.20	36.10	38.80	39.80	43.80
30	40	37.90	40.10	42.00	43.20	48.60
30	44	41.70	44.10	46.30	47.40	53.50
30	48	45.50	48.10	50.40	51.50	58.40
30	54	59.90	63.15	66.40	69.70	81.10
30	60	66.60	70.20	73.80	77.50	90.00
30	66	71.10	74.80	78.75	82.60	96.00
30	72	79.90	84.20	88.60	92.80	108.00
36	36	41.70	44.00	46.20	47.30	53.50
36	42	56.20	59.30	62.30	65.40	76.00
36	48	64.00	67.50	70.90	74.40	86.50
36	54	71.80	75.60	79.60	83.40	97.10
36	60	79.90	84.30	88.60	92.90	108.00
36	66	87.85	92.70	97.35	102.10	118.75
36	72	95.80	101.10	106.10	111.30	129.50
36	78	103.80	109.50	115.10	120.80	140.50
36	84	111.70	117.80	123.80	129.90	151.00
42	42	65.50	69.00	72.60	76.20	88.50
42	48	74.70	78.80	82.90	86.90	101.00
42	54	84.00	88.55	93.00	97.55	113.50
42	60	93.30	98.30	103.20	108.20	126.00
42	66	102.40	108.00	113.50	119.00	138.50
42	72	111.70	117.80	123.80	129.90	151.00
42	78	121.30	127.90	134.50	141.00	164.00
42	84	130.50	137.50	144.80	151.80	176.50
42	90	139.80	147.30	154.90	162.50	189.00
42	96	149.20	157.40	165.50	173.50	201.80
48	48	85.50	90.10	94.60	98.40	115.40
48	54	95.80	101.80	106.10	111.30	129.40
48	60	106.50	112.30	118.10	123.80	144.00
48	66	117.20	123.50	129.90	136.20	158.30
48	72	128.00	135.00	141.80	148.80	173.00
48	78	138.30	145.90	153.20	160.80	187.00
48	84	149.30	157.40	165.40	173.60	201.80
48	90	159.50	168.10	176.70	186.30	215.50
48	96	170.20	179.40	188.50	197.80	230.00
54	54	107.90	113.80	119.70	125.40	146.00
54	60	119.80	126.40	132.80	139.20	162.00
54	66	131.70	138.80	145.90	153.00	178.00
54	72	143.50	151.20	159.00	166.80	194.00
54	78	155.40	163.80	172.40	180.70	210.00
54	84	166.80	175.70	184.50	193.50	225.00
54	96	188.80	198.90	209.00	219.50	255.00
60	60	131.40	138.50	145.60	152.80	177.50
60	66	144.30	152.10	159.80	167.80	195.00
60	72	159.20	167.80	176.30	185.00	215.00
60	78	170.80	180.00	189.20	198.50	231.20
60	84	185.00	195.00	205.00	215.00	250.00
60	90	198.00	208.50	219.50	230.00	258.80

Width Inches	Height Inches	PRICE, EACH DEPTH, INCHES			
		3	4	5	8
4 1/2	5	\$.86	\$ 1.17	.....	.....
4 1/2	9	1.00	1.32	\$ 1.38	.....
6	6	.94	1.08	1.45	\$ 1.88
6	9	1.15	1.48	1.74	2.54
6	10	1.32	1.58	1.83	2.70
6	11	1.41	1.70	2.00	2.26
6	12	1.50	1.68	2.10	3.06
6	16	1.80	2.04	2.35	3.78
6	8	1.05	1.32	1.65	2.13
8	8	1.28	1.53	1.89	2.30
8	10	1.47	1.72	2.10	2.55
8	12	1.72	2.01	2.31	2.90
8	15	2.01	2.31	2.67	3.30
8	18	2.31	2.67	3.03	3.60
9	9	1.48	1.89	2.07	2.55
9	12	1.83	2.13	2.45	3.00
9	15	2.10	2.45	2.91	3.50
9	16	2.28	2.52	3.00	3.67
9	18	2.43	2.91	3.26	3.95
9	20	2.70	3.17	3.52	4.25
9	24	3.06	3.55	4.02	4.80
9	28	5.45	6.15	6.78	7.55
9	32	6.25	6.80	7.58	8.40
9	36	6.78	7.60	8.36	9.20
10	10	1.78	2.01	2.32	2.95
10	12	1.98	2.25	2.58	3.25
10	15	2.34	2.61	2.74	3.70
10	18	2.67	2.80	3.25	4.20
10	20	3.16	3.58	4.10	4.65
10	24	3.70	4.15	4.75	5.30
10	28	5.98	6.57	6.87	8.07
10	32	6.60	7.35	8.07	8.97
10	36	7.35	8.12	8.82	9.96
12	12	2.45	2.78	3.28	3.72
12	16	3.05	3.06	3.95	4.45
12	18	3.32	3.30	4.30	4.80
12	20	3.56	3.85	4.45	5.15
12	24	4.24	4.50	4.50	5.88
12	28	6.75	7.44	8.19	8.97
12	32	7.53	8.34	9.05	9.93
12	36	8.40	9.24	10.05	10.95
12	40	9.24	10.07	10.98	11.94
16	12	3.05	3.06	3.95	4.45
16	15	3.55	3.60	4.55	5.10
16	18	4.15	4.15	5.20	5.75

Columbia Type P Flush Cabinets
For Cut-outs, Service Switches and Panel Boards



These cabinets are provided with removable steel trim and door Plain type without ornamental beads; body is formed from one piece of steel with corners folded in and securely welded.

Finished in black baked japan. Regularly equipped with knob and turn catch.

Cabinets having surface area of over 360 square inches are furnished with vault handle.

Cabinets can be supplied with any style hinges, catch or lock.

Holes for cut-outs, switches, etc., add one cent per hole per box net. For tapped holes, two cents per hole net. Minimum 50 cents net per order.

CONDUIT DRILLING.—Cabinets are regularly furnished with knockouts for 1/2-inch conduit. For special conduit drilling an extra charge will be made. Knockouts other than 1/2-inch are furnished at a net charge of 50 cents for each variation from 1/2-inch. This covers any number of knockouts in any number of boxes.

Panel Board Cabinets

This style cabinet is especially adapted for panelboards. Give size of panel, or specify maker's name and manufacturer's number. Sizes not listed at proportionate prices. This style of cabinet can also be furnished for surface work if so ordered.

The boxes listed below are made of sheet steel of the required thickness to conform with Board of Underwriters' requirements and bear the Underwriters' labels.

All boxes are hinged on height unless otherwise specified. When ordering, specify hinged side first.

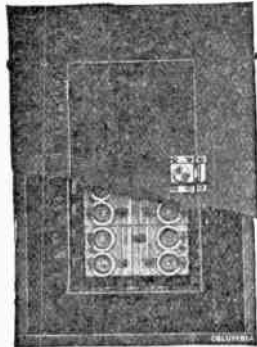
Columbia Type P Flush Cabinets
For Cut-outs, Service Switches and Panel Boards

Width Inches	Height Inches	PRICE, EACH—DEPTH, INCHES				
		3	4	5	6	
15	24	\$9.50	\$10.25	\$11.10	\$12.06	\$13.62
16	28	15.52	16.65	17.90	19.27	20.54
16	32	17.50	18.70	20.06	21.52	22.95
16	36	19.48	20.75	22.22	23.75	25.38
16	40	21.46	22.84	24.38	26.00	27.38
18	18	8.66	9.40	10.12	11.06	12.42
18	20	9.36	10.22	10.92	11.93	13.42
18	24	14.85	16.10	17.32	18.68	19.77
18	28	17.10	18.36	19.57	20.92	22.38
18	32	19.35	20.60	21.84	23.16	24.88
18	36	21.60	22.88	24.10	25.42	27.44
18	40	23.85	25.16	26.32	27.65	30.00
21	21	12.08	13.05	13.86	14.85	16.70
21	24	17.05	18.22	19.42	20.88	22.42
21	28	19.48	20.78	22.15	23.50	25.02
21	32	21.92	23.38	24.84	26.10	27.60
21	36	24.36	25.95	27.55	28.70	30.24
21	40	26.76	28.44	30.25	31.75	32.85
24	24	19.00	20.25	21.95	23.05	24.40
24	28	21.70	23.05	24.38	25.95	27.60
24	32	24.40	25.80	26.80	28.80	30.78
24	36	27.05	28.62	29.25	31.68	34.95
24	40	29.80	31.40	31.68	34.55	37.20
24	42	36.45	38.70	41.18	43.65	52.65
24	48	43.70	45.00	47.92	50.62	61.20
30	24	28.12	24.05	25.92	27.44	29.25
30	28	26.35	27.80	29.35	30.95	32.95
30	32	29.65	31.15	32.75	34.45	36.65
30	36	39.80	42.40	45.40	47.05	50.40
30	40	43.60	46.20	49.30	51.35	53.90
30	44	47.80	50.90	53.40	55.60	57.40
30	48	51.75	54.20	57.70	59.80	62.80
30	54	68.10	72.90	76.10	81.00	93.90
30	60	75.60	81.00	84.65	90.00	104.40
30	66	82.60	86.50	90.40	96.10	112.80
30	72	92.80	97.20	102.80	108.00	125.60
36	36	46.60	48.50	52.10	54.70	58.50
36	42	65.40	68.40	71.40	76.10	88.20
36	48	74.30	77.80	81.30	86.50	100.40
36	54	83.40	87.40	91.30	97.00	112.50
36	60	92.80	97.20	101.50	108.00	125.40
36	66	106.10	111.10	116.00	123.40	130.80
36	72	111.40	116.40	121.80	129.60	150.20
36	78	120.80	126.40	132.00	140.40	162.90
36	84	129.80	135.80	141.80	151.00	175.20
42	42	73.60	79.00	82.65	88.00	102.40
42	48	86.90	90.90	94.80	100.50	116.00
42	54	97.60	102.00	106.40	113.50	131.80
42	60	108.40	113.50	118.50	126.00	146.10
42	66	119.00	124.50	130.10	138.40	160.80
42	72	129.80	135.80	141.90	151.00	175.10
42	78	141.00	147.50	154.20	164.00	190.20
42	84	150.50	157.50	164.50	175.00	203.00
42	90	160.80	168.50	175.80	187.00	206.80
42	96	171.20	179.10	187.20	199.00	231.00
48	48	99.50	104.00	108.50	115.60	134.10
48	54	110.40	115.40	120.80	128.60	149.20
48	60	123.80	129.80	134.10	142.40	164.80
48	66	136.20	141.80	148.90	159.00	182.00
48	72	146.50	152.50	159.20	169.00	195.20
48	78	159.20	166.50	173.80	185.00	204.80
48	84	171.20	179.10	187.20	199.00	231.00
48	90	184.80	193.30	201.80	214.80	249.00
48	96	197.10	206.10	215.00	229.00	265.80
54	54	125.80	131.80	136.10	144.40	166.80
54	60	137.50	142.80	149.90	160.00	183.00
54	66	151.50	158.50	165.50	176.00	204.00
54	72	165.50	173.50	180.80	192.00	211.80
54	78	180.00	188.10	196.20	208.00	240.00
54	84	193.50	202.10	211.00	225.00	261.80
54	96	221.00	230.50	241.80	257.00	298.00
60	60	152.50	158.50	165.20	175.00	201.20
60	66	167.50	175.10	183.20	195.00	227.00
60	72	184.80	193.30	201.80	214.80	249.00
60	78	198.50	207.10	217.00	231.00	267.80
60	84	215.50	224.50	235.80	251.00	292.00
60	90	230.00	240.80	250.80	267.00	310.00

All boxes are hinged on height unless otherwise specified. When ordering, specify hinged side first.

Width Inches	Height Inches	PRICE, EACH—DEPTH, INCHES			
		3	4	5	6
4 1/2	5	\$3.56	\$3.90	\$4.50	.....
4 1/2	9	3.69	4.00	4.50	\$5.25
6	6	3.66	3.95	4.25	4.60
6	9	3.88	4.21	4.60	5.00
6	10	3.97	4.30	4.75	5.20
6	11	4.09	4.45	4.86	5.30
6	12	4.21	4.54	5.00	5.15
6	16	4.69	5.08	5.47	6.00
6	8	3.81	4.11	4.47	4.85
8	8	4.11	4.41	4.90	5.25
8	10	4.38	4.74	5.15	5.55
8	12	4.55	4.94	5.35	5.75
8	15	4.97	5.27	5.70	6.15
8	18	5.39	5.54	6.20	7.00
9	9	4.33	4.69	5.10	5.50
9	12	4.75	5.11	5.50	6.15
9	15	5.20	5.62	6.10	6.55
9	16	5.38	5.80	6.20	7.00
9	18	5.68	6.20	7.15	7.75
9	20	6.10	6.70	7.35	8.35
9	24	7.25	8.00	8.80	9.10
9	28	10.30	11.16	12.28	13.45
9	32	11.38	12.51	13.72	14.98
9	36	11.46	13.86	15.16	16.51
10	10	4.61	4.97	5.40	5.80
10	12	4.94	5.63	6.10	6.55
10	15	5.42	5.84	6.50	7.10
10	18	6.00	6.55	7.20	8.30
10	20	6.75	7.50	8.05	8.60
10	24	7.55	8.25	8.60	9.40
10	28	10.92	12.02	13.12	14.35
10	32	13.32	13.50	14.68	16.42
10	36	13.72	15.00	16.20	18.48
12	12	5.00	5.75	6.50	7.25
12	16	6.35	7.05	7.85	8.50
12	18	7.40	7.85	8.30	9.25
12	20	7.65	8.45	8.75	9.25
12	24	8.60	8.90	9.63	10.58
12	28	12.50	13.58	14.75	15.98
12	32	14.00	15.15	16.42	17.72
12	36	15.48	16.72	18.18	19.50
12	40	16.95	18.36	19.75	21.24
16	12	6.50	7.30	7.60	8.25
16	15	7.50	8.15	8.50	9.05
16	18	8.30	8.65	9.78	10.16
16	20	8.60	9.36	10.08	10.92

**Columbia Guttered Type Cabinets
For Flush and Surface Work**



**Type PSG
For Surface—Exposed—Work**

A recent ruling of the Underwriters' Code requires that all cabinets enclosing cut-outs or panelboards over four circuits must have a gutter frame and side wiring spaces or back wiring space, unless the wires leave the cabinet directly opposite the terminals. To take care of this ruling, a line of cabinets has been designed which is the most complete of its kind and can be adapted to almost every kind of cut-out in common use. In addition to those listed, cabinets can be furnished in special sizes to accommodate any style or make of cut-out.

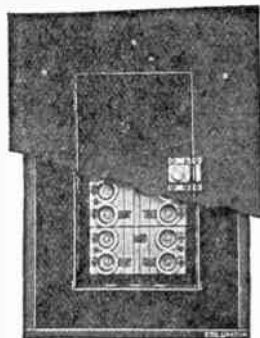
General Description of All Types

CODE STANDARD.—All cabinets listed are National Electrical Code Standard.

GUTTERS.—Cabinets for all cut-outs listed (except Perkins Dead Front Panel Switches) are equipped with steel gutter frames. These frames conceal the side wiring spaces and are provided with bushed holes opposite the terminals of the cut-outs and in the mains.

Both gutter frames and doors are made to allow for a three-inch wiring space around the cut-outs. Cabinets for Perkins Dead Front Panel Switches are especially made so that the cut-outs are mounted on bridges across the back of the cabinet, allowing a back wiring space underneath and around the cut-outs.

HARDWARE.—All cabinets are equipped with steel hinges and cupboard catches. Any style of hardware can be used if desired.



**Type PFG
For Flush—Concealed—Work**

CONDUIT DRILLING.—All cabinets are provided with 1/2-inch conduit knockouts on all sides, unless other conduit drilling is specified.

FINISH.—The standard finish is baked-on japan. If specified, olive green or white enamel can be furnished at an extra charge.

DIRECTORY FRAMES.—Directory frames will be supplied if mentioned on order, at an additional charge of 2.00.

Cabinets up to 24 circuits are listed. Any size cabinet can be furnished to accommodate any number of circuits.

Type PSG

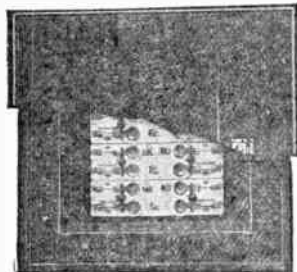
This type is a superior cabinet for surface work and is suitable for any kind of installation. The door and trim is removable and is without ornamentation.

Type PFG

This type is similar to Type PSG, except that it is designed for flush work.

Type CG

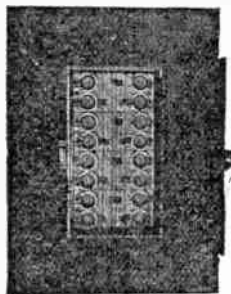
This type is made for flush work only.



**Type CG
For Flush—Concealed—Work**

**Columbia Guttered Type Cabinets
For Flush and Surface Work**

**For 2 or 3-wire Main Plug Cut-outs
Double-pole, Double-branch, with Side Gutter Frames**



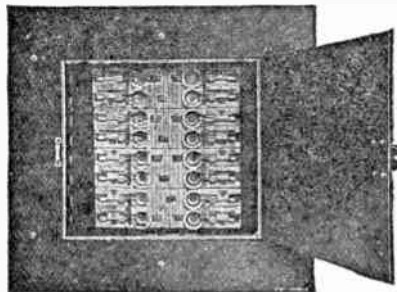
Cat. No.	Size Cabinet Inches	No. of Circuits	PRICE, EACH		
			Type PSG	Type PFG	Type CG
901	10 1/2 x 13 1/2 x 3	2	\$10.80	\$10.80	\$12.80
902	13 1/2 x 13 1/2 x 3	4	11.60	11.60	13.60
903	16 1/2 x 13 1/2 x 3	6	12.40	12.40	14.40
904	19 1/2 x 13 1/2 x 3	8	13.20	13.20	15.60
905	22 1/2 x 13 1/2 x 3	10	14.00	14.00	16.30
906	25 1/2 x 13 1/2 x 3	12	16.40	16.40	22.40
907	28 1/2 x 13 1/2 x 3	14	17.60	17.60	23.40
908	31 1/2 x 13 1/2 x 3	16	18.80	18.80	24.40
909	35 1/2 x 13 1/2 x 3	18	20.00	20.00	25.60
910	38 1/2 x 13 1/2 x 3	20	21.20	21.20	26.30
924	41 1/2 x 13 1/2 x 3	22	22.40	22.40	28.30
925	44 1/2 x 13 1/2 x 3	24	23.60	23.60	29.20

Prices do not include cut-outs. Other sizes can be made at proportionate prices. Give arrangement of cut-out and switches, size of gutter frame and cabinet. These cabinets are also made for any type of cut-out required.

When ordering, give number and specify type of cabinet wanted.

**Columbia Guttered Type Cabinets
For Flush and Surface Work**

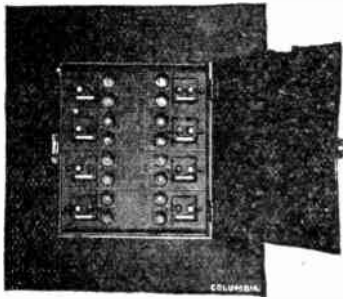
**For 2 or 3-wire Main Panel Switch Cut-outs
Double-pole, Double-branch, with Side Gutter Frames**



Cat. No.	Size Cabinet Inches	No. of Circuit	PRICE, EACH		
			Type PSG	Type PFG	Type CG
911	10 1/2 x 21 x 4	2	\$13.60	\$13.60	\$16.80
912	13 1/2 x 21 x 4	4	15.20	15.20	18.40
913	16 1/2 x 21 x 4	6	16.80	16.80	19.60
914	19 1/2 x 21 x 4	8	20.00	20.00	26.40
915	22 1/2 x 21 x 4	10	22.00	22.00	28.80
916	25 1/2 x 21 x 4	12	24.00	24.00	31.20
917	28 1/2 x 21 x 4	14	26.00	26.00	33.60
918	31 1/2 x 21 x 4	16	28.00	28.00	36.00
919	35 1/2 x 21 x 4	18	30.00	30.00	38.40
920	38 1/2 x 21 x 4	20	32.00	32.00	40.80
921	41 1/2 x 21 x 4	22	34.00	34.00	43.20
922	44 1/2 x 21 x 4	24	36.00	36.00	45.60

Prices do not include cut-outs. Other sizes can be made at proportionate prices. Give arrangement of cut-out and switches, size of gutter frame and cabinet. These cabinets are also made for any type of cut-out required.

When ordering, give number and specify type of cabinet wanted.

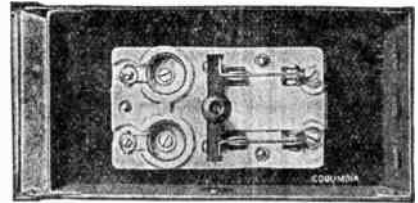


Columbia Guttered Type Cabinets
For Flush and Surface Work

For Perkins Panel Cut-outs, Plug Fuses, 10 and 20 Amps. 125 Volts

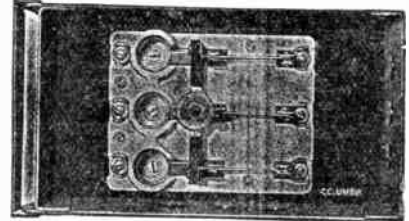
With dead fronts and push button switches, Bryant Nos. 2699, 2700, 2724, and 2725; with back wiring space.

Columbia Metal Cabinet Sizes
For 2-pole Plug Fused Entrance Switches



The size of cabinet which is adapted for a two-pole, 125-volt plug fused entrance switch is 4½ inches wide, 9 inches long and 3½ inches deep.

For 3-pole Plug Fused Entrance Switches



The size of cabinet which is adapted for a three-pole, 125-250-volt plug fused entrance switch is 6 inches wide, 11 inches long, and 3½ inches deep.

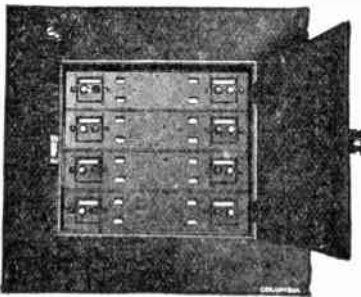
FOR 2-WIRE MAIN CUT-OUTS Nos. 2699 AND 2724		FOR 3-WIRE MAIN CUT-OUTS Nos. 2700 AND 2725		No. of Cir.	PRICE, EACH		
Cat. No.	Size Cabinet In.	Cat. No.	Size Cabinet In.		Type PSG	Type PFG	Type CG
741	10½x17x4	761	10½x18x4	2	\$12.00	\$12.00	\$15.20
742	13½x17x4	762	13½x18x4	4	12.80	12.80	16.40
743	16½x17x4	763	16½x18x4	6	13.60	13.60	17.20
744	19½x17x4	764	19½x18x4	8	14.40	14.40	18.00
745	22½x17x4	765	22½x18x4	10	18.00	18.00	24.80
746	25½x17x4	766	25½x18x4	12	19.60	19.60	26.40
747	28½x17x4	767	28½x18x4	14	22.00	22.00	28.40
748	31½x17x4	768	31½x18x4	16	22.80	22.80	31.20
749	35½x17x4	769	35½x18x4	18	24.40	24.40	32.80
750	38½x17x4	770	38½x18x4	20	26.00	26.00	35.00
751	41½x17x4	771	41½x18x4	22	27.60	27.60	37.00
752	44½x17x4	772	44½x18x4	24	29.20	29.20	39.00

Prices do not include cut-outs. Other sizes can be made at proportionate prices. Give arrangement of cut-outs and switches, size of gutter frame and cabinet. These cabinets are also made in the above styles for any type of cut-out required. When ordering, specify type and give Cat. No. of cabinet wanted.

Columbia Guttered Type Cabinets

For Flush and Surface Work
For Perkins Panel Cut-outs, N. E. C. Fused, 10 and 20 Amps., 250 Volts

With dead fronts and push button switches, Bryant Nos. 2685, 2686, 2727, and 2728; with back wiring space.



FOR 2-WIRE MAIN CUT-OUTS Nos. 2685 AND 2727		FOR 3-WIRE MAIN CUT-OUTS Nos. 2686 AND 2728		No. of Cir.	PRICE, EACH		
Cat. No.	Size Cabinet In.	Cat. No.	Size Cabinet In.		Type PSG	Type PFG	Type CG
841	10½x20x4	861	10½x21x4	2	\$13.60	\$13.60	\$16.80
842	13½x20x4	862	13½x21x4	4	15.20	15.20	18.40
843	16½x20x4	863	16½x21x4	6	16.80	16.80	19.60
844	19½x20x4	864	19½x21x4	8	20.00	20.00	26.40
845	22½x20x4	865	22½x21x4	10	22.00	22.00	28.80
846	25½x20x4	866	25½x21x4	12	24.00	24.00	31.20
847	28½x20x4	867	28½x21x4	14	26.00	26.00	33.60
848	31½x20x4	868	31½x21x4	16	28.00	28.00	36.00
849	35½x20x4	869	35½x21x4	18	30.00	30.00	38.40
850	38½x20x4	870	38½x21x4	20	32.00	32.00	40.80
851	41½x20x4	871	41½x21x4	22	34.00	34.00	43.20
852	44½x20x4	872	44½x21x4	24	36.00	36.00	45.60

Prices do not include cut-outs. Other sizes can be made at proportionate prices. Give arrangement of cut-outs and switches, size of gutter frame and cabinet. These cabinets are also made in the above styles for any type of cut-out required.

When ordering, specify type of cabinet and Cat. No.

Columbia Metal Cabinet Sizes

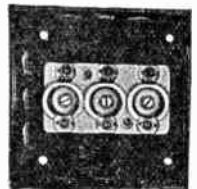
For 2-pole Main Line Plug Cut-outs



The size cabinet adapted for a two-pole main line plug cut-out is 4½ inches long, 5 inches wide and 3 inches deep.

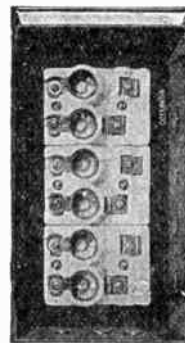
Columbia Metal Cabinet Sizes

For 3-pole Main Line Plug Cut-outs



The size cabinet adapted for a three-pole main line plug cut-out is 6 inches long, 6 inches wide, and 3 inches deep.

Columbia Metal Cabinet Sizes
For Double-pole Single Branch Plug Cut-outs



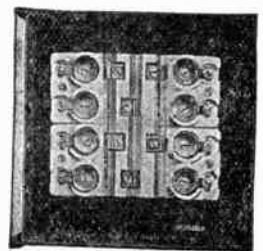
No. of Circuits	SIZE BOX REQUIRED, INCHES		
	Length	Width	Depth
1	6	6	3
2	9	6	3
3	12	6	3
4	16	6	3
*5	18	6	3
*6	21	6	3
*7	24	6	3
*8	27	6	3
*9	30	6	3
*10	33	6	3

*Approved only if the wires leave the box directly opposite the terminals.

For Double-pole Double Branch Plug Cut-outs
2 or 3-wire Mains

No. of Circuits	Size Box Required	No. of Circuits	Size Box Required
2	6x9x3	*12	21x9x3
4	9x9x3	*14	24x9x3
*6	12x9x3	*16	28x9x3
*8	15x9x3	*18	32x9x3
*10	18x9x3	.....	.....

*Approved only if the wires leave the box directly opposite the terminals.



Columbia Metal Cabinet Sizes

For Triple-pole Single Branch Plug Cut-outs



No. of Circuits	SIZE BOX REQUIRED, INCHES		
	Length	Width	Depth
1	9	9	3
2	12	9	3
3	16	9	3
4	20	9	3
*5	24	9	3
*6	32	9	3
*7	36	9	3
*8	40	9	3
*9	44	9	3
*10	48	9	3

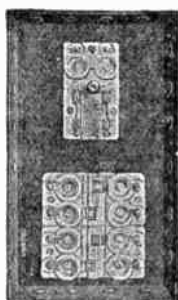
*Approved only if the wires leave the box directly opposite the terminals.

Columbia Metal Cabinet Sizes

For Double-branch Cut-outs with Main Switches

2 or 3-wire Mains

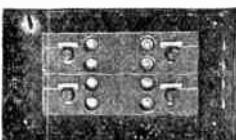
No. of Circuits	SIZE BOX REQUIRED, INCHES		
	Length	Width	Depth
2	12	9	4
4	15	9	4
*6	18	9	4
*8	21	9	4
*10	24	9	4
*12	28	9	4
*14	32	9	4
*16	36	9	4
*18	40	9	4



*Approved only if the wires leave the box directly opposite the terminals.

Columbia Metal Cabinet Sizes

For Bryant Dead Front Panel Switch Cut-outs



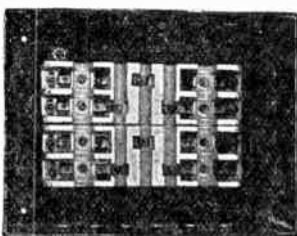
No. of Circuits	2 or 3-wire Mains		
	Size Box Required	No. of Circuits	Size Box Required
2	6x16x4	*10	18x16x4
4	9x16x4	*12	21x16x4
*6	12x16x4	*14	24x16x4
*8	15x16x4	*16	28x16x4
		18	28x16x14

*Approved if wires leave box opposite terminals.

Columbia Metal Cabinet Sizes

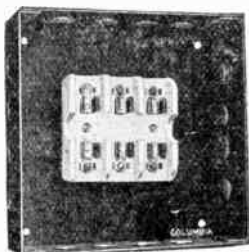
For Double-pole N. E. C. Double Branch Cut-outs

2 or 3-wire Mains



For Main Line N. E. C. Fuse Blocks

3-pole



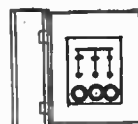
Cap. Amps.	No. of Circuits	Size Box Required	Cap. Amps.	Size Box Required
0-30	2	6x16x4	0-30	6x 8x3
0-30	4	9x16x4	31-60	8x12x4
0-30	*6	12x16x4	61-100	12x16x4
31-60	2	9x18x4	.....	.....
31-60	4	12x18x4	.....	.....
31-60	*6	16x18x4	.....	.....

*Approved only if wires leave the box directly opposite terminals.

Box Sizes Required for Wiring Steel Cabinets



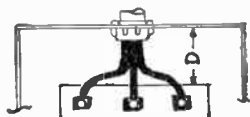
2-pole



3-pole

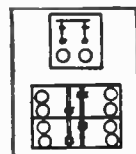
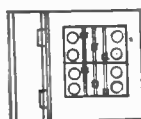
Two-pole fused entrance switch takes box 4 1/2 x 9 x 3 1/2.
Three-pole fused entrance switch takes box 6 x 10 x 4.

Underwriters' Required Clearance



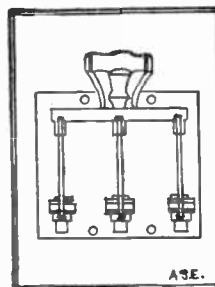
Amps.	Conduit Size	Size Wire	D Space Inches
100	1 1/2	1	4 1/2
200	2	3-0	5 1/2
400	3	500,000 cm.	7
600	4	1,000,000 cm.	9

Box Sizes Required for Cutouts



Circuits	Box Size			
	Plug Cutouts 3 to 2-wire Double Branch	Panel Cutouts 3 to 2-wire Double Branch	Plug Cutouts 2 to 2-wire Double Branch with Main Switch	Panel Cutouts 3 to 2-wire Double Branch with Main Switch
2	4 1/2 x 8x3	6x15x4	8x12x4	12x15x4
4	8 x 8x3	8x15x4	8x15x4	15x15x4
6	8 x12x3	12x15x4	8x27x4	15x18x4
8	8 x15x3	15x15x4	8x30x4	15x21x4
10	8 x18x3	15x18x4	8x33x4	15x24x4
12	8 x21x3	15x21x4	8x40x5	15x37x4
14	8 x24x3	15x24x4	8x43x5	15x40x4
16	8 x27x3	15x27x4	8x46x5	15x43x4
18	8 x30x3	15x30x4	8x49x5	15x46x4

Box Sizes Required for Types A and C 250-volt D. C. or 500-volt A. C. Knife Switches

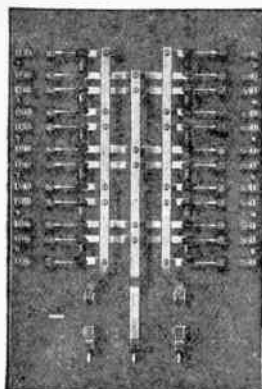


Front Connections—Single Throw—Not Fused

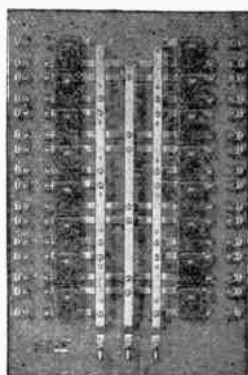
Capacity Amperes	DOUBLE-POLE			THREE-POLE			FOUR-POLE		
	W.	H.	D.	W.	H.	D.	W.	H.	D.
30	6	15	4	10	15	4	12	15	4
60	6	15	4	10	15	4	12	15	4
100	8	21	5	12	21	5	15	21	5
200	10	24	5	12	24	5	18	24	5
300	10	27	6	15	27	6	18	27	6
400	12	30	6	15	30	6	21	30	6
600	12	30	8	15	30	8	21	30	8

Crouse-Hinds Panels and Cabinets

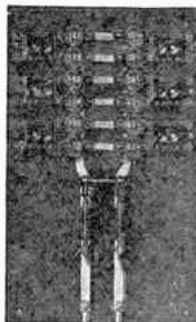
Crouse-Hinds Panels and Cabinets



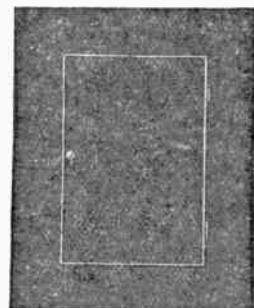
Type A 3-2 Wire Panel with Main Fuse Terminals



Type F 3-2 Wire Panel with Main Lugs



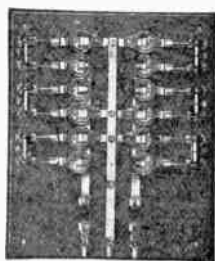
Type DP 2-2 Wire Panel with Main Fuseless Switch



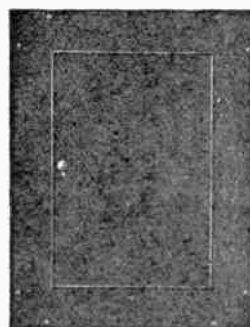
Type BM Cabinet For Surface Mounting



Type DD 2-2 Wire Panel with Main Lugs



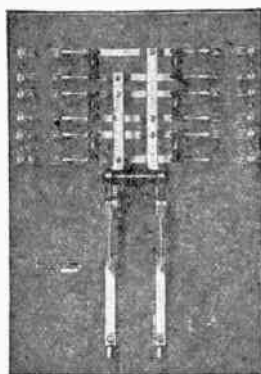
Type DK 3-2 Wire Panel with Main Fuse Terminals



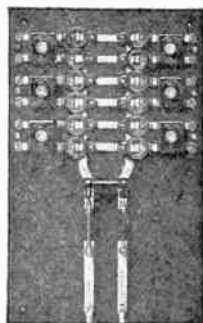
Type BN Cabinet For Flush Mounting



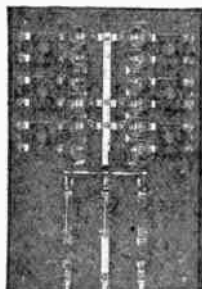
Type BT Cabinet For Flush Mounting



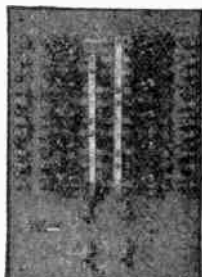
Type A 2-2 Wire Panel with Fuseless Main Switch



Type DR 2-2 Wire Panel with Fuseless Main Switch



Type DR 3-2 Wire Panel with Main Fusible Switch



Type O 2-2 Wire Panel with Main Fusible Switch

We are distributors for the complete line of Crouse-Hinds Panelboards and Cabinets.

Safety Panels and Cabinets are listed in this catalogue.

Prices for the following panels and cabinets will be quoted upon request:

Type A Panels

Branches arranged for N. E. C. cartridge fuses with or without knife switches.

Type DD Panels

Branches arranged for Edison plug fuses only.

Type DK Panels

Branches arranged for Edison plug fuses and knife switches.

Type DP Panels

Branches arranged for Edison plug fuses and push button switches.

Type DR Panels

Branches arranged for Edison plug fuses and rotary snap switches.

Type F Panels

Branches arranged for N. E. C. cartridge fuses and rotary snap switches.

Type O Panels

Branches arranged for N. E. C. cartridge fuses and push button switches.

The above types of panels are furnished with main lugs, main fuse terminals, main fuseless switches, or main fusible switches.

Type BM Cabinet

Combination of type B steel box and type M steel trim.

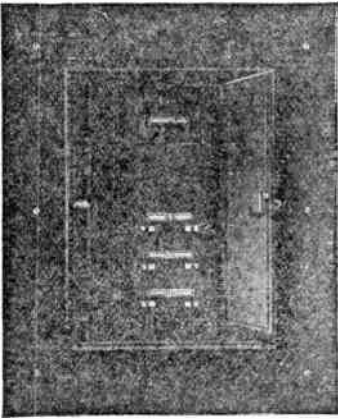
Type BN Cabinet

Combination of type B steel box and type N steel trim.

Type BT Cabinet

Combination of type B steel box and type T wooden trim.

Crouse-Hinds Safety Panels and Cabinets



General Panel Specifications for Types AT, DT, DPS, and EPS

Safety panels and cabinets allow unrestricted use of the circuit switches without the possibility of the operator coming in contact with any live part of the panel. Fuses and live parts are accessible only to persons holding the key to the separate compartment in which they are located. These panels are especially desirable in locations where they are subject to operation by persons unfamiliar with electrical devices.

MATERIAL.—The base consists of the highest grade of black Monson slate free from flaws or metallic veins. All current-carrying parts are made of the best grade of hard drawn copper of 98% conductivity.

FINISH.—The slate is furnished with a rubbed oil finish. All exposed metal parts are finished in polished copper, carefully lacquered, except on contact surfaces.

SPACINGS.—All current-carrying parts are spaced in accordance with the latest requirements of the National Board of Fire Underwriters.

CURRENT DENSITY.—All current-carrying parts are based upon a maximum current density of 1000 amperes per square inch cross-section.

CIRCUIT CONNECTIONS.—All 2 to 2-wire panels are connected so that adjacent poles of adjoining circuits are of the same polarity, but fed separately. All 3 to 2-wire panels are connected for the Edison 3-wire system, having one pole of each circuit connected to the neutral bus bar and the other pole connected to one of the outside bus bars. Adjacent poles of adjoining circuits are of the same polarity, but fed separately.

CIRCUIT STRIPS.—Branch circuit strips are made of $\frac{1}{2}$ -inch by $\frac{1}{16}$ -inch copper.

FUSE ARRANGEMENT.—Branch circuits are arranged for mounting fuses between switches and outgoing circuits.

CAPACITIES.—Mains on all 3 to 2-wire, 125-volts, and 2 to 2-wire, 250-volt panels are figured at 3 amperes per circuit. On 2 to 2-wire, 125-volt panels they are figured at 6 amperes per circuit. The capacities of main connections for various panelboards are given in the schedule where panelboards are listed.

SLATE FRAMES.—Slate frames are made of oiled Monson slate, $\frac{1}{2}$ -inch thick, and telescope the panelboard; slate frames are drilled for circuit wires and slotted for main wires, and are held in position by adjustable corner irons.

CIRCUIT SWITCHES.—For Types AT and DT Panels. Circuits are controlled by 30-ampere, 250-volt tumbler switches developed for use on panels exclusively. Each switch comprises a complete individual unit, consisting of a special high grade composition base on which are mounted the contacts and operating mechanism. This unit, or complete switch, can be easily removed or replaced if necessary. The contacts are formed to make direct connection with bus bars and circuit strips so that no screws are used to carry current. The mechanism is positive, strong, smooth in action, and easily operated. It is quick make, quick break, and double break. An insulating barrier is provided between the blades and contacts, or live parts and the frame and mechanism, so that an arc cannot form between them.

CIRCUIT SWITCHES FOR TYPES DPS AND EPS PANELS.—Circuits are controlled by 10-ampere, 250-volt, indicating push button switches enclosed in porcelain cases. These switches are arranged in pairs horizontally, each pair being connected by a twin yoke which holds the switches the proper distance apart. A steel spacer bar runs vertically between the switches and is attached to the center of each yoke, thus spacing and aligning the switches so that the switch plate or cover may be easily placed in position and held by screws threading into the spacer bar at each end.

Crouse-Hinds Safety Panels and Cabinets

MAIN SWITCHES.—For Types AT and DT Panels. Main switches are quick break and double break. They have laminated brush type contacts and are operated through a non-retardable, self-locking, toggle mechanism by a handle projecting through a cover which is a part of the switch. Main switches are regularly mounted at the top of the panel, and if main fuses are used, they are between the main switch and circuit switches so that when the main switch is opened the panel is completely dead.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

MAIN SWITCHES.—For Types DPS and EPS Panels—Main switches are knife blade type of a substantial design and construction and are regularly mounted at the bottom of the panelboard.

Panels can be furnished with main switches at top, but this necessitates increases in both price and size of panels.

General Cabinet Specifications

BOXES.—Type B steel boxes may be used for either flush or surface mounting. They are formed from one piece of No. 10 U. S. gauge sheet steel overlapped and riveted at the corners. They are the proper size to form a 3 or $3\frac{1}{2}$ -inch wiring compartment or gutter between the sides of the box and the slate frame surrounding the panel.

DRILLING.—Boxes will be drilled for conduit without extra charge, provided complete drilling information accompanies the order. Knockouts will be furnished at the following additions per knockout to list prices: $\frac{1}{2}$, $\frac{3}{4}$, or 1-inch, 10 cents; $1\frac{1}{2}$ or 2-inch, 15 cents.

TRIMS.—Steel trims are made from No. 10 U. S. gauge sheet steel. Mats are in one piece and furnished with adjustable trim fasteners which engage the flanges on the boxes, to hold the trims in place. Doors are secured to the mat by flush butt hinges, welded on, and have an ornamental molding welded around their edges and overlapping the mat, thereby forming a rabbet.

Wood trims are made from plain white oak, $\frac{1}{8}$ -inch thick. Both mat and door are made with square, mortised joints at corners. Doors are hung with flush butt hinges, have wooden panels, are set flush with the mat and close against a rabbet. Trims are lined with No. 16 gauge, black finished sheet steel.

FINISH.—Steel boxes and steel trims are painted both inside and outside with dead black lacquer.

Boxes and trims will be furnished with baked black enamel finish at an advance of 20% in the list prices.

Wood trims are filled and varnished on the outside.

TRIM CONSTRUCTION.—Trims with form S or form S1 construction have one large door opening over the entire panel, which door is provided with a combination Yale lock and spring catch. In the large door is hung a smaller door opening over the circuit switch handles and main switch, if used. This door is provided with a snap catch and polished brass vault handle. Attached to the back of the large door is a shield which covers all parts of the panel exposed by the small door and not covered by the switch covers. This shield prevents access to fuses and contact with live parts by the operator.

Types of Cabinets

Type BMS cabinet is a type B steel box with type MS steel trim for surface mounting.

Type BFS cabinet is a type B steel box with type FS steel trim for flush mounting.

Type BTS cabinet is a type B steel box with type TS wood trim for flush mounting.

Type BMSI cabinet is a type B steel box with type MSI steel trim for surface mounting.

Type BNSI cabinet is a type B steel box with type NSI steel trim for flush mounting.

Type BTSI cabinet is a type B steel box with type TSI wood trim for flush mounting.

Type DT Crouse-Hinds Safety Panels
2-wire, 125-volt Mains

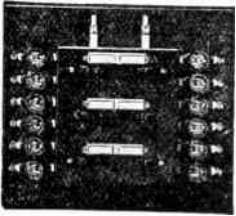
2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request.

Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Lugs



No. 71502

Cat. No. Panel	No. of Branch Circuits	DIMENSIONS		
		Wide	INCHES High	Deep
71501	4	24	18 1/2	5 1/2
71502	6	24	22 1/2	5 1/2
71503	8	24	24 1/2	5 1/2
71504	10	24	28 1/2	5 1/2
71505	12	24	32 1/2	5 1/2
71506	14	24	34 1/2	5 1/2
71507	16	24	38 1/2	5 1/2
71508	18	24	40 1/2	5 1/2
71509	20	24	44 1/2	5 1/2
71510	22	24	46 1/2	5 1/2
71511	24	24	50 1/2	5 1/2
71512	26	24	52 1/2	5 1/2
71513	28	24	56 1/2	5 1/2

Prices

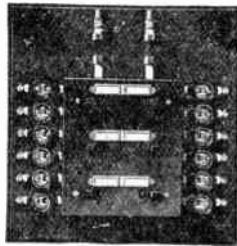
PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	SURFACE BMS	FLUSH BFS	FLUSH BTS
71501	4	30	\$15.50	\$45.60	\$45.60	\$51.20
71502	6	60	22.10	53.80	53.80	60.60
71503	8	60	28.80	61.50	61.50	69.30
71504	10	60	35.20	69.80	69.80	77.70
71505	12	100	42.30	78.70	78.70	86.70
71506	14	100	49.40	86.60	86.60	94.80
71507	16	100	55.90	95.00	95.00	103.00
71508	18	200	64.10	106.20	106.20	112.90
71509	20	200	70.80	114.80	114.80	121.90
71510	22	200	77.60	122.60	122.60	129.80
71511	24	200	84.20	133.90	133.90	139.40
71512	26	200	91.00	142.00	142.00	148.00
71513	28	200	97.70	151.10	151.10	158.10

With Main Fuse Terminals

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	INCHES High	Deep
71517	4	24	20 1/2	5 1/2
71518	6	24	26 1/2	5 1/2
71519	8	24	28 1/2	5 1/2
71520	10	24	32 1/2	5 1/2
71521	12	24	38 1/2	5 1/2
71522	14	24	40 1/2	5 1/2
71523	16	24	44 1/2	5 1/2
71524	18	24	48 1/2	5 1/2
71525	20	24	50 1/2	5 1/2
71526	22	24	54 1/2	5 1/2
71527	24	24	56 1/2	5 1/2
71528	26	24	60 1/2	5 1/2
71529	28	24	62 1/2	5 1/2



No. 71518

Prices

PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	SURFACE BMS	FLUSH BFS	FLUSH BTS
71517	4	30	\$17.00	\$47.90	\$47.90	\$54.50
71518	6	60	23.90	57.60	57.60	65.50
71519	8	60	30.60	65.20	65.20	73.10
71520	10	60	37.00	73.40	73.40	81.40
71521	12	100	45.00	84.10	84.10	92.60
71522	14	100	52.10	94.20	94.20	100.90
71523	16	100	58.60	102.60	102.60	109.70
71524	18	200	68.40	116.90	116.90	121.90
71525	20	200	75.10	124.80	124.80	130.30
71526	22	200	81.90	134.10	134.10	140.60
71527	24	200	88.50	141.90	141.90	148.90
71528	26	200	95.30	153.20	153.20	159.20
71529	28	200	102.00	161.10	161.10	167.70

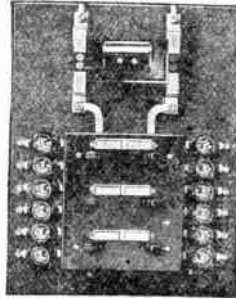
Type DT Crouse-Hinds Safety Panels
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Fuseless Switch



No. 71534

Cat. No. Panel	No. of Branch Circuits	DIMENSIONS		
		Wide	INCHES High	Deep
71533	4	24	26 1/2	5 1/2
71534	6	24	28 1/2	5 1/2
71535	8	24	32 1/2	5 1/2
71536	10	24	34 1/2	5 1/2
71537	12	24	38 1/2	5 1/2
71538	14	24	40 1/2	5 1/2
71539	16	24	44 1/2	5 1/2
71540	18	24	48 1/2	6 1/2
71541	20	24	52 1/2	6 1/2
71542	22	24	54 1/2	6 1/2
71543	24	24	58 1/2	6 1/2
71544	26	24	60 1/2	6 1/2
71545	28	24	64 1/2	6 1/2

Prices

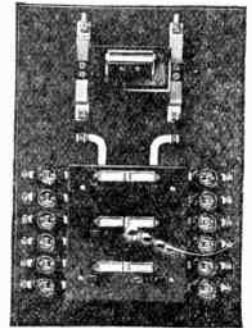
PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	SURFACE BMS	FLUSH BFS	FLUSH BTS
71533	4	30	\$27.80	\$61.50	\$61.50	\$69.40
71534	6	60	35.30	69.90	69.90	77.80
71535	8	60	42.00	78.40	78.40	86.40
71536	10	60	48.40	85.60	85.60	93.80
71537	12	100	58.30	97.40	97.40	105.90
71538	14	100	65.40	107.50	107.50	114.20
71539	16	100	71.90	115.90	115.90	123.00
71540	18	200	87.30	137.90	137.90	142.90
71541	20	200	94.00	147.30	147.30	153.30
71542	22	200	100.80	154.30	154.30	161.80
71543	24	200	107.40	166.50	166.50	172.00
71544	26	200	114.20	174.50	174.50	180.50
71545	28	200	120.90	184.00	184.00	191.10

With Main Fusible Switch

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	INCHES High	Deep
71549	4	24	26 1/2	5 1/2
71550	6	24	30 1/2	5 1/2
71551	8	24	34 1/2	5 1/2
71552	10	24	36 1/2	5 1/2
71553	12	24	44 1/2	5 1/2
71554	14	24	46 1/2	5 1/2
71555	16	24	50 1/2	5 1/2
71556	18	24	56 1/2	6 1/2
71557	20	24	58 1/2	6 1/2
71558	22	24	62 1/2	6 1/2
71559	24	24	64 1/2	6 1/2
71560	26	24	68 1/2	6 1/2
71561	28	24	70 1/2	6 1/2



No. 71550

Prices

PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	SURFACE BMS	FLUSH BFS	FLUSH BTS
71549	4	30	\$29.20	\$62.90	\$62.90	\$70.80
71550	6	60	36.70	72.20	72.20	80.10
71551	8	60	43.40	80.60	80.60	88.80
71552	10	60	49.80	87.90	87.90	96.30
71553	12	100	61.50	105.50	105.50	112.60
71554	14	100	68.60	113.60	113.60	120.80
71555	16	100	75.10	124.80	124.80	130.30
71556	18	200	91.80	147.60	147.60	154.60
71557	20	200	98.50	157.60	157.60	163.10
71558	22	200	105.30	167.00	167.00	173.60
71559	24	200	111.90	175.00	175.00	182.10
71560	26	200	118.70	184.70	184.70	192.90
71561	28	200	125.40	192.90	192.90	201.70

Type DT Crouse-Hinds Safety Panels

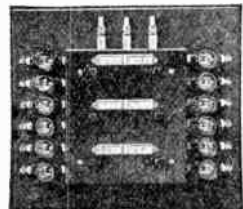
3-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Lugs



No. 71566

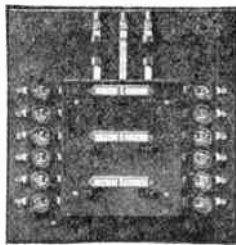
Cat. No. Panel	No. of Branch Circuits	DIMENSIONS, BOX		
		Wide	High	Deep
71565	4	24	18 1/2	5 1/2
71566	6	24	22 1/2	5 1/2
71567	8	24	24 1/2	5 1/2
71568	10	24	28 1/2	5 1/2
71569	12	24	30 1/2	5 1/2
71570	14	24	34 1/2	5 1/2
71571	16	24	36 1/2	5 1/2
71572	18	24	40 1/2	5 1/2
71573	20	24	42 1/2	5 1/2
71574	22	24	46 1/2	5 1/2
71575	24	24	50 1/2	5 1/2
71576	26	24	52 1/2	5 1/2
71577	28	24	56 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71565	4	30	\$15.30	\$45.40	\$45.40	\$51.00
71566	6	30	22.70	54.40	54.40	61.20
71567	8	30	29.70	62.40	62.40	70.20
71568	10	30	36.50	71.10	71.10	79.00
71569	12	60	43.70	79.20	79.20	87.10
71570	14	60	50.40	87.60	87.60	95.80
71571	16	60	57.30	95.40	95.40	103.80
71572	18	60	64.00	106.10	106.10	112.80
71573	20	60	70.90	113.90	113.90	120.80
71574	22	100	79.10	124.10	124.10	131.30
71575	24	100	86.00	135.70	135.70	141.20
71576	26	100	92.80	143.80	143.80	149.80
71577	28	100	99.50	152.90	152.90	159.90

With Main Fuse Terminals

Cat. No. Panel	No. of Branch Circuits	DIMENSIONS, BOX		
		Wide	High	Deep
71581	4	24	20 1/2	5 1/2
71582	6	24	24 1/2	5 1/2
71583	8	24	26 1/2	5 1/2
71584	10	24	30 1/2	5 1/2
71585	12	24	34 1/2	5 1/2
71586	14	24	38 1/2	5 1/2
71587	16	24	40 1/2	5 1/2
71588	18	24	44 1/2	5 1/2
71589	20	24	46 1/2	5 1/2
71590	22	24	52 1/2	5 1/2
71591	24	24	56 1/2	5 1/2
71592	26	24	58 1/2	5 1/2
71593	28	24	62 1/2	5 1/2



No. 71582

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71581	4	30	\$17.60	\$48.50	\$48.50	\$55.10
71582	6	30	24.00	56.70	56.70	64.50
71583	8	30	32.00	65.70	65.70	73.60
71584	10	30	38.80	74.30	74.30	82.20
71585	12	60	46.40	83.60	83.60	91.80
71586	14	60	53.10	92.20	92.20	100.70
71587	16	60	60.00	102.10	102.10	108.80
71588	18	60	66.70	110.70	110.70	117.80
71589	20	60	73.60	118.60	118.60	125.80
71590	22	100	83.20	134.20	134.20	140.20
71591	24	100	90.10	143.50	143.50	150.50
71592	26	100	96.90	153.50	153.50	159.00
71593	28	100	103.60	162.70	162.70	169.30

Type DT Crouse-Hinds Safety Panels

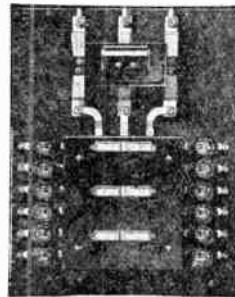
3-wire, 125-volt Mains

2-wire 125-volt Branches with 30-ampere Tumbler Switches and Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered without change in price or size.

With Main Fuseless Switch



No. 71598

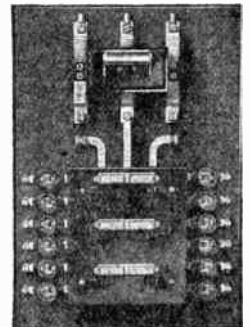
Cat. No. Panel	No. of Branch Circuits	DIMENSIONS, BOX		
		Wide	High	Deep
71597	4	24	26 1/2	5 1/2
71598	6	24	28 1/2	5 1/2
71599	8	24	32 1/2	5 1/2
71600	10	24	34 1/2	5 1/2
71601	12	24	38 1/2	5 1/2
71602	14	24	40 1/2	5 1/2
71603	16	24	44 1/2	5 1/2
71604	18	24	46 1/2	5 1/2
71605	20	24	50 1/2	5 1/2
71606	22	24	52 1/2	5 1/2
71607	24	24	56 1/2	5 1/2
71608	26	24	58 1/2	5 1/2
71609	28	24	62 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71597	4	30	\$31.80	\$65.50	\$65.50	\$73.40
71598	6	30	39.20	73.80	73.80	81.70
71599	8	30	46.20	82.60	82.60	90.60
71600	10	30	53.00	90.20	90.20	98.40
71601	12	60	61.50	100.60	100.60	109.10
71602	14	60	68.20	110.30	110.30	117.00
71603	16	60	75.10	119.10	119.10	126.20
71604	18	60	81.80	126.80	126.80	134.00
71605	20	60	88.70	138.40	138.40	143.90
71606	22	100	101.10	152.10	152.10	158.10
71607	24	100	108.00	161.40	161.40	168.40
71608	26	100	114.80	171.40	171.40	176.90
71609	28	100	121.50	180.60	180.60	187.20

With Main Fusible Switch

Cat. No. Panel	No. of Branch Circuits	DIMENSIONS, BOX		
		Wide	High	Deep
71613	4	24	26 1/2	5 1/2
71614	6	24	30 1/2	5 1/2
71615	8	24	32 1/2	5 1/2
71616	10	24	36 1/2	5 1/2
71617	12	24	40 1/2	5 1/2
71618	14	24	42 1/2	5 1/2
71619	16	24	46 1/2	5 1/2
71620	18	24	48 1/2	5 1/2
71621	20	24	52 1/2	5 1/2
71622	22	24	58 1/2	5 1/2
71623	24	24	62 1/2	5 1/2
71624	26	24	64 1/2	5 1/2
71625	28	24	68 1/2	5 1/2



No. 71614

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Main Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71613	4	30	\$33.90	\$67.60	\$67.60	\$75.50
71614	6	30	41.30	76.80	76.80	84.70
71615	8	30	48.30	84.70	84.70	92.70
71616	10	30	55.10	93.20	93.20	101.60
71617	12	60	63.60	105.70	105.70	112.40
71618	14	60	70.30	113.30	113.30	120.20
71619	16	60	77.20	122.20	122.20	129.40
71620	18	60	84.90	133.40	133.40	138.40
71621	20	60	90.80	141.80	141.80	147.80
71622	22	100	101.40	158.00	158.00	163.50
71623	24	100	112.80	171.90	171.90	178.50
71624	26	100	119.60	180.00	180.00	187.10
71625	28	100	126.30	189.30	189.30	197.50

Type AT Crouse-Hinds Safety Panels

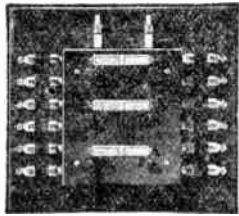
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Lugs



No. 71630

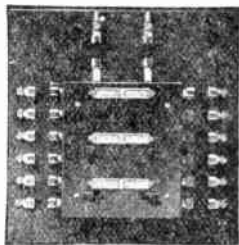
Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71629	4	24	18 1/2	5 1/2
71630	6	24	22 1/2	5 1/2
71631	8	24	24 1/2	5 1/2
71632	10	24	28 1/2	5 1/2
71633	12	24	32 1/2	5 1/2
71634	14	24	34 1/2	5 1/2
71635	16	24	38 1/2	5 1/2
71636	18	24	40 1/2	5 1/2
71637	20	24	44 1/2	5 1/2
71638	22	24	46 1/2	5 1/2
71639	24	24	50 1/2	5 1/2
71640	26	24	52 1/2	5 1/2
71641	28	24	56 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH— PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71629	4	30	\$15.50	\$45.60	\$45.60	\$51.20
71630	6	60	22.10	53.80	53.80	60.60
71631	8	60	28.80	61.50	61.50	69.30
71632	10	60	35.20	69.80	69.80	77.70
71633	12	100	42.30	78.70	78.70	86.70
71634	14	100	49.40	86.60	86.60	94.80
71635	16	100	55.90	95.00	95.00	103.00
71636	18	200	64.10	106.20	106.20	112.90
71637	20	200	70.80	114.80	114.80	121.90
71638	22	200	77.60	122.60	122.60	129.80
71639	24	200	84.20	133.90	133.90	139.40
71640	26	200	91.00	142.90	142.00	148.00
71641	28	200	97.70	151.10	151.10	158.10

With Main Fuse Terminals

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71645	4	24	20 1/2	5 1/2
71646	6	24	26 1/2	5 1/2
71647	8	24	28 1/2	5 1/2
71648	10	24	32 1/2	5 1/2
71649	12	24	38 1/2	5 1/2
71650	14	24	40 1/2	5 1/2
71651	16	24	44 1/2	5 1/2
71652	18	24	48 1/2	5 1/2
71653	20	24	50 1/2	5 1/2
71654	22	24	54 1/2	5 1/2
71655	24	24	56 1/2	5 1/2
71656	26	24	60 1/2	5 1/2
71657	28	24	62 1/2	5 1/2



No. 71646

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH— PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71645	4	30	\$17.00	\$47.90	\$47.90	\$54.50
71646	6	60	23.90	57.60	57.60	65.50
71647	8	60	30.60	65.20	65.20	73.10
71648	10	60	37.00	73.40	73.40	81.40
71649	12	100	45.00	84.10	84.10	92.60
71650	14	100	52.10	94.20	94.20	100.90
71651	16	100	58.60	102.60	102.60	109.70
71652	18	200	68.40	116.90	116.90	121.90
71653	20	200	75.10	124.80	124.80	130.30
71654	22	200	81.90	134.10	134.10	140.60
71655	24	200	88.50	141.90	141.90	148.90
71656	26	200	95.30	153.20	153.20	159.20
71657	28	200	102.00	161.10	161.10	167.70

Type AT Crouse-Hinds Safety Panels

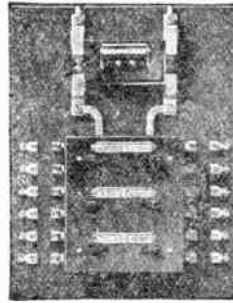
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Fuseless Switch



No. 71662

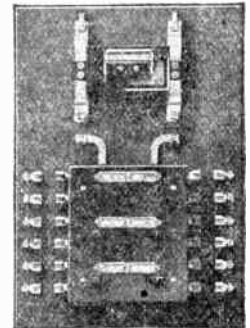
Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71661	4	24	26 1/2	5 1/2
71662	6	24	28 1/2	5 1/2
71663	8	24	32 1/2	5 1/2
71664	10	24	34 1/2	5 1/2
71665	12	24	38 1/2	5 1/2
71666	14	24	40 1/2	5 1/2
71667	16	24	44 1/2	5 1/2
71668	18	24	48 1/2	6 1/2
71669	20	24	52 1/2	6 1/2
71670	22	24	54 1/2	6 1/2
71671	24	24	58 1/2	6 1/2
71672	26	24	60 1/2	6 1/2
71673	28	24	64 1/2	6 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH— PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71661	4	30	\$27.80	\$61.50	\$61.50	\$69.40
71662	6	60	35.30	69.90	69.90	77.80
71663	8	60	42.00	78.40	78.40	86.40
71664	10	60	48.40	85.60	85.60	93.80
71665	12	100	58.30	97.40	97.40	105.90
71666	14	100	65.40	107.50	107.50	114.20
71667	16	100	71.90	115.90	115.90	123.00
71668	18	200	87.30	137.90	137.90	142.90
71669	20	200	94.00	147.30	147.30	153.30
71670	22	200	100.80	154.30	154.30	161.80
71671	24	200	107.40	166.50	166.50	172.00
71672	26	200	114.20	174.50	174.50	180.50
71673	28	200	120.90	184.00	184.00	191.10

With Main Fusible Switch

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71677	4	24	26 1/2	5 1/2
71678	6	24	30 1/2	5 1/2
71679	8	24	34 1/2	5 1/2
71680	10	24	36 1/2	5 1/2
71681	12	24	44 1/2	5 1/2
71682	14	24	46 1/2	5 1/2
71683	16	24	50 1/2	5 1/2
71684	18	24	56 1/2	6 1/2
71685	20	24	58 1/2	6 1/2
71686	22	24	62 1/2	6 1/2
71687	24	24	64 1/2	6 1/2
71688	26	24	68 1/2	6 1/2
71689	28	24	70 1/2	6 1/2



No. 71678

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH— PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71677	4	30	\$29.20	\$62.90	\$62.90	\$70.80
71678	6	60	36.70	72.20	72.20	80.10
71679	8	60	43.40	80.60	80.60	88.80
71680	10	60	49.80	87.90	87.90	96.30
71681	12	100	61.50	105.50	105.50	112.60
71682	14	100	68.60	113.60	113.60	120.80
71683	16	100	75.10	124.80	124.80	130.30
71684	18	200	91.80	147.60	147.60	154.60
71685	20	200	98.50	157.60	157.60	163.10
71686	22	200	105.30	167.00	167.00	173.60
71687	24	200	111.90	175.00	175.00	182.10
71688	26	200	118.70	184.70	184.70	192.90
71689	28	200	125.40	192.90	192.90	201.70

Type AT Crouse-Hinds Safety Panels

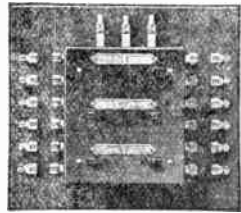
3-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Lugs



No. 71694

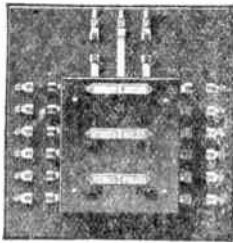
Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE Wide	DIMENS., INCHES High	BOX Deep
71693	4	24	18 1/2	5 1/2
71694	6	24	22 1/2	5 1/2
71695	8	24	24 1/2	5 1/2
71696	10	24	28 1/2	5 1/2
71697	12	24	30 1/2	5 1/2
71698	14	24	34 1/2	5 1/2
71699	16	24	36 1/2	5 1/2
71700	18	24	40 1/2	5 1/2
71701	20	24	42 1/2	5 1/2
71702	22	24	46 1/2	5 1/2
71703	24	24	50 1/2	5 1/2
71704	26	24	52 1/2	5 1/2
71705	28	24	56 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71693	4	30	\$15.30	\$45.40	\$45.40	\$51.00
71694	6	30	22.70	54.40	54.40	61.20
71695	8	30	29.70	62.40	62.40	70.20
71696	10	30	36.50	71.10	71.10	79.00
71697	12	60	43.70	79.20	79.20	87.10
71698	14	60	50.40	87.60	87.60	95.80
71699	16	60	57.30	95.40	95.40	103.80
71700	18	60	64.00	106.10	106.10	112.80
71701	20	60	70.90	113.90	113.90	120.80
71702	22	100	79.10	124.10	124.10	131.30
71703	24	100	86.00	135.70	135.70	141.20
71704	26	100	92.80	143.80	143.80	149.80
71705	28	100	99.50	152.90	152.90	159.90

With Main Fuse Terminals

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE Wide	DIMENS., INCHES High	BOX Deep
71709	4	24	20 1/2	5 1/2
71710	6	24	24 1/2	5 1/2
71711	8	24	26 1/2	5 1/2
71712	10	24	30 1/2	5 1/2
71713	12	24	34 1/2	5 1/2
71714	14	24	38 1/2	5 1/2
71715	16	24	40 1/2	5 1/2
71716	18	24	44 1/2	5 1/2
71717	20	24	46 1/2	5 1/2
71718	22	24	52 1/2	5 1/2
71719	24	24	56 1/2	5 1/2
71720	26	24	58 1/2	5 1/2
71721	28	24	62 1/2	5 1/2



No. 71710

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71709	4	30	\$17.60	\$48.50	\$48.50	\$55.10
71710	6	30	24.00	56.70	56.70	64.50
71711	8	30	32.00	65.70	65.70	73.60
71712	10	30	38.80	74.30	74.30	82.20
71713	12	60	46.40	83.60	83.60	91.80
71714	14	60	53.10	92.20	92.20	100.70
71715	16	60	60.00	102.10	102.10	108.80
71716	18	60	66.70	110.70	110.70	117.80
71717	20	60	73.60	118.60	118.60	125.80
71718	22	100	83.20	134.20	134.20	140.20
71719	24	100	90.10	143.50	143.50	150.50
71720	26	100	96.90	153.50	153.50	159.00
71721	28	100	103.60	162.70	162.70	169.30

Type AT Crouse-Hinds Safety Panels

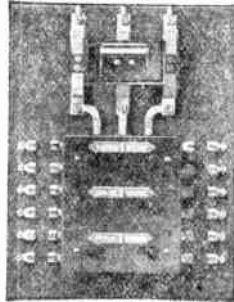
3-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Fuseless Switch



No. 71726

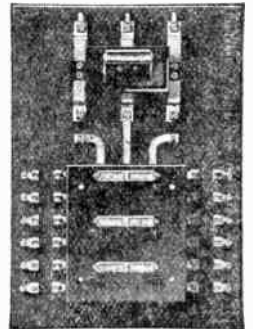
Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE Wide	DIMENS., INCHES High	BOX Deep
71725	4	24	26 1/2	5 1/2
71726	6	24	28 1/2	5 1/2
71727	8	24	32 1/2	5 1/2
71728	10	24	34 1/2	5 1/2
71729	12	24	38 1/2	5 1/2
71730	14	24	40 1/2	5 1/2
71731	16	24	44 1/2	5 1/2
71732	18	24	46 1/2	5 1/2
71733	20	24	50 1/2	5 1/2
71734	22	24	52 1/2	5 1/2
71735	24	24	56 1/2	5 1/2
71736	26	24	58 1/2	5 1/2
71737	28	24	62 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71725	4	30	\$31.80	\$65.50	\$65.50	\$73.80
71726	6	30	39.20	73.80	73.80	81.70
71727	8	30	46.20	82.60	82.60	90.60
71728	10	30	53.00	90.20	90.20	98.40
71729	12	60	61.50	100.60	100.60	109.10
71730	14	60	68.20	110.30	110.30	117.00
71731	16	60	75.10	119.10	119.10	126.20
71732	18	60	81.80	126.80	126.80	134.00
71733	20	60	88.70	138.40	138.40	143.90
71734	22	100	101.10	152.10	152.10	158.10
71735	24	100	108.00	161.40	161.40	168.40
71736	26	100	114.80	171.40	171.40	176.90
71737	28	100	121.50	180.60	180.60	187.20

With Main Fusible Switch

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE Wide	DIMENS., INCHES High	BOX Deep
71741	4	24	26 1/2	5 1/2
71742	6	24	30 1/2	5 1/2
71743	8	24	32 1/2	5 1/2
71744	10	24	36 1/2	5 1/2
71745	12	24	40 1/2	5 1/2
71746	14	24	42 1/2	5 1/2
71747	16	24	46 1/2	5 1/2
71748	18	24	48 1/2	5 1/2
71749	20	24	52 1/2	5 1/2
71750	22	24	58 1/2	5 1/2
71751	24	24	62 1/2	5 1/2
71752	26	24	64 1/2	5 1/2
71753	28	24	68 1/2	5 1/2



No. 71742

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71741	4	30	\$33.90	\$67.60	\$67.60	\$75.50
71742	6	30	41.30	76.80	76.80	84.70
71743	8	30	48.30	84.70	84.70	92.70
71744	10	30	55.10	93.20	93.20	101.60
71745	12	60	63.60	105.70	105.70	112.40
71746	14	60	70.30	113.30	113.30	120.20
71747	16	60	77.20	122.20	122.20	129.40
71748	18	60	84.90	133.40	133.40	138.40
71749	20	60	90.80	141.80	141.80	147.80
71750	22	100	101.40	158.00	158.00	163.50
71751	24	100	112.80	171.90	171.90	178.50
71752	26	100	119.60	180.00	180.00	187.10
71753	28	100	126.30	189.30	189.30	197.50

Type AT Crouse-Hinds Safety Panels

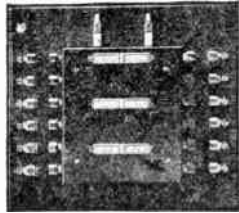
2-wire, 250-volt Mains

2-wire, 250-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Lugs



No. 71758

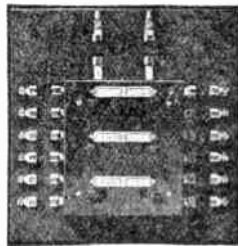
Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71757	4	24	18 1/2	5 1/2
71758	6	24	22 1/2	5 1/2
71759	8	24	24 1/2	5 1/2
71760	10	24	28 1/2	5 1/2
71761	12	24	30 1/2	5 1/2
71762	14	24	34 1/2	5 1/2
71763	16	24	36 1/2	5 1/2
71764	18	24	40 1/2	5 1/2
71765	20	24	42 1/2	5 1/2
71766	22	24	46 1/2	5 1/2
71767	24	24	50 1/2	5 1/2
71768	26	24	52 1/2	5 1/2
71769	28	24	56 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71757	4	30	\$15.80	\$45.90	\$45.90	\$51.50
71758	6	30	22.50	54.20	54.20	61.00
71759	8	30	29.30	62.00	62.00	69.80
71760	10	30	35.90	70.50	70.50	78.40
71761	12	60	43.10	78.60	78.60	86.50
71762	14	60	49.90	87.10	87.10	95.30
71763	16	60	56.50	94.60	94.60	103.00
71764	18	60	63.40	105.50	105.50	112.20
71765	20	60	70.40	113.40	113.40	120.30
71766	22	100	78.20	123.20	123.20	130.40
71767	24	100	85.20	134.90	134.90	140.40
71768	26	100	91.80	142.80	142.80	148.80
71769	28	100	98.70	152.10	152.10	159.10

With Main Fuse Terminals

Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71773	4	24	22 1/2	5 1/2
71774	6	24	24 1/2	5 1/2
71775	8	24	28 1/2	5 1/2
71776	10	24	30 1/2	5 1/2
71777	12	24	34 1/2	5 1/2
71778	14	24	38 1/2	5 1/2
71779	16	24	40 1/2	5 1/2
71780	18	24	44 1/2	5 1/2
71781	20	24	46 1/2	5 1/2
71782	22	24	52 1/2	5 1/2
71783	24	24	56 1/2	5 1/2
71784	26	24	58 1/2	5 1/2
71785	28	24	62 1/2	5 1/2



No. 71774

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71773	4	30	\$17.30	\$49.00	\$49.00	\$55.80
71774	6	30	24.00	56.70	56.70	64.50
71775	8	30	30.80	65.40	65.40	73.30
71776	10	30	37.40	72.90	72.90	80.80
71777	12	60	44.90	82.10	82.10	90.30
71778	14	60	51.70	90.80	90.80	99.30
71779	16	60	58.30	100.40	100.40	107.10
71780	18	60	65.20	109.20	109.20	116.30
71781	20	60	72.20	117.20	117.20	124.40
71782	22	100	80.90	131.90	131.90	137.90
71783	24	100	87.80	141.20	141.20	148.20
71784	26	100	94.50	151.10	151.10	156.50
71785	28	100	101.40	160.50	160.50	167.10

Type AT Crouse-Hinds Safety Panels

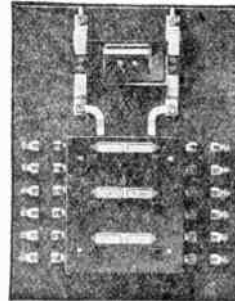
2-wire, 250-volt Mains

2-wire, 250-volt Branches with 30-ampere Tumbler Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

Panels will be furnished with main connections at bottom, if so ordered, without change in price or size.

With Main Fuseless Switch



No. 71790

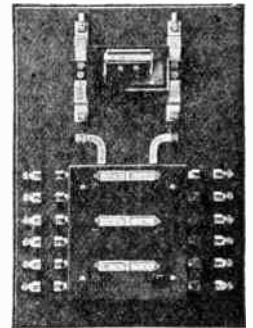
Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71789	4	24	26 1/2	5 1/2
71790	6	24	28 1/2	5 1/2
71791	8	24	32 1/2	5 1/2
71792	10	24	34 1/2	5 1/2
71793	12	24	38 1/2	5 1/2
71794	14	24	40 1/2	5 1/2
71795	16	24	44 1/2	5 1/2
71796	18	24	46 1/2	5 1/2
71797	20	24	50 1/2	5 1/2
71798	22	24	54 1/2	5 1/2
71799	24	24	56 1/2	5 1/2
71800	26	24	60 1/2	5 1/2
71801	28	24	62 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71789	4	30	\$28.10	\$61.80	\$61.80	\$69.70
71790	6	30	34.80	69.40	69.40	77.30
71791	8	30	41.60	78.00	78.00	86.00
71792	10	30	48.20	85.40	85.40	93.60
71793	12	60	56.30	95.40	95.40	103.90
71794	14	60	63.10	105.20	105.20	111.90
71795	16	60	69.70	113.70	113.70	120.80
71796	18	60	76.60	121.60	121.60	128.80
71797	20	60	83.60	133.30	133.30	138.80
71798	22	100	94.20	146.40	146.40	152.90
71799	24	100	101.10	154.50	154.50	161.50
71800	26	100	107.80	165.70	165.70	171.70
71801	28	100	114.70	173.80	173.80	180.40

With Main Fusible Switch

Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71805	4	24	28 1/2	5 1/2
71806	6	24	30 1/2	5 1/2
71807	8	24	34 1/2	5 1/2
71808	10	24	36 1/2	5 1/2
71809	12	24	40 1/2	5 1/2
71810	14	24	44 1/2	5 1/2
71811	16	24	46 1/2	5 1/2
71812	18	24	50 1/2	5 1/2
71813	20	24	52 1/2	5 1/2
71814	22	24	60 1/2	5 1/2
71815	24	24	62 1/2	5 1/2
71816	26	24	66 1/2	5 1/2
71817	28	24	68 1/2	5 1/2



No. 71806

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMS	Flush BFS	Flush BTS
71805	4	30	\$29.50	\$64.10	\$64.10	\$72.00
71806	6	30	36.50	72.00	72.00	79.90
71807	8	30	43.00	80.20	80.20	88.40
71808	10	30	49.60	87.70	87.70	96.10
71809	12	60	57.70	99.80	99.80	106.50
71810	14	60	64.50	108.50	108.50	115.60
71811	16	60	71.10	116.10	116.10	123.30
71812	18	60	78.00	127.70	127.70	133.20
71813	20	60	85.00	136.00	136.00	142.00
71814	22	100	97.40	155.30	155.30	161.30
71815	24	100	104.30	163.40	163.40	170.00
71816	26	100	111.00	172.70	172.70	180.40
71817	28	100	117.90	180.90	180.90	189.10

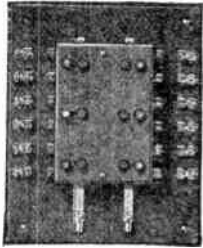
Type EPS Crouse-Hinds Safety Panels

2 to 2-wire, 250-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Arranged for N. E. C. Cartridge Fuses

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Lugs



No. 71403

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE DIMENS., INCHES	High	Deep
71402	4	20	17 1/2	5 1/2
71403	6	20	21 1/2	5 1/2
71404	8	20	23 1/2	5 1/2
71405	10	20	27 1/2	5 1/2
71406	12	20	31 1/2	5 1/2
71407	14	20	33 1/2	5 1/2
71408	16	20	37 1/2	5 1/2
71409	18	20	39 1/2	5 1/2
71410	20	20	43 1/2	5 1/2
71411	22	20	47 1/2	5 1/2
71412	24	20	49 1/2	5 1/2
71413	26	20	53 1/2	5 1/2
71414	28	20	55 1/2	5 1/2

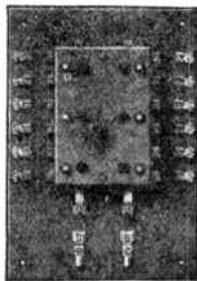
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	PANEL AND CABINET		
71402	4	30	\$12.80	\$41.10	\$41.10	\$47.10
71403	6	30	18.00	48.10	48.10	54.30
71404	8	30	23.30	54.10	54.10	60.40
71405	10	30	28.40	61.00	61.00	67.50
71406	12	60	34.10	68.30	68.30	75.10
71407	14	60	39.40	74.40	74.40	81.50
71408	16	60	44.50	81.30	81.30	88.90
71409	18	60	49.90	89.60	89.60	95.40
71410	20	60	55.40	96.80	96.80	103.00
71411	22	100	61.70	107.50	107.50	111.80
71412	24	100	67.20	114.10	114.10	118.70
71413	26	100	72.30	121.40	121.40	127.10
71414	28	100	77.70	127.90	127.90	134.30

With Main Fuse Terminals

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., INCHES		
		Wide	High	Deep
71418	4	20	19 1/2	5 1/2
71419	6	20	23 1/2	5 1/2
71420	8	20	25 1/2	5 1/2
71421	10	20	29 1/2	5 1/2
71422	12	20	35 1/2	5 1/2
71423	14	20	37 1/2	5 1/2
71424	16	20	41 1/2	5 1/2
71425	18	20	43 1/2	5 1/2
71426	20	20	47 1/2	5 1/2
71427	22	20	53 1/2	5 1/2
71428	24	20	55 1/2	5 1/2
71429	26	20	59 1/2	5 1/2
71430	28	20	61 1/2	5 1/2



No. 71419

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	PANEL AND CABINET		
71418	4	30	\$14.30	\$43.50	\$43.50	\$49.60
71419	6	30	19.50	50.30	50.30	56.60
71420	8	30	24.80	56.50	56.50	62.90
71421	10	30	29.90	63.30	63.30	69.90
71422	12	60	35.90	71.80	71.80	79.00
71423	14	60	41.20	78.00	78.00	85.60
71424	16	60	46.30	86.90	86.90	92.90
71425	18	60	51.70	93.10	93.10	99.30
71426	20	60	57.20	103.00	103.00	107.30
71427	22	100	64.40	113.50	113.50	119.20
71428	24	100	69.80	120.00	120.00	126.40
71429	26	100	75.00	129.80	129.80	134.80
71430	28	100	80.40	136.40	136.40	141.80

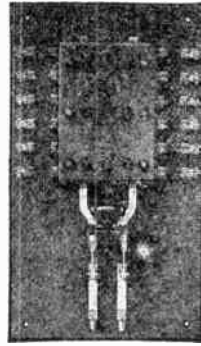
Type EPS Crouse-Hinds Safety Panels

2 to 2-wire, 250-volt, Double Branch

Branches have 10-ampere Push Button Switches and Cartridge Fuse Clips

Prices under heading "Panel with Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Fuseless Switch



No. 71435

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		OUTSIDE DIMENS., INCHES	High	Deep
71434	4	20	27 1/2	5 1/2
71435	6	20	29 1/2	5 1/2
71436	8	20	33 1/2	5 1/2
71437	10	20	35 1/2	5 1/2
71438	12	20	41 1/2	5 1/2
71439	14	20	43 1/2	5 1/2
71440	16	20	47 1/2	5 1/2
71441	18	20	49 1/2	5 1/2
71442	20	20	53 1/2	5 1/2
71443	22	20	57 1/2	5 1/2
71444	24	20	61 1/2	5 1/2
71445	26	20	63 1/2	5 1/2
71446	28	20	67 1/2	5 1/2

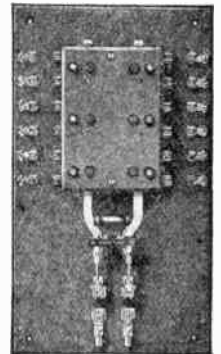
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	PANEL AND CABINET		
71434	4	30	\$17.10	\$49.70	\$49.70	\$56.20
71435	6	30	22.30	55.70	55.70	62.30
71436	8	30	27.60	62.60	62.60	69.70
71437	10	30	32.70	68.60	68.60	75.80
71438	12	60	39.30	79.90	79.90	85.90
71439	14	60	44.60	86.00	86.00	92.20
71440	16	60	49.70	95.50	95.50	99.80
71441	18	60	55.10	102.00	102.00	106.60
71442	20	60	60.60	109.70	109.70	115.40
71443	22	100	69.70	123.40	123.40	127.80
71444	24	100	75.10	131.10	131.10	136.50
71445	26	100	80.30	137.50	137.50	143.60
71446	28	100	85.70	147.00	147.00	152.90

With Main Fusible Switch

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., INCHES		
		Wide	High	Deep
71450	4	20	27 1/2	5 1/2
71451	6	20	29 1/2	5 1/2
71452	8	20	33 1/2	5 1/2
71453	10	20	35 1/2	5 1/2
71454	12	20	41 1/2	5 1/2
71455	14	20	43 1/2	5 1/2
71456	16	20	47 1/2	5 1/2
71457	18	20	49 1/2	5 1/2
71458	20	20	53 1/2	5 1/2
71459	22	20	61 1/2	5 1/2
71460	24	20	63 1/2	5 1/2
71461	26	20	67 1/2	5 1/2
71462	28	20	69 1/2	5 1/2



No. 71451

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			PANEL ONLY	PANEL AND CABINET		
71450	4	30	\$18.50	\$51.10	\$51.10	\$57.60
71451	6	30	24.00	57.40	57.40	64.00
71452	8	30	29.00	64.00	64.00	71.10
71453	10	30	34.10	70.00	70.00	77.20
71454	12	60	40.70	81.30	81.30	87.30
71455	14	60	46.00	87.40	87.40	93.60
71456	16	60	51.10	96.90	96.90	101.20
71457	18	60	56.50	103.40	103.40	108.00
71458	20	60	62.00	111.10	111.10	116.80
71459	22	100	72.90	128.90	128.90	134.30
71460	24	100	78.30	135.50	135.50	141.60
71461	26	100	83.50	143.00	143.00	150.70
71462	28	100	88.90	149.60	149.60	158.20

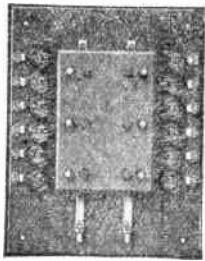
Type DPS Crouse-Hinds Safety Panels

2 to 2-wire, 125-volt, Double Branch

Branches have 10-ampere Push Button Switches and Edison Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Lugs



No. 71003

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71002	4	20	17 1/2	5 1/2
71003	6	20	21 1/2	5 1/2
71004	8	20	25 1/2	5 1/2
71005	10	20	27 1/2	5 1/2
71006	12	20	31 1/2	5 1/2
71007	14	20	35 1/2	5 1/2
71008	16	20	37 1/2	5 1/2
71009	18	20	41 1/2	5 1/2
71010	20	20	43 1/2	5 1/2
71011	22	20	47 1/2	5 1/2
71012	24	20	49 1/2	5 1/2
71013	26	20	53 1/2	5 1/2
71014	28	20	55 1/2	5 1/2

Prices

PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS	Flush BNS1	Flush BTS1
71002	4	30	\$12.50	\$40.80	\$40.80	\$46.80
71003	6	60	17.60	47.70	47.70	53.90
71004	8	60	22.80	54.50	54.50	60.90
71005	10	60	27.70	60.30	60.30	66.80
71006	12	100	33.30	67.50	67.50	74.30
71007	14	100	38.90	74.80	74.80	82.00
71008	16	100	43.90	80.70	80.70	88.30
71009	18	200	50.60	91.20	91.20	97.20
71010	20	200	55.80	97.20	97.20	103.40
71011	22	200	61.10	106.90	106.90	111.20
71012	24	200	66.20	113.10	113.10	117.70
71013	26	200	71.50	120.60	120.60	126.30
71014	28	200	76.70	126.90	126.90	133.30

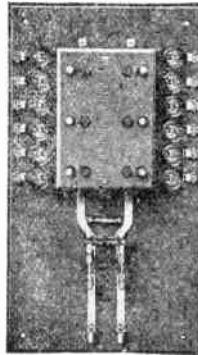
Type DPS Crouse-Hinds Safety Panels

2 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Edison Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Fuseless Switch



No. 71035

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71034	4	20	25 1/2	5 1/2
71035	6	20	31 1/2	5 1/2
71036	8	20	33 1/2	5 1/2
71037	10	20	37 1/2	5 1/2
71038	12	20	41 1/2	5 1/2
71039	14	20	45 1/2	5 1/2
71040	16	20	47 1/2	5 1/2
71041	18	20	55 1/2	6 1/2
71042	20	20	57 1/2	6 1/2
71043	22	20	61 1/2	6 1/2
71044	24	20	63 1/2	6 1/2
71045	26	20	67 1/2	6 1/2
71046	28	20	69 1/2	6 1/2

Prices

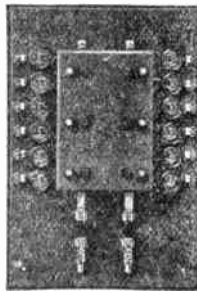
PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71034	4	30	\$16.80	\$48.50	\$48.50	\$54.90
71035	6	60	22.80	57.00	57.00	63.80
71036	8	60	28.00	63.00	63.00	70.10
71037	10	60	32.90	69.70	69.70	77.30
71038	12	100	41.30	81.90	81.90	87.90
71039	14	100	46.90	89.30	89.30	95.70
71040	16	100	51.90	97.70	97.70	102.00
71041	18	200	61.80	114.10	114.10	120.50
71042	20	200	67.00	123.00	123.00	127.40
71043	22	200	72.30	130.80	130.80	136.20
71044	24	200	77.40	137.20	137.20	143.30
71045	26	200	82.70	144.90	144.90	152.60
71046	28	200	87.90	151.30	151.30	159.90

With Main Fuse Terminals

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71018	4	20	19 1/2	5 1/2
71019	6	20	25 1/2	5 1/2
71020	8	20	29 1/2	5 1/2
71021	10	20	31 1/2	5 1/2
71022	12	20	37 1/2	5 1/2
71023	14	20	41 1/2	5 1/2
71024	16	20	43 1/2	5 1/2
71025	18	20	47 1/2	5 1/2
71026	20	20	51 1/2	5 1/2
71027	22	20	53 1/2	5 1/2
71028	24	20	57 1/2	5 1/2
71029	26	20	59 1/2	5 1/2
71030	28	20	63 1/2	5 1/2



No. 71019

Prices

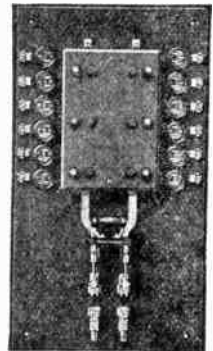
PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS	Flush BNS1	Flush BTS1
71018	4	30	\$14.00	\$43.20	\$43.20	\$49.30
71019	6	60	19.40	51.10	51.10	57.50
71020	8	60	24.60	58.00	58.00	64.60
71021	10	60	29.50	64.00	64.00	70.50
71022	12	100	36.00	72.80	72.80	79.90
71023	14	100	41.60	82.20	82.20	88.20
71024	16	100	46.60	88.00	88.00	94.20
71025	18	200	54.90	100.70	100.70	105.00
71026	20	200	60.10	108.10	108.10	113.10
71027	22	200	65.40	114.50	114.50	120.20
71028	24	200	70.50	124.20	124.20	128.60
71029	26	200	75.80	130.60	130.60	135.60
71030	28	200	81.00	138.20	138.20	144.30

With Main Fusible Switch

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX INCHES		
		Wide	High	Deep
71050	4	20	25 1/2	5 1/2
71051	6	20	31 1/2	5 1/2
71052	8	20	33 1/2	5 1/2
71053	10	20	37 1/2	5 1/2
71054	12	20	45 1/2	5 1/2
71055	14	20	47 1/2	5 1/2
71056	16	20	51 1/2	5 1/2
71057	18	20	57 1/2	6 1/2
71058	20	20	59 1/2	6 1/2
71059	22	20	63 1/2	6 1/2
71060	24	20	65 1/2	6 1/2
71061	26	20	69 1/2	6 1/2
71062	28	20	71 1/2	6 1/2



No. 71051

Prices

PRICE, EACH

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71050	4	30	\$18.20	\$49.90	\$49.90	\$56.30
71051	6	60	24.20	58.40	58.40	65.20
71052	8	60	29.40	64.40	64.40	71.50
71053	10	60	34.30	71.10	71.10	78.70
71054	12	100	44.50	86.90	86.90	93.30
71055	14	100	50.10	95.90	95.90	100.20
71056	16	100	55.10	103.10	103.10	107.30
71057	18	200	66.30	122.30	122.30	126.70
71058	20	200	71.50	128.80	128.80	133.80
71059	22	200	76.80	136.60	136.60	142.70
71060	24	200	81.90	142.80	142.80	149.80
71061	26	200	87.20	150.60	150.60	159.20
71062	28	200	92.40	156.90	156.90	166.40

Type DPS Crouse-Hinds Safety Panels

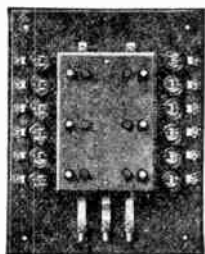
3 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Edison Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Lugs

Dimensions



No. 71103

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71102	4	20	17 1/2	5 1/2
71103	6	20	21 1/2	5 1/2
71104	8	20	23 1/2	5 1/2
71105	10	20	27 1/2	5 1/2
71106	12	20	31 1/2	5 1/2
71107	14	20	33 1/2	5 1/2
71108	16	20	37 1/2	5 1/2
71109	18	20	39 1/2	5 1/2
71110	20	20	43 1/2	5 1/2
71111	22	20	47 1/2	5 1/2
71112	24	20	49 1/2	5 1/2
71113	26	20	53 1/2	5 1/2
71114	28	20	55 1/2	5 1/2

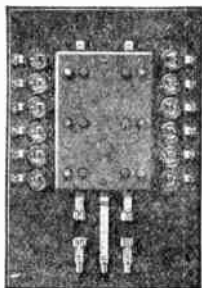
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMSI	Flush BNSI	Flush BTSI
71102	4	30	\$12.30	\$40.60	\$40.60	\$46.60
71103	6	30	18.20	48.30	48.30	54.50
71104	8	30	23.70	54.50	54.50	60.80
71105	10	30	29.00	61.60	61.60	68.10
71106	12	60	34.70	68.90	68.90	75.70
71107	14	60	39.90	74.90	74.90	82.00
71108	16	60	45.30	82.10	82.10	89.70
71109	18	60	50.50	90.20	90.20	96.00
71110	20	60	55.90	97.30	97.30	103.50
71111	22	100	62.60	108.40	108.40	112.70
71112	24	100	68.00	114.90	114.90	119.50
71113	26	100	73.30	122.40	122.40	128.10
71114	28	100	78.50	128.70	128.70	135.10

With Main Fuse Terminals

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71118	4	20	19 1/2	5 1/2
71119	6	20	23 1/2	5 1/2
71120	8	20	25 1/2	5 1/2
71121	10	20	29 1/2	5 1/2
71122	12	20	35 1/2	5 1/2
71123	14	20	37 1/2	5 1/2
71124	16	20	41 1/2	5 1/2
71125	18	20	43 1/2	5 1/2
71126	20	20	47 1/2	5 1/2
71127	22	20	53 1/2	5 1/2
71128	24	20	55 1/2	5 1/2
71129	26	20	59 1/2	5 1/2
71130	28	20	61 1/2	5 1/2



No. 71119

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMSI	Flush BNSI	Flush BTSI
71118	4	30	\$14.60	\$43.80	\$43.80	\$49.90
71119	6	30	19.50	50.30	50.30	56.60
71120	8	30	26.00	57.70	57.70	64.10
71121	10	30	31.30	64.70	64.70	71.30
71122	12	60	37.40	73.30	73.30	80.50
71123	14	60	42.60	79.40	79.40	87.00
71124	16	60	48.00	88.60	88.60	94.60
71125	18	60	53.20	94.60	94.60	100.80
71126	20	60	58.60	104.40	104.40	108.70
71127	22	100	66.70	115.80	115.80	121.50
71128	24	100	72.10	122.30	122.30	128.70
71129	26	100	77.40	132.20	132.20	137.20
71130	28	100	82.60	138.60	138.60	144.00

Type DPS Crouse-Hinds Safety Panels

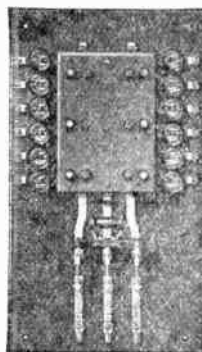
3 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Edison Plug Fuse Receptacles

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Fuseless Switch

Dimensions



No. 71135

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71134	4	20	25 1/2	5 1/2
71135	6	20	29 1/2	5 1/2
71136	8	20	31 1/2	5 1/2
71137	10	20	35 1/2	5 1/2
71138	12	20	39 1/2	5 1/2
71139	14	20	43 1/2	5 1/2
71140	16	20	45 1/2	5 1/2
71141	18	20	49 1/2	5 1/2
71142	20	20	51 1/2	5 1/2
71143	22	20	57 1/2	5 1/2
71144	24	20	59 1/2	5 1/2
71145	26	20	63 1/2	5 1/2
71146	28	20	65 1/2	5 1/2

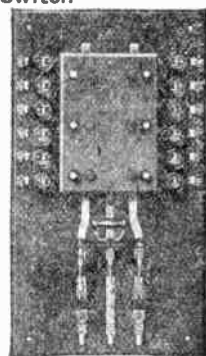
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMSI	Flush BNSI	Flush BTSI
71134	4	30	\$18.80	\$50.50	\$50.50	\$56.90
71135	6	30	24.70	58.10	58.10	64.70
71136	8	30	30.20	64.40	64.40	71.20
71137	10	30	35.50	71.40	71.40	78.60
71138	12	60	42.50	82.20	82.20	88.00
71139	14	60	47.70	89.10	89.10	95.30
71140	16	60	53.10	95.50	95.50	101.90
71141	18	60	58.30	105.20	105.20	109.80
71142	20	60	63.70	111.70	111.70	116.70
71143	22	100	74.60	128.30	128.30	132.70
71144	24	100	80.00	136.00	136.00	141.40
71145	26	100	85.30	142.50	142.50	148.60
71146	28	100	90.50	150.00	150.00	157.70

With Main Fusible Switch

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71150	4	20	25 1/2	5 1/2
71151	6	20	29 1/2	5 1/2
71152	8	20	31 1/2	5 1/2
71153	10	20	35 1/2	5 1/2
71154	12	20	39 1/2	5 1/2
71155	14	20	43 1/2	5 1/2
71156	16	20	45 1/2	5 1/2
71157	18	20	49 1/2	5 1/2
71158	20	20	51 1/2	5 1/2
71159	22	20	59 1/2	5 1/2
71160	24	20	63 1/2	5 1/2
71161	26	20	65 1/2	5 1/2
71162	28	20	69 1/2	5 1/2



No. 71151

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH PANEL AND CABINET			
			Panel Only	Surface BMSI	Flush BNSI	Flush BTSI
71150	4	30	\$20.90	\$52.60	\$52.60	\$59.00
71151	6	30	26.80	60.20	60.20	66.80
71152	8	30	32.30	66.50	66.50	73.30
71153	10	30	37.60	73.50	73.50	80.70
71154	12	60	44.60	84.30	84.30	90.10
71155	14	60	49.80	91.20	91.20	97.40
71156	16	60	55.20	97.60	97.60	104.00
71157	18	60	61.40	108.30	108.30	112.90
71158	20	60	65.80	113.80	113.80	118.80
71159	22	100	74.90	129.70	129.70	134.70
71160	24	100	84.80	142.00	142.00	148.10
71161	26	100	90.10	148.50	148.50	155.50
71162	28	100	95.30	156.00	156.00	164.60

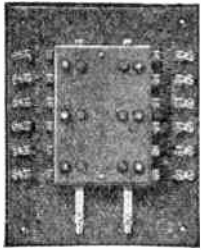
Type EPS Crouse-Hinds Safety Panels

2 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Lugs



No. 71203

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		Wide	INCHES High	Deep
71202	4	20	17 1/2	5 1/2
71203	6	20	21 1/2	5 1/2
71204	8	20	25 1/2	5 1/2
71205	10	20	27 1/2	5 1/2
71206	12	20	31 1/2	5 1/2
71207	14	20	35 1/2	5 1/2
71208	16	20	37 1/2	5 1/2
71209	18	20	41 1/2	5 1/2
71210	20	20	43 1/2	5 1/2
71211	22	20	47 1/2	5 1/2
71212	24	20	49 1/2	5 1/2
71213	26	20	53 1/2	5 1/2
71214	28	20	55 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71202	4	30	\$12.50	\$40.80	\$40.80	\$46.80
71203	6	60	17.60	47.70	47.70	53.90
71204	8	60	22.80	54.50	54.50	60.90
71205	10	60	27.70	60.30	60.30	66.80
71206	12	100	33.30	67.50	67.50	74.30
71207	14	100	38.90	74.80	74.80	82.00
71208	16	100	43.90	80.70	80.70	88.30
71209	18	200	50.60	91.20	91.20	97.20
71210	20	200	55.80	97.20	97.20	103.40
71211	22	200	61.10	106.90	106.90	111.20
71212	24	200	66.20	113.10	113.10	117.70
71213	26	200	71.50	120.60	120.60	126.30
71214	28	200	76.70	126.90	126.90	133.30

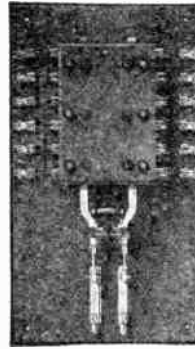
Type EPS Crouse-Hinds Safety Panels

2 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Fuseless Switch



No. 71235

Cat. No. Panel	No. of Branch Circuits	Dimensions		
		Wide	INCHES High	Deep
71234	4	20	25 1/2	5 1/2
71235	6	20	31 1/2	5 1/2
71236	8	20	33 1/2	5 1/2
71237	10	20	37 1/2	5 1/2
71238	12	20	41 1/2	5 1/2
71239	14	20	45 1/2	5 1/2
71240	16	20	47 1/2	5 1/2
71241	18	20	55 1/2	6 1/2
71242	20	20	57 1/2	6 1/2
71243	22	20	61 1/2	6 1/2
71244	24	20	63 1/2	6 1/2
71245	26	20	67 1/2	6 1/2
71246	28	20	69 1/2	6 1/2

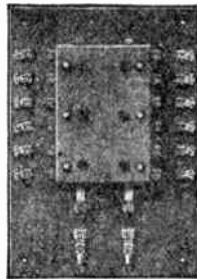
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71234	4	30	\$16.80	\$48.50	\$48.50	\$54.90
71235	6	60	22.80	57.00	57.00	63.80
71236	8	60	28.00	63.00	63.00	70.10
71237	10	60	32.90	69.70	69.70	77.30
71238	12	100	41.30	81.90	81.90	87.90
71239	14	100	46.90	89.30	89.30	95.70
71240	16	100	51.90	97.70	97.70	102.00
71241	18	200	61.80	114.10	114.10	120.50
71242	20	200	67.00	123.00	123.00	127.40
71243	22	200	72.30	130.80	130.80	136.20
71244	24	200	77.40	137.20	137.20	143.30
71245	26	200	82.70	144.90	144.90	152.60
71246	28	200	87.90	151.30	151.30	159.90

With Main Fuse Terminals

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	INCHES High	Deep
71218	4	20	19 1/2	5 1/2
71219	6	20	25 1/2	5 1/2
71220	8	20	29 1/2	5 1/2
71221	10	20	31 1/2	5 1/2
71222	12	20	37 1/2	5 1/2
71223	14	20	41 1/2	5 1/2
71224	16	20	43 1/2	5 1/2
71225	18	20	47 1/2	5 1/2
71226	20	20	51 1/2	5 1/2
71227	22	20	53 1/2	5 1/2
71228	24	20	57 1/2	5 1/2
71229	26	20	59 1/2	5 1/2
71230	28	20	63 1/2	5 1/2



No. 71219

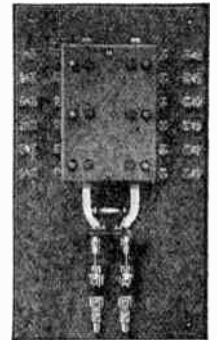
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71218	4	30	\$14.00	\$43.20	\$43.20	\$49.30
71219	6	60	19.40	51.10	51.10	57.50
71220	8	60	24.60	58.00	58.00	64.60
71221	10	60	29.50	64.00	64.00	70.50
71222	12	100	36.00	72.80	72.80	79.90
71223	14	100	41.60	82.20	82.20	88.20
71224	16	100	46.60	88.00	88.00	94.20
71225	18	200	54.90	100.70	100.70	105.00
71226	20	200	60.10	108.10	108.10	113.10
71227	22	200	65.40	114.50	114.50	120.20
71228	24	200	70.50	124.20	124.20	128.60
71229	26	200	75.80	130.60	130.60	135.60
71230	28	200	81.00	138.20	138.20	144.30

With Main Fusible Switch

Dimensions

Cat. No. Panel	No. of Branch Circuits	OUTSIDE DIMENS., BOX		
		Wide	INCHES High	Deep
71250	4	20	25 1/2	5 1/2
71251	6	20	31 1/2	5 1/2
71252	8	20	33 1/2	5 1/2
71253	10	20	37 1/2	5 1/2
71254	12	20	45 1/2	5 1/2
71255	14	20	47 1/2	5 1/2
71256	16	20	51 1/2	5 1/2
71257	18	20	57 1/2	6 1/2
71258	20	20	59 1/2	6 1/2
71259	22	20	63 1/2	6 1/2
71260	24	20	65 1/2	6 1/2
71261	26	20	69 1/2	6 1/2
71262	28	20	71 1/2	6 1/2



No. 71251

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71250	4	30	\$18.20	\$49.90	\$49.90	\$56.30
71251	6	60	24.20	58.40	58.40	65.20
71252	8	60	29.40	64.40	64.40	71.50
71253	10	60	34.30	71.10	71.10	78.70
71254	12	100	44.50	86.90	86.90	93.30
71255	14	100	50.10	95.90	95.90	100.20
71256	16	100	55.10	103.10	103.10	107.30
71257	18	200	66.30	122.30	122.30	126.70
71258	20	200	71.50	128.80	128.80	133.80
71259	22	200	76.80	136.60	136.60	142.70
71260	24	200	81.90	142.80	142.80	149.80
71261	26	200	87.20	150.60	150.60	159.20
71262	28	200	92.40	156.90	156.90	166.40

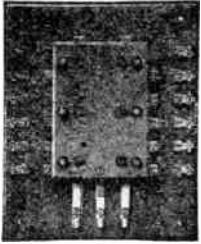
Type EPS Crouse-Hinds Safety Panels

3 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Cartridge Fuse Clips

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panel with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Lugs



No. 71303

Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71302	4	20	17 1/2	5 1/2
71303	6	20	21 1/2	5 1/2
71304	8	20	23 1/2	5 1/2
71305	10	20	27 1/2	5 1/2
71306	12	20	31 1/2	5 1/2
71307	14	20	33 1/2	5 1/2
71308	16	20	37 1/2	5 1/2
71309	18	20	39 1/2	5 1/2
71310	20	20	43 1/2	5 1/2
71311	22	20	47 1/2	5 1/2
71312	24	20	49 1/2	5 1/2
71313	26	20	53 1/2	5 1/2
71314	28	20	55 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71302	4	30	\$12.30	\$40.60	\$40.60	\$46.60
71303	6	30	18.20	48.30	48.30	54.50
71304	8	30	23.70	54.50	54.50	60.80
71305	10	30	29.00	61.60	61.60	68.10
71306	12	60	34.70	68.90	68.90	75.70
71307	14	60	39.90	74.90	74.90	82.00
71308	16	60	45.30	82.10	82.10	89.70
71309	18	60	50.50	90.20	90.20	96.00
71310	20	60	55.90	97.30	97.30	103.50
71311	22	100	62.60	108.40	108.40	112.70
71312	24	100	68.00	114.90	114.90	119.50
71313	26	100	73.30	122.40	122.40	128.10
71314	28	100	78.50	128.70	128.70	135.10

With Main Fuse Terminals

Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71318	4	20	19 1/2	5 1/2
71319	6	20	23 1/2	5 1/2
71320	8	20	25 1/2	5 1/2
71321	10	20	29 1/2	5 1/2
71322	12	20	35 1/2	5 1/2
71323	14	20	37 1/2	5 1/2
71324	16	20	41 1/2	5 1/2
71325	18	20	43 1/2	5 1/2
71326	20	20	47 1/2	5 1/2
71327	22	20	53 1/2	5 1/2
71328	24	20	55 1/2	5 1/2
71329	26	20	59 1/2	5 1/2
71330	28	20	61 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71318	4	30	\$14.60	\$43.80	\$43.80	\$49.90
71319	6	30	19.50	50.30	50.30	56.60
71320	8	30	26.00	57.70	57.70	64.10
71321	10	30	31.30	64.70	64.70	71.30
71322	12	60	37.40	73.30	73.30	80.50
71323	14	60	42.60	79.40	79.40	87.00
71324	16	60	48.00	88.60	88.60	94.60
71325	18	60	53.20	94.60	94.60	100.80
71326	20	60	58.60	104.40	104.40	108.70
71327	22	100	66.70	115.80	115.80	121.50
71328	24	100	72.10	122.30	122.30	128.70
71329	26	100	77.40	132.20	132.20	137.20
71330	28	100	82.60	138.60	138.60	144.00

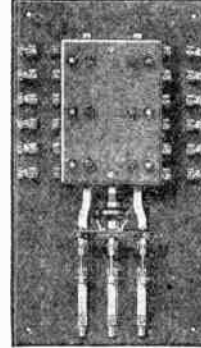
Type EPS Crouse-Hinds Safety Panels

3 to 2-wire, 125-volt, Double Branch

Branches Have 10-ampere Push Button Switches and Arranged for N. E. C. Cartridge Fuses

Prices under heading "Panel and Cabinet" include panel, slate frame, box and trim complete. Prices for panels with through feeds or meter loops will be furnished upon request. Prices do not include fuses.

With Main Fuseless Switch



No. 71335

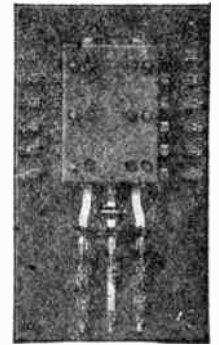
Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71334	4	20	25 1/2	5 1/2
71335	6	20	29 1/2	5 1/2
71336	8	20	31 1/2	5 1/2
71337	10	20	35 1/2	5 1/2
71338	12	20	39 1/2	5 1/2
71339	14	20	43 1/2	5 1/2
71340	16	20	45 1/2	5 1/2
71341	18	20	49 1/2	5 1/2
71342	20	20	51 1/2	5 1/2
71343	22	20	57 1/2	5 1/2
71344	24	20	59 1/2	5 1/2
71345	26	20	63 1/2	5 1/2
71346	28	20	65 1/2	5 1/2

Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71334	4	30	\$18.80	\$50.50	\$50.50	\$56.90
71335	6	30	24.70	58.10	58.10	64.70
71336	8	30	30.20	64.40	64.40	71.20
71337	10	30	35.50	71.40	71.40	78.60
71338	12	60	42.50	82.20	82.20	88.00
71339	14	60	47.70	89.10	89.10	95.30
71340	16	60	53.10	95.50	95.50	101.90
71341	18	60	58.30	105.20	105.20	109.80
71342	20	60	63.70	111.70	111.70	116.70
71343	22	100	74.60	128.30	128.30	132.70
71344	24	100	80.00	136.00	136.00	141.40
71345	26	100	85.30	142.50	142.50	148.60
71446	28	100	90.50	150.00	150.00	157.00

With Main Fusible Switch

Cat. No. Panel	No. of Branch Circuits	Dimensions OUTSIDE DIMENS., BOX		
		Wide	High	Deep
71350	4	20	25 1/2	5 1/2
71351	6	20	29 1/2	5 1/2
71352	8	20	31 1/2	5 1/2
71353	10	20	35 1/2	5 1/2
71354	12	20	39 1/2	5 1/2
71355	14	20	41 1/2	5 1/2
71356	16	20	45 1/2	5 1/2
71357	18	20	49 1/2	5 1/2
71358	20	20	51 1/2	5 1/2
71359	22	20	59 1/2	5 1/2
71360	24	20	63 1/2	5 1/2
71361	26	20	65 1/2	5 1/2
71362	28	20	69 1/2	5 1/2



No. 71351

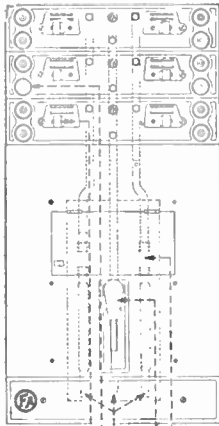
Prices

Cat. No. Panel	No. of Branch Circuits	Cap. Mains Amps.	PRICE, EACH			
			Panel Only	Surface BMS1	Flush BNS1	Flush BTS1
71350	4	30	\$20.90	\$52.60	\$52.60	\$59.00
71351	6	30	26.80	60.20	60.20	66.80
71352	8	30	32.30	66.50	66.50	73.30
71353	10	30	37.60	73.50	73.50	80.70
71354	12	60	44.60	84.30	84.30	90.10
71355	14	60	49.80	91.20	91.20	97.40
71356	16	60	55.20	97.60	97.60	104.00
71357	18	60	61.40	108.30	108.30	112.90
71358	20	60	65.80	113.80	113.80	118.80
71359	22	100	74.90	129.70	129.70	134.70
71360	24	100	84.80	142.00	142.00	148.10
71361	26	100	90.10	148.50	148.50	155.50
71362	28	100	95.30	156.00	156.00	164.60

FA Panelboard and Cabinet Units

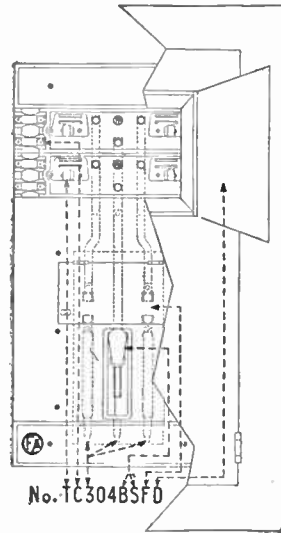
Explanation of Descriptive Catalogue Numbers

With the Frank Adam Electric Company method of descriptive listing your order is fully understood in all details through the various letters comprising each catalogue number. Should a clerical error be made when sending us the order the mistake will at once be noticed and inquiry made. This saves expensive shipments and a great deal of valuable time that occasionally are needlessly wasted when numerals and not descriptive listings are used. These catalogue listings were devised for your convenience and to enable us to give you better and faster service. Please note them carefully and use them in ordering.



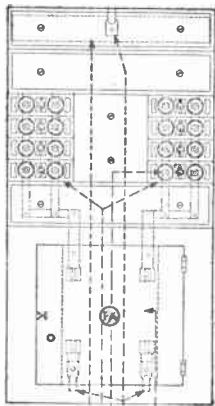
No. TP306BSF

- T—Tumbler Switch in Branches
- P—Plug Fuse Connection in Branches
- 3—3-wire Mains
- 06—Number of Branch Circuits
- BS—Brush Type Main Switch
- F—Fuse Connections in Mains



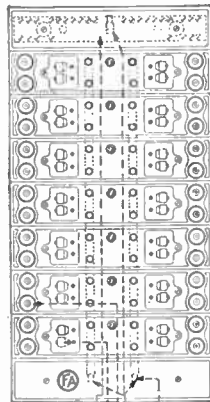
No. TC304BSFD

- T—Tumbler Switch in Branches
- C—Cartridge Fuse Connections in Branches
- 3—3-wire Mains
- 04—Number of Branch Circuits
- BS—Brush Type Main Switch
- D—Door-in-Door Steel Front



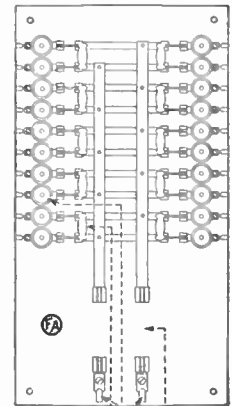
No. N2P316F

- N—Neutral Solid in Branches
- 2—Two Row Construction
- P—Plug Fuses in Branches
- 3—3-wire Mains
- 16—Number of Branch Circuits
- F—Fuse Connections in Mains



No. NTP328L

- N—Neutral Solid in Branches
- T—Tumbler Switch in Branches
- P—Plug Fuse Connections Branches
- 3—3-wire Mains
- 28—Number of Branch Circuits
- L—Lugs Only in Mains



No. KP210F

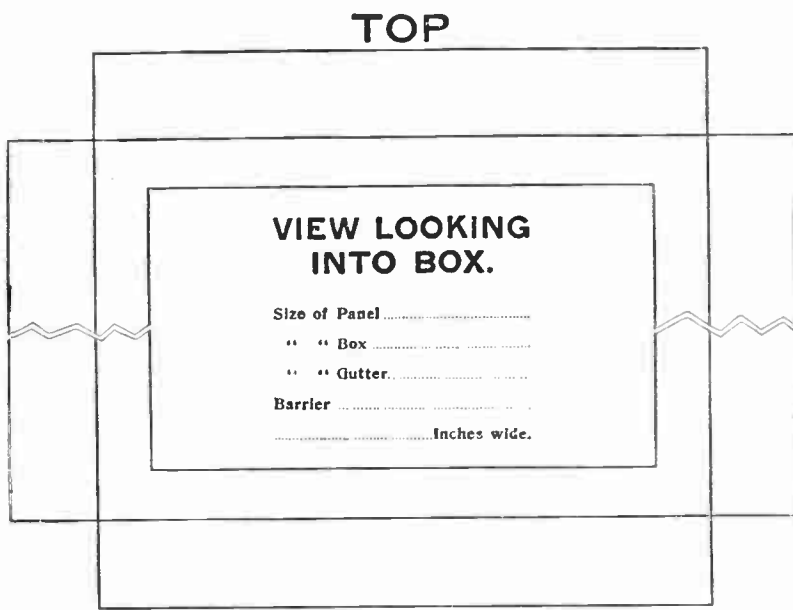
- K—Knife Switch in Branches
- P—Plug Fuse Connections in Branches
- 2—2-wire Mains
- 10—Number of Branch Circuits
- F—Fuse Connections in Mains

FA Drilling (Hole) Template for Steel Box Cabinets

If standard knockouts as shown in catalogue will not be satisfactory, send template, showing layout of holes with order, as we cannot start work on boxes until template is received.

NOTE.—Unless Template is sent with order, boxes will be shipped with standard knockouts.

Dimensions of Conduit, Bushings and Spacing of Same



Rigid Enameled Steel Conduit

Internal Diameter Inches	Hole in Box Inches	Center to Center Inches
1/2	7/8	1 3/8
3/4	1 1/8	1 7/8
1	1 3/8	2
1 1/4	1 3/4	2 3/8
1 1/2	2	2 7/8
2	2 1/2	3 1/8
2 1/2	3	3 3/4
3	3 3/8	4 3/8
3 1/2	4 1/8	5 1/8
4	4 3/4	5 3/8

Flexible Conduit

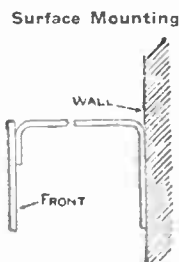
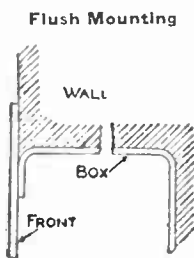
1/4	5/8	1
3/8	7/8	1 1/8
1/2	1	1 3/8
5/8	1 1/8	1 7/8
3/4	1 3/8	2
1	1 7/8	2 3/8
1 1/4	2 1/4	

Federal Clamp Bushings

Cat. No.	Internal Diameter Inches	Hole in Box Inches	Center to Center Inches
1-A	9/32	11/16	1
2-A	16/32	7/8	1 1/4
3-A	9/16	1 1/8	1 3/8
4-A	3/4	1 3/8	1 3/4
5-A	1 1/8	1 3/4	2 1/8
6-A	1 3/8	2 1/2	2 7/8

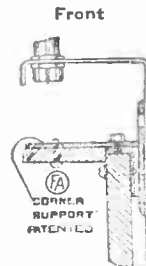
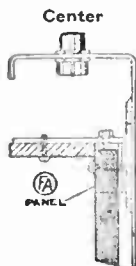
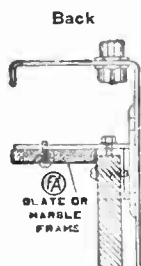
Are Fronts for Flush or Surface Mounting?

Indicate on Order—Flush or Surface Mounting

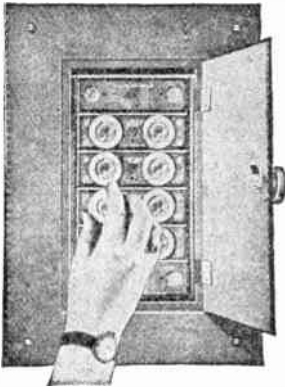
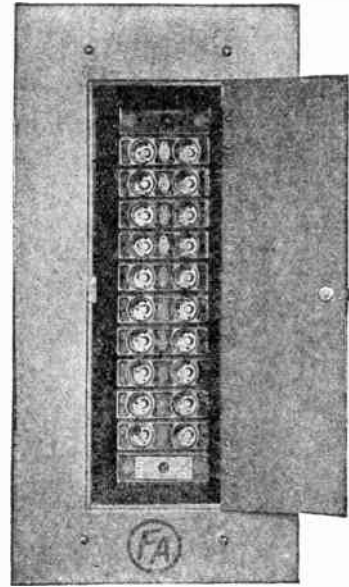


How Shall Conduit Enter Box?

Indicate on Order—Back—Center or Front—Conduit Entrance



NOTE.—We will furnish copies of this Template on request.

FA Safety Type Standardized 2-fuse Panel Boards and Cabinets**Type R****Type R3G**

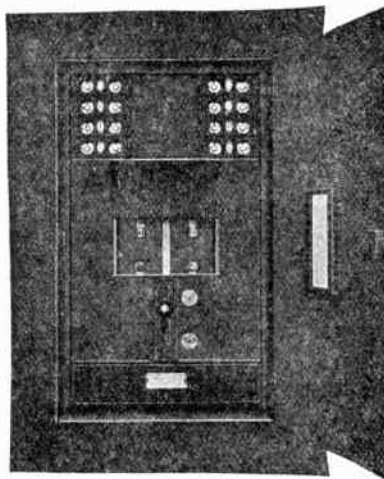
Type R Panel Boards are polarity type and built up of sections made of asbestos composition impervious to moisture. Each section contains one branch circuit. These sections are mounted on back of box, completely assembled, ready for connections to mains and branch circuits.

On account of the small wiring gutter, this type of panel board and cabinet can be used only when feeds for panel terminate in this cabinet. Whenever necessary to run risers through the cabinet, use Type R3G.

These panel boards can be used for either 2 or 3-wire service. Cabinets have 1½-inch gutter; fronts are finished dead black with doors fitted with FA Latch only.

Type R3G Panel Boards are also built up of single circuit sections but the sections instead of being mounted on back of box are mounted on removable steel mounting backs.

This type of panel board is made with main lugs only as they are not wide enough to accommodate main switches or sub feeders. Cabinets have standard 3-inch gutters, with adjustable panel board supports, with fronts finished dead black having doors fitted with FA Latch only.

**Type 2P3BSF**

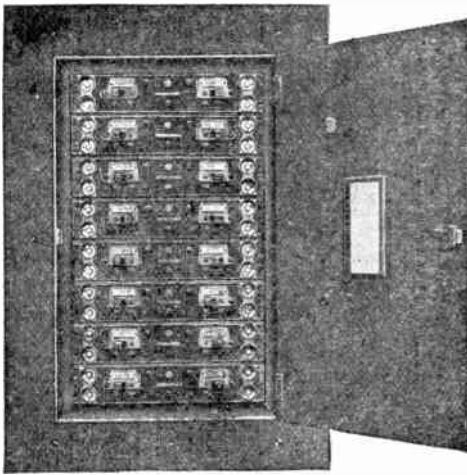
Type 2P3 Panel Boards are built up of 2 rows of single circuit sections and have the sections mounted on removable steel mounting backs. Main and sub-feeder switches are all safety brush type.

Main fuses are placed under separate locked doors and when used with safety switches cannot be opened unless switches are disconnected.

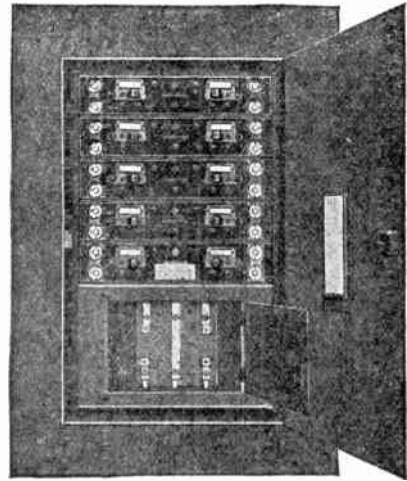
This type of panel board can be furnished with or without safety main switches. Sub-feeders and increased mains shown on other pages can be used on this type of panel.

Cabinets have standard width gutter with adjustable panel board supports having fronts finished dead black with doors fitted with FA Catch Locks.

FA Safety Type Standardized 2-fuse Panel Boards and Cabinets



Type TP3L



Type TP3F

Type TP Panel Boards are built up with double branch sections made of asbestos composition. Each section has two 30-amperes 250-volt double pole tumbler switches with N. E. C. Edison plug fuse connections.

All sections are mounted on steel panel backs connected complete ready for main and branch circuit connections.

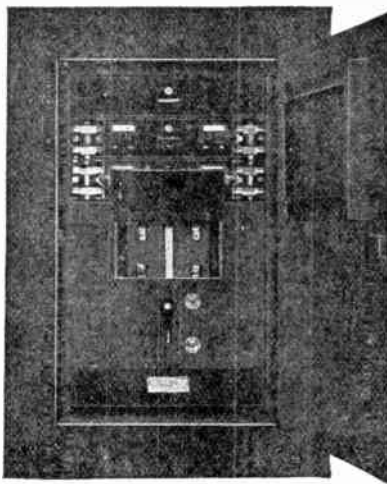
Main fuses are placed under separate locked doors and when used with safety main or sub-feeder switches, the doors cannot be opened unless the switches are disconnected.

Main switches are all safety brush type.

Cabinets have standard width gutters with adjustable panel board supports.

Fronts are finished dead black and regularly furnished with one door equipped with FA Catch Lock as this type of panel board has no live metal parts exposed and when fuses are installed are absolutely safe.

When specified, door in front door as called for below in connection with TC panel boards and cabinets, will be supplied.



Type TC3BSFD

Type TC Panel Boards are also built up with double branch sections, each section having two 30-ampere, 250-volt double pole tumbler switches with N. E. C. cartridge fuse connections.

Mains are equipped same as for TP panel boards above.

The fronts are regularly furnished in "door in door" construction, the inner door permitting access to branch switch handles only is fitted with FA Latch; the main door permitting access to the entire panel board is fitted with FA Catch Lock.

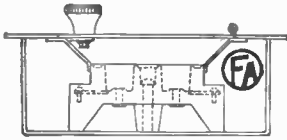
On special order, fronts with one door only, which leaves the panel boards semi-safe, will be furnished, and will not be classed as a safety type panel board.

FA Safety Type Panel Boards and Cabinets

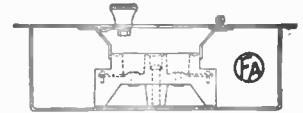
Type R Safety Type—2-fuse

For 2 and 3-wire Service

Mains, 125-250 Volts, 125-volt Branches, with N. E. C. Plug Fuse Connections



Panels are made of sections of molded material. Boxes are made of code thickness steel, 1½-inch gutter. Front is of code thickness steel, painted dead black.



Main Lugs Only

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Approx. Wt. Lbs.	Price Each
			Width	Height	Depth		
R2	2	30	9½	9½	3¾	16	\$10.00
R4	4	30	9½	9½	3¾	20	13.40
R6	6	60	9½	15½	3¾	25	18.00
R8	8	60	9½	18½	3¾	30	21.00
R10	10	60	9½	21½	3¾	35	24.00
R12	12	60	9½	24½	3¾	40	28.00

With Main Switch with Fuse Connections, Solid Neutral

R2S	2	..	9½	12½	3¾	25	\$15.00
R4S	4	..	9½	15½	3¾	30	18.00

Type R3G Safety Type—2-fuse

For 2 and 3-wire Service

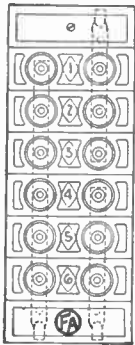
Mains, 125-250 Volts, 125-volt, 30-ampere

Double Pole Branches with N. E. C. Plug Fuse Connections

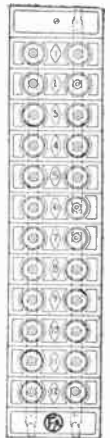
Panels are made of sections of molded material. Mains, 1923 N. E. C. capacity per branch. Boxes are made of code thickness steel, 3-inch gutter. Front is of code thickness steel, painted dead black; flush or surface.

Main Cable Lugs Only

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each	
			Width	Height	Depth				
R3G04	4	30	12½	14	4	5½	7	35	\$24.00
R3G06	6	60	12½	20	4	5½	13	40	30.00
R3G08	8	60	12½	23	4	5½	16	45	34.00
R3G10	10	60	12½	26	4	5½	19	50	38.00
R3G12	12	60	12½	29	4	5½	22	55	42.00
R3G14	14	100	12½	35	4	5½	28	60	47.00
R3G16	16	100	12½	38	4	5½	31	65	52.00
R3G18	18	100	12½	41	4	5½	34	70	57.00
R3G20	20	100	12½	44	4	5½	37	75	62.00



Type R



Type R3G

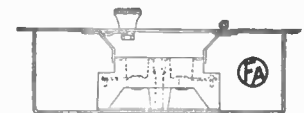
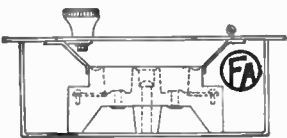
Type NR Safety Type—1-fuse

For 2 and 3-wire Service

Mains, 125-250 Volts, 125-volt, 30-ampere

Single Pole Branches with N. E. C. Plug Type Connections

Panels are made of sections of molded material. Boxes are made of code thickness steel, 1½-inch gutter. Front is of code thickness steel, painted dead black.



Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Approx. Wt. Lbs.	Price Each
			Width	Height	Depth		
NR4	4	30	9½	9½	3¾	16	\$12.00
NR8	8	60	9½	12½	3¾	20	16.00
NR12	12	60	9½	15½	3¾	30	22.00

Type NR3G Safety Type—1-fuse

For 2 and 3-wire Service

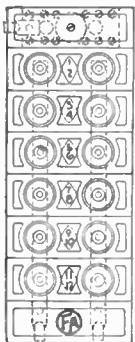
Mains, 125-250 Volts, 125-volt, 30-ampere

Single Pole Branches with N. E. C. Plug Type Connections

Panels are made of sections of molded material. Mains, 1923 N.E.C. capacity per branch. Boxes are made of code thickness steel, 3-inch gutter. Front is of code thickness steel, painted dead black; flush or surface.

With Cable Lugs Only

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each	
			Width	Height	Depth				
NR3G08	8	60	12½	17	4¼	5½	10	40	\$27.00
NR3G12	12	60	12½	20	4¼	5½	13	45	31.00
NR3G16	16	100	12½	26	4¼	5½	19	50	38.00
NR3G20	20	100	12½	29	4¼	5½	22	55	42.00



Type NR



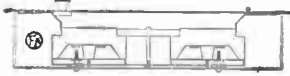
Type NR3G

FA Type 2P2 Safety Type 2-fuse Panel Boards and Cabinets

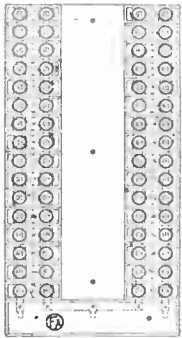
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch

Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface.



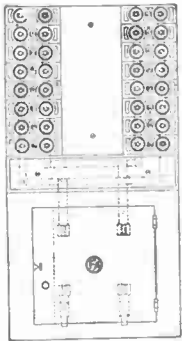
Main Cable Lugs Only



Type 2P2L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
R3C04	4	30	12 1/2	14	4 1/2	5 1/2	7	35	\$24.00
2P208L	8	100	22	17	4 1/2	15	10	85	45.00
2P212L	12	200	22	20	4 1/2	15	13	100	52.00
2P216L	16	200	22	23	4 1/2	15	16	120	60.00
2P220L	20	200	22	26	4 1/2	15	19	135	70.00
2P224L	24	200	22	29	4 1/2	15	22	155	80.00
2P228L	28	200	22	32	4 1/2	15	25	175	90.00
2P232L	32	200	22	35	4 1/2	15	28	190	100.00

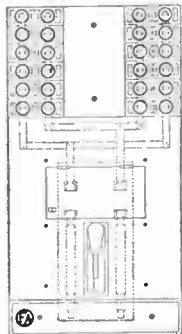
Main Fuse Connections—Solid Neutral



Type 2P2F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
2P204F	4	60	22	23	4 1/2	15	16	95	\$54.00
2P208F	8	100	22	29	4 1/2	15	22	115	68.00
2P212F	12	200	22	35	4 1/2	15	18	145	85.00
2P216F	16	200	22	38	4 1/2	15	31	160	95.00
2P220F	20	200	22	41	4 1/2	15	34	175	105.00
2P224F	24	200	22	44	4 1/2	15	37	195	115.00
2P228F	28	200	22	47	4 1/2	15	40	210	125.00
2P232F	32	200	24	52	4 1/2	15	43	225	135.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



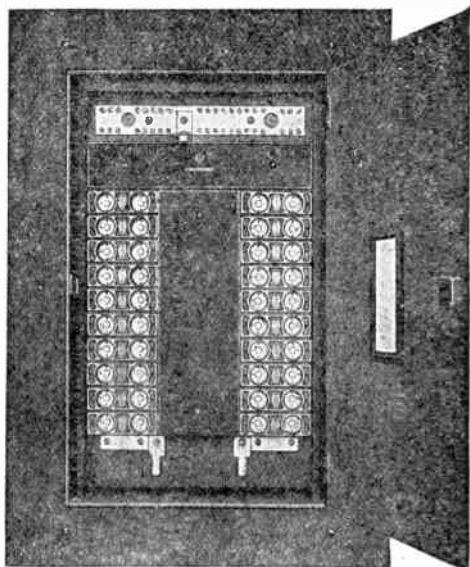
Type 2P2BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
2P204BSF	4	60	22	29	4 1/2	15	22	120	\$70.00
2P208BSF	8	100	22	35	4 1/2	15	28	150	80.00
2P212BSF	12	200	22	41	4 1/2	15	31	180	120.00
2P216BSF	16	200	22	44	4 1/2	15	37	200	130.00
2P220BSF	20	200	22	47	4 1/2	15	40	215	140.00
2P224BSF	24	200	24	52	4 1/2	15	43	230	150.00
2P228BSF	28	200	24	55	4 1/2	15	46	245	160.00
2P232BSF	32	200	24	58	4 1/2	15	49	260	180.00

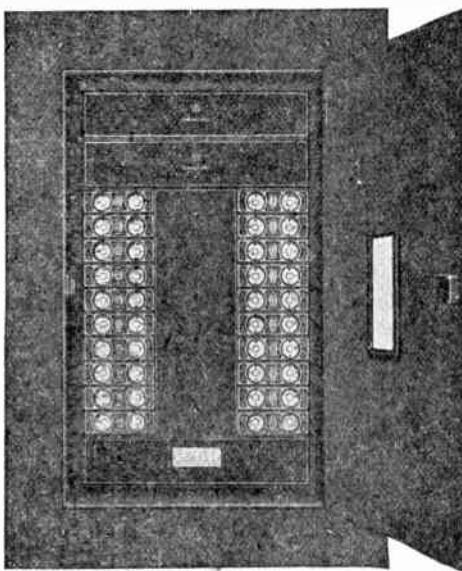
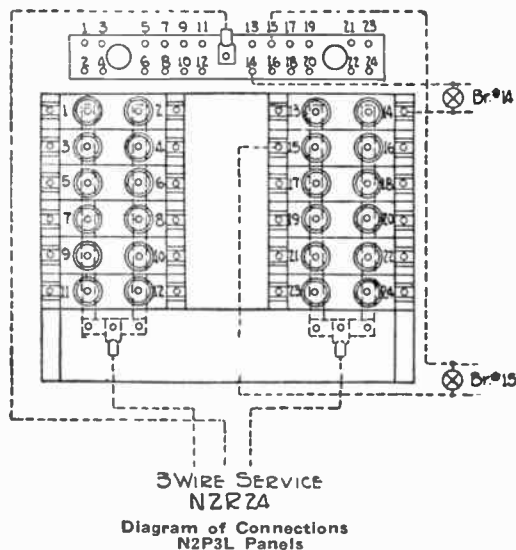
NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type N2P3 Safety Type 1-fuse Panel Boards and Cabinets

Single Fuse in Branch Circuits as Permitted by 1923 N.E.C.



Type N2P3L with Mains and Grounded Branch Circuit Connections Exposed



Type N2P3L with Mains and Branch Circuit Connections Concealed

This type of panel board is built up complete with moulded sections mounted on steel backs ready for main and branch circuit connections.

Each section has 2 N.E.C. Edison plug fuse connections for 2 branch circuits connected to ungrounded bus bars, the grounded side of branch circuit and main connections are placed at top of board and when connected are concealed by a

blank section. Each connection is properly marked to correspond with markings of ungrounded branch circuits.

Cabinet boxes have standard width gutters between and around sections with adjustable corner supports.

Front is finished dead black and has single doors, equipped with FA Catch Locks.

FA Type N2P3 Safety Type 1-fuse Panel Boards and Cabinets

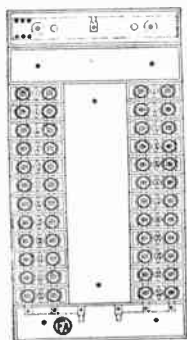
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Single Pole N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface.

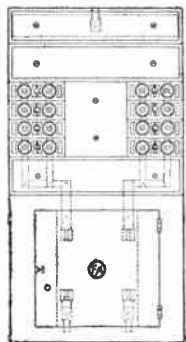
Main Cable Lugs Only



Type N2P3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
NR4	4	30	9 1/2	9 1/2	3 3/4	..	..	16	\$12.00
NR8	8	60	9 1/2	12 1/2	3 3/4	..	..	20	16.00
NR12	12	60	9 1/2	15 1/2	3 3/4	..	..	30	22.00
N2P316L	16	100	22	20	4 1/2	15	13	100	56.00
N2P324L	24	100	22	23	4 1/2	15	16	120	66.00
N2P332L	32	100	22	26	4 1/2	15	19	135	76.00
N2P340L	40	200	22	32	4 1/2	15	25	175	100.00
N2P348L	48	200	22	35	4 1/2	15	28	190	115.00
N2P356L	56	200	22	38	4 1/2	15	31	210	130.00
N2P364L	64	200	22	41	4 1/2	15	34	225	150.00

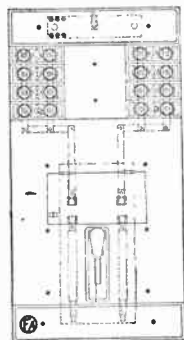
Main Fuse Connections—Solid Neutral



Type N2P3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
N2P308F	8	60	22	26	4 1/2	15	19	105	\$62.00
N2P316F	16	100	22	35	4 1/2	15	28	145	80.00
N2P324F	24	100	22	38	4 1/2	15	31	160	90.00
N2P332F	32	100	22	41	4 1/2	15	34	175	105.00
N2P340F	40	200	22	47	4 1/2	15	40	210	130.00
N2P348F	48	200	24	52	4 1/2	15	43	225	145.00
N2P356F	56	200	24	55	4 1/2	15	46	240	160.00
N2P364F	64	200	24	58	4 1/2	15	49	255	175.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type N2P3BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
N2P308BSF	8	60	22	32	4 1/2	15	25	135	\$74.00
N2P316BSF	16	100	22	41	4 1/2	15	34	180	95.00
N2P324BSF	24	100	22	44	4 1/2	15	37	200	108.00
N2P332BSF	32	100	22	47	4 1/2	15	40	215	120.00
N2P340BSF	40	200	24	55	4 1/2	15	46	245	160.00
N2P348BSF	48	200	24	58	4 1/2	15	49	260	180.00
N2P356BSF	56	200	24	61	4 1/2	15	52	275	200.00
N2P364BSF	64	200	24	64	4 1/2	15	55	290	220.00

FA Type 2P3 Safety Type 2-fuse Panel Boards and Cabinets

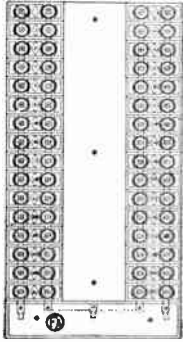
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface

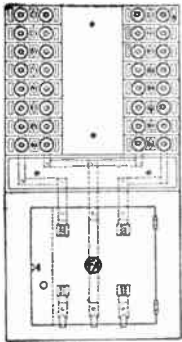
Main Cable Lugs Only



Type 2P3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
R3G04	4	30	12 1/2	14	4 1/2	5 1/2	7	\$24.00
2P308L	8	60	22	17	4 1/2	15	10	45.00
2P312L	12	60	22	20	4 1/2	15	13	52.00
2P316L	16	100	22	23	4 1/2	15	16	60.00
2P320L	20	100	22	26	4 1/2	15	19	70.00
2P324L	24	100	22	29	4 1/2	15	22	80.00
2P328L	28	100	22	32	4 1/2	15	25	90.00
2P332L	32	100	22	35	4 1/2	15	28	100.00
2P336L	36	200	22	38	4 1/2	15	31	115.00
2P340L	40	200	22	41	4 1/2	15	34	125.00
2P344L	44	200	22	44	4 1/2	15	37	135.00
2P348L	48	200	22	47	4 1/2	15	40	145.00
2P352L	52	200	24	52	4 1/2	15	43	160.00
2P356L	56	200	24	55	4 1/2	15	46	170.00
2P360L	60	200	24	58	4 1/2	15	49	180.00

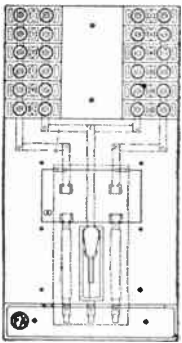
Main Fuse Connections—Solid Neutral



Type 2P3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
2P304F	4	30	22	23	4 1/2	15	16	\$95.00
2P308F	8	60	22	26	4 1/2	15	19	62.00
2P312F	12	60	22	29	4 1/2	15	22	70.00
2P316F	16	100	22	35	4 1/2	15	28	85.00
2P320F	20	100	22	38	4 1/2	15	31	95.00
2P324F	24	100	22	41	4 1/2	15	34	105.00
2P328F	28	100	22	44	4 1/2	15	37	115.00
2P332F	32	100	22	47	4 1/2	15	40	125.00
2P336F	36	200	24	55	4 1/2	15	46	145.00
2P340F	40	200	24	58	4 1/2	15	49	160.00
2P344F	44	200	24	61	4 1/2	15	52	170.00
2P348F	48	200	24	64	4 1/2	15	55	180.00
2P352F	52	200	24	67	4 1/2	15	58	190.00
2P356F	56	200	24	70	4 1/2	15	61	200.00
2P360F	60	200	24	73	4 1/2	15	64	210.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type 2P3BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
2P304BSF	4	30	22	29	4 1/2	15	22	\$70.00
2P308BSF	8	60	22	32	4 1/2	15	25	78.00
2P312BSF	12	60	22	35	4 1/2	15	28	86.00
2P316BSF	16	100	22	41	4 1/2	15	34	100.00
2P320BSF	20	100	22	44	4 1/2	15	37	110.00
2P324BSF	24	100	22	47	4 1/2	15	40	120.00
2P328BSF	28	100	24	52	4 1/2	15	43	136.00
2P332BSF	32	100	24	55	4 1/2	15	46	146.00
2P336BSF	36	200	24	61	4 1/2	15	52	184.00
2P340BSF	40	200	24	64	4 1/2	15	55	194.00
2P344BSF	44	200	24	67	4 1/2	15	58	204.00
2P348BSF	48	200	24	70	4 1/2	15	61	214.00
2P352BSF	52	200	24	73	4 1/2	15	64	224.00
2P356BSF	56	200	24	76	4 1/2	15	67	234.00
2P360BSF	60	200	24	79	4 1/2	15	70	244.00

FA Type TP2 Safety Type 2-fuse Panel Boards and Cabinets

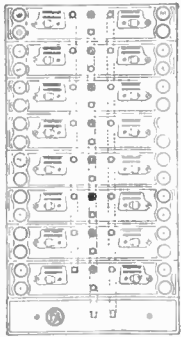
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. One door construction.

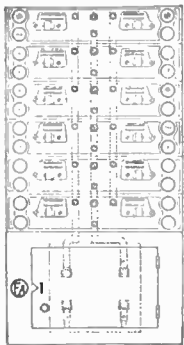
Main Cable Lugs Only



Type TP2L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP204L	4	60	22	14	4 1/2	15 7	75	\$42.00
TP206L	6	100	22	20	4 1/2	15 13	105	52.00
TP208L	8	100	22	23	4 1/2	15 16	115	62.00
TP210L	10	100	22	26	4 1/2	15 19	125	72.00
TP212L	12	200	22	29	4 1/2	15 22	135	82.00
TP214L	14	200	22	32	4 1/2	15 25	150	94.00
TP216L	16	200	22	35	4 1/2	15 28	170	104.00
TP218L	18	200	22	38	4 1/2	15 31	190	114.00
TP220L	20	200	22	41	4 1/2	15 34	210	124.00
TP222L	22	200	22	44	4 1/2	15 37	230	134.00
TP224L	24	200	22	47	4 1/2	15 40	250	144.00
TP226L	26	200	24	52	4 1/2	15 43	270	159.00
TP228L	28	200	24	55	4 1/2	15 46	290	169.00
TP230L	30	200	24	58	4 1/2	15 49	310	184.00
TP232L	32	200	24	61	4 1/2	15 52	330	200.00

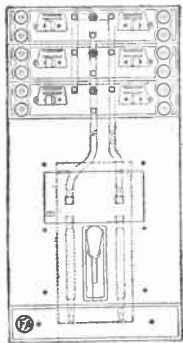
Main Fuse Connections—Solid Neutral



Type TP2F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP204F	4	60	22	23	4 1/2	15 16	95	\$58.00
TP206F	6	100	22	29	4 1/2	15 22	115	70.00
TP208F	8	100	22	32	4 1/2	15 25	125	80.00
TP210F	10	100	22	35	4 1/2	15 28	135	90.00
TP212F	12	200	22	41	4 1/2	15 34	155	110.00
TP214F	14	200	22	44	4 1/2	15 37	175	120.00
TP216F	16	200	22	47	4 1/2	15 40	195	130.00
TP218F	18	200	24	52	4 1/2	15 43	215	140.00
TP220F	20	200	24	55	4 1/2	15 46	235	150.00
TP222F	22	200	24	58	4 1/2	15 49	255	170.00
TP224F	24	200	24	61	4 1/2	15 52	275	180.00
TP226F	26	200	24	64	4 1/2	15 55	295	190.00
TP228F	28	200	24	67	4 1/2	15 58	315	200.00
TP230F	30	200	24	70	4 1/2	15 61	335	210.00
TP232F	32	200	24	73	4 1/2	15 64	355	220.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



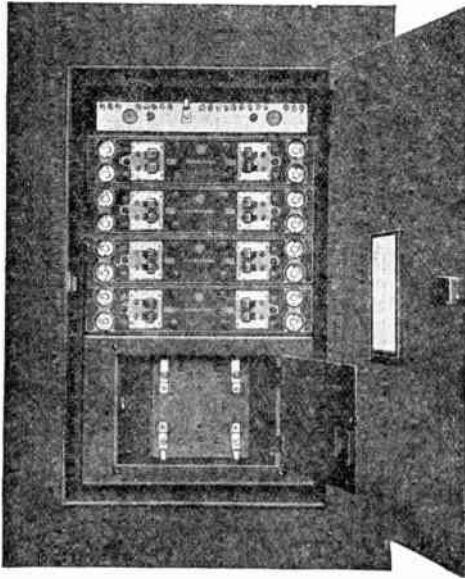
Type TP2BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP204BSF	4	60	22	32	4 1/2	15 25	125	\$72.00
TP206BSF	6	100	22	38	4 1/2	15 31	160	92.00
TP208BSF	8	100	22	41	4 1/2	15 34	180	102.00
TP210BSF	10	100	22	44	4 1/2	15 37	200	112.00
TP212BSF	12	200	24	52	4 1/2	15 43	220	145.00
TP214BSF	14	200	24	55	4 1/2	15 46	240	155.00
TP216BSF	16	200	24	58	4 1/2	15 49	260	175.00
TP218BSF	18	200	24	61	4 1/2	15 52	280	185.00
TP220BSF	20	200	24	64	4 1/2	15 55	300	195.00
TP222BSF	22	200	24	67	4 1/2	15 58	320	205.00
TP224BSF	24	200	24	70	4 1/2	15 61	340	215.00
TP226BSF	26	200	24	73	4 1/2	15 64	360	230.00
TP228BSF	28	200	24	76	4 1/2	15 67	380	245.00
TP230BSF	30	200	24	79	4 1/2	15 70	400	260.00
TP232BSF	32	200	24	82	4 1/2	15 73	420	275.00

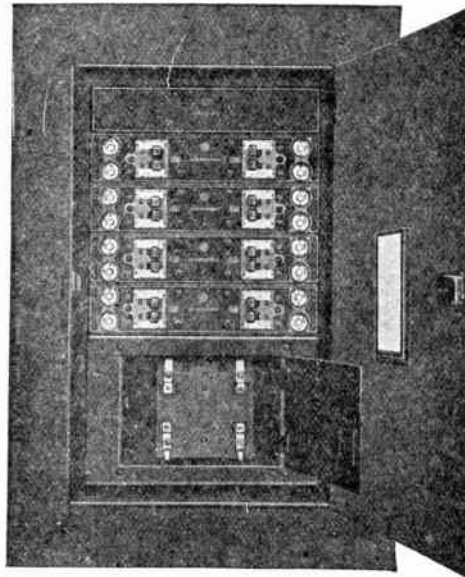
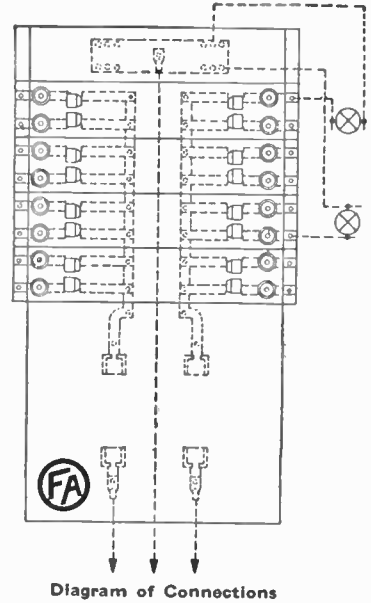
NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type NTP3 Safety Type 1-fuse Panel Boards and Cabinets

Single Fuse in Branch as Permitted by 1923 Code



With Mains and Grounded Branch
Circuit Connections Exposed



With Mains and Branch Circuit
Connections Concealed

This type of panel board is built up complete with moulded sections, mounted on steel backs ready for main and branch circuit connections.

Each section has four 30-ampere, 250-volt, single pole tumbler switches with N.E.C. Edison plug fuse connections for controlling ungrounded sides of branch circuits, the grounded side of each branch circuit is fed direct from the bus bar and is not fused.

All unfused branch circuit connections on grounded bus are located at top of board and when connected up are concealed by blank sections. Each branch circuit connection is properly marked to correspond with markings of ungrounded branch circuits.

Cabinet has standard width gutters with adjustable panel board supports.

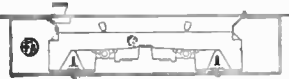
Front is finished dead black and has single doors equipped with FA Catch Locks.

FA Type NTP3 Safety Type 1-fuse Panel Boards and Cabinets

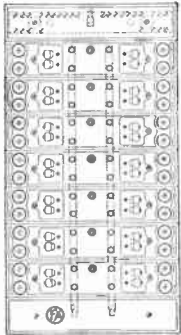
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch

Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. One door construction.



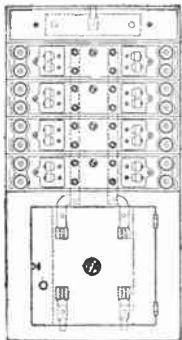
Main Cable Lugs Only



Type NTP3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304L	4	30	22	14	4 1/2	15 7	75	\$38.00
NTP308L	8	60	22	17	4 1/2	15 10	95	52.00
NTP312L	12	60	22	20	4 1/2	15 13	105	64.00
NTP316L	16	100	22	26	4 1/2	15 19	125	84.00
NTP320L	20	100	22	29	4 1/2	15 22	135	96.00
NTP324L	24	100	22	32	4 1/2	15 25	150	108.00
NTP328L	28	100	22	35	4 1/2	15 28	170	120.00
NTP332L	32	100	22	38	4 1/2	15 31	190	132.00
NTP336L	36	200	22	41	4 1/2	15 34	210	152.00
NTP340L	40	200	22	44	4 1/2	15 37	230	164.00
NTP344L	44	200	22	47	4 1/2	15 40	250	176.00
NTP348L	48	200	24	52	4 1/2	15 43	270	188.00
NTP352L	52	200	24	55	4 1/2	15 46	290	200.00
NTP356L	56	200	24	58	4 1/2	15 49	310	220.00
NTP360L	60	200	24	61	4 1/2	15 52	330	232.00

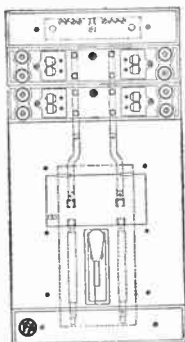
Main Fuse Connections—Solid Neutral



Type NTP3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304F	4	30	22	23	4 1/2	15 16	90	\$54.00
NTP308F	8	60	22	26	4 1/2	15 19	100	66.00
NTP312F	12	60	22	29	4 1/2	15 22	110	78.00
NTP316F	16	100	22	35	4 1/2	15 28	135	98.00
NTP320F	20	100	22	38	4 1/2	15 31	155	110.00
NTP324F	24	100	22	41	4 1/2	15 34	175	122.00
NTP328F	28	100	22	44	4 1/2	15 37	195	134.00
NTP332F	32	100	22	47	4 1/2	15 40	215	146.00
NTP336F	36	200	24	55	4 1/2	15 46	255	166.00
NTP340F	40	200	24	58	4 1/2	15 49	275	186.00
NTP344F	44	200	24	61	4 1/2	15 52	295	198.00
NTP348F	48	200	24	64	4 1/2	15 55	315	210.00
NTP352F	52	200	24	67	4 1/2	15 58	335	222.00
NTP356F	56	200	24	70	4 1/2	15 61	355	234.00
NTP360F	60	200	24	73	4 1/2	15 64	375	246.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type NTP3BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304BSF	4	30	22	32	4 1/2	15 25	125	\$68.00
NTP308BSF	8	60	22	35	4 1/2	15 28	140	84.00
NTP312BSF	12	60	22	38	4 1/2	15 31	160	96.00
NTP316BSF	16	100	22	44	4 1/2	15 37	200	120.00
NTP320BSF	20	100	22	47	4 1/2	15 40	220	132.00
NTP324BSF	24	100	24	52	4 1/2	15 43	260	144.00
NTP328BSF	28	100	24	55	4 1/2	15 46	270	156.00
NTP332BSF	32	100	24	58	4 1/2	15 49	280	176.00
NTP336BSF	36	200	24	64	4 1/2	15 55	320	210.00
NTP340BSF	40	200	24	67	4 1/2	15 58	340	225.00
NTP344BSF	44	200	24	70	4 1/2	15 61	360	237.00
NTP348BSF	48	200	24	73	4 1/2	15 64	380	249.00
NTP352BSF	52	200	24	76	4 1/2	15 67	400	260.00
NTP356BSF	56	200	24	79	4 1/2	15 70	420	275.00
NTP360BSF	60	200	24	82	4 1/2	15 73	440	290.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type TP3 Safety Type 2-fuse Panel Boards and Cabinets

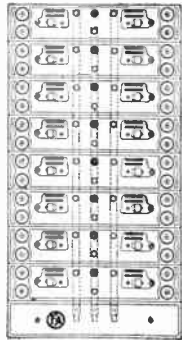
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. One door construction.

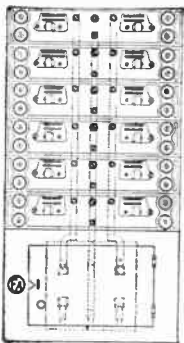
Main Cable Lugs Only



Type TP3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304L	4	30	22	14	4 1/2	15 7	75	\$40.00
TP306L	6	60	22	17	4 1/2	15 10	95	48.00
TP308L	8	60	22	20	4 1/2	15 13	105	58.00
TP310L	10	60	22	23	4 1/2	15 16	115	68.00
TP312L	12	60	22	26	4 1/2	15 19	125	78.00
TP314L	14	100	22	32	4 1/2	15 25	150	90.00
TP316L	16	100	22	35	4 1/2	15 28	170	100.00
TP318L	18	100	22	38	4 1/2	15 31	190	110.00
TP320L	20	100	22	41	4 1/2	15 34	210	120.00
TP322L	22	100	22	44	4 1/2	15 37	230	130.00
TP324L	24	100	22	47	4 1/2	15 40	250	140.00
TP326L	26	100	24	52	4 1/2	15 43	270	155.00
TP328L	28	100	24	55	4 1/2	15 46	290	165.00
TP330L	30	100	24	58	4 1/2	15 49	310	180.00
TP332L	32	100	24	61	4 1/2	15 52	330	195.00
TP334L	34	200	24	64	4 1/2	15 55	350	212.00

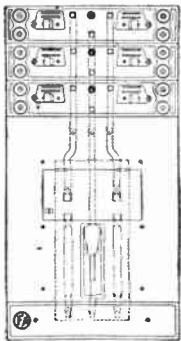
Main Fuse Connections—Solid Neutral



Type TP3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304F	4	30	22	23	4 1/2	15 16	95	\$56.00
TP306F	6	60	22	26	4 1/2	15 19	105	66.00
TP308F	8	60	22	29	4 1/2	15 22	115	76.00
TP310F	10	60	22	32	4 1/2	15 25	125	86.00
TP312F	12	60	22	35	4 1/2	15 28	135	96.00
TP314F	14	100	22	41	4 1/2	15 34	155	116.00
TP316F	16	100	22	44	4 1/2	15 37	175	126.00
TP318F	18	100	22	47	4 1/2	15 40	195	136.00
TP320F	20	100	24	52	4 1/2	15 43	215	146.00
TP322F	22	100	24	55	4 1/2	15 46	235	156.00
TP324F	24	100	24	58	4 1/2	15 49	255	176.00
TP326F	26	100	24	61	4 1/2	15 52	275	186.00
TP328F	28	100	24	64	4 1/2	15 55	295	196.00
TP330F	30	100	24	67	4 1/2	15 58	315	206.00
TP332F	32	100	24	70	4 1/2	15 61	335	216.00
TP334F	34	200	24	76	4 1/2	15 67	375	240.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TP3BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304BSF	4	30	22	32	4 1/2	15 25	125	\$70.00
TP306BSF	6	60	22	35	4 1/2	15 28	140	80.00
TP308BSF	8	60	22	38	4 1/2	15 31	160	90.00
TP310BSF	10	60	22	41	4 1/2	15 34	180	100.00
TP312BSF	12	60	22	44	4 1/2	15 37	200	110.00
TP314BSF	14	100	24	52	4 1/2	15 43	220	135.00
TP316BSF	16	100	24	55	4 1/2	15 46	240	145.00
TP318BSF	18	100	24	58	4 1/2	15 49	260	165.00
TP320BSF	20	100	24	61	4 1/2	15 52	280	175.00
TP322BSF	22	100	24	64	4 1/2	15 55	300	185.00
TP324BSF	24	100	24	67	4 1/2	15 58	320	195.00
TP326BSF	26	100	24	70	4 1/2	15 61	340	205.00
TP328BSF	28	100	24	73	4 1/2	15 64	360	215.00
TP330BSF	30	100	24	76	4 1/2	15 67	380	225.00
TP332BSF	32	100	24	79	4 1/2	15 70	400	235.00
TP334BSF	34	200	24	85	4 1/2	15 76	420	270.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type TP2D Safety Type 2-fuse Panel Boards and Cabinets

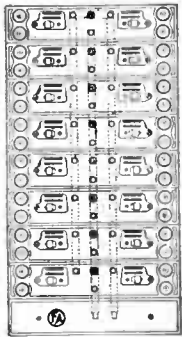
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with N. E. C. Plug Fuse Connections Capacity, 1923 Code per Branch



Panels are made of sections of milled material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. Door in door construction.

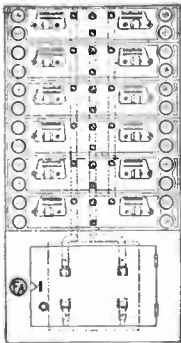
Main Cable Lugs Only



Type TP2LD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.		Marking of Box	Approx. Wt. Lbs.	Price Each	
			Width	Height				
TP204LD	4	60	22	20	4 1/2	15	105	\$62.00
TP206LD	6	100	22	23	4 1/2	15	115	72.00
TP208LD	8	100	22	26	4 1/2	15	140	82.00
TP210LD	10	100	22	29	4 1/2	15	155	92.00
TP212LD	12	200	22	32	4 1/2	15	170	102.00
TP214LD	14	200	22	35	4 1/2	15	185	114.00
TP216LD	16	200	22	38	4 1/2	15	200	124.00
TP218LD	18	200	22	41	4 1/2	15	215	134.00
TP220LD	20	200	22	44	4 1/2	15	230	144.00
TP222LD	22	200	22	47	4 1/2	15	250	154.00
TP224LD	24	200	24	52	4 1/2	15	270	164.00
TP226LD	26	200	24	55	4 1/2	15	290	174.00
TP228LD	28	200	24	58	4 1/2	15	310	189.00
TP230LD	30	200	24	61	4 1/2	15	330	204.00
TP232LD	32	200	24	64	4 1/2	15	350	220.00

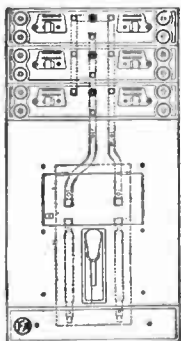
Main Fuse Connections—Solid Neutral



Type TP2FD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.		Marking of Box	Approx. Wt. Lbs.	Price Each	
			Width	Height				
TP204FD	4	60	22	26	4 1/2	15	105	\$76.00
TP206FD	6	100	22	32	4 1/2	15	125	90.00
TP208FD	8	100	22	35	4 1/2	15	135	100.00
TP210FD	10	100	22	38	4 1/2	15	145	110.00
TP212FD	12	200	22	44	4 1/2	15	175	130.00
TP214FD	14	200	22	47	4 1/2	15	195	140.00
TP216FD	16	200	24	52	4 1/2	15	215	150.00
TP218FD	18	200	24	55	4 1/2	15	235	160.00
TP220FD	20	200	24	58	4 1/2	15	255	170.00
TP222FD	22	200	24	61	4 1/2	15	275	190.00
TP224FD	24	200	24	64	4 1/2	15	295	200.00
TP226FD	26	200	24	67	4 1/2	15	315	210.00
TP228FD	28	200	24	70	4 1/2	15	335	220.00
TP230FD	30	200	24	73	4 1/2	15	355	230.00
TP232FD	32	200	24	76	4 1/2	15	375	240.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



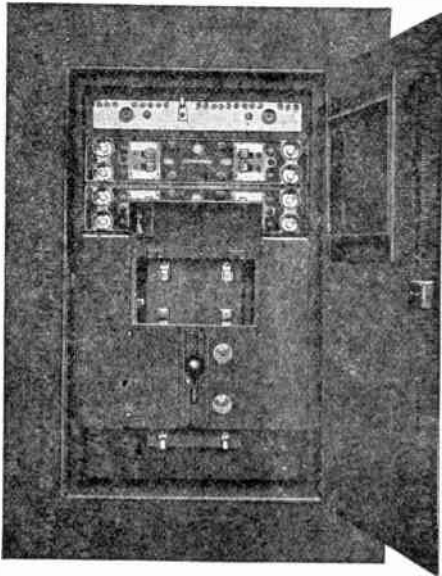
Type TP2BSFD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.		Marking of Box	Approx. Wt. Lbs.	Price Each	
			Width	Height				
TP204BSFD	4	60	22	35	4 1/2	15	140	\$92.00
TP206BSFD	6	100	22	41	4 1/2	15	180	112.00
TP208BSFD	8	100	22	44	4 1/2	15	200	122.00
TP210BSFD	10	100	22	47	4 1/2	15	220	132.00
TP212BSFD	12	200	24	55	4 1/2	15	240	165.00
TP214BSFD	14	200	24	58	4 1/2	15	260	175.00
TP216BSFD	16	200	24	61	4 1/2	15	280	195.00
TP218BSFD	18	200	24	64	4 1/2	15	300	205.00
TP220BSFD	20	200	24	67	4 1/2	15	320	215.00
TP222BSFD	22	200	24	70	4 1/2	15	340	225.00
TP224BSFD	24	200	24	73	4 1/2	15	360	235.00
TP226BSFD	26	200	24	76	4 1/2	15	380	250.00
TP228BSFD	28	200	24	79	4 1/2	15	400	265.00
TP230BSFD	30	200	24	82	4 1/2	15	420	280.00
TP232BSFD	32	200	24	85	4 1/2	15	440	295.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type NTP3D Safety Type 1-fuse Panel Boards and Cabinets

Single Fuse in Branch Circuit as Permitted by 1923 N.E.C.



With Mains and Grounded Branch Circuit Connections Exposed

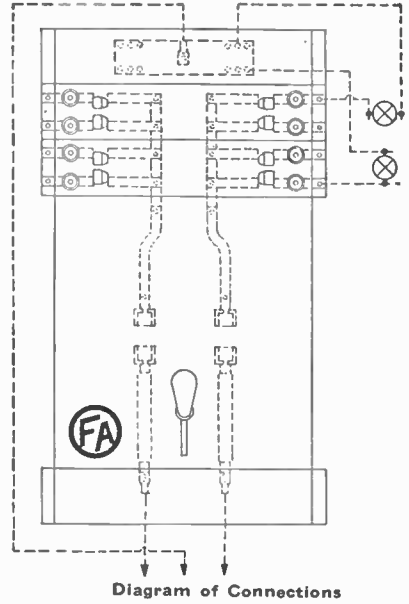
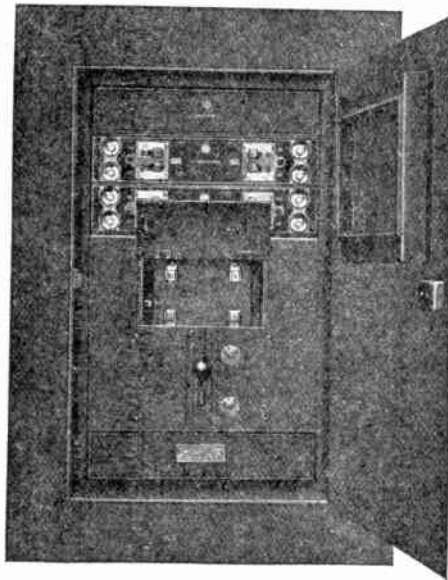


Diagram of Connections



With Main and Grounded Branch Circuit Connections Concealed

Mounted on steel backs ready for main and branch circuit connections. Panel board is built up complete with moulded sections each section having four 30-ampere, 250-volt single pole tumbler switches with N.E.C. Edison plug fuse connections for controlling ungrounded sides of branch circuits, the grounded side of each branch is fed direct from the bus bar and is not fused.

All unfused branch circuit connections on grounded bus are located at top of board and when connected up are concealed by blank sections.

Each branch circuit connection is properly marked to correspond with markings of ungrounded branch circuits.

Cabinet has standard width gutters with adjustable panel board supports.

Front is finished dead black and is of door in door construction, the inner door permitting access to switch handles only is fitted with FA Latch, the main door permitting access to entire panel board is fitted with FA Catch Lock.

FA Type NTP3D Safety Type 1-fuse Panel Boards and Cabinets

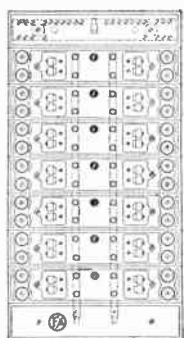
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Single Pole Tumbler Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. Door in door construction.

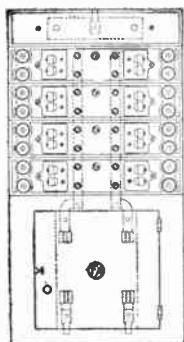
Main Cable Lugs Only



Type NTP3LD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF Box, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304LD	4	30	22	17	4 1/2	15 10	95	\$56.00
NTP308LD	8	60	22	20	4 1/2	15 13	105	70.00
NTP312LD	12	60	22	23	4 1/2	15 16	115	84.00
NTP316LD	16	100	22	26	4 1/2	15 19	125	104.00
NTP320LD	20	100	22	29	4 1/2	15 22	135	116.00
NTP324LD	24	100	22	32	4 1/2	15 25	150	128.00
NTP328LD	28	100	22	35	4 1/2	15 28	170	140.00
NTP332LD	32	100	22	38	4 1/2	15 31	190	152.00
NTP336LD	36	200	22	41	4 1/2	15 34	210	172.00
NTP340LD	40	200	22	44	4 1/2	15 37	230	184.00
NTP344LD	44	200	22	47	4 1/2	15 40	250	196.00
NTP348LD	48	200	24	52	4 1/2	15 43	270	208.00
NTP352LD	52	200	24	55	4 1/2	15 46	290	220.00
NTP356LD	56	200	24	58	4 1/2	15 49	310	240.00
NTP360LD	60	200	24	61	4 1/2	15 52	330	252.00

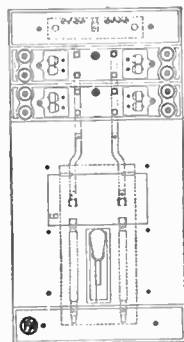
Main Fuse Connections—Solid Neutral



Type NTP3FD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF Box, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304FD	4	30	22	23	4 1/2	15 16	90	\$72.00
NTP308FD	8	60	22	26	4 1/2	15 19	100	84.00
NTP312FD	12	60	22	29	4 1/2	15 22	110	98.00
NTP316FD	16	100	22	35	4 1/2	15 28	135	118.00
NTP320FD	20	100	22	38	4 1/2	15 31	155	130.00
NTP324FD	24	100	22	41	4 1/2	15 34	175	142.00
NTP328FD	28	100	22	44	4 1/2	15 37	195	154.00
NTP332FD	32	100	22	47	4 1/2	15 40	215	166.00
NTP336FD	36	200	24	55	4 1/2	15 46	255	186.00
NTP340FD	40	200	24	58	4 1/2	15 49	275	206.00
NTP344FD	44	200	24	61	4 1/2	15 52	295	218.00
NTP348FD	48	200	24	64	4 1/2	15 55	315	230.00
NTP352FD	52	200	24	67	4 1/2	15 58	335	242.00
NTP356FD	56	200	24	70	4 1/2	15 61	355	254.00
NTP360FD	60	200	24	73	4 1/2	15 64	375	266.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type NTP3BSFD

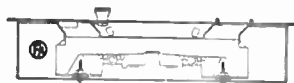
Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF Box, In.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
NTP304BSFD	4	30	22	32	4 1/2	15 25	125	\$86.00
NTP308BSFD	8	60	22	35	4 1/2	15 28	150	102.00
NTP312BSFD	12	60	22	38	4 1/2	15 31	160	116.00
NTP316BSFD	16	100	22	44	4 1/2	15 37	200	140.00
NTP320BSFD	20	100	22	47	4 1/2	15 40	220	152.00
NTP324BSFD	24	100	24	52	4 1/2	15 43	260	164.00
NTP328BSFD	28	100	24	55	4 1/2	15 46	270	176.00
NTP332BSFD	32	100	24	58	4 1/2	15 49	280	196.00
NTP336BSFD	36	200	24	64	4 1/2	15 55	320	230.00
NTP340BSFD	40	200	24	67	4 1/2	15 58	340	245.00
NTP344BSFD	44	200	24	70	4 1/2	15 61	360	257.00
NTP348BSFD	48	200	24	73	4 1/2	15 64	380	269.00
NTP352BSFD	52	200	24	76	4 1/2	15 67	400	280.00
NTP356BSFD	56	200	24	79	4 1/2	15 70	420	295.00
NTP360BSFD	60	200	24	82	4 1/2	15 73	440	310.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type TP3D Safety Type 2-fuse Panel Boards and Cabinets

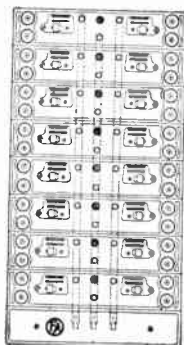
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel gutter type. Front is of code thickness steel, painted dead black; flush or surface. Door in door construction.

NOTE.—Panels will not be made for less than four circuit branches.

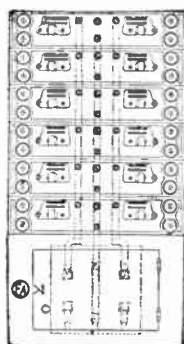


Type TP3LD

Main Cable Lugs Only

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304LD	4	30	22	20	4 1/2	15 13	105	\$58.00
TP306LD	6	60	22	23	4 1/2	15 16	115	68.00
TP308LD	8	60	22	26	4 1/2	15 19	140	78.00
TP310LD	10	60	22	29	4 1/2	15 22	155	88.00
TP312LD	12	60	22	32	4 1/2	15 25	170	98.00
TP314LD	14	100	22	35	4 1/2	15 28	185	110.00
TP316LD	16	100	22	38	4 1/2	15 31	200	120.00
TP318LD	18	100	22	41	4 1/2	15 34	215	130.00
TP320LD	20	100	22	44	4 1/2	15 37	230	140.00
TP322LD	22	100	22	47	4 1/2	15 40	250	150.00
TP324LD	24	100	24	52	4 1/2	15 43	270	160.00
TP326LD	26	100	24	55	4 1/2	15 46	290	170.00
TP328LD	28	100	24	58	4 1/2	15 49	310	185.00
TP330LD	30	100	24	61	4 1/2	15 52	330	200.00
TP332LD	32	100	24	64	4 1/2	15 55	350	215.00
TP334LD	34	200	24	67	4 1/2	15 58	370	232.00

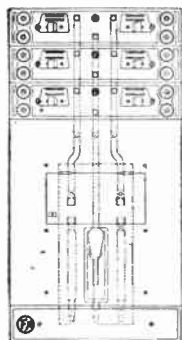
Main Fuse Connections—Solid Neutral



Type TP3FD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304FD	4	30	22	26	4 1/2	15 19	105	\$74.00
TP306FD	6	60	22	29	4 1/2	15 22	115	86.00
TP308FD	8	60	22	32	4 1/2	15 25	125	96.00
TP310FD	10	60	22	35	4 1/2	15 28	135	106.00
TP312FD	12	60	22	38	4 1/2	15 31	145	116.00
TP314FD	14	100	22	44	4 1/2	15 37	175	136.00
TP316FD	16	100	22	47	4 1/2	15 40	195	146.00
TP318FD	18	100	22	52	4 1/2	15 43	215	156.00
TP320FD	20	100	24	55	4 1/2	15 46	235	166.00
TP322FD	22	100	24	58	4 1/2	15 49	255	176.00
TP324FD	24	100	24	61	4 1/2	15 52	275	196.00
TP326FD	26	100	24	64	4 1/2	15 55	295	206.00
TP328FD	28	100	24	67	4 1/2	15 58	315	216.00
TP330FD	30	100	24	70	4 1/2	15 61	335	226.00
TP332FD	32	100	24	73	4 1/2	15 64	355	236.00
TP334FD	34	100	24	79	4 1/2	15 70	395	260.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TP3BSFD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TP304BSFD	4	30	22	35	4 1/2	15 28	140	\$88.00
TP306BSFD	6	60	22	38	4 1/2	15 31	160	100.00
TP308BSFD	8	60	22	41	4 1/2	15 34	180	110.00
TP310BSFD	10	60	22	44	4 1/2	15 37	200	120.00
TP312BSFD	12	60	22	47	4 1/2	15 40	220	130.00
TP314BSFD	14	100	24	55	4 1/2	15 46	240	155.00
TP316BSFD	16	100	24	58	4 1/2	15 49	260	165.00
TP318BSFD	18	100	24	61	4 1/2	15 52	280	185.00
TP320BSFD	20	100	24	64	4 1/2	15 55	300	195.00
TP322BSFD	22	100	24	67	4 1/2	15 58	320	205.00
TP324BSFD	24	100	24	70	4 1/2	15 61	340	215.00
TP326BSFD	26	100	24	73	4 1/2	15 64	360	225.00
TP328BSFD	28	100	24	76	4 1/2	15 67	380	235.00
TP330BSFD	30	100	24	79	4 1/2	15 70	400	245.00
TP332BSFD	32	100	24	82	4 1/2	15 73	420	255.00
TP334BSFD	34	200	24	88	4 1/2	15 79	440	290.00

FA Type TC2 2-fuse Panel Boards and Cabinets

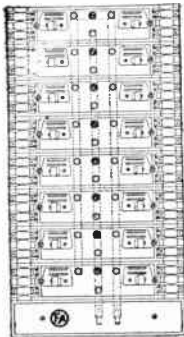
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere, Double Pole Tumbler Switches with Cartridge Type Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. One door construction, not safety type.

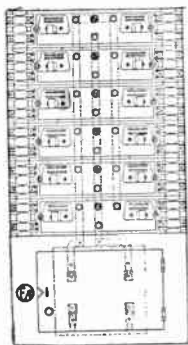
Main Cable Lugs Only



Type TC2L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC204L	4	60	22	14	4 1/2	15 7	75	\$42.00
TC206L	6	100	22	20	4 1/2	15 13	105	52.00
TC208L	8	100	22	23	4 1/2	15 16	115	62.00
TC210L	10	100	22	26	4 1/2	15 19	125	72.00
TC212L	12	200	22	29	4 1/2	15 22	135	82.00
TC214L	14	200	22	32	4 1/2	15 25	150	94.00
TC216L	16	200	22	35	4 1/2	15 28	170	104.00
TC218L	18	200	22	38	4 1/2	15 31	190	114.00
TC220L	20	200	22	41	4 1/2	15 34	210	124.00
TC222L	22	200	22	44	4 1/2	15 37	230	134.00
TC224L	24	200	22	47	4 1/2	15 40	250	144.00
TC226L	26	200	24	52	4 1/2	15 43	270	159.00
TC228L	28	200	24	55	4 1/2	15 46	290	169.00
TC230L	30	200	24	58	4 1/2	15 49	310	184.00
TC232L	32	200	24	61	4 1/2	15 52	330	200.00

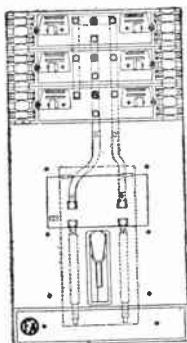
Main Fuse Connections—Solid Neutral



Type TC2F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC204F	4	60	22	23	4 1/2	15 16	95	\$58.00
TC206F	6	100	22	29	4 1/2	15 22	115	70.00
TC208F	8	100	22	32	4 1/2	15 25	125	80.00
TC210F	10	100	22	35	4 1/2	15 28	145	90.00
TC212F	12	200	22	41	4 1/2	15 34	155	110.00
TC214F	14	200	22	44	4 1/2	15 37	175	120.00
TC216F	16	200	22	47	4 1/2	15 40	195	130.00
TC218F	18	200	24	52	4 1/2	15 43	215	140.00
TC220F	20	200	24	55	4 1/2	15 46	235	150.00
TC222F	22	200	24	58	4 1/2	15 49	255	170.00
TC224F	24	200	24	61	4 1/2	15 52	275	180.00
TC226F	26	200	24	64	4 1/2	15 55	295	190.00
TC228F	28	200	24	67	4 1/2	15 58	315	200.00
TC230F	30	200	24	70	4 1/2	15 61	335	210.00
TC232F	32	200	24	73	4 1/2	15 64	355	220.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TC2BSF

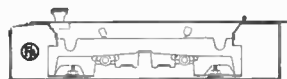
Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC204BSF	4	60	22	32	4 1/2	15 25	125	\$72.00
TC206BSF	6	100	22	38	4 1/2	15 31	160	92.00
TC208BSF	8	100	22	41	4 1/2	15 34	180	102.00
TC210BSF	10	100	22	44	4 1/2	15 37	200	112.00
TC212BSF	12	200	24	52	4 1/2	15 43	230	145.00
TC214BSF	14	200	24	55	4 1/2	15 46	240	155.00
TC216BSF	16	200	24	58	4 1/2	15 49	260	175.00
TC218BSF	18	200	24	61	4 1/2	15 52	280	185.00
TC220BSF	20	200	24	64	4 1/2	15 55	300	195.00
TC222BSF	22	200	24	67	4 1/2	15 58	320	205.00
TC224BSF	24	200	24	70	4 1/2	15 61	340	215.00
TC226BSF	26	200	24	73	4 1/2	15 64	360	230.00
TC228BSF	28	200	24	76	4 1/2	15 67	380	245.00
TC230BSF	30	200	24	79	4 1/2	15 70	400	260.00
TC232BSF	32	200	24	82	4 1/2	15 73	420	275.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type TC3 2-fuse Panel Boards and Cabinets

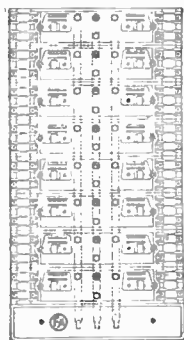
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with Cartridge Type Fuse Connections, Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. One door construction, not safety type.

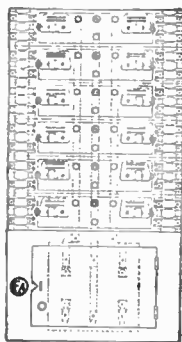
Main Cable Lugs Only



Type TC3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC304L	4	30	22	14 1/2	4 1/2	15 7	75	\$49.00
TC306L	6	60	22	17	4 1/2	15 10	95	48.00
TC308L	8	60	22	20	4 1/2	15 13	105	58.00
TC310L	10	60	22	23	4 1/2	15 16	115	68.00
TC312L	12	60	22	26	4 1/2	15 19	125	78.00
TC314L	14	100	22	32	4 1/2	15 25	150	90.00
TC316L	16	100	22	35	4 1/2	15 28	170	100.00
TC318L	18	100	22	38	4 1/2	15 31	190	110.00
TC320L	20	100	22	41	4 1/2	15 34	210	120.00
TC322L	22	100	22	44	4 1/2	15 37	230	130.00
TC324L	24	100	22	47	4 1/2	15 40	250	140.00
TC326L	26	100	24	52	4 1/2	15 43	270	155.00
TC328L	28	100	24	55	4 1/2	15 46	290	165.00
TC330L	30	100	24	58	4 1/2	15 49	310	180.00
TC332L	32	100	24	61	4 1/2	15 52	330	195.00
TC334L	34	200	24	64	4 1/2	15 55	350	212.00

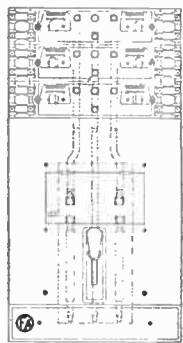
Main Fuse Connections—Solid Neutral



Type TC3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC304F	4	60	22	23	4 1/2	15 16	95	56.00
TC306F	6	60	22	26	4 1/2	15 19	105	66.00
TC308F	8	60	22	29	4 1/2	15 22	115	76.00
TC310F	10	60	22	32	4 1/2	15 25	125	86.00
TC312F	12	60	22	35	4 1/2	15 28	135	96.00
TC314F	14	100	22	41	4 1/2	15 34	155	116.00
TC316F	16	100	22	44	4 1/2	15 37	175	126.00
TC318F	18	100	22	47	4 1/2	15 40	195	136.00
TC320F	20	100	24	52	4 1/2	15 43	215	146.00
TC322F	22	100	24	55	4 1/2	15 46	235	156.00
TC324F	24	100	24	58	4 1/2	15 49	255	176.00
TC326F	26	100	24	61	4 1/2	15 52	275	186.00
TC328F	28	100	24	64	4 1/2	15 55	295	196.00
TC330F	30	100	24	67	4 1/2	15 58	315	206.00
TC332F	32	100	24	70	4 1/2	15 61	335	216.00
TC334F	34	200	24	76	4 1/2	15 67	375	240.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TC3BSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth			
TC304BSF	4	30	22	32	4 1/2	15 25	125	\$70.00
TC306BSF	6	60	22	35	4 1/2	15 28	140	80.00
TC308BSF	8	60	22	38	4 1/2	15 31	160	90.00
TC310BSF	10	60	22	41	4 1/2	15 34	180	100.00
TC312BSF	12	60	22	44	4 1/2	15 37	200	110.00
TC314BSF	14	100	24	52	4 1/2	15 43	220	135.00
TC316BSF	16	100	24	55	4 1/2	15 46	240	145.00
TC318BSF	18	100	24	58	4 1/2	15 49	260	165.00
TC320BSF	20	100	24	61	4 1/2	15 52	280	175.00
TC322BSF	22	100	24	64	4 1/2	15 55	300	185.00
TC324BSF	24	100	24	67	4 1/2	15 58	320	195.00
TC326BSF	26	100	24	70	4 1/2	15 61	340	205.00
TC328BSF	28	100	24	73	4 1/2	15 64	360	215.00
TC330BSF	30	100	24	76	4 1/2	15 67	380	225.00
TC332BSF	32	100	24	79	4 1/2	15 70	400	235.00
TC334BSF	34	200	24	85	4 1/2	15 76	420	270.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type TC2D Safety Type 2-fuse Panel Boards and Cabinets

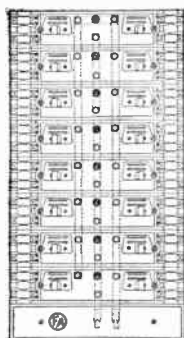
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Toggle Switches with Cartridge Type Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface. Door in door construction, safety type.

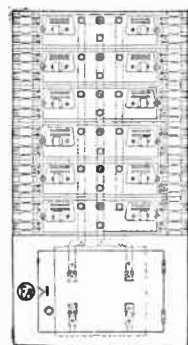
Main Cable Lugs Only



Type TC2LD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
TC204LD	4	60	22	20	4 1/2	15	13	105	\$62.00
TC206LD	6	100	22	23	4 1/2	15	16	115	72.00
TC208LD	8	100	22	26	4 1/2	15	19	144	82.00
TC210LD	10	100	22	29	4 1/2	15	22	155	92.00
TC212LD	12	200	22	32	4 1/2	15	25	170	102.00
TC214LD	14	200	22	35	4 1/2	15	28	185	114.00
TC216LD	16	200	22	38	4 1/2	15	31	200	124.00
TC218LD	18	200	22	41	4 1/2	15	34	215	134.00
TC220LD	20	200	22	44	4 1/2	15	37	230	144.00
TC222LD	22	200	22	47	4 1/2	15	40	250	154.00
TC224LD	24	200	24	52	4 1/2	15	43	270	164.00
TC226LD	26	200	24	55	4 1/2	15	46	290	174.00
TC228LD	28	200	24	58	4 1/2	15	49	310	189.00
TC230LD	30	200	24	61	4 1/2	15	52	330	204.00
TC232LD	32	200	24	63	4 1/2	15	55	350	220.00

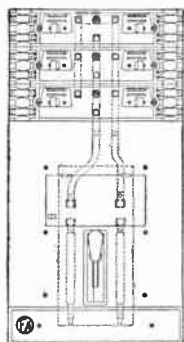
Main Fuse Connections—Solid Neutral



Type TC2FD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
TC204FD	4	60	22	26	4 1/2	15	19	105	\$76.00
TC206FD	6	100	22	32	4 1/2	15	25	125	90.00
TC208FD	8	100	22	35	4 1/2	15	28	135	100.00
TC210FD	10	100	22	38	4 1/2	15	31	145	110.00
TC212FD	12	200	22	44	4 1/2	15	37	175	130.00
TC214FD	14	200	22	47	4 1/2	15	40	195	140.00
TC216FD	16	200	24	52	4 1/2	15	43	215	150.00
TC218FD	18	200	24	55	4 1/2	15	46	235	160.00
TC220FD	20	200	24	58	4 1/2	15	49	255	170.00
TC222FD	22	200	24	61	4 1/2	15	52	275	190.00
TC224FD	24	200	24	64	4 1/2	15	55	295	200.00
TC226FD	26	200	24	67	4 1/2	15	58	315	210.00
TC228FD	28	200	24	70	4 1/2	15	61	335	220.00
TC230FD	30	200	24	73	4 1/2	15	64	355	230.00
TC232FD	32	200	24	76	4 1/2	15	67	375	240.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TC2BSFD

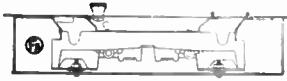
Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
TC204BSFD	4	60	22	35	4 1/2	15	28	140	\$92.00
TC206BSFD	6	100	22	41	4 1/2	15	34	180	112.00
TC208BSFD	8	100	22	44	4 1/2	15	37	200	122.00
TC210BSFD	10	100	22	47	4 1/2	15	40	220	132.00
TC212BSFD	12	200	24	55	4 1/2	15	46	240	165.00
TC214BSFD	14	200	24	58	4 1/2	15	49	260	175.00
TC216BSFD	16	200	24	61	4 1/2	15	52	280	195.00
TC218BSFD	18	200	24	64	4 1/2	15	55	300	205.00
TC220BSFD	20	200	24	67	4 1/2	15	58	320	215.00
TC222BSFD	22	200	24	70	4 1/2	15	61	340	225.00
TC224BSFD	24	200	24	73	4 1/2	15	64	360	235.00
TC226BSFD	26	200	24	76	4 1/2	15	67	380	250.00
TC228BSFD	28	200	24	79	4 1/2	15	70	400	265.00
TC230BSFD	30	200	24	82	4 1/2	15	73	420	280.00
TC232BSFD	32	200	24	85	4 1/2	15	76	440	295.00

NOTE.—Panel will not be made for less than 4 circuit branches.

FA Type TC3D Safety Type 2-fuse Panel Boards and Cabinets

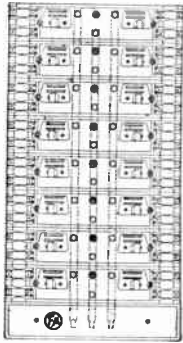
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Tumbler Switches with Cartridge Type Fuse Connections
Capacity 1923 Code per Branch



Panels are made of sections of molded material. Boxes are made of code thickness steel gutter type. Front is of code thickness steel, painted dead black; flush or surface. Door in door construction, safety type.

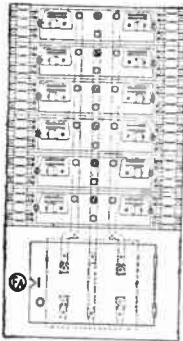
Main Cable Lugs Only



Type TC3LD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Wt. Lbs.	Price Each
			Width	Height	Depth				
TC304LD	4	30	22	20	4 1/2	15	13	105	\$58.00
TC306LD	6	60	22	23	4 1/2	15	16	115	68.00
TC308LD	8	60	22	26	4 1/2	15	19	140	78.00
TC310LD	10	60	22	29	4 1/2	15	22	155	88.00
TC312LD	12	60	22	32	4 1/2	15	25	170	98.00
TC314LD	14	100	22	35	4 1/2	15	28	185	110.00
TC316LD	16	100	22	38	4 1/2	15	31	200	120.00
TC318LD	18	100	22	41	4 1/2	15	34	215	130.00
TC320LD	20	100	22	44	4 1/2	15	37	230	140.00
TC322LD	22	100	22	47	4 1/2	15	40	250	150.00
TC324LD	24	100	24	52	4 1/2	15	43	270	160.00
TC326LD	26	100	24	55	4 1/2	15	46	290	170.00
TC328LD	28	100	24	58	4 1/2	15	49	310	185.00
TC330LD	30	100	24	61	4 1/2	15	52	330	200.00
TC332LD	32	100	24	64	4 1/2	15	55	360	215.00
TC334LD	34	200	24	67	4 1/2	15	58	370	232.00

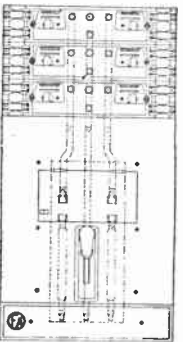
Main Fuse Connections—Solid Neutral



Type TC3FD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
TC304FD	4	30	22	26	4 1/2	15	19	105	\$74.00
TC306FD	6	60	22	29	4 1/2	15	22	115	86.00
TC308FD	8	60	22	32	4 1/2	15	25	125	96.00
TC310FD	10	60	22	35	4 1/2	15	28	135	106.00
TC312FD	12	60	22	38	4 1/2	15	31	145	116.00
TC314FD	14	100	22	44	4 1/2	15	37	175	136.00
TC316FD	16	100	22	47	4 1/2	15	40	195	146.00
TC318FD	18	100	24	52	4 1/2	15	43	215	156.00
TC320FD	20	100	24	55	4 1/2	15	46	235	166.00
TC322FD	22	100	24	58	4 1/2	15	49	255	176.00
TC324FD	24	100	24	61	4 1/2	15	52	275	196.00
TC326FD	26	100	24	64	4 1/2	15	55	295	206.00
TC328FD	28	100	24	67	4 1/2	15	58	315	216.00
TC330FD	30	100	24	70	4 1/2	15	61	335	226.00
TC332FD	32	100	24	73	4 1/2	15	64	355	236.00
TC334FD	34	200	24	79	4 1/2	15	70	395	260.00

Main Brush Type Switch with Fuse Connections—Solid Neutral



Type TC3BSFD

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
TC304BSFD	4	30	22	35	4 1/2	15	28	140	\$88.00
TC306BSFD	6	60	22	33	4 1/2	15	31	160	100.00
TC308BSFD	8	60	22	41	4 1/2	15	34	180	110.00
TC310BSFD	10	60	22	44	4 1/2	15	37	200	120.00
TC312BSFD	12	60	22	47	4 1/2	15	40	220	130.00
TC314BSFD	14	100	24	55	4 1/2	15	46	240	155.00
TC316BSFD	16	100	24	58	4 1/2	15	49	260	165.00
TC318BSFD	18	100	24	61	4 1/2	15	52	280	185.00
TC320BSFD	20	100	24	64	4 1/2	15	55	300	195.00
TC322BSFD	22	100	24	67	4 1/2	15	58	320	205.00
TC324BSFD	24	100	24	70	4 1/2	15	61	340	215.00
TC326BSFD	26	100	24	73	4 1/2	15	64	360	225.00
TC328BSFD	28	100	24	76	4 1/2	15	67	380	235.00
TC330BSFD	30	100	24	79	4 1/2	15	70	400	245.00
TC332BSFD	32	100	24	82	4 1/2	15	73	420	255.00
TC334BSFD	34	200	24	88	4 1/2	15	70	440	290.00

NOTE.—Panels will not be made for less than 4 circuit branches.

FA Type KP2 2-fuse Panel Boards and Cabinets

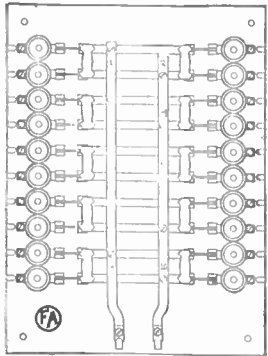
2-wire, 125-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Knife Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch

Panels are of 7/8-inch slate, dead black finish. Barriers, 1/2-inch transite board with FA Patented Adjustable Corner Supports. Box is of code thickness steel, gutter type. Front is of code thickness steel, painted dead black; flush or surface.



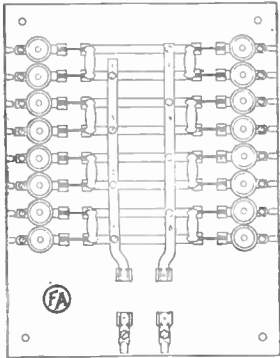
Main Lugs Only



Type KP2L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP204L	4	60	22	20	4 1/2	15	13	95	\$45.00
KP206L	6	100	22	23	4 1/2	15	16	117	54.00
KP208L	8	100	22	26	4 1/2	15	19	139	61.00
KP210L	10	100	22	29	4 1/2	15	22	160	68.00
KP212L	12	200	22	32	4 1/2	15	25	182	84.00
KP214L	14	200	22	35	4 1/2	15	28	205	94.00
KP216L	16	200	22	38	4 1/2	15	31	226	104.00
KP218L	18	200	22	41	4 1/2	15	34	270	114.00
KP220L	20	200	22	44	4 1/2	15	37	292	124.00
KP222L	22	200	22	47	4 1/2	15	40	358	134.00
KP224L	24	200	24	52	4 1/2	15	43	383	145.00
KP226L	26	200	24	55	4 1/2	15	46	408	160.00
KP228L	28	200	24	58	4 1/2	15	49	434	170.00
KP230L	30	200	24	61	4 1/2	15	52	458	180.00
KP232L	32	200	24	64	4 1/2	15	55	483	190.00

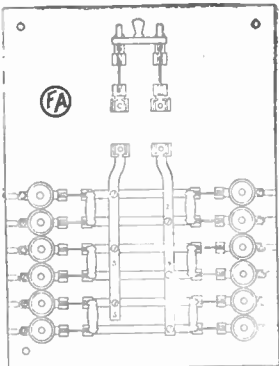
Main Fuse Connections



Type KP2F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP204F	4	60	22	23	4 1/2	15	16	138	\$50.00
KP206F	6	100	22	29	4 1/2	15	22	160	61.00
KP208F	8	100	22	32	4 1/2	15	25	182	68.00
KP210F	10	100	22	35	4 1/2	15	28	204	75.00
KP212F	12	200	22	41	4 1/2	15	34	248	95.00
KP214F	14	200	22	44	4 1/2	15	37	270	105.00
KP216F	16	200	22	47	4 1/2	15	40	333	115.00
KP218F	18	200	24	52	4 1/2	15	43	358	127.00
KP220F	20	200	24	55	4 1/2	15	46	383	137.00
KP222F	22	200	24	58	4 1/2	15	49	408	157.00
KP224F	24	200	24	61	4 1/2	15	52	434	167.00
KP226F	26	200	24	64	4 1/2	15	55	458	177.00
KP228F	28	200	24	67	4 1/2	15	58	483	187.00
KP230F	30	200	24	70	4 1/2	15	61	508	197.00
KP232F	32	200	24	73	4 1/2	15	64	534	207.00

Main Knife Switch with Fuse Connections



Type KP2KSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP204KSF	4	60	22	26	4 1/2	15	19	136	\$55.00
KP206KSF	6	100	22	32	4 1/2	15	25	182	67.00
KP208KSF	8	100	22	35	4 1/2	15	28	205	74.00
KP210KSF	10	100	22	38	4 1/2	15	31	228	81.00
KP312KSF	12	200	22	47	6	15	40	321	118.00
KP214KSF	14	200	24	52	6	15	43	347	130.00
KP216KSF	16	200	24	55	6	15	46	373	140.00
KP218KSF	18	200	24	58	6	15	49	408	160.00
KP220KSF	20	200	24	61	6	15	52	434	170.00
KP222KSF	22	200	24	64	6	15	55	458	180.00
KP224KSF	24	200	24	67	6	15	58	483	190.00
KP226KSF	26	200	24	70	6	15	61	508	200.00
KP228KSF	28	200	24	73	6	15	64	534	210.00
KP230KSF	30	200	24	76	6	15	67	558	220.00
KP232KSF	32	200	24	79	6	15	70	583	230.00

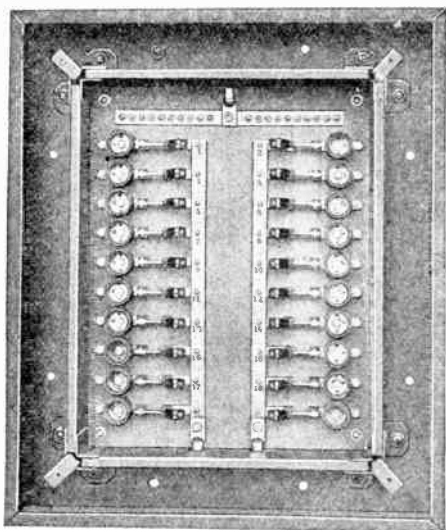
NOTE.—Panels will not be made for less than 4 circuit branches.

The 125-volt panel boards with cartridge fuse connections in branches will be furnished without extra cost.

For 250-volt panel boards with cartridge fuse connection in branches, add 20 per cent. This construction increases all dimensions.

FA Type NKP3 1-fuse Type Panel Boards and Cabinets

Single Fuse in Branch Circuits As Permitted by 1923 Code



With Front Removed Showing Open Gutters and Asbestos Barriers

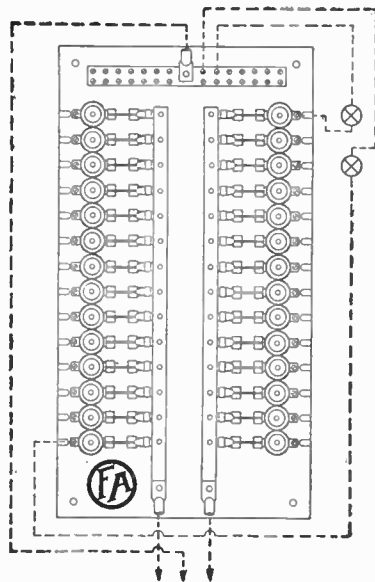
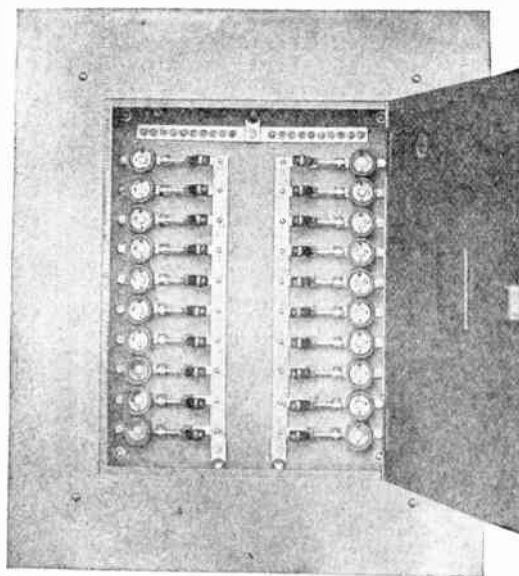


Diagram of Connections



Complete with Front

This type of panel board, on account of the open knife switches has a base $\frac{7}{8}$ inches dead black finish slate, the ungrounded side of each branch circuit is controlled by a 30-ampere single-pole knife switch with N.E.C. Edison plug fuse connections, the grounded side of each branch circuit is connected direct to the bus bar.

Each branch circuit connection on grounded bus is marked to correspond with branch circuit connections on ungrounded bus bars.

Mains are equipped with lugs only, fuses only, or main knife switch with N.E.C. cartridge fuse connections.

This type of panel board has $\frac{1}{2}$ -inch asbestos barriers, all around same, forming a barrier between panel board and wiring gutter.

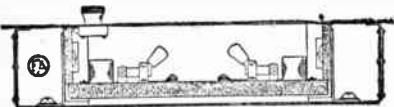
Cabinets have standard width gutters with adjustable corner supports with fronts finished dead black having door fitted with FA Catch Lock.

This type of panel board and cabinet is not recommended for the NTP Safety Type Panel Boards and cabinets. Type NTP3 Panel Boards and Cabinets are not much higher in price and are therefore more desirable.

FA Type NKP3 1-fuse Panel Boards and Cabinets

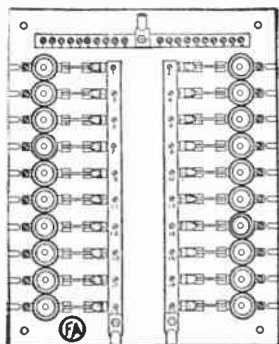
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Single Pole Knife Switches with N. E. C. Plug Fuse Connections, Capacity 1923 Code Rating



Panels are made of 1/8-inch slate; dead black finish. Barriers are 1/2-inch transite board with FA Patented Adjustable Corner Supports. Box is of code thickness steel, gutter type. Front is of code thickness steel, finished dead black with FA Catch Lock; flush or surface.

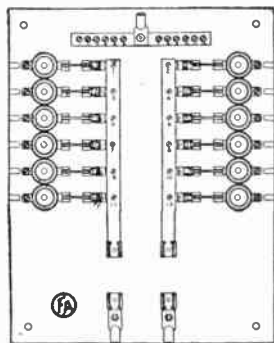
Main Lugs Only



Type NKP3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
NKP308L	8	60	22	17	4 1/2	15	10	73	\$48.00
NKP312L	12	60	22	20	4 1/2	15	13	95	60.00
NKP316L	16	100	22	23	4 1/2	15	16	117	67.00
NKP320L	20	100	22	26	4 1/2	15	19	139	78.00
NKP324L	24	100	22	32	4 1/2	15	25	182	88.00
NKP328L	28	100	22	35	4 1/2	15	28	205	99.00
NKP332L	32	100	22	38	4 1/2	15	31	226	110.00
NKP336L	36	200	22	44	4 1/2	15	37	269	132.00
NKP340L	40	200	22	47	4 1/2	15	40	312	144.00
NKP344L	44	200	24	52	4 1/2	15	43	370	156.00
NKP348L	48	200	24	55	4 1/2	15	46	395	166.00
NKP352L	52	200	24	58	4 1/2	15	49	420	180.00
NKP356L	56	200	24	61	4 1/2	15	52	446	200.00
NKP360L	60	200	24	64	4 1/2	15	55	470	212.00

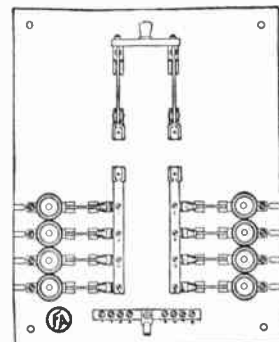
Main Fuse Connections



Type NKP3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
NKP308F	8	60	22	23	4 1/2	15	16	117	\$55.00
NKP312F	12	60	22	26	4 1/2	15	19	139	67.00
NKP316F	16	100	22	32	4 1/2	15	25	182	79.00
NKP320F	20	100	22	35	4 1/2	15	28	205	90.00
NKP324F	24	100	22	41	4 1/2	15	34	240	100.00
NKP328F	28	100	22	44	4 1/2	15	37	269	111.00
NKP332F	32	100	22	47	4 1/2	15	40	312	122.00
NKP336F	36	200	24	55	4 1/2	15	46	395	146.00
NKP340F	40	200	24	58	4 1/2	15	49	420	166.00
NKP344F	44	200	24	61	4 1/2	15	52	446	178.00
NKP348F	48	200	24	64	4 1/2	15	55	470	190.00
NKP352F	52	200	24	67	4 1/2	15	58	495	202.00
NKP356F	56	200	24	70	4 1/2	15	61	520	214.00
NKP360F	60	200	24	73	4 1/2	15	64	546	226.00

Main Knife Switch with Fuse Connections



Type NKP3KSF

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF BOX, IN.			Marking of Box		Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
NKP308KSF	8	60	22	26	4 1/2	15	19	139	\$66.00
NKP312KSF	12	60	22	29	4 1/2	15	22	179	75.00
NKP316KSF	16	100	22	35	4 1/2	15	28	205	90.00
NKP320KSF	20	100	22	38	4 1/2	15	31	226	104.00
NKP324KSF	24	100	22	44	4 1/2	15	37	269	117.00
NKP328KSF	28	100	22	47	4 1/2	15	40	312	129.00
NKP332KSF	32	100	24	52	4 1/2	15	43	370	140.00
NKP336KSF	36	200	24	61	6	15	52	446	160.00
NKP340KSF	40	200	24	64	6	15	55	470	180.00
NKP344KSF	44	200	24	67	6	15	58	495	192.00
NKP348KSF	48	200	24	70	6	15	61	520	204.00
NKP352KSF	52	200	24	73	6	15	64	546	216.00
NKP356KSF	56	200	24	76	6	15	67	570	228.00
NKP360KSF	60	200	24	79	6	15	70	595	240.00

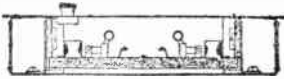
Panel boards with cartridge fuse connections in branches will be furnished without extra cost.

NOTE.—Panels will not be made for less than 8 circuit branches.

FA Type KP3 2-fuse Panel Boards and Cabinets

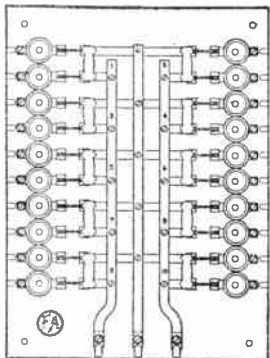
3-wire, 125-250-volt Mains

2-wire, 125-volt Branches with 30-ampere Double Pole Knife Switches with N. E. C. Plug Fuse Connections
Capacity 1923 Code per Branch



Panels are made of 7/8-inch slate, dead black finish. Barriers, 1/2-inch transite board with FA Patented Adjustable Corner Supports. Box is of code thickness steel, gutter type. Front is of code thickness steel; dead black paint. Flush or surface.

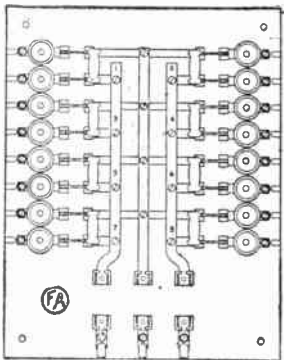
Main Lugs Only



Type KP3L

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF		Box, In.		Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP304L	4	30	22	17	4 1/2	15	10	73	\$44.00
KP306L	6	60	22	23	4 1/2	15	16	117	53.00
KP308L	8	60	22	26	4 1/2	15	19	139	60.00
KP310L	10	60	22	29	4 1/2	15	22	157	67.00
KP312L	12	60	22	32	4 1/2	15	25	182	77.00
KP314L	14	100	22	35	4 1/2	15	28	205	90.00
KP316L	16	100	22	38	4 1/2	15	31	226	100.00
KP318L	18	100	22	41	4 1/2	15	34	248	110.00
KP320L	20	100	22	44	4 1/2	15	37	270	120.00
KP322L	22	100	22	47	4 1/2	15	40	292	130.00
KP324L	24	100	24	52	4 1/2	15	43	358	142.00
KP326L	26	100	24	55	4 1/2	15	46	383	155.00
KP328L	28	100	24	58	4 1/2	15	49	408	165.00
KP330L	30	100	24	61	4 1/2	15	52	434	175.00
KP332L	32	100	24	64	4 1/2	15	55	458	185.00
KP334L	34	200	24	67	4 1/2	15	58	500	200.00

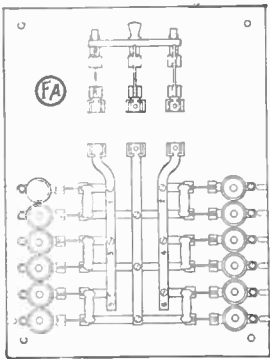
Main Fuse Connections



Type KP3F

Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF		Box, In.		Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP304F	4	30	22	20	4 1/2	15	13	95	\$48.00
KP306F	6	60	22	26	4 1/2	15	19	139	58.00
KP308F	8	60	22	29	4 1/2	15	22	160	65.00
KP310F	10	60	22	32	4 1/2	15	25	182	72.00
KP312F	12	60	22	35	4 1/2	15	28	205	82.00
KP314F	14	100	22	41	4 1/2	15	34	248	98.00
KP316F	16	100	22	44	4 1/2	15	37	270	108.00
KP318F	18	100	22	47	4 1/2	15	40	292	118.00
KP320F	20	100	24	52	4 1/2	15	43	356	130.00
KP322F	22	100	24	55	4 1/2	15	46	383	140.00
KP324F	24	100	24	58	4 1/2	15	49	408	160.00
KP326F	26	100	24	61	4 1/2	15	52	434	170.00
KP328F	28	100	24	64	4 1/2	15	55	458	180.00
KP330F	30	100	24	67	4 1/2	15	58	483	190.00
KP332F	32	100	24	70	4 1/2	15	61	508	200.00
KP334F	34	200	24	76	4 1/2	15	67	558	214.00

Main Knife Switch with Fuse Connections



Type KP3KSF

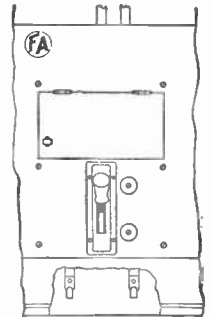
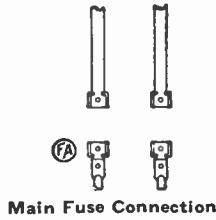
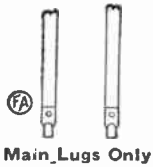
Cat. No.	No. of Branch Circuits	Cap. Mains Amp.	OUTSIDE DIMENSIONS OF		Box, In.		Marking of Box	Approx. Wt. Lbs.	Price Each
			Width	Height	Depth				
KP304KSF	4	30	22	23	4 1/2	15	16	117	\$53.00
KP306KSF	6	60	22	29	4 1/2	15	22	160	65.00
KP308KSF	8	60	22	32	4 1/2	15	25	182	72.00
KP310KSF	10	60	22	35	4 1/2	15	28	204	79.00
KP312KSF	12	60	22	38	4 1/2	15	31	226	89.00
KP314KSF	14	100	22	44	4 1/2	15	37	270	110.00
KP316KSF	16	100	22	47	4 1/2	15	40	292	118.00
KP318KSF	18	100	24	52	4 1/2	15	43	358	130.00
KP320KSF	20	100	24	55	4 1/2	15	46	384	140.00
KP322KSF	22	100	24	58	4 1/2	15	49	408	160.00
KP324KSF	24	100	24	61	4 1/2	15	52	434	170.00
KP326KSF	26	100	24	64	4 1/2	15	55	458	180.00
KP328KSF	28	100	24	67	4 1/2	15	58	483	190.00
KP330KSF	30	100	24	70	4 1/2	15	61	508	200.00
KP332KSF	32	100	24	73	4 1/2	15	64	534	210.00
KP334KSF	34	200	24	82	6	15	63	603	240.00

Panel boards with cartridge fuse connections in branches will be furnished without extra cost. NOTE.—Panels will not be made for less than four circuit branches.

FA Panelboards—Increased Mains and Sub-feeders

Add to Standard Combination Panel and Cabinet Prices for Increasing Ampere Capacity of Two-wire Mains

125-volt Mains for 125-volt Branches



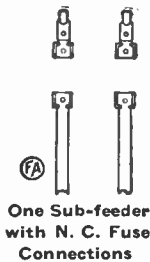
FA Safety Type Main Switch with Fuse Connection

Add to	Size of Box.....inches	No. of Branch Circuits	Standard Capacity of Mains Amperes	ONE-DOOR CONSTRUCTION		TWO-DOOR CONSTRUCTION		100 Amps.	200 Amps.	100 Amps.	200 Amps.
				100 Amps.	200 Amps.	100 Amps.	200 Amps.				
Size of Box.....inches	4	60	3	3	.....	.....	3	6	3	6
Price.....each	10	..	\$2.50	\$4.00	\$1.00	\$2.00	\$3.80	\$9.50	\$7.80	\$33.00	
Size of Box.....inches	6 to	..	..	..	..	..	..	3	..	3
Price.....each	10	..	..	2.00	..	2.00	..	6.50	..	29.00

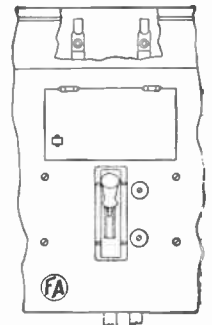
Sub-feeders

Add to Standard Combination Panel and Cabinet Prices After Adding for Increased Mains

125-volt Mains for 125-volt Branches



One Sub-feeder with N. C. Fuse Connections



One Sub-feeder with FA Safety Type Switch with Fuse Connections

Add to	Size of Box.....inches	ONE-DOOR CONSTRUCTION			TWO-DOOR CONSTRUCTION			30 Amps.	60 Amps.	100 Amps.	30 Amps.	60 Amps.	100 Amps.
		60 Amps.	100 Amps.	200 Amps.	60 Amps.	100 Amps.	200 Amps.						
Size of Box.....inches	3	3	.....	.....	.....	9	9	12	18	18	21	
Price.....each	\$1.25	\$3.50	\$1.25	\$1.25	\$2.25	\$3.00	\$19.00	\$19.00	\$22.00	\$38.00	\$38.00	\$42.00

- Add to Price When Additions Increase Height of Box from 57 or Less Inches, to 58 or More Inches, to Cover Shoot Bolts and Vault Door Handles.....each \$9.00
- Add to Price When Additions Increase Square Area of Box from 999 or Less Square Inches, to 1000 to 1500, or Less for Increasing Thickness of Box from No. 14 to No. 12 Gauge.....each 8.00
- Add to Price When Additions Increase Square Area of Box Containing from 1000 to 1500 Square Inches to 1500 or Over, for Increasing Thickness of Box from No. 12 to No. 10 Gauge.....each 3.00
- Add to Price When Additions Increase Square Area of Box Containing 999 or Less Square Inches to 1500 or Over, for Increasing Thickness of Box from No. 14 to No. 10 Gauge.....each 11.00

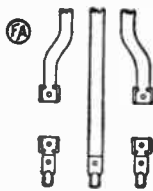
FA Panelboards—Increased Mains and Sub-feeders

Add to Standard Combination Panel and Cabinet Prices for Increasing Ampere Capacity of Three-wire Mains

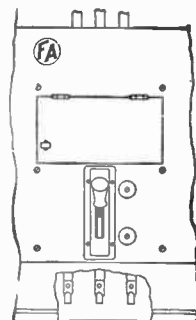
125-250-volt Mains for 125-volt Branches



Main Lugs Only



Main Fuse Connections



FA Safety Type Main Switch with Fuse Connections

	No. of Branch Circuits	Standard Capacity of Mains Amperes	ONE-DOOR CONSTRUCTION			TWO-DOOR CONSTRUCTION			60 Amps.	100 Amps.	200 Amps.	60 Amps.	100 Amps.	200 Amps.
			60 Amps.	100 Amps.	200 Amps.	60 Amps.	100 Amps.	200 Amps.						
Add to Size of Box.....inches	4	30		3	3				3	6		3	6	
“ “ Price.....each			\$1.00	\$4.00	\$6.00	\$1.00	\$1.30	\$3.00	\$2.00	\$6.00	\$13.00	\$3.00	\$9.50	\$40.00
“ “ Size of Box.....inches	6 to	60		3	3				3	6		3	6	
“ “ Price.....each	12			2.50	5.70		1.00	2.55		4.20	11.00		8.50	36.00
“ “ Size of Box.....inches	14 to	100									3		3	
“ “ Price.....each	32				3.00			3.00			9.00			32.00

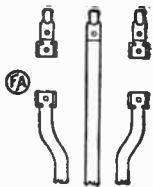
Sub-feeders

Add to Standard Combination Panel and Cabinet Prices After Adding for Increased Mains

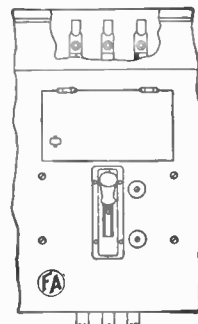
125-250-volt Mains for 125-volt Branches



Through Feed Lugs



One Sub-feeder with N. C. Fuse Connections



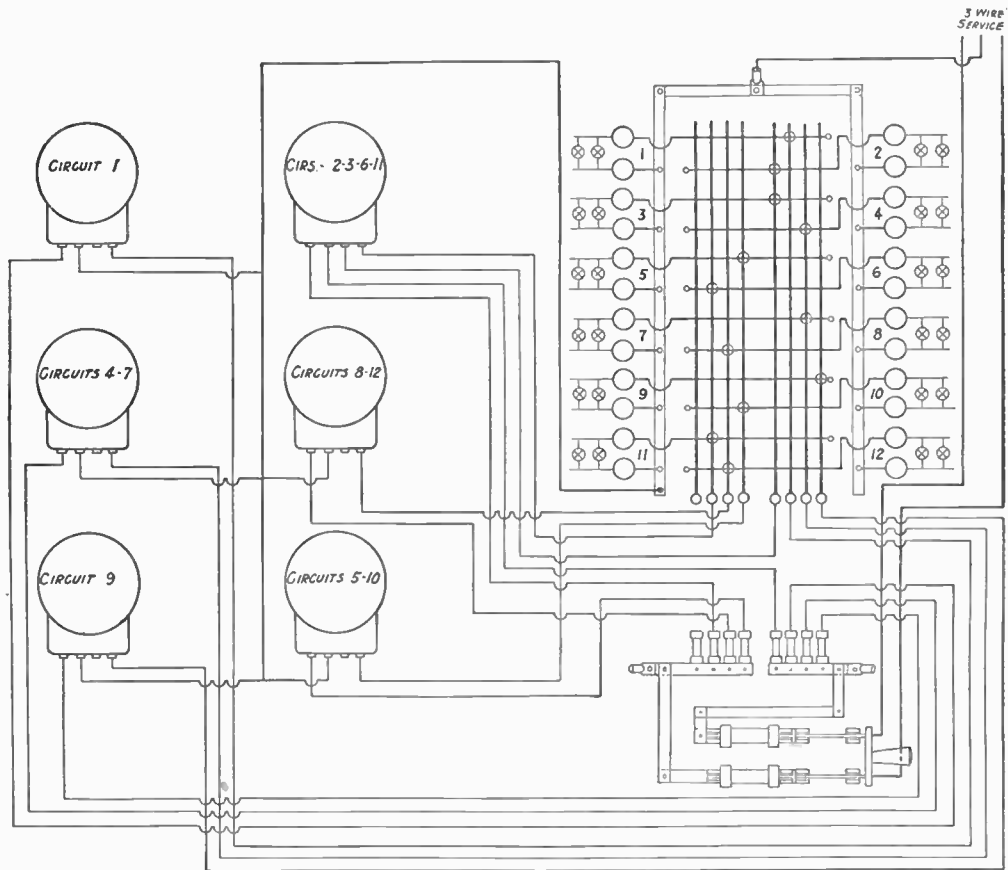
One Sub-feeder with FA Safety Type Switch with Fuse Connections

	ONE-DOOR CONSTRUCTION			TWO-DOOR CONSTRUCTION			30 Amps.	60 Amps.	100 Amps.	30 Amps.	60 Amps.	100 Amps.
	60 Amps.	100 Amps.	200 Amps.	60 Amps.	100 Amps.	200 Amps.						
Add to Size of Box.....inches		3	3				9	9	12	18	18	21
“ “ Price.....each	\$1.50	\$3.50	\$4.50	\$1.50	\$2.50	\$3.75	\$17.00	\$21.00	\$21.00	\$35.00	\$40.00	\$45.00
Add to Price When Additions Increase Height of Box from 57 or Less Inches, to 58 or More Inches, to Cover Shoot Bolts and Vault Door Handles.....each												\$9.00
Add to Price When Additions Increase Square Area of Box from 999 or Less Square Inches, to 1000, to 1500, or Less for Increasing Thickness of Box from No. 14 to No. 12 Gauge.....each												\$8.00
Add to Price When Additions Increase Square Area of Box Containing from 1000, to 1500, Square Inches to 1500 or Over, for Increasing Thickness of Box from No. 12 to No. 10 Gauge.....each												\$3.00
Add to Price When Additions Increase Square Area of Box Containing 999 or Less Square Inches to 1500 or Over, for Increasing Thickness of Box from No. 14 to No. 10 Gauge.....each												\$11.00

FA Diagram of Connections

For a 12-tenant Circuit, 6-meter Fuse and 6-meter Bar, Meter Control Panelboard Installation, Showing Four 2-wire and One 3-wire Meter

NOTE.—At all points of crossing of the meter bars and circuit bars connection can be readily made with a special connector according to the Type of Meter-control Panelboard specified.



Wiring

The proper circuit wiring for a Meter-control Panelboard installation is to provide a separate circuit to the outlets in each section of space that can be rented either separately or in combination with other sections, or space to meet the requirements of any tenant, in an office, store or warehouse building.

FA Meter Control Panelboards and Cabinets

FA Meter Control Panelboards and Cabinets were designed to take care of the demand for an economical and safe method of metering space in office buildings, arcades, lofts, stores, etc., that may be increased or decreased on demand.

Branch Wiring

Proper care should be taken in your branch circuit wiring by running a circuit to the outlets in each section of space that can be rented either separately or in combination with other sections to meet the possible demand of your tenants.

FA Meter Control Panelboards have the following advantages:

To Owner

The owner saves the expense of rewiring every time there is a change in tenant.

The owner does not have to worry about waste of current as each tenant pays for what he uses.

To Lighting Company

When owner does not care to bother about the tenant's lighting and power bills, the lighting company will take direct control of the distribution of the electric current, and be safeguarded in all of their meter connections by requiring our special sealing devices.

Protection Against Theft of Current

On account of the central stations and building managers desiring protection, we have our cabinets so designed that the connections between the branch circuits and meter busses or wires can be enclosed under separate cover, and can be sealed if desired—so that any change in tenant space can only be made by authorized persons.

See additional cost for these protection covers.

Standardization

We have standardized on 2 distinct types of meter control panelboards, each with 3 types of gutter cabinets, as follows:

FA Type M. B. Bus Bar Type Meter Control Panelboards

The FA Bus Bar Types are recommended when a good job is desired, as this type consists of a set of vertical meter bus bars and a horizontal bus bar for each branch circuit. Each branch circuit bus bar is equipped with a sliding FA Patented Bus Bar Connecting Device which makes it possible to connect any branch circuit or any number of branch circuits to any of the meter bus bars. With this type of meter control panelboard you do not have to remove the front or even disconnect the service when making changes—this feature alone will save enough labor to pay for the complete panelboard within a few years, as any engineer or even janitor can easily move the FA Patented Bus Bar Connecting Device from one meter to another and screw it in the selected position in a few minutes' time, without the use of a screw driver or pliers.

FA Type M. W. Wire Connecting Type Meter Control Panelboards

For your less particular clients, and where first cost is given preference over quality and simplicity, we have designed our FA Wire Connecting Type Meter Control Panelboard, which, although designed to give the same results as our FA Bus Bar Type Meter Control Panelboard, requires more time to make meter changes and these changes cannot be made readily without disconnecting the entire panel, and, some types, it is also necessary to remove the front.

FA Meter Control Panelboards Can Be Furnished with the Following Type Cabinets

Type C Cabinet having space for only meter control panelboards.

Type SFC Cabinets having space in cabinet for panelboard and space in front of meter cabinets for meters.

Type SBC Cabinets having space for panelboard and meters in cabinets.

FA Meter Control Panelboards and Cabinets

Additions and Deductions Main Feeder Connections

All of our standard designs are figured with main switch and main fuse because a number of City Ordinances specify them. If this is changed to main lugs only, the following deductions can be made:

30 Amperes	60 Amperes	100 Amperes	200 Amperes
\$2.60	\$4.60	\$6.00	\$7.30

If main lugs and main fuses are used, the following deductions can be made:

30 Amperes	60 Amperes	100 Amperes	200 Amperes
\$2.25	\$3.90	\$4.90	\$6.00

Meter Fuse Connections

For Each Additional Pair of Meter Fuses without Space for Meter, Add:	
For 30 Amperes.....	\$5.00
“ 60 “.....	6.00
No deduction if a lesser number of meter fuse connections are required.	
For Each Additional Space for 2 Meters over 18 Meters, Types MWSFC and MWSBC.....	\$8.00
“ “ “ Pair of Meter Bars and Meter Space, Types MBSFC and MBSBC.....	25.00

Additional Cost for Branches

Extra Cost per Pair of Tenant Branches over 34 Branches:	
Meter Wire Type.....	\$20.00
“ Bar “.....	30.00
Extra Cost per Pair for Owners' Branches:	
Meter Wire Type.....	\$20.00
“ Bar “.....	30.00
Extra Cost when Switch Is Specified in Either Tenant or Owners' Branches:	
Add for Each Pair of Branches.....	\$8.00

Extra Cost for Inside Door Over Meter Bars To Be Added to Meter Bar Types

On the meter bar type of meter control panelboards, we can furnish, on special order, an additional door (inside the regular door) covering only the meter bar sections. This special door is fastened with the regular standard meter seal device. The additional cost of this special door for sealing up meter connections is as below:

Number of Meter Bars

	PRICE, EACH				
Branches	4-6-8	10-12-14	16-18-20	22-24	26-double Door in Front
4- 6- 8	\$18.00				
10-12-14	20.00	\$25.00			
16-18-20	22.00	27.00	\$32.00		
22-24-26	35.00	30.00	35.00	\$40.00	\$50.00
28-30-32	27.00	32.00	37.00	42.00	52.00

FA Meter Control Panelboards and Cabinets

No Space for Meters

2-fuse

Type MWG Meter Wire Type

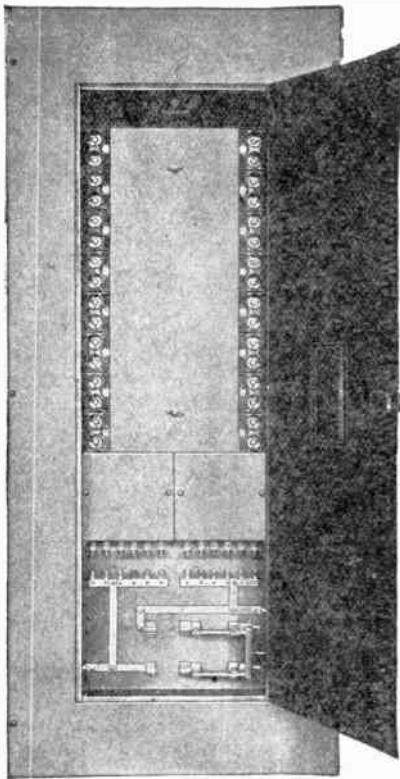
MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125-250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P., cartridge type.

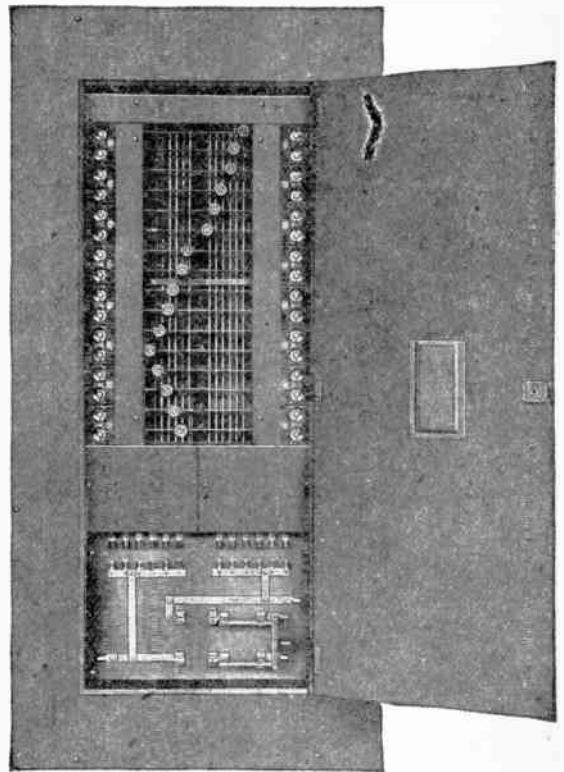
METER LOOP CONNECTIONS.—Ample space is left between circuit branch sections for all meter wires, each circuit branch having a special clamp wire terminal that will hold wires from No. 14 to No. 6 size and this space is covered with a sheet steel cover held in position by standard meter sealing device.

BRANCHES.—Made of sections of moulded material, with 125-volt, D.P., N.E.C. plug type fuse connections.

CABINETS.—Cabinets are of the standard N.E.C. gutter type. Fronts are finished dead black paint.



Type MWG



Type MBGC

Amperage Branches	Mains	No. of Meter Fuse Conns.	DIMENSIONS, IN.			Marking of Box	Price Each	Branches	Amperage Mains	No. of Meter Fuse Conns.	DIMENSIONS, IN.			Marking of Box	Price Each
			Wide	High	Deep						Wide	High	Deep		
6	60	6	22	38	4 1/2	15x31	\$85.00	22	100	18	24	67	4 1/2	15x58	\$207.00
8	60	8	22	41	4 1/2	15x34	97.00	24	100	18	24	70	4 1/2	15x61	218.00
10	60	10	22	44	4 1/2	15x37	108.00	26	100	18	24	73	4 1/2	15x64	228.00
12	60	12	22	47	4 1/2	15x40	130.00	28	100	18	24	76	4 1/2	15x67	238.00
14	100	14	24	55	4 1/2	15x46	148.00	30	100	18	24	79	4 1/2	15x70	250.00
16	100	14	24	58	4 1/2	15x49	158.00	32	100	18	24	82	4 1/2	15x73	261.00
18	100	14	24	61	4 1/2	15x52	167.00	34	200	20	27	88	6	18x79	290.00
20	100	14	24	64	4 1/2	15x55	177.00	..	..	..	..	..	..	..	..

This panelboard is also made on the 1-fuse type. Prices upon application.

Type MBGC Meter Bar Type

MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125-250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P. cartridge type.

BRANCHES.—Made of sections of moulded material with 125-volt, D.P., N.E.C. plug type fuse connections.

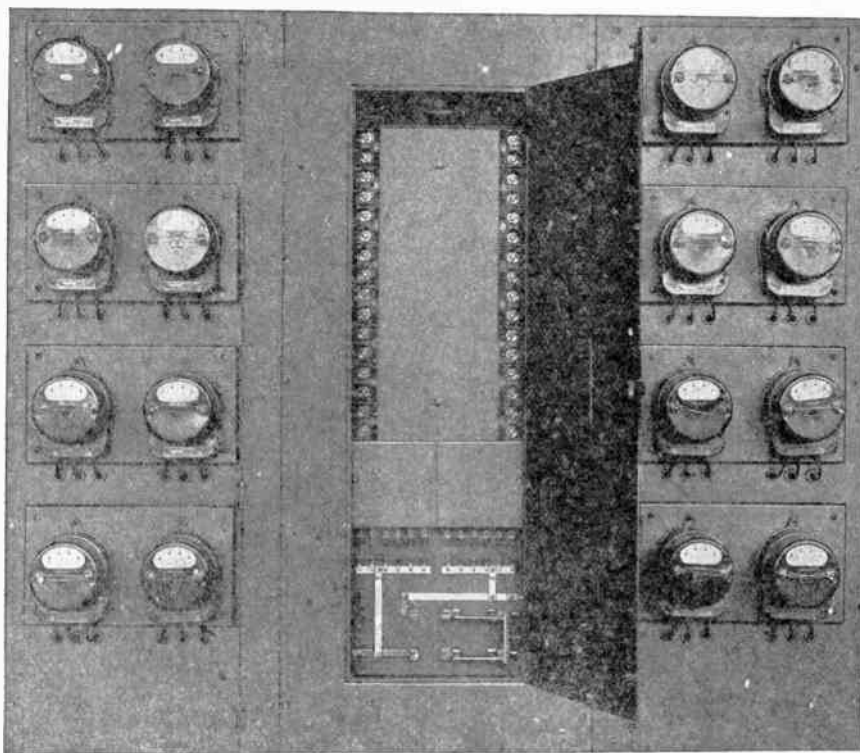
CABINETS.—Cabinets are of the standard N.E.C. gutter type. Fronts are finished dead black paint.

Branches of Mains	Amp.	NUMBER OF METER BARS AND METER FUSES																			
		DIMEN., IN. BOXES 4 1/2 IN. DEEP HEIGHT		6		8		10		12		14		16		18					
		Panel Back	Box	PANEL BACK 15 1/2 IN. WIDE Width of	Box In.	Price Each	PANEL BACK 16 1/2 IN. WIDE Width of	Box In.	Price Each	PANEL BACK 17 1/2 IN. WIDE Width of	Box In.	Price Each	PANEL BACK 18 1/2 IN. WIDE Width of	Box In.	Price Each	PANEL BACK 19 1/2 IN. WIDE Width of	Box In.	Price Each			
6	60	31 1/2	37 1/2	22 1/2	\$115.	..	..	..	..	..	..	..	..	..	..	..	..	..
8	60	34 1/2	40 1/2	22 1/2	130.	23 1/2	\$140.	..	..	..	..	..	..	..	..	..	..	..
10	60	37 1/2	43 1/2	22 1/2	150.	23 1/2	165.	24 1/2	\$175.	..	..	..	..	..	..	..	..	..
12	60	40 1/2	46 1/2	22 1/2	170.	23 1/2	185.	24 1/2	200.	25 1/2	\$210.	..	..	..	..	..	..	..
14	100	46 1/2	54 1/2	24 1/2	203.	25 1/2	218.	26 1/2	228.	27 1/2	238.	28 1/2	\$248.	..	..	..	..	..
16	100	49 1/2	57 1/2	24 1/2	223.	25 1/2	233.	26 1/2	243.	27 1/2	258.	28 1/2	268.	29 1/2	\$283.	..	..	..
18	100	52 1/2	60 1/2	24 1/2	243.	25 1/2	253.	26 1/2	263.	27 1/2	278.	28 1/2	288.	29 1/2	303.	30 1/2	\$323.	..			
20	100	55 1/2	63 1/2	24 1/2	263.	25 1/2	273.	26 1/2	288.	27 1/2	298.	28 1/2	308.	29 1/2	323.	30 1/2	338.	..			
22	100	58 1/2	66 1/2	24 1/2	280.	25 1/2	290.	26 1/2	305.	27 1/2	315.	28 1/2	325.	29 1/2	335.	30 1/2	345.	..			
24	100	61 1/2	69 1/2	24 1/2	300.	25 1/2	310.	26 1/2	325.	27 1/2	335.	28 1/2	345.	29 1/2	360.	30 1/2	370.	..			
26	100	64 1/2	72 1/2	24 1/2	325.	25 1/2	335.	26 1/2	350.	27 1/2	360.	28 1/2	370.	29 1/2	385.	30 1/2	395.	..			
28	100	67 1/2	75 1/2	24 1/2	350.	25 1/2	360.	26 1/2	375.	27 1/2	385.	28 1/2	395.	29 1/2	410.	30 1/2	420.	..			
30	100	70 1/2	78 1/2	24 1/2	375.	25 1/2	385.	26 1/2	400.	27 1/2	410.	28 1/2	420.	29 1/2	435.	30 1/2	445.	..			
32	100	73 1/2	81 1/2	24 1/2	400.	25 1/2	410.	26 1/2	420.	27 1/2	435.	28 1/2	445.	29 1/2	455.	30 1/2	470.	..			
		BOXES 6 IN. DEEP		PANEL BACK, 20 1/4 INCHES WIDE																	
34	200	79 1/2	87 1/2	24 1/2	\$425.	25 1/2	\$435.	26 1/2	\$450.	27 1/2	\$470.	28 1/2	\$485.	29 1/2	\$500.	30 1/2	\$510.		

FA Type MWSFC Meter Control Panelboards and Cabinets

Meter Wire Type—Meter Space on Front

2-fuse



MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125-250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P. cartridge type.

METER LOOP CONNECTIONS.—Ample space is left between circuit branch sections for all meter wires, each circuit branch having a special clamp wire terminal that will hold wires from No. 14 to No. 6 size, and this space is covered with a sheet steel cover held in position by standard meter sealing device.

BRANCHES.—Made of sections of moulded material with 125-volt D.P., N.E.C. plug type fuse connections.

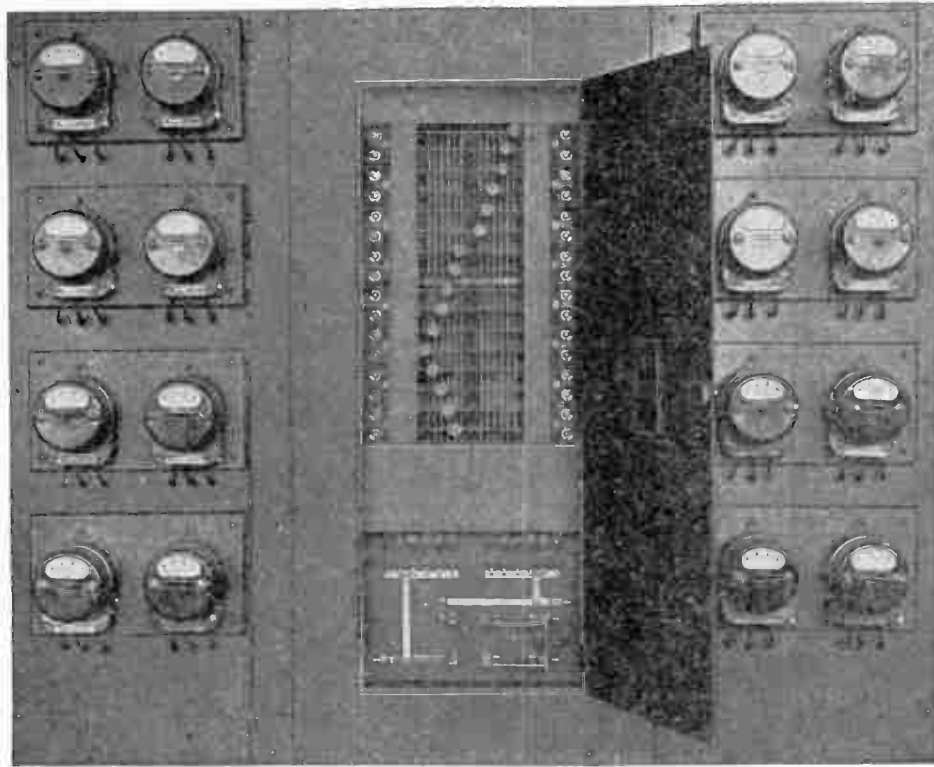
CABINETS.—Cabinets are of the standard N.E.C. gutter type for panelboard proper, with box extended and fitted with door or doors to which meters are fastened. Meter doors are fastened with meter sealing device. Fronts finished dead black paint.

Branches	Amp. of Mains	DIMEN., IN. Box 8 4 1/2 IN. DEEP HEIGHT		NUMBER OF METER FUSES AND METER SPACE																	
				6		8		10		12		14		16		18					
				PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each	PANEL BACK 15 1/2 IN. WIDE Width of Box In.	Price Each				
6	60	31 1/2	37 1/2	40	\$131.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	60	34 1/2	40 1/2	40	150.	58	\$192.	..	..	..	..	..	..	..	..	..	..	..	..
10	60	37 1/2	43 1/2	40	161.	58	205.	58	\$210.	..	..	..	..	..	..	..	..	..	..
12	60	40 1/2	46 1/2	40	185.	..	..	58	235.	..	..	..	..	..	..	..	..	..	..
14	100	46 1/2	54 1/2	42	217.	42	222.	..	..	60	273.	60	\$278.	..	..	..	..	..	..
16	100	49 1/2	57 1/2	42	228.	42	233.	..	..	60	285.	60	290.	60	\$295.	..	..	..	..
18	100	52 1/2	60 1/2	42	239.	42	244.	42	249.	..	..	60	303.	60	308.	60	\$313.	60	\$313.
20	100	55 1/2	63 1/2	42	255.	42	260.	42	265.	..	..	60	324.	60	329.	60	334.	60	334.
22	100	58 1/2	66 1/2	42	275.	42	280.	42	285.	42	290.	..	..	60	353.	60	358.	60	358.
24	100	61 1/2	69 1/2	42	287.	42	292.	42	297.	42	301.	..	..	60	367.	60	372.	60	372.
26	100	64 1/2	72 1/2	42	300.	42	305.	42	310.	42	315.	..	..	60	382.	60	387.	60	387.
28	100	67 1/2	75 1/2	42	312.	42	317.	42	322.	42	327.	42	332.	60	396.	60	401.	60	401.		
30	100	70 1/2	78 1/2	42	326.	42	331.	42	335.	42	340.	42	346.	..	..	60	417.	60	417.
32	100	73 1/2	81 1/2	42	339.	42	344.	42	349.	42	354.	42	359.	..	..	60	432.	60	432.
				BOXES 6 IN. DEEP		PANEL BACKS 18 1/2 INCHES WIDE															
34	200	79 1/2	87 1/2	45	\$376.	45	\$381.	45	\$386.	45	\$391.	45	\$396.	45	\$401.	63	\$477.				

FA Type MBSFC Meter Control Panelboards and Cabinets

Meter Bar Type—Meter Space on Front

2-fuse



MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125-250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P., cartridge type.

BRANCHES.—Made of sections of moulded material, with 125-volt, D.P., N.E.C. plug type fuse connections.

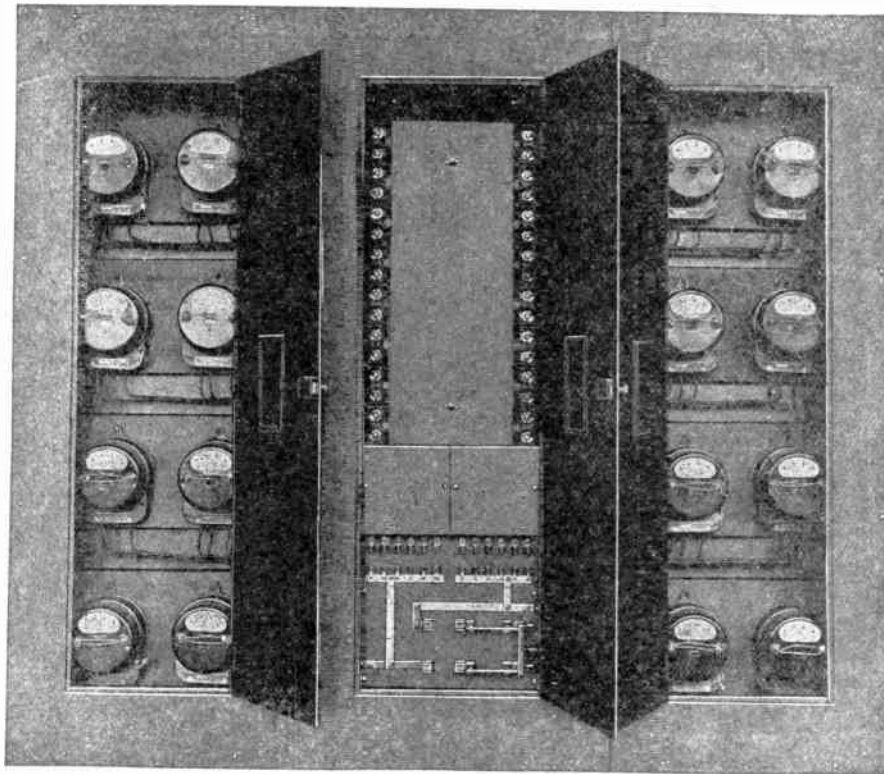
CABINETS.—Cabinets are of the standard N.E.C. gutter type for panelboard proper, with box extended and fitted with door or doors to which meters are fastened. Meter doors are fastened with meter sealing device. Fronts are finished dead black paint.

Branch- es	Amp. of Mains	DIMEN., IN.		NUMBER OF METERS, METER BARS AND FUSES													
		BOXES 4½ IN. DEEP HEIGHT		6		8		10		12		14		16		18	
		Panel Back	Box	PANEL BACK 15½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 16½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 17½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 18½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 19½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 20½ IN. WIDE Width of Box In.	Price Each	PANEL BACK 11½ IN. WIDE Width of Box In.	Price Each
6	60	31½	37½	40	\$160.	..	..	..	..	..	..	..	..	..	..	..	..
8	60	34½	40½	40	183.	59	\$235.	..	..	..	..	..	..	..	..	..	..
10	60	37½	43½	40	204.	..	..	60	\$279.	..	..	..	..	..	..	..	..
12	60	40½	46½	40	225.	..	..	..	..	61	\$320.	..	..	..	..	..	..
14	100	46½	54½	42	259.	43	279.	..	..	63	350.	64	\$365.	..	..	..	..
16	100	49½	57½	42	280.	43	295.	44	310.	63	372.	64	387.	65	\$417.	..	..
18	100	52½	60½	42	302.	43	317.	44	332.	63	396.	64	411.	65	431.	66	\$456.
20	100	55½	63½	42	328.	43	343.	44	363.	..	..	64	445.	65	462.	66	482.
22	100	58½	66½	42	348.	43	363.	44	382.	45	398.	64	465.	65	481.	66	496.
24	100	61½	69½	42	370.	43	385.	44	404.	45	420.	64	490.	65	510.	66	525.
25	100	64½	72½	42	391.	43	412.	44	431.	45	447.	64	519.	65	539.	66	553.
23	100	67½	75½	42	424.	43	439.	44	459.	45	474.	..	..	65	568.	66	582.
30	100	70½	78½	42	451.	43	466.	44	486.	45	501.	..	..	65	597.	66	611.
32	100	73½	81½	42	478.	43	493.	44	508.	45	528.	46	543.	..	..	66	640.
		BOXES 6 IN. DEEP		PANEL BACK, 20½ INCHES WIDE													
34	200	79½	87½	42	\$511.	43	\$526.	44	\$546.	45	\$571.	46	\$591.	47	\$611.	66	\$697.

FA Type MWSBC Meter Control Panelboards and Cabinets

Meter Wire Type—Space in Box for Meters

2-fuse



MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125-250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P., cartridge type.

METER LOOP CONNECTIONS.—Ample space is left between circuit branch sections for all meter wires, each circuit branch having a special clamp wire terminal that will hold wires from No. 14 to No. 16 size, and this space is covered with a sheet steel cover held in position by standard meter sealing device.

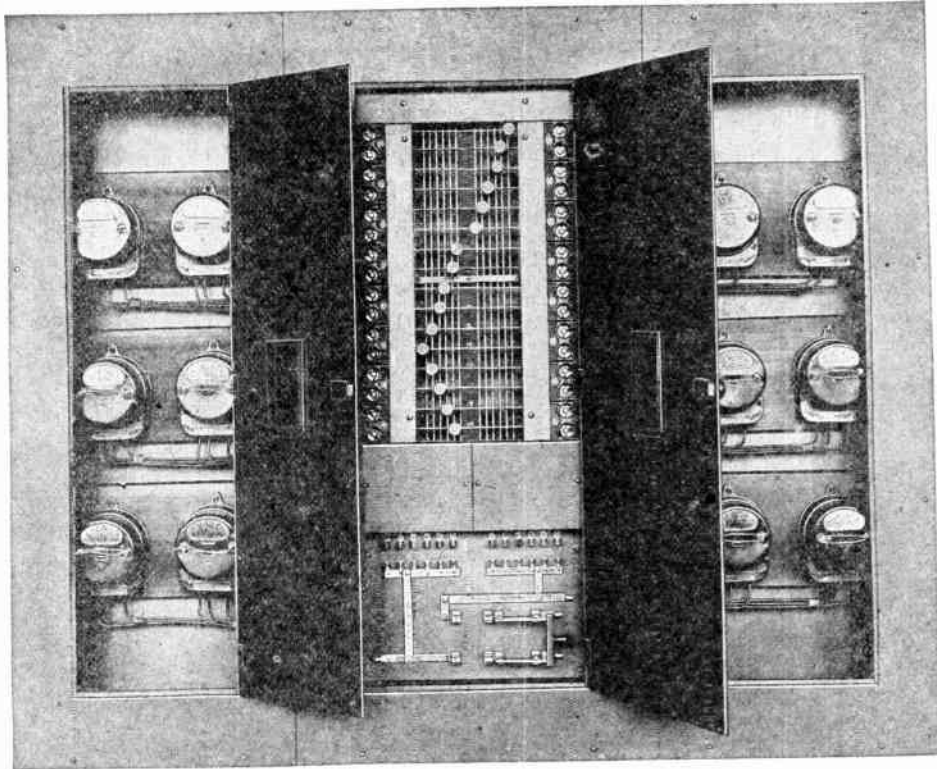
BRANCHES.—Made of sections of moulded material, with 125-volt D.P., N.E.C. plug type fuse connections.

CABINETS.—Cabinets for panelboards are standard N.E.C. gutter type. Cabinets for meters are standard N.E.C.B.F. type with wood meter boards for supporting meters. Fronts are equipped with combination FA catches and locks and are finished dead black paint.

Branches	Amp. of Mains	DIMEN., IN. BOXES 7 IN. DEEP HEIGHT		NUMBER OF METERS AND METER FUSES															
				6		8		10		12		14		16		18			
				PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	PANEL BACK 15½ IN. WIDE	
		Panel Back	Box	Box In.	Price Each	Box In.	Price Each	Box In.	Price Each	Box In.	Price Each	Box In.	Price Each	Box In.	Price Each	Box In.	Price Each		
6	60	31½	37½	40	\$140.	..	..	..	..	..	..	..	..	..	..	..	..
8	60	34½	40½	40	161.	58	\$207.	..	..	..	..	..	..	..	..	..	..
10	60	37½	43½	40	173.	..	..	58	\$224.	..	..	..	..	..	..	..	..
12	60	40½	46½	40	196.	..	..	58	262.	58	\$266.	..	..	..	..	..	..
14	100	46½	54½	42	228.	42	232.	..	..	60	286.	60	\$290.	..	..	..	..
16	100	49½	57½	42	239.	42	243.	..	..	60	298.	60	302.	60	\$316.	..	..
18	100	52½	60½	42	250.	42	254.	..	..	60	311.	60	315.	60	319.	60	\$323.
20	100	55½	63½	42	270.	42	274.	42	278.	..	..	60	342.	60	346.	60	350.
22	100	58½	66½	42	290.	42	294.	42	298.	..	..	60	366.	60	370.	60	374.
24	100	61½	69½	42	302.	42	306.	42	310.	..	..	60	384.	60	388.	60	388.
26	100	64½	72½	42	315.	42	319.	42	323.	42	327.	..	..	60	399.	60	403.
28	100	67½	75½	42	327.	42	331.	42	335.	42	339.	..	..	60	413.	60	417.
30	100	70½	78½	42	341.	42	345.	42	349.	42	353.	..	..	60	429.	60	433.
32	100	73½	81½	42	354.	42	358.	42	362.	42	365.	42	370.	60	444.	60	448.		
34	200	79½	87½	45	\$391.	45	\$395.	45	\$399.	45	\$403.	45	\$407.	63	\$489.	63	\$493.		

FA Type MBSBC Meter Control Panelboards and Cabinets
Meter Bus Bar Type—Space in Box for Meters

2-fuse



MAINS.—Knife switch with cartridge type fuse connections, solid neutral, 125–250 volts.

METER FUSE CONNECTIONS.—30 amperes, S.P., cartridge type.

BRANCHES.—Made of sections of moulded material with 125-volt D.P., N.E.C. plug fuse connections.

CABINETS.—Cabinets for panelboards are standard N.E.C. gutter type. Cabinets for meters are standard N.E.C., B.F. type with wood meter boards for supporting meters. Fronts are equipped with combination FA Catch and Lock and are finished dead black paint.

Branches	Amp. of Mains	DIMEN., IN.		NUMBER OF METERS, METER BARS AND METER FUSES															
		Box's 7 IN. DEEP	HEIGHT	6		8		10		12		14		16		18			
		Panel Back	Box	PANEL BACK 15½ IN. WIDE	Price	PANEL BACK 16½ IN. WIDE	Price	PANEL BACK 17½ IN. WIDE	Price	PANEL BACK 18½ IN. WIDE	Price	PANEL BACK 19½ IN. WIDE	Price	PANEL BACK 20½ IN. WIDE	Price	PANEL BACK 21½ IN. WIDE	Price		
		In.	In.	In.	Each	In.	Each	In.	Each	In.	Each	In.	Each	In.	Each	In.	Each		
6	60	31½	37½	40	\$168.	..	..	..	..	..	..	..	..	..	..	..	..
8	60	34½	40½	40	193.	59	\$250.	..	..	..	..	..	..	..	..	..	..
10	60	37½	43½	40	215.	59	277.	60	\$291.	..	..	..	..	..	..	..	..
12	60	40½	46½	40	236.	..	..	60	319.	61	\$333.	..	..	..	..	..	..
14	100	46½	54½	42	270.	43	284.	62	349.	63	363.	64	\$377.	..	..	..	..
16	100	49½	57½	42	291.	43	305.	62	366.	63	385.	64	399.	65	\$418.	..	..
18	100	52½	60½	42	313.	43	327.	..	..	63	409.	64	423.	65	442.	66	\$466.
20	100	55½	63½	42	343.	43	355.	44	375.	63	446.	64	460.	65	479.	66	488.		
22	100	58½	66½	42	363.	43	377.	44	396.	..	..	64	484.	65	497.	66	511.
24	100	61½	69½	42	385.	43	399.	44	417.	..	..	64	508.	65	526.	66	541.
26	100	64½	72½	42	412.	43	426.	44	444.	45	460.	64	537.	65	555.	66	570.		
28	100	67½	75½	42	439.	43	452.	44	471.	45	486.	..	..	65	585.	66	599.
30	100	70½	78½	42	465.	43	480.	44	498.	45	513.	..	..	65	614.	66	628.
32	100	73½	81½	42	492.	43	507.	44	520.	45	540.	46	554.	65	638.	66	657.		
				PANEL BACK, 20½ INCHES WIDE															
34	200	79½	87½	45	\$526.	45	\$540.	45	\$558.	45	\$583.	46	\$602.	65	\$699.	66	\$713.		

Benjamin-Starrett Standardized Panel Boards and Cabinets

Introductory

Durability, strength and fine appearance are features of Benjamin-Starrett Panel Boards and Cabinets. The durable qualities of the sectional, molded composition bases have shown their worth in the test of time. Molded composition is impervious to moisture, oil or acid; therefore, its natural high resistance is not affected by absorption. Because of its strength, both dielectric and mechanical, engineers have recognized this material as the most satisfactory for panel boards.

The Benjamin-Starrett method of attaching the molded composition bases to the steel frame, and the design of the frame itself, give a rigid assembly of remarkable strength.

Fine appearance is a result of modern manufacturing methods. Every part is machine made, with an unusually high degree of accuracy.

Changes have been made to meet the requirements of the 1923 Edition of the National Electrical Code and other new features have been added.

THE 1-FUSE PANEL—(Authorized by the 1923 Edition of the National Electrical Code) is one of the new features of Benjamin-Starrett panel board construction.

2-FUSE PANELS—That is, panels having 2 fuses in each wire branch circuit, have been standard and universally used in the past.

THE 1-FUSE PANEL has branch circuits with one fuse per circuit. This form of wiring is used only with 3-wire grounded neutral. One leg of the branch circuit is taken off either the plus or minus main buss, and is fused. The other leg is taken directly off the neutral main buss *without fusing*.

Two Types of Cabinets

DEAD FRONT—This type is equipped with a double door—one small door within a larger one. Opening the large door exposes the full face of the panel; the smaller one gives access only to the switches of the branch circuits. This panel is recommended for installations where branch circuit switches are used by inexperienced persons, and fuses renewed by a maintenance man.

OPEN FRONT—The Open Front Panel is identical with the Dead Front, except that it has a single door which gives access to all the switches and fuses on the face of the board. For this reason it is usually installed where an experienced person is authorized to attend to the switches and fuses. The combined Yale lock, latch and knob prevents tampering and theft of fuses.

Residence Panels

These Residence Panels are exactly suited to the needs of the residence, the small apartment building or the small store building.

They are neat, compact and durable.

They are furnished in three types to meet varying wiring conditions and offering a choice in materials. All types have Safety or Dead Fronts for the protection of the inexperienced persons, who occasionally find it necessary to renew fuses.

Benjamin-Starrett Residence Panels and Cabinets

Type RDG

For

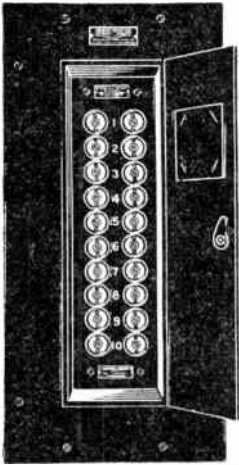
2-wire and 3-wire Service—2-fuse Branches

Mains: 250-125-volt 3-wire, 125-volt 2-wire

Branches: 125-volt Arranged for Plug Fuses Only

For larger installations than the average residence or small business building and when large gutter space is required to accommodate riser cables, Type RDG is recommended. This panel has base of cold molded composition with steel back and has regular panel board mounting.

Cabinet has 3-inch wiring gutter and is furnished for either surface or flush mounting. Door is provided with vault handle latch only and with directory frame.



No. of Cir.	CAT. NOS.		CABINET DIMEN., IN.			Price Each
	Surface Cabinet	Flush Cabinet	Width Outside	Height Outside	Depth Inside	
2	60202	60252	11½	13½	3½	\$20.00
4	60204	60254	11½	17½	3½	24.00
6	60206	60256	11½	20½	3½	30.00
8	60208	60258	11½	23½	3½	34.00
10	60210	60260	11½	26½	3½	38.00
12	60212	60262	11½	29½	3½	42.00
14	60214	60264	11½	32½	3½	47.00
16	60216	60266	11½	35½	3½	52.00
18	60218	60268	11½	38½	3½	57.00
20	60220	60270	11½	41½	3½	62.00

Type SDG

For

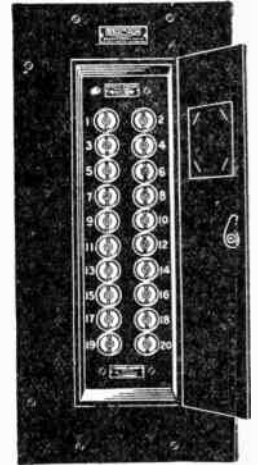
3-wire Service—1-fuse Branches

Mains: 250-125-volt

Branches: 125-volt Arranged for Plug Fuses Only

When the grounded neutral system with one fuse per branch, as allowed by the 1923 Code, is to be installed, Type SDG Panel is recommended, especially under similar conditions to those suggested for Type RDG.

Cabinet has 3-inch wiring gutter and is furnished for surface or flush mounting. Door is furnished with vault handle latch only and with directory frame.



No. of Cir.	CAT. NOS.		CABINET DIMEN., IN.			Price Each
	Surface Cabinet	Flush Cabinet	Width Flush	Height Outside	Depth Inside	
4	60104	60154	11½	13½	3½	\$23.00
6	60106	60156	11½	15	3½	25.00
8	60108	60158	11½	16½	3½	27.00
10	60110	60160	11½	18	3½	29.00
12	60112	60162	11½	19½	3½	31.00
14	60114	60164	11½	21	3½	36.00
16	60116	60166	11½	22½	3½	38.00
18	60118	60168	11½	24	3½	40.00
20	60120	60170	11½	25½	3½	42.00

Type RD

For

2-wire and 3-wire Service—2-fuse Branches

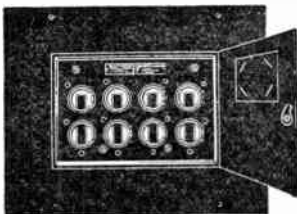
3-wire Service—1-fuse Branches

Mains: 250-125-volt 3-wire, 125-volt 2-wire

Branches: 125-volt Arranged for Plug Fuses Only

Universal application to all house wiring systems is provided for in the Type RD Residence Panel.

The panel is made of porcelain and has a dead front cover. Cabinet has 2-inch wiring space and can be furnished for surface or flush mounting. Door is provided with vault handle latch only and with directory frame.



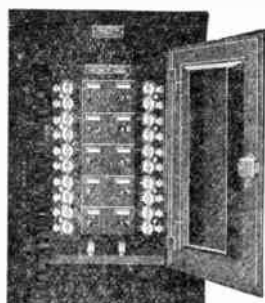
No. of Circuits	CAT. NOS.		CABINET DIMEN., IN.			Price Each	
	2-fuse Type	1-fuse Type	Width Outside	Height Outside	Depth Inside		
2	4	60002	60052	8½	10½	3½	\$10.00
4	8	60004	60054	12	10	3½	13.40
6	12	60006	60056	12	12½	3½	18.00
8	16	60008	60058	13	12½	3½	21.00
10	20	60010	60060	12	19	3½	24.00
12	24	60012	60062	12	21½	3½	28.00

Type DPT Benjamin-Starrett Dead Front Panels with Cabinets

2-2-wire, 2-fuse

Branches—30-ampere, 125-volt Tumbler Switches—For Plug Fuses
Mains—125 Volts

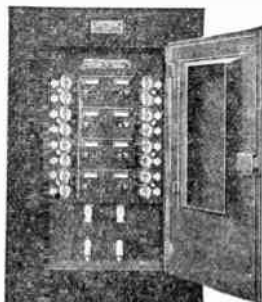
Panels with Main Lugs Only



2-wire—Main Lugs Only

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	80204	80254	60	3	X20	18	20	5 1/4	85	\$60.00
6	80206	80256	100	3	X23	18	23	5 1/4	100	70.00
8	80208	80258	100	3	X26	18	26	5 1/4	110	80.00
10	80210	80260	100	3	X29	18	29	5 1/4	120	90.00
12	80212	80262	200	3	X32	18	32	5 1/4	135	100.00
14	80214	80264	200	3	X35	18	35	5 1/4	145	111.00
16	80216	80266	200	3	X38	18	38	5 1/4	160	122.00
18	80218	80268	200	3	X41	18	41	5 1/4	175	133.00
20	80220	80270	200	3	X44	18	44	5 1/4	190	144.00
22	80222	80272	200	3	X47	18	47	5 1/4	205	155.00
24	80224	80274	200	4	X52	20	52	5 1/4	220	166.00
26	80226	80276	200	4	X55	20	55	5 1/4	235	177.00
28	80228	80278	200	4	X58	20	58	5 1/4	250	188.00
30	80230	80280	200	4	X61	20	61	5 1/4	280	200.00

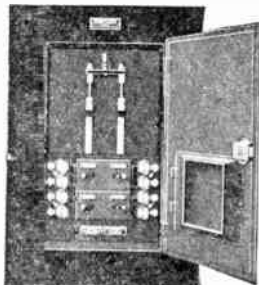
Panels with Fusible Mains



2-wire—Fusible Mains

4	81204	81254	60	3	X23	18	23	5 1/4	100	\$72.00
6	81206	81256	100	3	X32	18	32	5 1/4	135	84.00
8	81208	81258	100	3	X35	18	35	5 1/4	145	94.00
10	81210	81260	100	3	X38	18	38	5 1/4	160	104.00
12	81212	81262	200	3	X44	18	44	5 1/4	190	124.00
14	81214	81264	200	3	X47	18	47	5 1/4	205	134.00
16	81216	81266	200	4	X52	20	52	5 1/4	220	145.00
18	81218	81268	200	4	X55	20	55	5 1/4	235	156.00
20	81220	81270	200	4	X58	20	58	5 1/4	250	167.00
22	81222	81272	200	4	X61	20	61	5 1/4	280	180.00
24	81224	81274	200	4	X61	20	64	5 1/4	295	192.00
26	81226	81276	200	4	X67	20	67	5 1/4	310	204.00
28	81228	81278	200	4	X70	20	70	5 1/4	325	215.00
30	81230	81280	200	4	X73	20	73	5 1/4	340	226.00

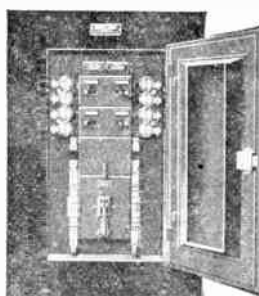
Panels with Fusible Main Knife Switch



2-wire Fusible Main Switch

4	83204	83254	60	3	X29	18	29	5 1/4	135	\$79.00
6	83206	83256	100	3	X38	18	38	5 1/4	145	94.00
8	83208	83258	100	3	X41	18	41	5 1/4	160	104.00
10	83210	83260	100	3	X44	18	44	5 1/4	175	114.00
12	83212	83262	200	4	W52	20	52	6	235	152.00
14	83214	83264	200	4	W55	20	55	6	250	164.00
16	83216	83266	200	4	W58	20	58	6	265	175.00
18	83218	83268	200	4	W61	20	61	6	295	186.00
20	83220	83270	200	4	W64	20	64	6	310	198.00
22	83222	83272	200	4	W67	20	67	6	325	212.00
24	83224	83274	200	4	W70	20	70	6	340	224.00
26	83226	83276	200	4	W73	20	73	6	355	235.00
28	83228	83278	200	4	W76	20	76	6	370	246.00
30	83230	83280	200	4	W79	20	79	6	385	257.00

Panels with Fusible Main Brush Type Switch



2-wire Main Brush Type Switch

4	84204	84254	60	3	X29	18	29	5 1/4	135	\$94.00
6	84206	84256	100	3	X38	18	38	5 1/4	160	109.00
8	84208	84258	100	3	X41	18	41	5 1/4	175	119.00
10	84210	84260	100	3	X44	18	44	5 1/4	190	129.00
12	84212	84262	200	4	W52	20	52	6	235	162.00
14	84214	84264	200	4	W55	20	55	6	250	174.00
16	84216	84266	200	4	W58	20	58	6	265	185.00
18	84218	84268	200	4	W61	20	61	6	295	196.00
20	84220	84270	200	4	W64	20	64	6	310	208.00
22	84222	84272	200	4	W67	20	67	6	325	220.00
24	84224	84274	200	4	W70	20	70	6	340	232.00
26	84226	84276	200	4	W73	20	73	6	355	243.00
28	84228	84278	200	4	W76	20	76	6	370	254.00
30	84230	84280	200	4	W79	20	79	6	385	265.00

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

Type DPT Benjamin-Starrett Dead Front Panels with Cabinets

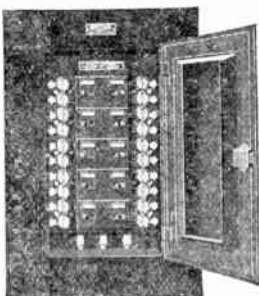
3-2-wire, 2-fuse

Branches—30-ampere, 125-volt Tumbler Switches—For Plug Fuses

Mains—250-125 Volts

Panels with Main Lugs Only

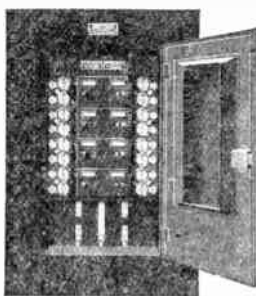
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	80704	80754	30	3	X20	18	20	5 1/4	85	\$58.00
6	80706	80756	60	3	X23	18	23	5 1/4	100	68.00
8	80708	80758	60	3	X26	18	26	5 1/4	110	78.00
10	80710	80760	60	3	X29	18	29	5 1/4	120	88.00
12	80712	80762	60	3	X32	18	32	5 1/4	135	98.00
14	80714	80764	100	3	X35	18	35	5 1/4	145	110.00
16	80716	80766	100	3	X38	18	38	5 1/4	160	120.00
18	80718	80768	100	3	X41	18	41	5 1/4	175	130.00
20	80720	80770	100	3	X44	18	44	5 1/4	190	140.00
22	80722	80772	100	3	X47	18	47	5 1/4	205	150.00
24	80724	80774	100	4	X52	20	52	5 1/4	220	160.00
26	80726	80776	100	4	X55	20	55	5 1/4	235	170.00
28	80728	80778	100	4	X58	20	58	5 1/4	250	185.00
30	80730	80780	100	4	X61	20	61	5 1/4	280	200.00



3-wire—Main Lugs Only

Panels with Fusible Mains

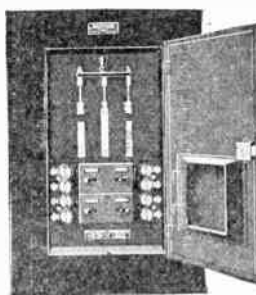
4	81704	81754	30	3	X23	18	23	5 1/4	100	\$70.00
6	81706	81756	60	3	X26	18	26	5 1/4	110	80.00
8	81708	81758	60	3	X29	18	29	5 1/4	120	90.00
10	81710	81760	60	3	X32	18	32	5 1/4	135	100.00
12	81712	81762	60	3	X35	18	35	5 1/4	145	110.00
14	81714	81764	100	3	X44	18	44	5 1/4	190	131.00
16	81716	81766	100	3	X47	18	47	5 1/4	205	142.00
18	81718	81768	100	4	X52	20	52	5 1/4	220	153.00
20	81720	81770	100	4	X55	20	55	5 1/4	235	164.00
22	81722	81772	100	4	X58	20	58	5 1/4	250	175.00
24	81724	81774	100	4	X61	20	61	5 1/4	280	190.00
26	81726	81776	100	4	X64	20	64	5 1/4	295	203.00
28	81728	81778	100	4	X67	20	67	5 1/4	310	215.00
30	81730	81780	100	4	X70	20	70	5 1/4	325	226.00



3-wire Fusible Mains

Panels with Fusible Main Knife Switch

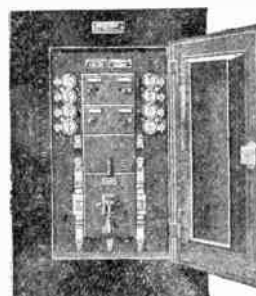
4	83704	83754	30	3	X29	18	29	5 1/4	120	\$78.00
6	83706	83756	60	3	X35	18	35	5 1/4	145	92.00
8	83708	83758	60	3	X38	18	38	5 1/4	160	102.00
10	83710	83760	60	3	X41	18	41	5 1/4	175	112.00
12	83712	83762	60	3	X44	18	44	5 1/4	190	123.00
14	83714	83764	100	4	X52	20	52	5 1/4	220	151.00
16	83716	83766	100	4	X55	20	55	5 1/4	235	162.00
18	83718	83768	100	4	X58	20	58	5 1/4	250	177.00
20	83720	83770	100	4	X61	20	61	5 1/4	280	187.00
22	83722	83772	100	4	X64	20	64	5 1/4	295	197.00
24	83724	83774	100	4	X67	20	67	5 1/4	310	207.00
26	83726	83776	100	4	X70	20	70	5 1/4	325	219.00
28	83728	83778	100	4	X73	20	73	5 1/4	340	230.00
30	83730	83780	100	4	X76	20	76	5 1/4	355	241.00



3-wire Fusible Main Switch

Panels with Fusible Main Brush Type Switch

4	84704	84754	30	3	X29	18	29	5 1/4	120	\$88.00
6	84706	84756	60	3	X35	18	35	5 1/4	145	100.00
8	84708	84758	60	3	X38	18	38	5 1/4	160	110.00
10	84710	84760	60	3	X41	18	41	5 1/4	175	120.00
12	84712	84762	60	3	X44	18	44	5 1/4	190	130.00
14	84714	84764	100	4	X52	20	52	5 1/4	220	155.00
16	84716	84766	100	4	X55	20	55	5 1/4	235	165.00
18	84718	84768	100	4	X58	20	58	5 1/4	250	175.00
20	84720	84770	100	4	X61	20	61	5 1/4	280	195.00
22	84722	84772	100	4	X64	20	64	5 1/4	295	205.00
24	84724	84774	100	4	X67	20	67	5 1/4	310	215.00
26	84726	84776	100	4	X70	20	70	5 1/4	325	225.00
28	84728	84778	100	4	X73	20	73	5 1/4	340	235.00
30	84730	84780	100	4	X76	20	76	5 1/4	355	245.00



3-wire Main Brush Type Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

Type OP Benjamin-Starrett Open Front Panels with Cabinets

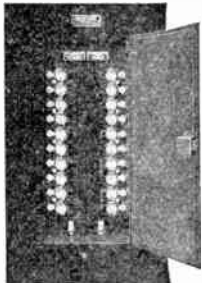
2-2-wire, 2-fuse

Branches—Arranged for Plug Fuses Only

Mains—125 Volts

Panels with Main Lugs Only

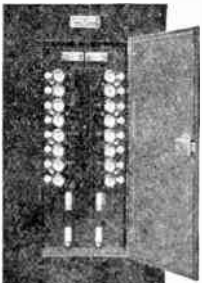
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approximate Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep In-side		
4	70004	70054	60	3	X520	15½	20	5¼	75	\$38.00
6	70006	70056	100	3	X523	15½	23	5¼	90	42.00
8	70008	70058	100	3	X526	15½	26	5¼	100	45.00
10	70010	70060	100	3	X529	15½	29	5¼	110	48.00
12	70012	70062	200	3	X532	15½	32	5¼	120	52.00
14	70014	70064	200	3	X535	15½	35	5¼	130	56.00
16	70016	70066	200	3	X538	15½	38	5¼	145	60.00
18	70018	70068	200	3	X541	15½	41	5¼	160	65.00
20	70020	70070	200	3	X544	15½	44	5¼	175	70.00
22	70022	70072	200	3	X547	15½	47	5¼	190	75.00
24	70024	70074	200	4	X552	17½	52	5¼	205	80.00
26	70026	70076	200	4	X555	17½	55	5¼	220	85.00
28	70028	70078	200	4	X558	17½	58	5¼	235	90.00
30	70030	70080	200	4	X561	17½	61	5¼	265	95.00



2-wire—Main Lugs Only

Panels with Fusible Mains

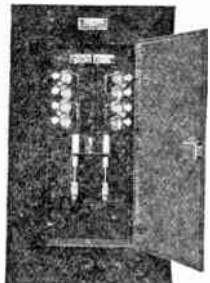
4	71004	71054	60	3	X523	15½	23	5¼	90	\$42.00
6	71006	71056	100	3	X532	15½	32	5¼	120	50.00
8	71008	71058	100	3	X535	15½	35	5¼	130	53.00
10	71010	71060	100	3	X538	15½	38	5¼	145	57.00
12	71012	71062	200	3	X544	15½	44	5¼	175	68.00
14	71014	71064	200	3	X547	15½	47	5¼	190	73.00
16	71016	71066	200	4	X552	17½	52	5¼	205	78.00
18	71018	71068	200	4	X555	17½	55	5¼	220	83.00
20	71020	71070	200	4	X558	17½	58	5¼	235	88.00
22	71022	71072	200	4	X561	17½	61	5¼	265	93.00
24	71024	71074	200	4	X564	17½	64	5¼	280	99.00
26	71026	71076	200	4	X567	17½	67	5¼	295	107.00
28	71028	71078	200	4	X570	17½	70	5¼	310	111.00
30	71030	71080	200	4	X573	17½	73	5¼	325	115.00



2-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

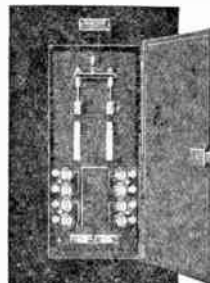
4	72004	72054	60	3	X529	15½	29	5¼	120	\$50.00
6	72006	72056	100	3	X535	15½	35	5¼	130	60.00
8	72008	72058	100	3	X538	15½	38	5¼	145	63.00
10	72010	72060	100	3	X541	15½	41	5¼	160	66.00
12	72012	72062	200	3	X547	15½	47	5¼	190	81.00
14	72014	72064	200	4	X552	17½	52	5¼	205	86.00
16	72016	72066	200	4	X555	17½	55	5¼	220	92.00
18	72018	72068	200	4	X558	17½	58	5¼	235	98.00
20	72020	72070	200	4	X561	17½	61	5¼	265	105.00
22	72022	72072	200	4	X564	17½	64	5¼	280	112.00
24	72024	72074	200	4	X567	17½	67	5¼	295	117.00
26	72026	72076	200	4	X570	17½	70	5¼	310	122.00
28	72028	72078	200	4	X573	17½	73	5¼	325	127.00
30	72030	72080	200	4	X576	17½	76	5¼	340	132.00



2-wire Fuseless Main Switches

Panels with Fusible Main Knife Switch

4	73004	73054	60	3	X529	15½	29	5¼	120	\$53.00
6	73006	73056	100	3	X538	15½	38	5¼	145	63.00
8	73008	73058	100	3	X541	15½	41	5¼	160	66.00
10	73010	73060	100	3	X544	15½	44	5¼	175	70.00
12	73012	73062	200	4	W552	17½	52	6	215	90.00
14	73014	73064	200	4	W555	17½	55	6	230	96.00
16	73016	73066	200	4	W558	17½	58	6	245	102.00
18	73018	73068	200	4	W561	17½	61	6	275	109.00
20	73020	73070	200	4	W564	17½	64	6	290	114.00
22	73022	73072	200	4	W567	17½	67	6	305	122.00
24	73024	73074	200	4	W570	17½	70	6	320	127.00
26	73026	73076	200	4	W573	17½	73	6	335	132.00
28	73028	73078	200	4	W576	17½	76	6	350	137.00
30	73030	73080	200	4	W579	17½	79	6	365	142.00



2-wire Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

Type OP Benjamin-Starrett Open Front Panels with Cabinets

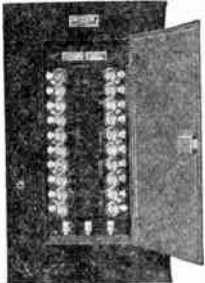
3-2-wire, 2-fuse

Branches—Arranged for Plug Fuses Only

Mains—250-125 Volts

Panels with Main Lugs Only

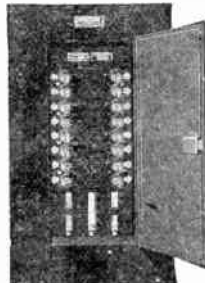
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt. Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep In-side		
4	70504	70554	30	3	X520	15½	20	5¼	75	\$39.00
6	70506	70556	60	3	X523	15½	23	5¼	90	42.00
8	70508	70558	60	3	X526	15½	26	5¼	100	45.00
10	70510	70560	60	3	X529	15½	29	5¼	110	49.00
12	70512	70562	60	3	X532	15½	32	5¼	120	52.00
14	70514	70564	100	3	X535	15½	35	5¼	130	57.00
16	70516	70566	100	3	X538	15½	38	5¼	145	60.00
18	70518	70568	100	3	X541	15½	41	5¼	160	65.00
20	70520	70570	100	3	X544	15½	44	5¼	175	70.00
22	70522	70572	100	3	X547	15½	47	5¼	190	75.00
24	70524	70574	100	4	X552	17½	52	5¼	205	80.00
26	70526	70576	100	4	X555	17½	55	5¼	220	85.00
28	70528	70578	100	4	X558	17½	58	5¼	235	90.00
30	70530	70580	100	4	X561	17½	61	5¼	265	95.00



3-wire—Main Lugs Only

Panels with Fusible Mains

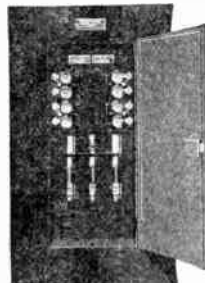
4	71504	71554	30	3	X523	15½	23	5¼	90	\$43.00
6	71506	71556	60	3	X526	15½	26	5¼	100	48.00
8	71508	71558	60	3	X529	15½	29	5¼	110	52.00
10	71510	71560	60	3	X532	15½	32	5¼	120	57.00
12	71512	71562	60	3	X535	15½	35	5¼	130	62.00
14	71514	71564	100	3	X544	15½	44	5¼	175	71.00
16	71516	71566	100	3	X547	15½	47	5¼	190	77.00
18	71518	71568	100	4	X552	17½	52	5¼	205	83.00
20	71520	71570	100	4	X555	17½	55	5¼	220	89.00
22	71522	71572	100	4	X558	17½	58	5¼	235	95.00
24	71524	71574	100	4	X561	17½	61	5¼	265	100.00
26	71526	71576	100	4	X564	17½	64	5¼	280	106.00
28	71528	71578	100	4	X567	17½	67	5¼	295	112.00
30	71530	71580	100	4	X570	17½	70	5¼	310	117.00



3-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

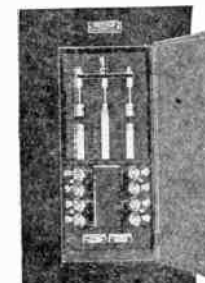
4	72504	72554	30	3	X529	15½	29	5¼	110	\$51.00
6	72506	72556	60	3	X535	15½	35	5¼	130	59.00
8	72508	72558	60	3	X538	15½	38	5¼	145	63.00
10	72510	72560	60	3	X541	15½	41	5¼	160	68.00
12	72512	72562	60	3	X544	15½	44	5¼	175	72.00
14	72514	72564	100	3	X547	15½	47	5¼	190	87.00
16	72516	72566	100	4	X552	17½	52	5¼	205	92.00
18	72518	72568	100	4	X555	17½	55	5¼	220	98.00
20	72520	72570	100	4	X558	17½	58	5¼	235	103.00
22	72522	72572	100	4	X561	17½	61	5¼	265	109.00
24	72524	72574	100	4	X564	17½	64	5¼	280	114.00
26	72526	72576	100	4	X567	17½	67	5¼	295	121.00
28	72528	72578	100	4	X570	17½	70	5¼	310	126.00
30	72530	72580	100	4	X573	17½	73	5¼	325	131.00



3-wire
Fuseless Main Switch

Panels with Fusible Main Knife Switch

4	73504	73554	30	3	X529	15½	29	5¼	110	\$54.00
6	73506	73556	60	3	X535	15½	35	5¼	130	62.00
8	73508	73558	60	3	X538	15½	38	5¼	145	66.00
10	73510	73560	60	3	X541	15½	41	5¼	160	71.00
12	73512	73562	60	3	X544	15½	44	5¼	175	75.00
14	73514	73564	100	4	X552	17½	52	5¼	190	90.00
16	73516	73566	100	4	X555	17½	55	5¼	220	96.00
18	73518	73568	100	4	X558	17½	58	5¼	235	102.00
20	73520	73570	100	4	X561	17½	61	5¼	265	108.00
22	73522	73572	100	4	X564	17½	64	5¼	280	116.00
24	73524	73574	100	4	X567	17½	67	5¼	295	124.00
26	73526	73576	100	4	X570	17½	70	5¼	310	129.00
28	73528	73578	100	4	X573	17½	73	5¼	325	134.00
30	73530	73580	100	4	X576	17½	76	5¼	340	139.00



3-wire
Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

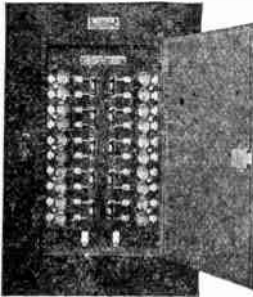
Type OPK Benjamin-Starrett Open Front Panels with Cabinets

2-2-wire, 2-fuse

Branches—Equipped with 30-ampere Knife Switches—For Plug Fuses
Mains—125 Volts

Panels with Main Lugs Only

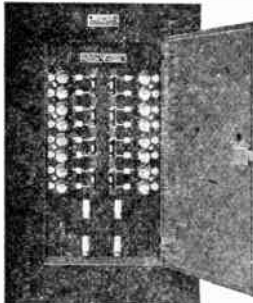
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	70304	70354	60	3	X20	18	20	5 1/4	90	\$44.00
6	70306	70356	100	3	X23	18	23	5 1/4	105	54.00
8	70308	70358	100	3	X26	18	26	5 1/4	115	61.00
10	70310	70360	100	3	X29	18	29	5 1/4	125	68.00
12	70312	70362	200	3	X32	18	32	5 1/4	135	84.00
14	70314	70364	200	3	X35	18	35	5 1/4	145	94.00
16	70316	70366	200	3	X38	18	38	5 1/4	160	103.00
18	70318	70368	200	3	X41	18	41	5 1/4	175	112.00
20	70320	70370	200	3	X44	18	44	5 1/4	190	121.00
22	70322	70372	200	3	X47	18	47	5 1/4	205	130.00
24	70324	70374	200	4	X52	20	52	5 1/4	220	139.00
26	70326	70376	200	4	X55	20	55	5 1/4	235	149.00
28	70328	70378	200	4	X58	20	58	5 1/4	250	159.00
30	70330	70380	200	4	X61	20	61	5 1/4	280	169.00



2-wire—Main Lugs Only

Panels with Fusible Mains

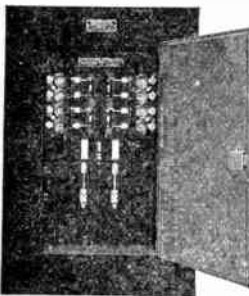
4	71304	71354	60	3	X23	18	23	5 1/4	105	\$50.00
6	71306	71356	100	3	X32	18	32	5 1/4	135	61.00
8	71308	71358	100	3	X35	18	35	5 1/4	145	68.00
10	71310	71360	100	3	X38	18	38	5 1/4	160	75.00
12	71312	71362	200	3	X41	18	41	5 1/4	190	95.00
14	71314	71364	200	3	X47	18	47	5 1/4	205	105.00
16	71316	71366	200	4	X52	20	52	5 1/4	220	115.00
18	71318	71368	200	4	X55	20	55	5 1/4	235	125.00
20	71320	71370	200	4	X58	20	58	5 1/4	250	134.00
22	71322	71372	200	4	X61	20	61	5 1/4	280	144.00
24	71324	71374	200	4	X64	20	64	5 1/4	295	153.00
26	71326	71376	200	4	X67	20	67	5 1/4	310	162.00
28	71328	71378	200	4	X70	20	70	5 1/4	325	172.00
30	71330	71380	200	4	X73	20	73	5 1/4	340	182.00



2-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

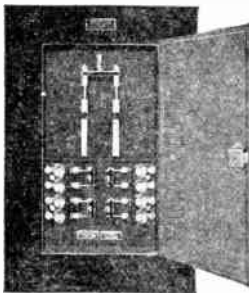
4	72304	72354	60	3	X29	18	29	5 1/4	135	\$53.00
6	72306	72356	100	3	X35	18	35	5 1/4	145	65.00
8	72308	72358	100	3	X38	18	38	5 1/4	160	72.00
10	72310	72360	100	3	X41	18	41	5 1/4	175	78.00
12	72312	72362	200	3	X47	18	47	5 1/4	205	108.00
14	72314	72364	200	4	X52	20	52	5 1/4	220	118.00
16	72316	72366	200	4	X55	20	55	5 1/4	235	128.00
18	72318	72368	200	4	X58	20	58	5 1/4	250	138.00
20	72320	72370	200	4	X61	20	61	5 1/4	280	149.00
22	72322	72372	200	4	X64	20	64	5 1/4	295	160.00
24	72324	72374	200	4	X67	20	67	5 1/4	310	170.00
26	72326	72376	200	4	X70	20	70	5 1/4	325	179.00
28	72328	72378	200	4	X73	20	73	5 1/4	340	189.00
30	72330	72380	200	4	X76	20	76	5 1/4	355	199.00



2-wire
Fuseless Main Switch

Panels with Fusible Main Knife Switch

4	73304	73354	60	3	X29	18	29	5 1/4	135	\$55.00
6	73306	73356	100	3	X38	18	38	5 1/4	160	67.00
8	73308	73358	100	3	X41	18	41	5 1/4	175	74.00
10	73310	73360	100	3	X44	18	44	5 1/4	190	81.00
12	73312	73362	200	4	W52	20	52	6	220	118.00
14	73314	73364	200	4	W55	20	55	6	235	128.00
16	73316	73366	200	4	W58	20	58	6	250	138.00
18	73318	73368	200	4	W61	20	61	6	280	148.00
20	73320	73370	200	4	W64	20	64	6	295	158.00
22	73322	73372	200	4	W67	20	67	6	310	169.00
24	73324	73374	200	4	W70	20	70	6	325	179.00
26	73326	73376	200	4	W73	20	73	6	340	189.00
28	73328	73378	200	4	W76	20	76	6	355	199.00
30	73330	73380	200	4	W79	20	79	6	370	209.00



2-wire
Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

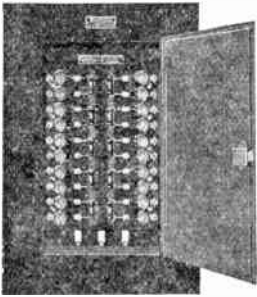
Type OPK Benjamin-Starrett Open Front Panels with Cabinets

3-2-wire, 2-fuse

Branches—Equipped with 30-ampere Knife Switches—For Plug Fuses
Mains—250-125 Volts

Panels with Main Lugs Only

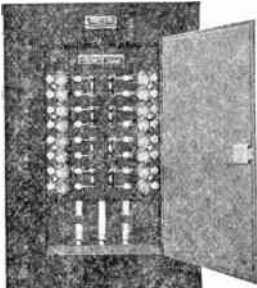
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Box Wide Outside	High Outside	Deep Inside		
4	70804	70854	30	3	X20	18	20	5 1/4	85	\$43.00
6	70806	70856	60	3	X23	18	23	5 1/4	100	53.00
8	70808	70858	60	3	X26	18	26	5 1/4	110	60.00
10	70810	70860	60	3	X29	18	29	5 1/4	120	67.00
12	70812	70862	60	3	X32	18	32	5 1/4	135	77.00
14	70814	70864	100	3	X35	18	35	5 1/4	145	90.00
16	70816	70866	100	3	X38	18	38	5 1/4	160	100.00
18	70818	70868	100	3	X41	18	41	5 1/4	175	110.00
20	70820	70870	100	3	X44	18	44	5 1/4	190	120.00
22	70822	70872	100	3	X47	18	47	5 1/4	205	130.00
24	70824	70874	100	4	X52	20	52	5 1/4	220	141.00
26	70826	70876	100	4	X55	20	55	5 1/4	235	151.00
28	70828	70878	100	4	X58	20	58	5 1/4	250	161.00
30	70830	70880	100	4	X61	20	61	5 1/4	280	172.90



3-wire—Main Lugs Only

Panels with Fusible Mains

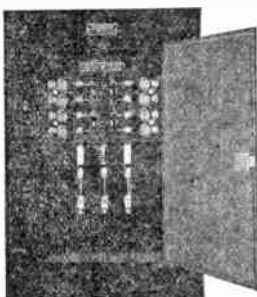
4	71804	71854	30	3	X23	18	23	5 1/4	100	\$48.00
6	71806	71856	60	3	X26	18	26	5 1/4	110	58.00
8	71808	71858	60	3	X29	18	29	5 1/4	120	65.00
10	71810	71860	60	3	X32	18	32	5 1/4	135	72.00
12	71812	71862	60	3	X35	18	35	5 1/4	145	82.00
14	71814	71864	100	3	X44	18	44	5 1/4	190	98.00
16	71816	71866	100	3	X47	18	47	5 1/4	205	108.00
18	71818	71868	100	4	X52	20	52	5 1/4	220	118.00
20	71820	71870	100	4	X55	20	55	5 1/4	235	130.00
22	71822	71872	100	4	X58	20	58	5 1/4	250	140.00
24	71824	71874	100	4	X61	20	61	5 1/4	280	152.00
26	71826	71876	100	4	X64	20	64	5 1/4	295	162.00
28	71828	71878	100	4	X67	20	67	5 1/4	310	172.00
30	71830	71880	100	4	X70	20	70	5 1/4	325	182.00



3-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

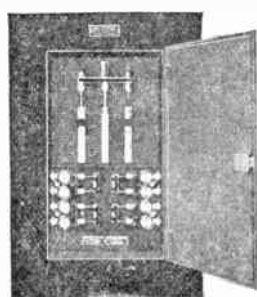
4	72804	72854	30	3	X29	18	29	5 1/4	120	\$49.00
6	72806	72856	60	3	X35	18	35	5 1/4	145	60.00
8	72808	72858	60	3	X38	18	38	5 1/4	160	68.00
10	72810	72860	60	3	X41	18	41	5 1/4	175	74.00
12	72812	72862	60	3	X44	18	44	5 1/4	190	83.00
14	72814	72864	100	3	X47	18	47	5 1/4	205	105.00
16	72816	72866	100	4	X52	20	52	5 1/4	220	113.00
18	72818	72868	100	4	X55	20	55	5 1/4	235	124.00
20	72820	72870	100	4	X58	20	58	5 1/4	250	133.00
22	72822	72872	100	4	X61	20	61	5 1/4	280	153.00
24	72824	72874	100	4	X64	20	64	5 1/4	295	160.00
26	72826	72876	100	4	X67	20	67	5 1/4	310	175.00
28	72828	72878	100	4	X70	20	70	5 1/4	325	186.00
30	72830	72880	100	4	X73	20	73	5 1/4	340	196.00



3-wire Fuseless Main Switch

Panels with Fusible Main Knife Switch

4	73804	73854	30	3	X29	18	29	5 1/4	120	\$53.00
6	73806	73856	60	3	X35	18	35	5 1/4	145	65.00
8	73808	73858	60	3	X38	18	38	5 1/4	160	72.00
10	73810	73860	60	3	X41	18	41	5 1/4	175	79.00
12	73812	73862	60	3	X44	18	44	5 1/4	190	89.00
14	73814	73864	100	4	X52	20	52	5 1/4	220	110.00
16	73816	73866	100	4	X55	20	55	5 1/4	235	118.00
18	73818	73868	100	4	X58	20	58	5 1/4	250	130.00
20	73820	73870	100	4	X61	20	61	5 1/4	280	140.00
22	73822	73872	100	4	X64	20	64	5 1/4	295	160.00
24	73824	73874	100	4	X67	20	67	5 1/4	310	170.00
26	73826	73876	100	4	X70	20	70	5 1/4	325	180.00
28	73828	73878	100	4	X73	20	73	5 1/4	340	190.00
30	73830	73880	100	4	X76	20	76	5 1/4	355	200.00



3-wire Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

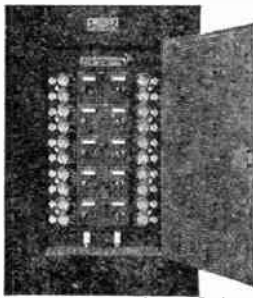
Type OPT Benjamin-Starrett Open Front Panels with Cabinets

2-2-wire, 2-fuse

Branches—30-ampere, 125-volt Tumbler Switches—For Plug Fuses
Mains—125 Volts

Panels with Main Lugs Only

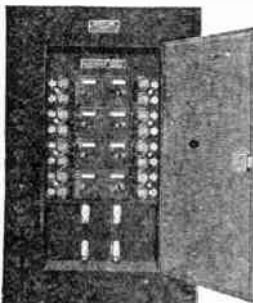
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amps.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	70204	70254	60	3	X20	18	20	5 1/4	90	\$46.00
6	70206	70256	100	3	X23	18	23	5 1/4	105	56.00
8	70208	70258	100	3	X26	18	26	5 1/4	115	65.00
10	70210	70260	100	3	X29	18	29	5 1/4	125	74.00
12	70212	70262	200	3	X32	18	32	5 1/4	135	87.00
14	70214	70264	200	3	X35	18	35	5 1/4	145	97.00
16	70216	70266	200	3	X38	18	38	5 1/4	160	106.00
18	70218	70268	200	3	X41	18	41	5 1/4	175	115.00
20	70220	70270	200	3	X44	18	44	5 1/4	190	125.00
22	70222	70272	200	3	X47	18	47	5 1/4	205	135.00
24	70224	70274	200	4	X52	20	52	5 1/4	220	145.00
26	70226	70276	200	4	X55	20	55	5 1/4	235	155.00
28	70228	70278	200	4	X58	20	58	5 1/4	250	165.00
30	70230	70280	200	4	X61	20	61	5 1/4	280	176.00



2-wire—Main Lugs Only

Panels with Fusible Mains

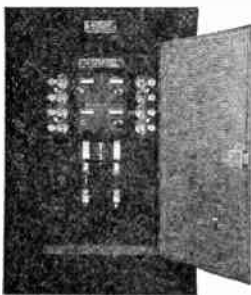
4	71204	71254	60	3	X23	18	23	5 1/4	105	\$52.00
6	71206	71256	100	3	X32	18	32	5 1/4	135	63.00
8	71208	71258	100	3	X35	18	35	5 1/4	145	72.00
10	71210	71260	100	3	X38	18	38	5 1/4	160	82.00
12	71212	71262	200	3	X44	18	44	5 1/4	190	98.00
14	71214	71264	200	3	X47	18	47	5 1/4	205	108.00
16	71216	71266	200	4	X52	20	52	5 1/4	220	118.00
18	71218	71268	200	4	X55	20	55	5 1/4	235	128.00
20	71220	71270	200	4	X58	20	58	5 1/4	250	138.00
22	71222	71272	200	4	X61	20	61	5 1/4	280	148.00
24	71224	71274	200	4	X64	20	64	5 1/4	295	159.00
26	71226	71276	200	4	X67	20	67	5 1/4	310	170.00
28	71228	71278	200	4	X70	20	70	5 1/4	325	180.00
30	71230	71280	200	4	X73	20	73	5 1/4	340	190.00



2-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

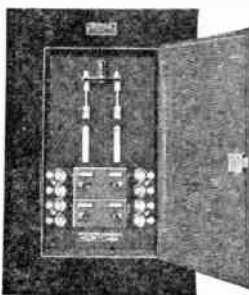
4	72204	72254	60	3	X29	18	29	5 1/4	135	\$60.00
6	72206	72256	100	3	X35	18	35	5 1/4	145	74.00
8	72208	72258	100	3	X38	18	38	5 1/4	160	84.00
10	72210	72260	100	3	X41	18	41	5 1/4	175	94.00
12	72212	72262	200	3	X47	18	47	5 1/4	205	113.00
14	72214	72264	200	4	X52	20	52	5 1/4	220	124.00
16	72216	72266	200	4	X55	20	55	5 1/4	235	134.00
18	72218	72268	200	4	X58	20	58	5 1/4	250	144.00
20	72220	72270	200	4	X61	20	61	5 1/4	280	156.00
22	72222	72272	200	4	X64	20	64	5 1/4	295	167.00
24	72224	72274	200	4	X67	20	67	5 1/4	310	177.00
26	72226	72276	200	4	X70	20	70	5 1/4	325	187.00
28	72228	72278	200	4	X73	20	73	5 1/4	340	197.00
30	72230	72280	200	4	X76	20	76	5 1/4	355	207.00



2-wire Fuseless Main Switches

Panels with Fusible Main Knife Switch

4	73204	73254	60	3	X29	18	29	5 1/4	135	\$62.00
6	73206	73256	100	3	X38	18	38	5 1/4	160	77.00
8	73208	73258	100	3	X41	18	41	5 1/4	175	87.00
10	73210	73260	100	3	X44	18	44	5 1/4	190	96.00
12	73212	73262	200	4	W52	20	52	6	220	122.00
14	73214	73264	200	4	W55	20	55	6	235	132.00
16	73216	73266	200	4	W58	20	58	6	250	142.00
18	73218	73268	200	4	W61	20	61	6	280	154.00
20	73220	73270	200	4	W64	20	64	6	295	164.00
22	73222	73272	200	4	W67	20	67	6	310	176.00
24	73224	73274	200	4	W70	20	70	6	325	186.00
26	73226	73276	200	4	W73	20	73	6	340	196.00
28	73228	73278	200	4	W76	20	76	6	355	206.00
30	73230	73280	200	4	W79	20	79	6	370	216.00



2-wire Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

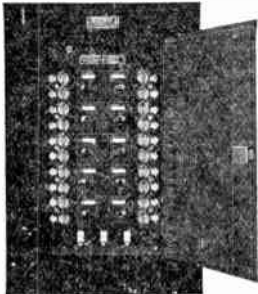
Type OPT Benjamin-Starrett Open Front Panels with Cabinets

3-2-wire, 2-fuse

Branches—30-ampere, 125-volt Tumbler Switches—For Plug Fuses
Mains—250-125 Volts

Panels with Main Lugs Only

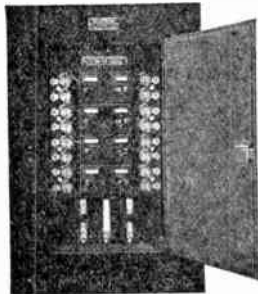
No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	70704	70754	30	3	X20	18	20	5 1/4	85	\$45.00
6	70706	70756	60	3	X23	18	23	5 1/4	100	57.00
8	70708	70758	60	3	X26	18	26	5 1/4	110	67.00
10	70710	70760	60	3	X29	18	29	5 1/4	120	77.00
12	70712	70762	60	3	X32	18	32	5 1/4	135	86.00
14	70714	70764	100	3	X35	18	35	5 1/4	145	98.00
16	70716	70766	100	3	X38	18	38	5 1/4	160	107.00
18	70718	70768	100	3	X41	18	41	5 1/4	175	117.00
20	70720	70770	100	3	X44	18	44	5 1/4	190	127.00
22	70722	70772	100	3	X47	18	47	5 1/4	205	137.00
24	70724	70774	100	4	X52	20	52	5 1/4	220	148.00
26	70726	70776	100	4	X55	20	55	5 1/4	235	158.00
28	70728	70778	100	4	X58	20	58	5 1/4	250	168.00
30	70730	70780	100	4	X61	20	60	5 1/4	280	179.00



3-wire—Main Lugs Only

Panels with Fusible Mains

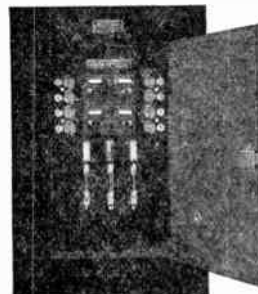
4	71704	71754	30	3	X23	18	23	5 1/4	100	\$50.00
6	71706	71756	60	3	X26	18	26	5 1/4	110	61.00
8	71708	71758	60	3	X29	18	29	5 1/4	120	71.00
10	71710	71760	60	3	X32	18	32	5 1/4	135	81.00
12	71712	71762	60	3	X35	18	35	5 1/4	145	91.00
14	71714	71764	100	3	X44	18	44	5 1/4	190	106.00
16	71716	71766	100	3	X47	18	47	5 1/4	205	116.00
18	71718	71768	100	4	X52	20	52	5 1/4	220	126.00
20	71720	71770	100	4	X55	20	55	5 1/4	235	137.00
22	71722	71772	100	4	X58	20	58	5 1/4	250	147.00
24	71724	71774	100	4	X61	20	61	5 1/4	280	158.00
26	71726	71776	100	4	X64	20	64	5 1/4	295	169.00
28	71728	71778	100	4	X67	20	67	5 1/4	310	179.00
30	71730	71780	100	4	X70	20	70	5 1/4	325	189.00



3-wire—Fusible Mains

Panels with Fuseless Main Knife Switch

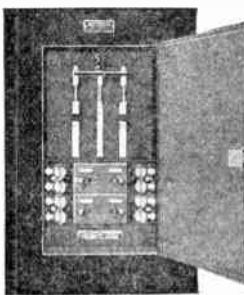
4	72704	72754	30	3	X29	18	29	5 1/4	120	\$58.00
6	72706	72756	60	3	X35	18	35	5 1/4	145	75.00
8	72708	72758	60	3	X38	18	38	5 1/4	160	85.00
10	72710	72760	60	3	X41	18	40	5 1/4	175	94.00
12	72712	72762	60	3	X44	18	44	5 1/4	190	104.00
14	72714	72764	100	3	X47	18	47	5 1/4	205	122.00
16	72716	72766	100	4	X52	20	52	5 1/4	220	132.00
18	72718	72768	100	4	X55	20	55	5 1/4	235	142.00
20	72720	72770	100	4	X58	20	58	5 1/4	250	152.00
22	72722	72772	100	4	X61	20	61	5 1/4	280	163.00
24	72724	72774	100	4	X64	20	64	5 1/4	295	173.00
26	72726	72776	100	4	X67	20	67	5 1/4	310	184.00
28	72728	72778	100	4	X70	20	70	5 1/4	325	194.00
30	72730	72780	100	4	X73	20	73	5 1/4	340	204.00



3-wire Fuseless Main Switch

Panels with Fusible Main Knife Switch

4	73704	73754	30	3	X29	18	29	5 1/4	120	\$62.00
6	73706	73756	60	3	X35	18	35	5 1/4	145	78.00
8	73708	73758	60	3	X38	18	38	5 1/4	160	88.00
10	73710	73760	60	3	X41	18	41	5 1/4	175	98.00
12	73712	73762	60	3	X44	18	44	5 1/4	190	107.00
14	73714	73764	100	4	X52	20	52	5 1/4	220	126.00
16	73716	73766	100	4	X55	20	55	5 1/4	235	137.00
18	73718	73768	100	4	X58	20	58	5 1/4	250	148.00
20	73720	73770	100	4	X61	20	61	5 1/4	280	159.00
22	73722	73772	100	4	X64	20	64	5 1/4	295	171.00
24	73724	73774	100	4	X67	20	67	5 1/4	310	182.00
26	73726	73776	100	4	X70	20	70	5 1/4	320	192.00
28	73728	73778	100	4	X73	20	73	5 1/4	340	202.00
30	73730	73780	100	4	X76	20	76	5 1/4	355	212.00



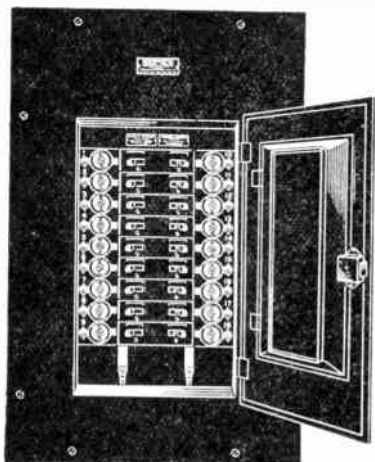
3-wire Fusible Main Switch

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

Type SDPT Benjamin-Starrett Dead Front Panels with Cabinets

3-2-wire, 1-fuse

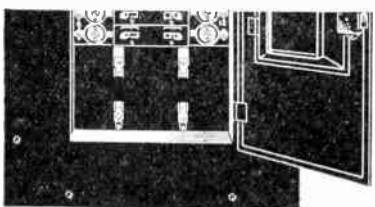
Branches—30-ampere, 125-volt Tumbler Switches—For Plug Fuses
Mains—250-125 Volts



3-wire—Main Lugs Only

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Box Wide Outside	High Outside	Deep Inside		
4	90704	90754	30	3	X17	18	17	5 1/4	80	\$54.00
6	90706	90756	60	3	X20	18	20	5 1/4	90	62.00
8	90708	90758	60	3	X20	18	20	5 1/4	90	69.00
10	90710	90760	60	3	X23	18	23	5 1/4	100	76.00
12	90712	90762	60	3	X23	18	23	5 1/4	100	82.00
14	90714	90764	100	3	X26	18	26	5 1/4	115	94.00
16	90716	90766	100	3	X29	18	29	5 1/4	125	100.00
18	90718	90768	100	3	X29	18	29	5 1/4	125	108.00
20	90720	90770	100	3	X32	18	32	5 1/4	135	116.00
22	90722	90772	100	3	X32	18	32	5 1/4	135	125.00
24	90724	90774	100	3	X35	18	35	5 1/4	150	133.00
26	90726	90776	100	3	X38	18	38	5 1/4	160	141.00
28	90728	90778	100	3	X38	18	38	5 1/4	160	150.00
30	90730	90780	100	3	X41	18	41	5 1/4	185	158.00

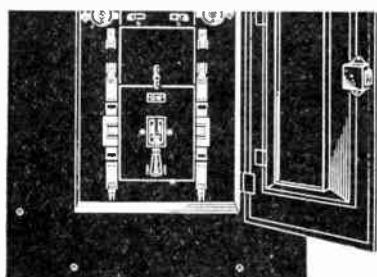
Panels with Main Lugs Only



3-wire—Fusible Mains

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Box Wide Outside	High Outside	Deep Inside		
4	91704	91754	30	3	X20	18	20	5 1/4	90	\$68.00
6	91706	91756	60	3	X23	18	23	5 1/4	100	78.00
8	91708	91758	60	3	X23	18	23	5 1/4	100	83.00
10	91710	91760	60	3	X26	18	26	5 1/4	115	89.00
12	91712	91762	60	3	X26	18	26	5 1/4	115	95.00
14	91714	91764	100	3	X35	18	35	5 1/4	150	104.00
16	91716	91766	100	3	X38	18	38	5 1/4	160	111.00
18	91718	91768	100	3	X38	18	38	5 1/4	160	117.00
20	91720	91770	100	3	X41	18	41	5 1/4	185	124.00
22	91722	91772	100	3	X41	18	41	5 1/4	185	131.00
24	91724	91774	100	3	X44	18	44	5 1/4	200	137.00
26	91726	91776	100	3	X47	18	47	5 1/4	210	144.00
28	91728	91778	100	3	X47	18	47	5 1/4	210	151.00
30	91730	91780	100	4	X52	20	52	5 1/4	225	158.00

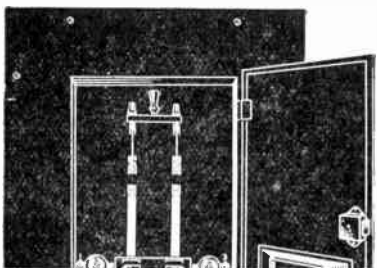
Panels with Fusible Mains



3-wire—Fusible Main Brush Type Switch

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Box Wide Outside	High Outside	Deep Inside		
4	94704	94754	30	3	X26	18	26	5 1/4	115	\$82.00
6	94706	94756	60	3	X32	18	32	5 1/4	135	91.00
8	94708	94758	60	3	X32	18	32	5 1/4	135	99.00
10	94710	94760	60	3	X35	18	35	5 1/4	150	107.00
12	94712	94762	60	3	X35	18	35	5 1/4	150	115.00
14	94714	94764	100	3	X44	18	44	5 1/4	200	135.00
16	94716	94766	100	3	X47	18	47	5 1/4	210	144.00
18	94718	94768	100	3	X47	18	47	5 1/4	210	153.00
20	94720	94770	100	4	X52	20	52	5 1/4	225	162.00
22	94722	94772	100	4	X52	20	52	5 1/4	225	171.00
24	94724	94774	100	4	X55	20	55	5 1/4	240	180.00
26	94726	94776	100	4	X58	20	58	5 1/4	260	188.00
28	94728	94778	100	4	X58	20	58	5 1/4	260	197.00
30	94730	94780	100	4	X61	20	61	5 1/4	290	206.00

Panels with Fusible Main Brush Type Switch



3-wire—Fusible Main Switch

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Box Wide Outside	High Outside	Deep Inside		
4	93704	93754	30	3	X26	18	26	5 1/4	115	\$76.00
6	93706	93756	60	3	X32	18	32	5 1/4	135	84.00
8	93708	93758	60	3	X32	18	32	5 1/4	135	90.00
10	93710	93760	60	3	X35	18	35	5 1/4	150	96.00
12	93712	93762	60	3	X35	18	35	5 1/4	150	102.00
14	93714	93764	100	3	X44	18	44	5 1/4	200	121.00
16	93716	93766	100	3	X47	18	47	5 1/4	210	129.00
18	93718	93768	100	3	X47	18	47	5 1/4	210	138.00
20	93720	93770	100	4	X52	20	52	5 1/4	225	147.00
22	93722	93772	100	4	X52	20	52	5 1/4	225	156.00
24	93724	93774	100	4	X55	20	55	5 1/4	240	165.00
26	93726	93776	100	4	X58	20	58	5 1/4	260	174.00
28	93728	93778	100	4	X58	20	58	5 1/4	260	183.00
30	93730	93780	100	4	X61	20	61	5 1/4	290	192.00

Panels with Fusible Main Knife Switch

NOTE—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

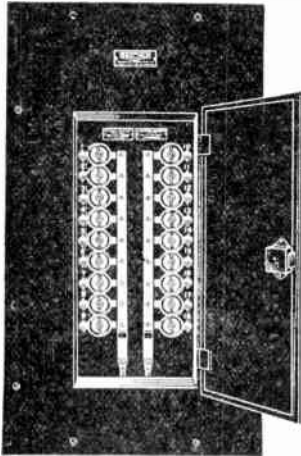
Type SOP Benjamin-Starrett Open Front Panels with Cabinets

3-2-wire, 1-fuse

Branches—Arranged for Plug Fuses Only

Mains—250-125 Volts

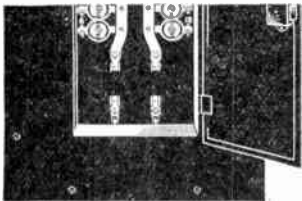
Panels with Main Lugs Only



3-wire—Main Lugs Only

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	Box Wide Outside	DIMENSIONS, INCHES High Outside	Deep Inside	Approx. Ship. Wt., Lbs	Price Each
	Surface Cat. No.	Flush Cat. No.								
4	60504	60554	30	3	X517	15 1/2	17	5 1/4	60	\$31.00
6	60506	60556	60	3	X520	15 1/2	20	5 1/4	70	35.00
8	60508	60558	60	3	X520	15 1/2	20	5 1/4	70	39.00
10	60510	60560	60	3	X523	15 1/2	23	5 1/4	80	43.00
12	60512	60562	60	3	X526	15 1/2	26	5 1/4	90	47.00
14	60514	60564	100	3	X526	15 1/2	26	5 1/4	90	51.00
16	60516	60566	100	3	X529	15 1/2	29	5 1/4	100	55.00
18	60518	60568	100	3	X529	15 1/2	29	5 1/4	100	59.00
20	60520	60570	100	3	X532	15 1/2	32	5 1/4	110	64.00
22	60522	60572	100	3	X535	15 1/2	35	5 1/4	120	68.00
24	60524	60574	100	3	X535	15 1/2	35	5 1/4	120	71.00
26	60526	60576	100	3	X538	15 1/2	38	5 1/4	130	76.00
28	60528	60578	100	3	X538	15 1/2	38	5 1/4	130	80.00
30	60530	60580	100	3	X541	15 1/2	41	5 1/4	145	86.00

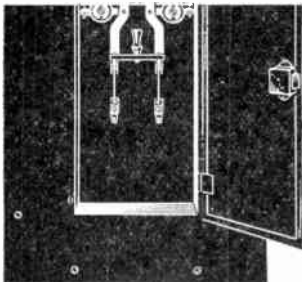
Panels with Fusible Mains



3-wire—Fusible Mains

4	61504	61554	30	3	X520	15 1/2	20	5 1/4	70	\$40.00
6	61506	61556	60	3	X523	15 1/2	23	5 1/4	80	47.00
8	61508	61558	60	3	X523	15 1/2	23	5 1/4	80	51.00
10	61510	61560	60	3	X526	15 1/2	26	5 1/4	90	55.00
12	61512	61562	60	3	X529	15 1/2	29	5 1/4	100	59.00
14	61514	61564	100	3	X535	15 1/2	35	5 1/4	120	67.00
16	61516	61566	100	3	X538	15 1/2	38	5 1/4	130	71.00
18	61518	61568	100	3	X538	15 1/2	38	5 1/4	130	76.00
20	61520	61570	100	3	X541	15 1/2	41	5 1/4	145	80.00
22	61522	61572	100	3	X544	15 1/2	44	5 1/4	155	85.00
24	61524	61574	100	3	X544	15 1/2	44	5 1/4	155	89.00
26	61526	61576	100	3	X547	15 1/2	47	5 1/4	165	93.00
28	61528	61578	100	3	X547	15 1/2	47	5 1/4	165	98.00
30	61530	61580	100	4	X552	17 1/2	52	5 1/4	180	103.00

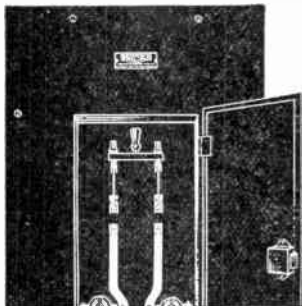
Panels with Fuseless Main Knife Switch



3-wire—Fuseless Main Switch

4	62504	62554	30	3	X526	15 1/2	26	5 1/4	90	\$52.00
6	62506	62556	60	3	X532	15 1/2	32	5 1/4	110	60.00
8	62508	62558	60	3	X532	15 1/2	32	5 1/4	110	64.00
10	62510	62560	60	3	X535	15 1/2	35	5 1/4	120	68.00
12	62512	62562	60	3	X538	15 1/2	38	5 1/4	130	72.00
14	62514	62564	100	3	X541	15 1/2	41	5 1/4	145	80.00
16	62516	62566	100	3	X544	15 1/2	44	5 1/4	155	84.00
18	62518	62568	100	3	X544	15 1/2	44	5 1/4	155	88.00
20	62520	62570	100	3	X547	15 1/2	47	5 1/4	165	92.00
22	62522	62572	100	4	X552	17 1/2	52	5 1/4	180	96.00
24	62524	62574	100	4	X552	17 1/2	52	5 1/4	180	100.00
26	62526	62576	100	4	X555	17 1/2	55	5 1/4	190	104.00
28	62528	62578	100	4	X555	17 1/2	55	5 1/4	190	108.00
30	62530	62580	100	4	X558	17 1/2	58	5 1/4	210	112.00

Panels with Fusible Main Knife Switch



3-wire—Fusible Main Switch

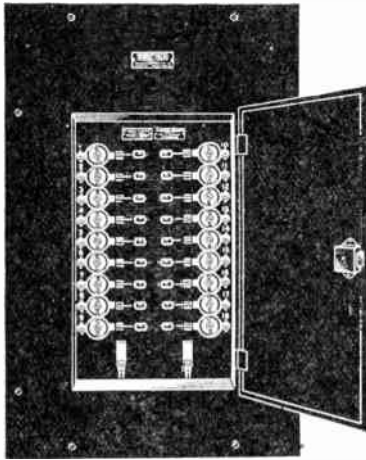
4	63504	63554	30	3	X526	15 1/2	26	5 1/4	90	\$55.00
6	63506	63556	60	3	X532	15 1/2	32	5 1/4	110	64.00
8	63508	63558	60	3	X532	15 1/2	32	5 1/4	110	68.00
10	63510	63560	60	3	X535	15 1/2	35	5 1/4	120	72.00
12	63512	63562	60	3	X538	15 1/2	38	5 1/4	130	76.00
14	63514	63564	100	3	X544	15 1/2	44	5 1/4	155	85.00
16	63516	63566	100	3	X547	15 1/2	47	5 1/4	165	89.00
18	63518	63568	100	3	X547	15 1/2	47	5 1/4	165	93.00
20	63520	63570	100	4	X552	17 1/2	52	5 1/4	180	97.00
22	63522	63572	100	4	X555	17 1/2	55	5 1/4	190	101.00
24	63524	63574	100	4	X555	17 1/2	55	5 1/4	190	105.00
26	63526	63576	100	4	X558	17 1/2	58	5 1/4	210	109.00
28	63528	63578	100	4	X558	17 1/2	58	5 1/4	210	113.00
30	63530	63580	100	4	X561	17 1/2	61	5 1/4	230	117.00

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

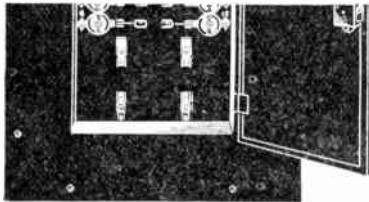
Type SOPK Benjamin-Starrett Open Front Panels with Cabinets

3-2-wire, 1-fuse

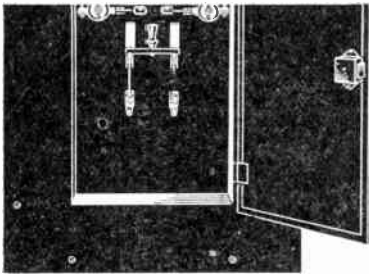
Branches—30-ampere Knife Switches—For Plug Fuses
Mains—250-125 Volts



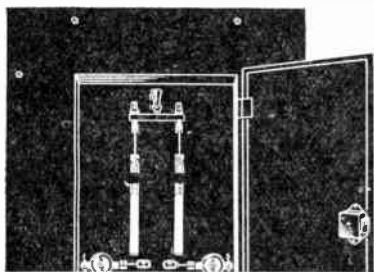
3-wire—Main Lugs Only



3-wire—Fusible Mains



3-wire—Fuseless Main Switch



3-wire—Fusible Main Switch

Panels with Main Lugs Only

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	60804	60854	30	3	X17	18	17	5 1/4	80	\$38.00
6	60806	60856	60	3	X20	18	20	5 1/4	90	42.00
8	60808	60858	60	3	X20	18	20	5 1/4	90	46.00
10	60810	60860	60	3	X23	18	23	5 1/4	100	52.00
12	60812	60862	60	3	X23	18	23	5 1/4	100	57.00
14	60814	60864	100	3	X26	18	26	5 1/4	115	61.00
16	60816	60866	100	3	X29	18	29	5 1/4	125	65.00
18	60818	60868	100	3	X29	18	29	5 1/4	125	72.00
20	60820	60870	100	3	X32	18	32	5 1/4	135	78.00
22	60822	60872	100	3	X32	18	32	5 1/4	135	83.00
24	60824	60874	100	3	X35	18	35	5 1/4	150	87.00
26	60826	60876	100	3	X38	18	38	5 1/4	160	92.00
28	60828	60878	100	3	X38	18	38	5 1/4	185	97.00
30	60830	60880	100	3	X41	18	41	5 1/4	...	105.00

Panels with Fusible Mains

4	61804	61854	30	3	X20	18	20	5 1/4	90	\$44.00
6	61806	61856	60	3	X23	18	23	5 1/4	100	50.00
8	61808	61858	60	3	X23	18	23	5 1/4	100	55.00
10	61810	61860	60	3	X26	18	26	5 1/4	115	61.00
12	61812	61862	60	3	X26	18	26	5 1/4	115	67.00
14	61814	61864	100	3	X35	18	35	5 1/4	150	73.00
16	61816	61866	100	3	X38	18	38	5 1/4	160	79.00
18	61818	61868	100	3	X38	18	38	5 1/4	160	85.00
20	61820	61870	100	3	X41	18	41	5 1/4	185	90.00
22	61822	61872	100	3	X41	18	41	5 1/4	185	95.00
24	61824	61874	100	3	X44	18	44	5 1/4	200	100.00
26	61826	61876	100	3	X47	18	47	5 1/4	210	106.00
28	61828	61878	100	3	X47	18	47	5 1/4	210	111.00
30	61830	61880	100	4	X52	20	52	5 1/4	225	117.00

Panels with Fuseless Main Knife Switch

4	62804	62854	30	3	X26	18	26	5 1/4	115	\$47.00
6	62806	62856	60	3	X32	18	32	5 1/4	135	57.00
8	62808	62858	60	3	X32	18	32	5 1/4	135	62.00
10	62810	62860	60	3	X35	18	35	5 1/4	150	67.00
12	62812	62862	60	3	X35	18	35	5 1/4	150	72.00
14	62814	62864	100	3	X41	18	41	5 1/4	200	86.00
16	62816	62866	100	3	X44	18	44	5 1/4	210	91.00
18	62818	62868	100	3	X44	18	44	5 1/4	210	97.00
20	62820	62870	100	3	X47	18	47	5 1/4	225	102.00
22	62822	62872	100	3	X47	18	47	5 1/4	225	107.00
24	62824	62874	100	4	X52	20	52	5 1/4	240	112.00
26	62826	62876	100	4	X55	20	55	5 1/4	260	117.00
28	62828	62878	100	4	X55	20	55	5 1/4	260	122.00
30	62830	62880	100	4	X58	20	58	5 1/4	290	127.00

Panels with Fusible Main Knife Switch

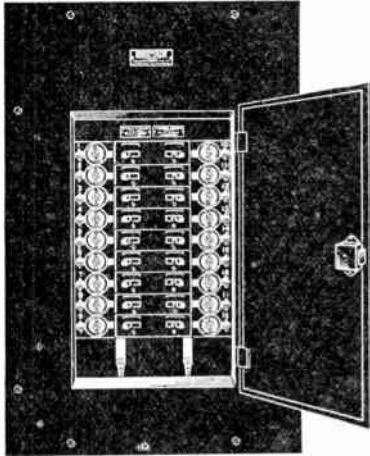
4	63804	63854	30	3	X26	18	26	5 1/4	115	\$52.00
6	63806	63856	60	3	X32	18	32	5 1/4	135	59.00
8	63808	63858	60	3	X32	18	32	5 1/4	135	64.00
10	63810	63860	60	3	X35	18	35	5 1/4	150	68.00
12	63812	63862	60	3	X35	18	35	5 1/4	150	71.00
14	63814	63864	100	3	X44	18	44	5 1/4	200	82.00
16	63816	63866	100	3	X47	18	47	5 1/4	210	87.00
18	63818	63868	100	3	X47	18	47	5 1/4	210	96.00
20	63820	63870	100	4	X52	20	52	5 1/4	225	103.00
22	63822	63872	100	4	X52	20	52	5 1/4	225	110.00
24	63824	63874	100	4	X55	20	55	5 1/4	240	114.00
26	63826	63876	100	4	X58	20	58	5 1/4	260	120.00
28	63828	63878	100	4	X58	20	58	5 1/4	260	125.00
30	63830	63880	100	4	X61	20	61	5 1/4	290	132.00

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

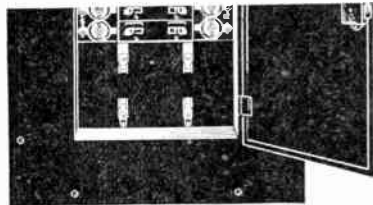
Type SOPT Benjamin-Starrett Open Front Panels with Cabinets

3-2-wire, 1-fuse

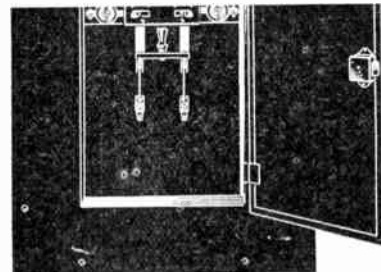
Branches—30-ampere, 125 volt Tumbler Switches—For Plug Fuses
Mains—250-125 Volts



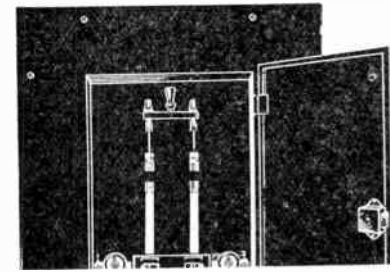
3-wire—Main Lugs Only



3-wire—Fusible Mains



3-wire—Fuseless Main Switch



3-wire—Fusible Main Switch

Panels with Main Lugs Only

No. of Circuits	PANEL AND BARRIER WITH CABINET		Cap. of Mains Amp.	Gutter Space Inches	Box No.	BOX DIMENSIONS, INCHES			Approx. Ship. Wt., Lbs.	Price Each
	Surface Cat. No.	Flush Cat. No.				Wide Outside	High Outside	Deep Inside		
4	60704	60754	30	3	X17	18	17	5 1/4	80	\$40.00
6	60706	60756	60	3	X20	18	20	5 1/4	90	51.00
8	60708	60758	60	3	X20	18	20	5 1/4	90	56.00
10	60710	60760	60	3	X23	18	23	5 1/4	100	62.00
12	60712	60762	60	3	X23	18	23	5 1/4	100	68.00
14	60714	60764	100	3	X26	18	26	5 1/4	115	80.00
16	60716	60766	100	3	X29	18	29	5 1/4	125	86.00
18	60718	60768	100	3	X29	18	29	5 1/4	125	92.00
20	60720	60770	100	3	X32	18	32	5 1/4	135	99.00
22	60722	60772	100	3	X32	18	32	5 1/4	135	106.00
24	60724	60774	100	3	X35	18	35	5 1/4	150	113.00
26	60726	60776	100	3	X38	18	38	5 1/4	160	120.00
28	60728	60778	100	3	X38	18	38	5 1/4	160	127.00
30	60730	60780	100	3	X41	18	41	5 1/4	185	134.00

Panels with Fusible Mains

4	61704	61754	30	3	X20	18	20	5 1/4	90	\$50.00
6	61706	61756	60	3	X23	18	23	5 1/4	100	61.00
8	61708	61758	60	3	X23	18	23	5 1/4	100	67.00
10	61710	61760	60	3	X26	18	26	5 1/4	115	73.00
12	61712	61762	60	3	X26	18	26	5 1/4	115	79.00
14	61714	61764	100	3	X35	18	35	5 1/4	150	93.00
16	61716	61766	100	3	X38	18	38	5 1/4	160	99.00
18	61718	61768	100	3	X38	18	38	5 1/4	160	106.00
20	61720	61770	100	3	X41	18	41	5 1/4	185	112.00
22	61722	61772	100	3	X41	18	41	5 1/4	185	117.00
24	61724	61774	100	3	X44	18	44	5 1/4	200	123.00
26	61726	61776	100	3	X47	18	47	5 1/4	210	129.00
28	61728	61778	100	3	X47	18	47	5 1/4	210	135.00
30	61730	61780	100	4	X52	20	52	5 1/4	225	141.00

Panels with Fuseless Main Knife Switch

4	62704	62754	30	3	X26	18	26	5 1/4	115	\$58.00
6	62706	62756	60	3	X32	18	32	5 1/4	135	69.00
8	62708	62758	60	3	X32	18	32	5 1/4	135	76.00
10	62710	62760	60	3	X35	18	35	5 1/4	150	82.00
12	62712	62762	60	3	X35	18	35	5 1/4	150	88.00
14	62714	62764	100	3	X41	18	41	5 1/4	185	107.00
16	62716	62766	100	3	X44	18	44	5 1/4	200	115.00
18	62718	62768	100	3	X44	18	44	5 1/4	200	122.00
20	62720	62770	100	3	X47	18	47	5 1/4	210	128.00
22	62722	62772	100	3	X47	18	47	5 1/4	210	134.00
24	62724	62774	100	4	X52	20	52	5 1/4	225	140.00
26	62726	62776	100	4	X55	20	55	5 1/4	240	146.00
28	62728	62778	100	4	X55	20	55	5 1/4	240	152.00
30	62730	62780	100	4	X58	20	58	5 1/4	260	159.00

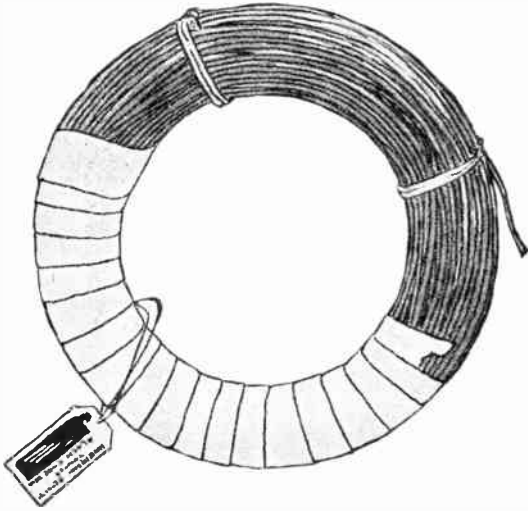
Panels with Fusible Main Knife Switch

4	63704	63754	30	3	X26	18	26	5 1/4	115	\$67.00
6	63706	63756	60	3	X32	18	32	5 1/4	135	78.00
8	63708	63758	60	3	X32	18	32	5 1/4	135	84.00
10	63710	63760	60	3	X35	18	35	5 1/4	150	90.00
12	63712	63762	60	3	X35	18	35	5 1/4	150	96.00
14	63714	63764	100	3	X44	18	44	5 1/4	200	116.00
16	63716	63766	100	3	X47	18	47	5 1/4	210	122.00
18	63718	63768	100	3	X47	18	47	5 1/4	210	128.00
20	63720	63770	100	4	X52	20	52	5 1/4	225	134.00
22	63722	63772	100	4	X52	20	52	5 1/4	225	140.00
24	63724	63774	100	4	X55	20	55	5 1/4	240	147.00
26	63726	63776	100	4	X58	20	58	5 1/4	260	154.00
28	63728	63778	100	4	X58	20	58	5 1/4	260	161.00
30	63730	63780	100	4	X61	20	61	5 1/4	290	168.00

NOTE.—Panels arranged for cartridge fuses but otherwise the same as panels listed on this page, will be furnished at the above prices.

Bare and Insulated Wires

General Information



Stocks

From our catalog it will be seen that the Western Electric Company carries in stock a supply of many different types and sizes of wire covering a wide range of uses and at a considerable variation in price. We carry at our various distributing houses a considerable stock of material, which, in addition to the large reserve stock carried by the manufacturers from whom we buy, gives this company a unique and comprehensive assortment. We handle thousands of types of wires, bare and insulated, suitable for general purposes, and, of course, in addition, special wires and cables for aerial, underground, submarine, mine, signal, telephone, and telegraph service.

Factory Facilities

Factory facilities for the manufacture of rubber covered wires and cables have been continually improved, so that to-day the Western Electric Company is in a position to offer its customers unsurpassed facilities for the production of rubber insulated wires, and we are as well able to have produced promptly special wires and cables such as are used by the railroads, the mines and the United States Government.

Price and Quality

The Western Electric Company sells its wires and cables at prices consistent with the quality of material used, and our customers will find that we are in line with other manufacturers producing high grade wire.

Special Wires

Although the foregoing refers principally to the standard types of rubber covered wire, the same holds good to other classes of rubber covered wire handled by the Western Electric Company. We are in a position to furnish not only material from a large stock of wires and cables, which meet these ordinary specifications, and from which shipment can usually be made as soon as order is received, but we also have exceptional facilities for executing promptly all orders for emergency or special cables even of the most complicated construction.

Service

Our distributing houses are so well located and our stocks are so large that we are able to give customers service of a quality that cannot be exceeded by any of our competitors in any part of the country, and salesmen can unhesitatingly assure their customers that all stock of Western Electric wire receives the most careful scrutiny and inspection by men experienced in that line of work.

Bare and Insulated Wires

Wiring of Buildings

Classes of Wiring—Wiring Rules

CLASSES OF WIRING. Wires may be installed in buildings:

- (1) In conduits or raceways.
- (2) On porcelain knobs.

If the wiring must be enclosed, two systems are available:

- (1) Concealed conduit wiring.
- (2) Concealed knob and tube wiring.

If the wiring may be exposed, three systems are available:

- (1) Open conduit wiring.
- (2) Metal raceway wiring.
- (3) Exposed knob and cleat wiring.

In general, the above systems are used as follows:

CONCEALED CONDUIT WIRING. Public buildings, office buildings, hotels, apartment houses and high class residences.

CONCEALED OR KNOB AND TUBE WIRING. Inexpensive frame houses, where it is not a serious drawback that wall and floors must be opened to make repairs.

OPEN CONDUIT WIRING. High class factories, power stations, warehouses.

METAL RACEWAY WIRING. Office buildings, factories, warehouses and garages.

EXPOSED KNOB AND CLEAT WIRING. Factories and mills.

Selections of Wires and Cables for Given Service

The type of wire or cable to use for a given service cannot always be determined without a knowledge of both the conditions of service and the capabilities of the various types of wires and cables available. The following tables give a general idea of the types used for various services:

- A. Wires and cables for indoor use.
- B. Flexible cords.
- C. Wires and cables for outdoor use.
- D. Wires and cables for vehicles.
- E. Wires and cables for ships.
- F. Wires and cables for mines.
- G. Telegraph wires.
- H. Telephone wires.

A description of each type of wire or cable will be found under the given name in the catalog section of this book.

A. Wires and Cables for Indoor Use

Type of Wiring	Condition of Service	SINGLE CONDUCTOR*		MULTIPLE CONDUCTOR	
		Smaller than No. 6 A.W.G.	Larger than and No. 6 A.W.G.	Smaller than and No. 6 A.W.G.	Larger than and No. 6 A.W.G.
Flexible conduit	Dry places	AC	AC	AC	AC
	Damp places	ACL	ACL	ACL	ACL
Concealed knob and tube	.....	R	{ R Double braid R Double braid RL RL }	.....	.....
	.....	R		R	R
Conduit	{ Dry places	R	RL	R	R
	{ Damp places }					Double braid	Double braid
Fixtures	In fixtures	F	.....	.....	.....
	Open	{ Ordinary places	R	{ R Double braid SB or SBW or SBW }
{ Extra hot places, Power stations, Substations, etc. }		Station Cable		
On electric machines	Flexible connections	Apparatus Cable		.....	.....
On motion picture machines	{ Flexible connections }	Motion Picture Machine Cable		.....	.....

*Except in power stations, substations, etc., single-conductor cables are not allowed by the National Electrical Code, for pressures over 600 volts between wires. No wires for over 35 volts are allowed in buildings other than those mentioned above.

Bare and Insulated Wires

Continued

Key to Type Letters

(National Board of Fire Underwriters' Type Letters)

Letter	Type	Name
R	Rubber Insulated.....	Code House Wire
S B	Slow Burning	Slow Burning "
S B W	" " Weather-proof	" " Weather-proof Wire
A C	Armored Braided.....	Armored Wire
A C L	" " and Leaded.....	Leaded Armored Wire
R L	Rubber, Lead.....	Lead Covered Cable
F	Rubber Insulated.....	Fixture Wire

B. Flexible Cords

Use	Type Letter	Name
As pendants or portables in dry places.....	C	Lamp cord
Where not subject to hard usage.....	PD	Twisted portable
	PO	Parallel cord
	SJ	Type SJ
For hard usage.....	P	Reinforced cord
	S	Hard service cord
	CA	Armored cord
Pendants damp places.....	PA	Armor reinf. cord
	CB	Brewery cord
	CC	Canvasite cord
	S	Hard service cord
	SJ	Type SJ
	PWp	Reinforced cord wp.
	PkWp	Packhouse cord
Portable damp places.....	PAWp	Armored reinf. cord wp.
	S	Hard service cord
	SJ	Type SJ
Theatre Stages.....	T	Stage Cable
Theatre Borders.....	S	See type S above
	B	Border light cable
Elevator lighting and control	E	Elevator cable
	S	See type S above
Portable heaters.....	H	Heater cord

C. Wires and Cables for Outdoor Use

Use	Name
Aerial on messenger cable...	Aerial cable
Connecting suspended arc lamp to pole.....	Mast-arm cable
	Deck cable (See B. flexible cords)
Portable.....	Paper insulated cable or varnished cambric insulated cables with lead sheath
On wall (outdoors).....	Varnished cambric insulated cables with steel tape armor
On vibrating structures.....	Park cable
Buried in the ground.....	Signal wire
Signal wires in trunking, etc...	Paper insulated cable
In ducts.....	Armored submarine cable
Under water.....	

D. Wires and Cables for Elevators

Connecting controller on car to stationary equipment...	Elevator control cable
Connecting lights on car to source of supply.....	Elevator lighting cable
Wiring lights on elevators..	Code, house wire

Bare and Insulated Wires

Continued

Railroad Cars and Locomotives

Use	Name
Lighting by axle or similar systems.....	Car lighting cable
Connecting controllers, contactors, etc., of multiple unit cars.....	Train cables
Lighting of cars from traction circuits.....	Car cable
Wiring electric headlights..	Headlight wire

E. Wires and Cables for Ships

Use	Name
General wiring in conduits..	30% Hevea house wire, stranded if larger than No. 12
Exposed wiring.....	Basket-weave armored cable
Portables for use on decks, etc... ..	Deck cable

F. Wires and Cables for Mines

Use	Name
Open wiring to three-phase motors.....	Mine cable, triplex
Operating locomotives, hoists, drills, etc.....	Mine cable, twin (flat)
Operating mining locomotives which are run on steel track rails available for return current.....	Mine cable, single conductor
Hanging in shaft.....	Armored cable (with rubber insulation)

G. Telegraph Wires

Use	Name
Outdoor wiring.....	See telephone wires
Indoor wiring.....	Special. Information on request

H. Telephone Wires and Cables

Use	Name
Indoor wiring	Telephone wire, interior
Short runs of wire suspended in rings and similar outdoor use where span is short.....	Telephone wire, bridle
In ducts.....	Dry core cable
Connecting terminals on poles to subscribers' premises by a span.....	Telephone wire, drop
Connections in central offices between different switchboard terminals and outside cable terminals....	Telephone wire, distributing frame
Joining ends of cable conductors to terminals.....	Telephone wire, pot-head
Underground entrances to subscribers' premises... ..	Telephone wire, lead covered

Bare and Insulated Wires

Continued
Underwriters' Laboratories and Seal



The Underwriters' Laboratories is a Corporation which maintains laboratories for the examination and testing of appliances and devices, and enters into contracts with the owners and manufacturers of such appliances and devices respecting the recommendation there-

of to insurance organizations.

Its chief financial support has been received from the National Board of Fire Underwriters under whose general direction the work is carried on. It does its work for service and not for profit.

The Underwriters' Laboratories prescribe certain standards which must be met by the users in order to obtain fire insurance.

The principal method of carrying out this supervision of listed products is by inspection at the factories by the Laboratories' engineers and the labeling of standard materials whereby they may be recognized wherever found. In addition, systematic supplementary examinations and tests are made at the laboratories of samples of labeled goods purchased in the open market.

The labels for wire are issued in seven denominations which are of the same size and of the general appearance shown by the following illustrations:

The seven denominations vary only with respect to the length of wire which they represent, and are as follows:

100, 200, 250, 300, 400, 500 and 1000 feet.

The blank space at the bottom of the label is for a serial number by means of which a record is kept of the name of the manufacturer and the date of manufacture.

Code Cables and Wires

Code wires are made in accordance with the requirements of the National Electrical Code and are inspected by the National Board of Fire Underwriters, whose label is attached to each length certifying that it has passed inspection.

Type letters are assigned to wires in order to briefly indicate the construction details. The following type designations are applied to all rubber covered wires intended for use in indoor lighting and power equipment. A description of each type will be found under the name indicated below.

Type Letter	Name
A C	Rubber Insulated Wires for use in Armored Cables.
A C L	Lead Covered Wires for use in Armored Cables.
B	Border-Light Cable.
C	Lamp Cord.
C A	Armored Cord.
C B	Brewery "
C C	Canvasite "
E	Elevator Lighting Cable. Elevator Control Cable.
H	Heater Cord.
P	Reinforced Cord.
P A	Armored Reinforced Cord.
P A Wp	Moisture-proof Armored Reinforced Cord.
P k Wp	Packhouse Cord.
P O	Parallel Cord.
P D	Twisted Parallel Cord.
P Wp	Reinforced Cord, Moisture Proof.
RF 64	Fixture Wire " Insulation.
RF 32	" " " "
RF	" " " "
R	Code, House Wire Single Conductor.
R D	" " " Two
R D L	Lead Covered Rubber Insulated Cable, Two Conductor.
R L	" " " Single
S	Hard Service Cord.
S B	Slow Burning Wire.
S B W	" " Weatherproof Wire.
S J	Type S J Cord.
T	Stage Cable.
WP	Weatherproof Wire.

Type Numerals	Maximum Working Pressure Volts	Type Numerals	Maximum Working Pressure Volts
15	1500	50	5000
25	2500	70	7000
35	3500		

For example a No. 4 single conductor rubber insulated wire, intended for a 1100 volt circuit, would be designated by R-15.

**Rubber Covered Wire Data
Insulation**

Habirshaw wires and cables are insulated with rubber, varnished cambrie or paper.

Three standard and several special grades of rubber compounds are made. The highest standard grade, known as 30 per cent. hevea compound, is favored for pressures exceeding 2500 volts, and many engineers prefer to use it for all pressures exceeding 600 volts. It is also used for low pressure work where the greatest reliability and permanence is desired, as in high grade buildings and railway signal work. Habirshaw 30 per cent. hevea compounds are made in accordance with either the specification of the Joint Rubber Insulation Committee, which is used by the War Department, the Navy Department and other branches of the Government, and by the most important railroads, lighting companies, and industrial organizations, or the specification of the railway signal engineers (A. R. A. Signal Division), which is used by the signal departments of the principal railroads.

An intermediate grade of rubber compound, known as "Red Core" contains over 25 per cent of rubber, and was developed by the Habirshaw Research Laboratories to obtain the longest life, in proportion to the cost. "Red Core" wires are intermediate in cost between 30 per cent hevea and Code wires. The long life of "Red Core" wire is demonstrated by its extraordinary showing when subjected to accelerated ageing tests.

"Black Core" rubber compound is used for the ordinary wiring of buildings. It is made with over 20 per cent of rubber in accordance with the requirements of the National Electrical Code, and is inspected by representatives of the Underwriters' Laboratories in order to be certified that it is in accordance with the regulations of the National Board of Fire Underwriters. "Black Core" wire, however, not only meets with the requirements of these regulations, but exceeds them by a wide margin, the circumstance to which it owes its high reputation. Indeed, it has been the policy of the Habirshaw company to make the name "Black Core" represent a standard of quality.

Varnished cambrie insulation is used to some extent for large cables in buildings. It is particularly useful for high pressure cables in power stations and substations.

Paper insulation is used for outside cables but not generally for cables in buildings.

Thirty Per Cent Hevea Wire and Cable

Thirty per cent hevea rubber insulated wires and cables are used in place of Code wires, wherever circumstances justify the extra expenditure, to obtain added safety and longer life.

Wires of this grade are recommended for public buildings and high class dwellings, and for general use for voltages over 2500.

Habirshaw 30 per cent hevea rubber compound is made in accordance with the specification of the Joint Rubber Insulation Committee.

This Committee was appointed at a conference of users and manufacturers of rubber insulation in which the United States Government and several of the principal railroad companies and manufacturers participated to develop a specification and an analytical procedure for the highest rubber grade insulation. After six years of research the Committee presented a report containing a specification which was approved by the Standards Committee of the American Institute of Electrical Engineers and published by order of the Board of Directors in the Proceedings of April, 1917.

Among the important organizations which have adopted this specification are the American Electric Railway (Engineering) Association, the American Society for Testing Materials, The Association of Railway Electrical Engineers, The Baltimore & Ohio Railroad Company, The Interborough Rapid Transit Company (New York), New York Central Railroad Company (Electrical Department), The Panama Canal, and the Signal Corps U. S. Army. (Copies of this specification may be obtained from the American Society for Testing Materials.)

All types of rubber insulated wires and cables are made with 30 per cent hevea rubber compound if so ordered.

Rubber Covered Wire Data



Red Core Wire

Red Core wire is a distinctive product of the Habirshaw Research Laboratories, developed to meet the demand for wire of a quality intermediate between the 30 per cent hevea and code grades.

It is insulated with a compound which has been found by experience and experiment to be of a remarkably permanent character. It is made in all the various forms usually made with code compound except cords.

Black Core Wire and Cable

Habirshaw Black Core wire is code wire, made by an organization with a generation of experience in rubber-covered wire manufacture in back of it, and three well equipped research laboratories to keep it abreast of the times.

Black Core wire is made in single and double braid, or lead sheath and with one, two or more separately insulated conductors. See under "Code Wires and Cables" for a list of all types of wires and cables insulated with Black Core Compound.

While Habirshaw Black Core compound is intended primarily to meet the requirements of the National Electric Code, it possesses decidedly superior electrical, mechanical and chemical properties.



Code Requirements

Test Voltage	
14-8 A. W. G.	1500
6-2	2000
1-0000	2500
Return after stretch 2 to 5 ins.	2 1/2 in.
Breaks when stretched from 2 in. to	6 in.
Tensile strength, lbs. per sq. in.	50 J

Habirshaw Rubber Covered Flexible Cable



Size B. & S.	Carrying Cap. Amps.	No. of Wires	Size Wires	Rubber Wall In.	Diameter Over All In.	Approx. Wt., Lbs. per 1000 Feet
0000	225	133	.0399	5/64	.850	900
000	175	133	.0356	5/64	.780	730
00	150	133	.0317	5/64	.725	610
0	125	133	.0282	5/64	.670	490
1	100	133	.0251	5/64	.610	415
2	90	133	.0226	5/64	.550	325
4	70	49	.0291	5/64	.477	212
6	50	49	.0231	5/64	.423	146
8	35	49	.0183	3/64	.289	83
10	25	37	.0168	3/64	.240	55
12	20	19	.0186	3/64	.218	40
14	15	19	.0147	3/64	.198	30

Habirshaw Rubber Covered Braided Solid Wires and Cables

Single Conductor—600 Volts N. E. C. S.



Size Solid	Thick-ness Insulation Inches	Approved Carrying Capacity Amperes	No. of Braids	Feet per Coil	Coils per Burlap Bag Paper Wrapped	Feet per Burlap Bag	Gross Weight per Bag or Coil Pounds
18	1/64	3	1	1000	5	5000	50
18	1/32	3	1	1000	5	5000	70
16	1/64	6	1	1000	5	5000	68
16	1/32	6	1	1000	5	5000	91
14	3/64	15	1	500	5	2500	74
14	1/16	15	2	500	5	2500	84
12	3/64	20	1	500	5	2500	103
12	1/16	20	2	500	5	2500	108
10	3/64	25	1	500	5	2500	138
10	1/16	25	2	500	5	2500	145
8	3/64	35	1	500	Paper Wrapped Coil		38
8	1/16	35	2	500	"	"	40
6	3/64	50	1	500	"	"	67
6	1/16	50	2	500	"	"	69
4	3/64	70	1	500	"	"	96
4	1/16	70	2	500	"	"	99

Habirshaw Rubber Covered Braided Stranded Wires and Cables

Single Conductor—600 Volts N. E. C. S.



Size Stranded	Thick-ness Insulation Inches	Approved Carrying Capacity Amperes	No. of Braids	Feet per Coil	Coils per Burlap Bag Paper Wrapped	Feet per Burlap Bag	Gross Weight per Bag or Coil Pounds
14	3/64	15	1	500	5	2500	80
14	1/16	15	2	500	5	2500	92
12	3/64	20	1	500	5	2500	108
12	1/16	20	2	500	5	2500	118
10	3/64	25	1	500	5	2500	146
10	1/16	25	2	500	5	2500	158
8	3/64	35	1	500	Paper Wrapped Coil		40
8	1/16	35	2	500	"	"	43
6	3/64	50	1	500	"	"	68
6	1/16	50	2	500	"	"	70
4	3/64	70	1	500	"	"	98
4	1/16	70	2	500	"	"	101
2	3/64	90	1	500	"	"	139
2	1/16	90	2	500	"	"	144

Size Stranded	Length Standard Package Feet	Approved Carrying Capacity Amperes	Gross Weight Pounds per Pkg.	Size Reel Inches Corrugated Paper Wrap
1	1000	100	433	30
1/0	1000	125	518	30
2/0	1000	150	617	30
3/0	1000	175	738	36
4/0	1000	125	938	36

Habirshaw Rubber Covered Braided Solid Wire

Duplex Conductor—600 Volts N. E. C. S.

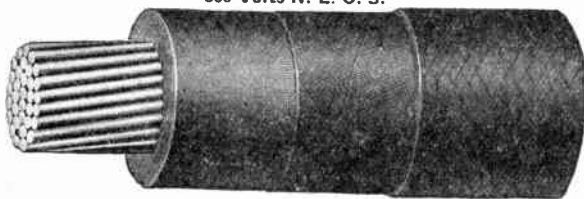


Coils paper wrapped.

Size Solid	Thickness Insulation Inches	Approved Carrying Capacity Amperes	Feet per Coil	Gross Weight per Bag or Coil Pounds
14	3/64	15	500	33
12	3/64	20	500	43
10	3/64	25	500	57
8	3/64	35	500	79

Unless otherwise specified the above lengths and packing will be furnished. Can be furnished with white braid.

Habirshaw Rubber Covered Braided Stranded Circular Mil Cables
Single Conductors
600 Volts N. E. C. S.



Size Circular Mils	Length Standard Package Feet	Approved Carrying Capacity Amperes	Gross Weight per Pkg. Pounds	Size Reel Inches Corrugated Paper Wrap
250000	1000	240	1097	36
300000	1000	275	1424	42
350000	1000	300	1597	42
400000	1000	325	1778	42
450000	1000	370	1945	42
500000	1000	400	2113	42
550000	500	...	1308	42
600000	500	450	1393	42
650000	500	...	1482	42
700000	500	500	1565	42
750000	500	...	1655	42
800000	500	550	1737	42
850000	500	...	1820	42
900000	500	600	1909	42
950000	500	...	1992	42
1000000	500	650	2080	42
1250000	500	750	5365	*48
1500000	500	850	6150	*48
1750000	500	950	7380	*56
2000000	500	1050	8200	*56

Unless otherwise specified the above lengths and packing will be furnished. Where special lengths are required, this should be specially noted on the orders.

*Lagged reels.

Methods of Packing Parac Rubber Cover Wires and Cables

Shipping weight includes reels, paper or burlap.

Size	Standard Package Feet	Type of Package	Ship., Wt Lbs., per 1000 Ft.
1,000,000	500	Reel 42 in. Diam.	4000
800,000	600	" 42 " "	3270
700,000	700	" 42 " "	2890
600,000	800	" 42 " "	2490
500,000	1000	" 42 " "	2060
400,000	1200	" 42 " "	1700
350,000	1200	" 42 " "	1540
300,000	1500	" 42 " "	1340
250,000	1800	" 42 " "	1130
0000	2000	" 42 " "	940
000	2200	" 42 " "	790
00	2500	" 42 " "	660
0	3000	" 42 " "	550
1	500	Coil	370
2	500	"	300
4	500	"	200
6	500	"	140
8	500	"	80
10	2500	Bundle 5 Coils	55
12	2500	" 5 " "	41
14	2500	" 5 " "	30
16	5000	" 5 " "	17
18	5000	" 5 " "	14

Fixture Wire

16	5000	Bundle 5 Coils	17
18	5000	" 5 " "	11

Duplex Wire

6	500	Coil	280
8	500	"	160
10	500	"	120
12	500	"	90
14	500	"	70

Twisted Pairs

14	1000	Coil	65
16	1000	"	40
18	1000	"	28
19	1000	"	25

Habirshaw Rubber Covered House Wire
Three Conductor—Solid



Each conductor of the Three-Conductor Rubber Covered House Wire is insulated by Black Core rubber compound. The covering over insulation is a 2 to 6 A. W. G., one rubber filled tape, and an 8 to 14 A. W. G., one saturated braid.

The conductors are grouped by twisting. They are filled with jute, covered by one rubber filled tape. The whole is covered by a saturated cotton braid.

Size A.W.G.	Thickness of Insulation Each Conductor 64ths Inch	Diameters Over Outside Braid Inches	Weight per 1000 Ft. Lbs.
2	4	.98	885
3	4	.91	732
4	4	.86	612
5	4	.81	511
6	4	.77	431
8	3	.63	278
10	3	.57	209
12	3	.53	158
14	3	.49	125

Habirshaw Code House Cable
Three-conductor—Stranded



The 3-conductor stranded code house cable is used under the same conditions as solid 3-conductor code house cable unless greater flexibility is required, especially in larger sizes.

Number of conductors, three.

Range of sizes, 0000 to 14 A. W. G., stranded.

Insulation on each conductor, "Black Core" rubber compound.

Covering over insulation, 0000 to 6 A. W. G., one rubber filled tape, 8 to 14 A. W. G., one saturated braid.

Grouping of conductors, twisted.

Fillers, jute.

Covering over jute, one rubber filled tape.

Covering over all, one saturated braid.

Size A. W. G.	No. of Strands	Thickness of Insulation 64ths Inch	Diameter Over Outside Braid Inches	Weight per 1000 Ft. Lbs.
0000	19	5	1.68	2640
000	19	5	1.55	2152
00	19	5	1.44	1763
0	19	5	1.34	1450
1	19	5	1.25	1232
2	7	4	1.05	939
3	7	4	.98	778
4	7	4	.92	648
5	7	4	.87	542
6	7	4	.82	458
8	7	3	.67	297
10	7	3	.60	219
12	7	3	.54	166
14	7	3	.50	132

Reels

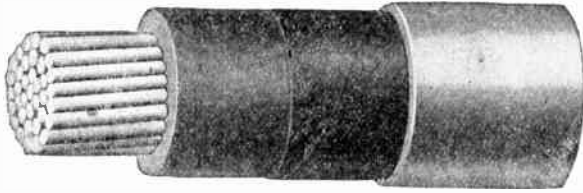
Some sizes and kinds of wires necessarily must be shipped on reels.

In such cases the reels will be billed at cost and credited at full billing value, less return freight charges, if returned to mill within six months of shipping date.

Obtain return tags and shipping instructions before shipping reels.

**Habirshaw Rubber and Lead Covered
Circular Mil Cable**

Single Conductors
600 Volts N. E. C. S.



Size A. W. G.	No. of Strands Concentric	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diameter Over Lead Inches	Approx. Ship. Wt. Lbs., per 1000 Ft.
2000000	127	8	7	2.14	11176
1750000	127	8	7	2.03	10189
1500000	91	8	7	1.92	8983
1250000	91	8	7	1.79	7816
1000000	61	7	6	1.60	6266
950000	61	7	6	1.57	6054
900000	61	7	6	1.54	5851
850000	61	7	6	1.51	5635
800000	61	7	6	1.47	5431
750000	61	7	6	1.44	5222
700000	61	7	6	1.41	5004
650000	61	7	6	1.37	4791
600000	61	7	6	1.34	4378
550000	61	7	6	1.30	4161
500000	37	6	5	1.20	3568
450000	37	6	5	1.15	3364
400000	37	6	5	1.11	3138
350000	37	6	5	1.06	2829
300000	37	6	5	1.01	2600
250000	37	6	5	.96	2364

Stranded Cable, Single Conductor

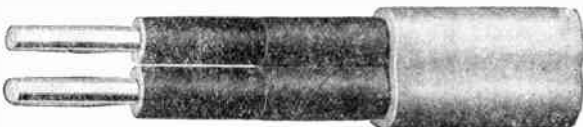
0000	19	5	4	.85	1909
000	19	5	4	.79	1504
00	19	5	4	.74	1336
0	19	5	4	.69	1196
1	19	5	4	.65	1080
2	7	4	4	.58	837
3	7	4	4	.55	758
4	7	4	4	.52	692
5	7	4	4	.49	635
6	7	4	4	.47	588

Solid Cable, Single Conductor



Size A. W. G.	Thickness of Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Outside Diameter Over Lead Inches	Approx. Ship. Wt. Lbs., per 1000 Ft.
4	4	4	.49	655
5	4	4	.47	604
6	4	4	.45	561
8	3	3	.35	314
10	3	3	.33	303
12	3	2	.27	205
14	3	2	.26	188

Solid Cable, Duplex Conductor



Size A. W. G.	Thickness Insulation 64ths Inch	Thickness of Lead Sheath 64ths Inch	Diam. Over Lead Inches	Approx. Ship. Wt. Lbs., per 1000 Ft.
6	4	4	.45x.76	867
8	3	3	.35x.60	545
10	3	3	.32x.55	485
12	3	3	.30x.51	402
14	3	2	.26x.44	272

**Habirshaw Lead Covered Cable—Twin,
Stranded**

600 Volts, N. E. C. S.

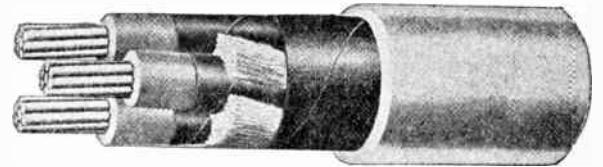


Stranded twin lead covered cable is used under the same conditions as stranded single conductor lead covered wire. Sizes range from 0000 to 14 A. W. G., stranded. Black Core rubber compound insulation on each conductor. Rubber filled tape or braid covering over insulation. Conductors grouped parallel. When specified, round cable with two conductors twisted will be furnished. Covering over all is lead sheath. Type letter R D L.

Size A.W.G.	No. of Strands Concen- tric	Thick- ness Insul- ation 64ths In.	Thick- ness Lead Sheath 64ths In.	Diam. over Lead Inches	Wt. per 1000 Ft., Lbs.	Type of Pkg.	Ft. in Pkg.	Approx. Ship. Wt. of Pkg. Lbs.
0000	19	5	5	.87x1.59	3065	Reel	1000	3445
000	19	5	5	.82x1.47	2622	"	1000	3002
00	19	5	5	.76x1.37	2300	"	1000	2580
0	19	5	5	.72x1.28	2030	"	1000	2410
1	19	5	5	.68x1.20	1771	"	1000	2151
2	7	4	4	.58x1.02	1298	"	1000	1478
3	7	4	4	.54x .96	1160	"	1000	1340
4	7	4	4	.52x .90	1027	"	1000	1207
5	7	4	4	.49x .85	920	"	1000	1000
6	7	4	4	.47x .81	844	"	1000	924
8	7	3	3	.37x .64	504	"	1000	584
10	7	3	3	.34x .58	427	"	1000	507
12	7	3	3	.31x .53	368	"	1000	423
14	7	3	2	.26x .46	233	"	1000	288

**Habirshaw Lead Covered Cable
Three-conductor, Stranded**

600 Volts, N. E. C. S.



Three-conductor lead covered cable, stranded, is used for three-phase circuits where extra flexibility is required in the smaller sizes and always in the larger sizes where solid conductors would make the cable too stiff to handle.

Contains three conductors. Sizes range from 0000 to 14 A. W. G. Each conductor insulated with Black Core rubber compound. Insulation covered by rubber filled tape. Conductors twisted, filled with jute. Rubber-filled tape covering over jute. Lead sheath covering over all.

Size A.W.G.	No. of Strands Concen- tric	Thick- ness Insul- ation 64ths In.	Thick- ness Lead Sheath 64ths In.	Diam. Over Lead In.	Wt. per 1000 Ft. Lbs.	Type of Pkg.	Ft. in Pkg.	Approx. Ship. Wt. of Pkg. Lbs.
0000	19	5	7	1.81	5459	Reel	1000	6109
000	19	5	6	1.65	4353	"	1000	5003
00	19	5	6	1.54	3807	"	1000	4457
0	19	5	6	1.44	3352	"	1000	4002
1	19	5	6	1.35	2973	"	1000	3435
2	7	4	5	1.16	2204	"	1000	2664
3	7	4	5	1.10	1968	"	1000	2348
4	7	4	5	1.04	1768	"	1000	2148
5	7	4	5	.98	1594	"	1000	1974
6	7	4	4	.90	1237	"	1000	1617
8	7	3	4	.75	934	"	1000	1114
10	7	3	4	.68	787	"	1000	967
12	7	3	3	.59	541	"	1000	621
14	7	3	3	.55	477	"	1000	557

Habirshaw Park Cable

Park cables are used for transmission and distribution where it is preferable to bury the cables directly in the ground rather than to put them in ducts. Any kind of cable will be furnished with park cable covering, but the following types are in general use for distribution purposes.

Standard park cables (0-600 volts). Number of conductors, one to three.

Insulation on each conductor, "Black Core" rubber compound for 1500 volts or less. For higher voltage, special high voltage rubber.

Covering over insulation, rubber filled tape. Covering over tape, lead sheath.

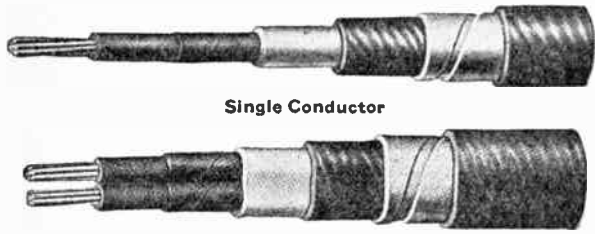
Covering over lead sheath, asphalted jute.

Protective armor, two ungalvanized steel tapes, wound in the same direction, the outer tape covering the spaces between turns of the inner tape.

Outside covering, asphalted jute.

Park cables with galvanized steel tapes will be furnished when so specified.

Habirshaw Park Cable with a single strip overlapping steel tape armor can be supplied. Complete data furnished upon application.



Single Conductor

Twin Conductor, Flat

Put up on reels containing 1000 feet.

Single Conductor, 600 Volts

Size A. W. G.	No. of Strands Concentric	Thick-ness of Insul. Each Cond. Inches	Thick-ness of Lead Covering Inches	Thick-ness Steel Tape Inches	Outside Diameter Inches	Approx. Weight per 1000 Feet Pounds	Approx. Shipping Weight per 1000 Feet Pounds
0000	19	5/64	3/64	.020	1.127	1950	2430
000	19	5/64	3/64	.020	1.070	1725	2205
00	19	5/64	3/64	.020	1.018	1695	2085
0	19	5/64	3/64	.020	.973	1364	1754
1	19	5/64	3/64	.020	.928	1230	1620
2	7	5/64	3/64	.020	.861	1081	1471
4	7	5/64	3/64	.020	.801	890	951
6	Solid	5/64	3/64	.020	.731	734	884
8	"	5/64	3/64	.020	.666	630	780
10	"	5/64	3/64	.020	.639	544	694
12	"	5/64	3/64	.020	.557	400	480
14	"	5/64	3/64	.020	.540	372	452

Two Conductor, Twin Flat

0000	19	5/64	5/64	.030	1.224x1.938	4060	5350
000	19	5/64	5/64	.030	1.166x1.822	3538	4498
00	19	5/64	5/64	.030	1.114x1.718	3143	4103
0	19	5/64	5/64	.030	1.003x1.563	2794	3812
1	19	5/64	5/64	.020	.963x1.481	2278	3058
2	7	5/64	5/64	.020	.861x1.308	1715	2295
4	7	5/64	5/64	.020	.801x1.117	1425	1905
6	Solid	5/64	5/64	.020	.731x1.048	1115	1505
8	"	5/64	5/64	.020	.667x .920	902	1292
10	"	5/64	5/64	.020	.639x .864	801	951
12	"	5/64	5/64	.020	.619x .824	716	866
14	"	5/64	5/64	.020	.571x .759	544	694

Three Conductor

0000	19	5/64	5/64	.030	2.142	6667	8347
000	19	5/64	5/64	.030	1.986	5486	6776
00	19	5/64	5/64	.030	1.873	4839	6129
0	19	5/64	5/64	.030	1.773	4333	5623
1	19	5/64	5/64	.030	1.687	3894	5184
2	7	5/64	5/64	.030	1.503	3044	4004
4	7	5/64	5/64	.020	1.309	2232	3192
6	Solid	5/64	5/64	.020	1.127	1569	2049
8	"	5/64	5/64	.020	.988	1222	1612
10	"	5/64	5/64	.020	.931	1067	1457
12	"	5/64	5/64	.020	.886	954	1344
14	"	5/64	5/64	.020	.849	881	1271

Habirshaw Park Cable

Single Conductor, 1500 Volts

Size A. W. G.	No. of Strands Concentric	Thick-ness of Insul. Each Cond. Inches	Thick-ness of Lead Covering Inches	Thick-ness Steel Tape Inches	Outside Diameter Inches	Approx. Weight per 1000 Feet Pounds	Approx. Shipping Weight per 1000 Feet Pounds
0000	19	5/64	3/64	.020	1.160	2015	2495
000	19	5/64	3/64	.020	1.102	1783	2263
00	19	5/64	3/64	.020	1.050	1577	2057
0	19	5/64	3/64	.020	1.005	1428	1818
1	19	5/64	3/64	.020	.964	1294	1684
2	7	5/64	3/64	.020	.892	1113	1503
4	7	5/64	3/64	.020	.832	939	1089
6	Solid	5/64	3/64	.020	.762	788	938
8	"	5/64	3/64	.020	.698	661	811
10	"	5/64	3/64	.020	.671	593	743
12	"	5/64	3/64	.020	.650	550	700
14	"	5/64	3/64	.020	.633	517	667

Single Conductor, 2500 Volts

0000	19	7/64	3/64	.020	1.222	2334	2814
000	19	7/64	3/64	.020	1.164	2064	2544
00	19	7/64	3/64	.020	1.081	1649	2129
0	19	7/64	3/64	.020	1.036	1491	1971
1	19	7/64	3/64	.020	.995	1353	1743
2	7	7/64	3/64	.020	.924	1176	1566
4	7	7/64	3/64	.020	.864	998	1388
6	Solid	7/64	3/64	.020	.794	873	1023
8	"	7/64	3/64	.020	.761	781	931
10	"	7/64	3/64	.020	.734	689	839
12	"	7/64	3/64	.020	.713	666	816
14	"	7/64	3/64	.020	.696	635	785

Single Conductor, 3500 Volts

0000	19	8/64	3/64	.020	1.253	2412	3192
000	19	8/64	3/64	.020	1.195	2140	2620
00	19	8/64	3/64	.020	1.112	1715	2195
0	19	8/64	3/64	.020	1.067	1553	2033
1	19	8/64	3/64	.020	1.026	1415	1805
2	7	8/64	3/64	.020	.985	1293	1683
4	7	8/64	3/64	.020	.926	1115	1505
6	Solid	8/64	3/64	.020	.856	979	1369
8	"	8/64	3/64	.020	.823	878	1268
10	"	8/64	3/64	.020	.796	808	958
12	"	8/64	3/64	.020	.775	773	923
14	"	8/64	3/64	.020	.758	738	888

Single Conductor, 5000 Volts

0000	19	12/64	3/64	.030	1.503	3029	3989
000	19	12/64	3/64	.030	1.385	2709	3669
00	19	12/64	3/64	.020	1.268	2251	3031
0	19	12/64	3/64	.020	1.223	2051	2531
1	19	12/64	3/64	.020	1.128	1898	2378
2	7	12/64	3/64	.020	1.111	1554	2034
4	7	12/64	3/64	.020	1.051	1365	1845
6	Solid	12/64	3/64	.020	.981	1174	1564
8	"	12/64	3/64	.020	.948	1110	1500
10	"	12/64	3/64	.020	.921	1032	1422
12	"	12/64	3/64	.020	.900	978	1368
14	"	12/64	3/64	.020	.883	941	1331

Two Conductor, 2500 Volts

6	Solid	5/64	3/64	.020	1.035	1306	1786
8	"	5/64	3/64	.020	.981	1153	1543

Two Conductor, 3500 Volts

6	Solid	5/64	3/64	.020	1.137	1491	1971
8	"	5/64	3/64	.020	1.081	1341	1821

Two Conductor, 5000 Volts

6	Solid	12/64	3/64	.030	1.437	2455	3415
8	"	12/64	3/64	.030	1.358	2267	3227

Habirshaw Rubber Insulated High Pressure Wire and Cable

The National Electrical Code recognizes the following working pressures:

- Low-pressure, 600 volts or less.
- High-pressure, 600 to 3500 volts.
- Extra-high pressure over 3500 volts.

High-pressure CABLES (i.e. from 600 to 3500 volts) may be brought into buildings only as metal sheathed multiple conductor cables in metal conduit.

EXTRA-HIGH PRESSURE CABLES (i.e. for over 3500 volts) may not be brought into or over buildings except power stations and substations.

High-pressure cables (i.e. from 600 to 3500 volts) may be insulated with "Black Core" or "Red Core" compound, but we recommend Habirshaw 30 per cent. hevea rubber insulation.

The following table gives the thickness of insulation recommended by Habirshaw for various alternating voltages.

Thickness of Insulation—64ths Inch

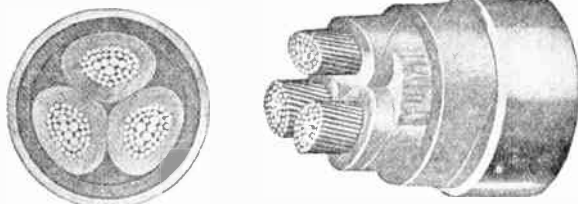
Size A. W. G.		600*	1500	2500	3500	5000	6000
		Volts	Volts	Volts	Volts	Volts	Volts
No. 14	to No. 8, incl.	3	6	8	10	12	14
" 6	" " 2, "	4	7	9	10	12	14
" 1	" 0000, incl.	5	8	10	10	12	14
250000	" 500000 C.M., incl.	6	9	10	11	12	14
550000	" 1000000 C.M., incl.	7	10	10	12	12	14
1250000	" 2000000 C.M., incl.	8	10	10	12	14	16

Size A. W. G.		7000	8000	9000	10000	11000
		Volts	Volts	Volts	Volts	Volts
No. 14	to No. 8, incl.	16	18	20	22	24
" 6	" " 2, "	16	18	20	22	24
" 1	" 0000, incl.	16	18	20	22	24
250000	" 500000 C.M., incl.	16	18	20	22	24
550000	" 1000000 C.M., incl.	16	18	20	22	24
1250000	" 2000000 C.M., incl.	18	18	20	22	24

NOTE.—In the case of multiple-conductor cables, the thickness of insulation on each conductor should correspond with the maximum effective working voltage across that insulation.

*House wire for voltages up to 600, whether Code, Red Core or 30 per cent. hevea.

Habirshaw Sector Cable
Paper Insulated

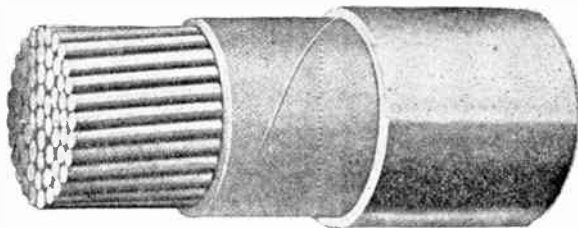


Sector cables are used in preference to round conductor cables because for a given outside diameter they have a greater carrying capacity. Habirshaw sector cable has been designed so as to secure all possible advantages of that type of cable to the maximum degree. There are seven such features to which attention may be called as follows:

1. Stability of form.
2. Flexibility.
3. Economy of size.
4. Maximum heat dissipation.
5. Minimum dielectric stresses.
6. Minimum dielectric losses.
7. Minimum injury to paper in manufacture.

The carrying capacity of sector cable is approximately the same as that of a round conductor cable of the same conductor cross-section.

Habirshaw Paper Insulated Cable



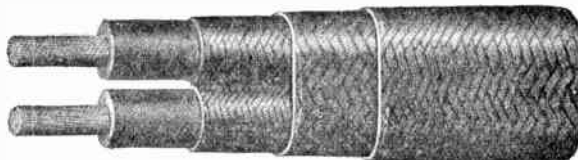
This cable has the advantage of cheapness, durability, low dielectric losses, and high current-carrying capacity.

The insulation consists of Manila paper applied helically to the conductor, and then saturated with a mineral oil compound which constitutes the essential insulation. In order to retain this oil the cable must have a sheath of lead.

Habirshaw Paper Insulated Cables have particularly low dielectric losses without sacrifice of dielectric strength. Great care is also taken to make the cable flexible at all temperatures at which it is likely to be operated.

Paper insulated cables are made in all sizes from No. 4 A. W. G. to 2,000,000 circular mils, and with any number of conductors within the usual limits.

Habirshaw Mast-arm Cable



Mast-arm cable is used where a flexible cable, capable of passing over a pulley, is required to connect arc-lamps suspended from a mast-arm or bracket to the feeder line where the lamps must be lowered for maintenance purposes.

Number of conductors, 2. Range of sizes, 6 and 8 A. W. G. Stranding, flexible. Insulation on each conductor, "Black Core" rubber compound. Thickness of insulation, code standard. Covering over insulation, one saturated cotton braid.

Grouping of conductors, parallel. Covering over all, 2 saturated cotton braids.

Habirshaw Control Cable



Train control cables are used for connecting the controllers, contactors, etc., of multiple unit trains, and are installed in conduits under the floor of the car body.

Number of conductors, five to thirty.

Usual size, 19 No. 25 A. W. G.

Separator, soft cotton wind.

Insulation on each conductor, rubber compound of quality specified.

Thickness of insulation each conductor, 3/4 inch.

Covering over insulation, colored dry cotton braid.

Grouping of conductors, twisted.

Fillers, dry jute.

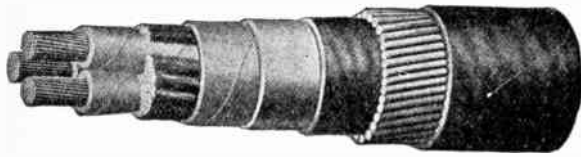
Covering over filler, one rubber filled tape.

Covering overall, two saturated cotton braids.

It is usual to have a different colored braid on each conductor in order to facilitate the identification of circuits.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

Habirshaw Armored Submarine Cable



Armored cable, or submarine cable, as it is sometimes called, is used under water for crossing rivers, bays and lakes.

Armored cable may be insulated with paper, varnished cambric or rubber compound. If insulated with paper or varnished cambric, a lead sheath is required. If insulated with rubber compound, a lead sheath is preferable, but may be omitted where the water, in which the cable is to be laid, does not contain injurious impurities. If the cable is rubber insulated and not lead covered, it has a rubber filled cotton tape.

The leaded or taped core is served with jute yarn, run through hot asphalt compound, then armored with galvanized steel wires, *run through hot asphalt compound, served with two layers of yarn and finally run through asphalt compound.

The asphalt and jute over the armor may be omitted, if desired.

Upon receipt of inquiry stating the conditions of service, our Engineering Department will furnish additional data.

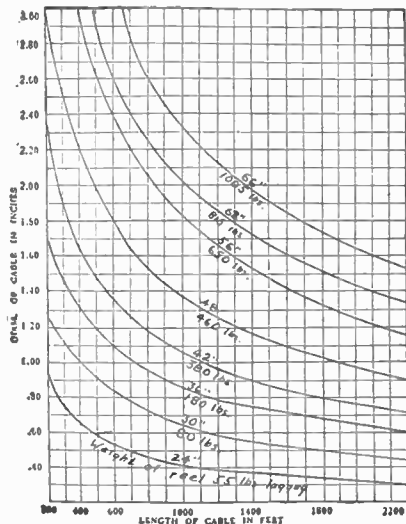
*Hot asphalt compound is also applied during armoring at the points where the armor wires come into contact, insuring complete sealing of the armor.

Reel Capacities

Curves Showing Reel Capacity for Cable Diameters Up to 3 Inches

Example

Diameter of Cable.....1.60 inches
 Length of Cable..... 730 feet
 Reel to Use..... 48-inch



Habirshaw Fire Alarm Cable



Fire Alarm cable is used to connect fire alarm boxes on streets and in buildings with fire department headquarters.

Such cables are usually made according to customers' specifications. However, in general, the insulation consists of 30 per cent hevea rubber compound, the conductors are laid concentrically with jute fillers, each layer being taped, and the cable has an outside covering consisting of a lead sheath.

Upon receipt of inquiry stating conditions of service, our Factory Engineering Department will furnish additional data.

Habirshaw Signal Wire and Cable

American Railroad Association Signal Division Standard

Railway signal wire is made to conform with the exacting specifications of the American Railroad Association Signal Division Standard and represents the standard engineering practice in this line. Standard practice means a great deal more to the railway signal engineer than to most others, as upon the reliability of signals depends the safety of millions of passengers.

The present American Railroad Association Signal Division Standard specification for rubber insulation is a development resulting from a study of the manufacture, inspection and use of rubber insulated wire extending over a period of many years, by a strong and representative committee of signal engineers who have given considerable time and attention to this subject. The specification has undergone changes in this time and every change has improved the product and confirmed the opinion of signal engineers as to the excellent quality of the insulation which it exacts.

Habirshaw has specialized on A. R. A. Signal wire and makes the following types:

I. Rubber Insulated Signal Wire for 660 Volts or Less



Number of conductors, one or two.
 Range of sizes, 0 to 18 A. W. G., solid.
 Insulation on each conductor, A. R. A. Signal Division compound.
 Covering over insulation, one cotton braid, 3/64 inch thick, weatherproof.

Thickness of insulation, No. 0-2 A. W. G., inclusive, 3/64 inch; 4-8 A. W. G., inclusive, 5/64 inch; 9-14 A. W. G., inclusive, 3/16 inch; 16-18 A. W. G., inclusive, 1/8 inch.

Shipped on reels or in coils as ordered. If in coils the following lengths are standard: No. 6 A. W. G., 1000 ft.; 8-12 A. W. G., inclusive, 1500 ft.; 14 A. W. G., 2000 ft.

II. Aerial Braided Cable for 660 Volts or Less



Number of conductors, as specified.
 Range of sizes, 4 to 16 A. W. G. (not necessarily all the same size in a given cable).
 Insulation on each conductor, A. R. A. Signal Division compound.

Fillers, dry jute.
 Covering over each layer, rubber filled tape.
 Covering over all, one saturated cotton braid, 3/64 inch thick.
 Thickness of insulation, No. 4 A. W. G., 3/64 inch; 6-9 A. W. G., inclusive, 1/16 inch; 10-14 A. W. G., inclusive, 1/8 inch; 16 A. W. G., 3/16 inch.

Cables of more than three and less than seven conductors are made with jute or sisal center. One wire in each layer is taped for a tracer.

Cables will be shipped on reels.
 Above cables can be furnished lead covered if required.

Habirshaw Corona-proof Cable



Used out-of-doors where rubber insulation is desirable, yet must be proof against the deteriorating effects of the elements and the oxidizing action of Corona discharges. It is a cable insulated with a special rubber compound, especially developed for this service, covered with a layer of tape, enclosed in one or more saturated cotton braids.

This cable is used for aerial distribution circuits at voltages of 2200 and over. Also for special purposes where extra high voltages are used.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

Habirshaw Aerial Cable

Aerial transmission cable is used mostly for the transmission of power between 6,600 and 25,000 volts where it is uneconomical to construct subways and where the conditions for open wire construction are unfavorable. It is especially useful where existing pole lines are congested or along suburban streets lined with heavy shade trees, as well as for certain types of crossings over or under highways and railroads. For the three-conductor cable, paper insulation with lead sheath is the most satisfactory. For the smaller sizes the weight does not exceed the weight of cables commonly used by the Telephone Companies in aerial construction. For larger sizes, however, the weight is somewhat greater but offers no special difficulty in installing.

Upon request our Engineering Department will advise as to the most desirable type of cable to be used under specified conditions.

Habirshaw Varnished Cambric Insulated Cable



Varnished cambric insulated cable is used:

- a. In power stations and sub-stations for connecting machinery and apparatus of all voltages (see Apparatus Cable and Station Cable).
- b. In buildings in place of rubber insulated cable, especially for the larger sizes.
- c. For low voltage underground distribution, where special reliability is desired.
- d. On vibrating structures where paper insulation cannot be used due to the crystallization of the lead sheath.

Varnished cambric insulation consists of varnished cambric tapes applied helically to the conductor with intervening layers of mineral base grease. The turns of tape overlap and the joints in successive layers are staggered. They are also reversed at least every three layers.

Varnished cambric insulated cable is usually covered as follows:

Apparatus cable, saturated cotton braid.

Station cable, a rubber filled cotton tape and a flameproof braid.

Building mains, two saturated cotton braids.

Underground cable, lead sheath.

Cable for outdoor structures, a rubber filled cotton tape, two galvanized steel tapes, and a layer of asphalted jute under and over the armor.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

**Habirshaw Habirlite Headlight Wire
Single Conductor**



Habirshaw wire is used where resistance to oil heat, sulphur fumes and steam is essential. Standard sizes, 10 to 14 A. W. G., solid. Wrapping, soft cotton wind, saturated. Insulation, heat proof compound insoluble in mineral oils, non-hygroscopic, chemically inert to reagents and flexible to breaking point of wire. Covering, three cotton braids saturated with heat resisting compound.

Size A. W. G.	Diameter Overall Inches	Weight Lbs. per 1000 Ft.	Type of Package	Feet in Package	Shipping Weight of Package
10	.220	51	10 coils in box	10000	540
12	.200	37	10 " " "	10000	390
14	.190	29	10 " " "	10000	310

**Habirshaw Automobile Starting Cable
S. A. E. Standard, Single Conductor**



Automobile starting and charging cable is used for connecting the batteries to the starting motor and generator, of a gasoline propelled car. Range of sizes, 2 to 00 A. W. G., stranded. Insulation, "Black Core" rubber compound. Intermediate covering, one overlapping strip of varnished cambric. Over all covering, one (2 coat) varnished braid, $\frac{1}{4}$ inch thick.

Size A. W. G.	No. and Size of Strands	Thickness of Insulation 64ths Inch	Diameter of Braid Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
00	133 No. 20	4	.66	565	Reel	1000	745
0	133 " 21	4	.61	463	"	1000	543
1	133 " 22	4	.56	383	"	1000	463
2	133 " 23	4	.53	327	"	1000	407

NOTE.—The size to be used depends upon the length installed. The S. A. E. recommends No. 1 for 5 ft. No. 0 for 7 ft., and No. 00 for 9 ft. lengths. It is common practice to use $\frac{1}{4}$ inch of insulation covered with two saturated braids.

**Habirshaw Battery Charging Cable
Two Conductor**



Battery charging cable is used for connecting storage batteries of automobiles to the stationary charging outfit. Also used largely by railroads for charging train lighting batteries on electric baggage trucks both in the charging rooms and for boosting while in position under railroad cars and on the baggage trucks. Range of sizes, 0000 to 8 A. W. G., stranded. Insulation on each conductor, "Black Core" rubber compound. Covering over insulation, one saturated braid. Grouping of conductors, twin (flat), except No. 0 and larger, which are round. Fillers, jute (for No. 0 and larger, only). Covering over both conductors, two saturated braids.

Size A. W. G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
0000	259	5	1.720	2220	Reel	1000	2870
000	133	5	1.590	1750	"	1000	2400
00	133	5	1.474	1520	"	1000	2170
0	133	5	1.368	1265	"	1000	1815
1	91	5	.625x1.160	825	"	1000	1205
2	91	4	.560x1.030	645	"	1000	825
4	61	4	.495x .900	458	"	1000	638
6	61	4	.446x .802	317	"	1000	397
8	61	3	.375x .660	210	"	1000	290

Habirshaw Basket Weave Armored Cable



Basket weave armor is a wire braid similar in construction to the ordinary cotton braid, used for covering wires. It is usually made of galvanized soft steel wire, but is sometimes made of brass or copper. The warp and woof of this fabric each consist of between five and fourteen ends, depending upon the size of cable, the usual size of wire being 0.0126 inch in diameter. The strands or ends are laid closely together, flat and parallel, firmly binding the core.

Basket weave is used for two purposes. First as a mechanical protection, and second, as a means of grounding the outside of high voltage cables in order to prevent static disturbances. The former application is by far the more important. Examples of its use are as follows:

a. Wiring of ships. Basket weave armor affords mechanical protection without the use of conduits, which are objectionable on shipboard, due to the difficulty of closing them at the watertight bulkheads. Furthermore, conduits on ships are difficult to repair and are liable to sweat.

b. Portable cables in machine shops. Basket weave armor affords mechanical protection without interfering with flexibility where cables lie on the floors of machine shops, where they are liable to be trodden upon and yet must be free to be moved about.

c. Mine cables. In mines where the work is not of a sufficiently permanent character to warrant the use of conduits, basket weave affords the necessary mechanical protection.

d. High voltage cables. Basket weave armor is used on high voltage cables especially if rubber insulated, in order to prevent the formation of static charges.

Upon receipt of inquiry stating conditions of service, our Engineering Department will furnish additional data.

Habirshaw Flameproof Cable



Flameproof cable is used about power houses in the vicinity of switchboards and apparatus where special fireproof protection is desired. This method of protection consists essentially in impregnating the braided covering with a flameproof paint, and may be used in connection with any conductors having braided covering, when so specified.

Habirshaw Mine Cable, Single Conductor

Locomotive or Gathering Reel Cable



Single conductor mine cable is used for operating gathering reel locomotive run on steel tracks which can be used for the return current.

Number of conductors, one.

Range of sizes, 2 to 6 A. W. G., flexible.

Insulation, "Black Core" rubber compound.

Covering over insulation, rubber filled tape.

Covering overall, one extra heavy or seine-twine (as specified), extra tight weatherproof braid.

Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inch	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	133	4	.59	337	Reel	1500	685
3	133	4	.55	271	"	1500	586
4	133	4	.52	234	"	1500	431
6	133	4	.46	167	"	1500	330

Habirshaw Twin Mine Cable Flat



Twin (flat) mine cable is used for gathering reel locomotives, cutting machines, hoists, drills, and other electrical machines in mines.

Number of conductors, two.

Range of sizes, 2 to 8 A.W.G., flexible.

Insulation on each conductor, "Black Core" rubber compound.

Covering over each conductor, one saturated braid.

Grouping of conductors, parallel.

Marker, raised thread in the braid of one conductor.

Covering over all, two or three saturated extra tight braids as specified.

Double Braid							
Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	49	4	1.094x.592	640	Reel	1500	1340
3	49	4	1.018x.554	550	"	1500	1205
4	49	4	.954x.522	460	"	1500	1070
5	49	4	.898x.494	390	"	1500	965
6	49	4	.846x.468	325	"	1500	668
8	49	3	.698x.394	220	"	1500	410

Triple Braid							
Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	49	4	1.139x.637	700	Reel	1500	1430
3	49	4	1.063x.599	605	"	1500	1283
4	49	4	.999x.567	510	"	1500	1145
5	49	4	.943x.539	430	"	1500	1025
6	49	4	.891x.513	360	"	1500	720
8	49	3	.743x.439	250	"	1500	555

Habirshaw Triplex Mine Cable



Triplex mine cables are used with three-phase motor equipments, and are usually made for pressures up to 600 volts.

Range of sizes, 2 to 8 A.W.G., flexible.

Insulation on each conductor "Black Core" rubber compound.

Covering over insulation, one saturated cotton braid or rubber-filled tape.

Grouping of conductors, twisted.

Fillers, jute.

Covering over filler, rubber filled tape.

Covering over all, one or two saturated extra tight braids.

Size A.W.G.	No. of Strands	Thickness of Insulation 64ths Inch	Outside Diameter Inches	Weight per 1000 Feet Lbs.	Type of Package	Feet in Package	Shipping Weight of Package Lbs.
2	49	4	1.203	1020	Reel	1500	2180
4	49	4	.997	725	"	1500	1548
6	49	4	.890	525	"	1500	1248
8	49	3	.730	345	"	1500	703

Reels

Some sizes and kinds of wires necessarily must be shipped on reels.

In such cases the reels will be billed at cost and credited at full billing value, less return freight charges, if returned to mill within six months of shipping date.

Obtain return tags and shipping instructions before shipping reels.

Tirex Rubber Armored Cable

The flexible copper conductors are insulated with a rubber compound of high dielectric strength containing a minimum of 30 per cent of new Para rubber.

The inner jacket is a 40 per cent Para rubber compound and fills the interstices between the conductors.

The outer jacket or rubber armor contains 60 per cent of new Para rubber and is securely locked to the cable.

A double reinforcement of hard twisted seine twine between the jackets adds greatly to the wearing qualities of Tirex Cables.

The outer covering or rubber armor effectively protects the cable and safeguards the user.

Tirex Cables, being all rubber, do not absorb moisture and are not appreciably affected by oils or acids under ordinary industrial conditions.

**Tirex Single Cable—Paper Separator
600 Volts**

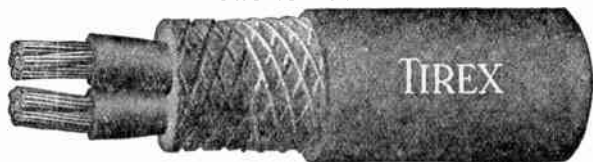
When the insulation is removed the conductor is left clean, ready for connecting to terminals or battery lugs. These cables are exactly like Tirex rubber-armored locomotive and mining machine cables, excepting that a paper tape is placed between the insulation and conductor which prevents the rubber compound from adhering to the copper. The outer protection is a 60 per cent rubber sheath under which is a serving of heavy seine twine which securely locks the sheath to the cable and prevents tearing or stripping.

Single Conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	5.9/32 = .922	950	.....
0000	259	5.4/32 = .922	950	.....
000	427	6.5/32 = .859	785	.....
000	259	6.4/32 = .859	785	.....
00	259	26/32 = .813	670	.....
00	133	26 1/2/32 = .813	670	.....
0	259	4.3/32 = .766	565	.....
0	133	4.5/32 = .766	565	.....
1	133	6.3/32 = .719	495	.....
2	133	3.3/32 = .656	405	.....
3	133	20/32 = .625	345	.....
3	49	20 1/2/32 = .625	345	.....
4	133	18 1/2/32 = .563	280	.....
4	49	18 1/2/32 = .563	280	.....
5	49	3/32 = .516	225	.....
6	49	3.1/32 = .484	190	.....
8	49	27/64 = .422	140	.....

Two-conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	5 1/2/32 = 1.781	2810	.....
0000	259	5 1/2/32 = 1.781	2810	.....
000	427	5 3/32 = 1.656	2360	.....
000	259	5 3/32 = 1.656	2360	.....
00	259	4 9/32 = 1.531	1970	.....
00	133	4 9/32 = 1.531	1970	.....
0	259	4 6/32 = 1.438	1680	.....
0	133	4 6/32 = 1.438	1680	.....
1	133	4 2/32 = 1.313	1430	.....
2	133	3 8/32 = 1.188	1150	.....
3	133	3 6/32 = 1.125	990	.....
3	49	3 6/32 = 1.125	990	.....
4	133	3 4/32 = 1.063	860	.....
4	49	3 4/32 = 1.063	860	.....
5	49	3 1/32 = .969	690	.....
6	49	2 9/32 = .906	585	.....
8	49	2 5/32 = .719	375	.....

Tirex Rubber Armored Cable

Maximum flexibility is obtained by proper stranding of the copper conductors and the omission of stiff, fibrous braids and fillings. Tirex Cables never kink.

The smooth, clean, outer surface of Tirex Cables does not collect and hold dirt and grease. It may easily be wiped clean when soiled.

Rigid electrical tests are made during the manufacture of Tirex Cables. These tests insure the integrity of every length.

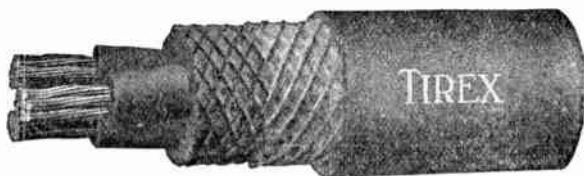
The rubber armor has the wearing qualities of a first class automobile tire and will last many times as long as a braided or woven fibrous covering.

Concentric, Two-conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	4 1/2/32 = 1.313	1955	.....
0000	259	4 1/2/32 = 1.313	1955	.....
000	427	3 9/32 = 1.219	1620	.....
000	259	3 9/32 = 1.219	1620	.....
00	259	3 7/32 = 1.156	1385	.....
00	133	3 7/32 = 1.156	1385	.....
0	259	6 9/64 = 1.078	1145	.....
0	133	6 9/64 = 1.078	1145	.....
1	133	3 2/32 = 1.000	965	.....
2	133	5 9/64 = .922	800	.....
3	133	5 7/64 = .891	700	.....
3	49	5 7/64 = .891	700	.....
4	133	2 7/32 = .844	600	.....
4	49	2 7/32 = .844	600	.....
5	49	5 1/64 = .797	500	.....
6	49	2 1/32 = .750	430	.....
8	49	3 9/64 = .609	285	.....

Three-conductor



Size B. & S.	No. of Strands	Outside Diameter Inches	Wt., Lbs. per 1000 Ft.	Price per 1000 Ft.
0000	427	1 23/64 = 1.922	3485	.....
0000	259	1 23/64 = 1.922	3485	.....
000	427	5 1/32 = 1.781	2925	.....
000	259	5 1/32 = 1.781	2925	.....
00	259	5 3/32 = 1.656	2505	.....
00	133	5 3/32 = 1.656	2505	.....
0	259	5 1/32 = 1.563	2095	.....
0	133	5 1/32 = 1.563	2095	.....
1	133	8 9/64 = 1.391	1735	.....
2	133	4 9/32 = 1.250	1385	.....
3	133	3 8/32 = 1.188	1190	.....
3	49	3 8/32 = 1.188	1190	.....
4	133	3 6/32 = 1.125	1025	.....
4	49	3 6/32 = 1.125	1025	.....
5	49	6 1/64 = 1.016	805	.....
6	49	6 1/64 = .953	690	.....
8	49	2 1/32 = .750	440	.....



Type S Tirez Portable Cord

The rubber covering of Tirez has the toughness and wearing qualities of a high grade automobile tire. Tirez will render continuous, satisfactory service for a long period of time even under most severe and trying conditions.

Oils, acids, etc., have no appreciable effect upon it and the clean, smooth outer surface will not collect dirt or grease. Its cleanliness and light weight commend it to all users of portable tools.

The flexible copper conductors are adequately insulated with a 30 per cent Para rubber compound; the insulation of each conductor being a distinctive color for identification and polarity marking. The outer jacket, containing a high percentage of Para Rubber is a guarantee against interruption of service from outside causes.

Two or three-conductor Nos. 18, 16 and 14 and two-conductor No. 12 are packed in special cartons containing 250 feet each, so constructed that the cord may be drawn out as needed without disturbing the remainder of the coil. All sizes are furnished in special lengths as ordered.

***One-conductor**

Size B. & S.	Outside Diam. In.	Wt. per 1000 Ft. Lbs.	Price per 1000 Ft.	Size B. & S.	Outside Diam. In.	Wt. per 1000 Ft. Lbs.	Price per 1000 Ft.
10	$\frac{2\frac{1}{2}}{32}$ equals	.328	85	16	$\frac{1\frac{3}{4}}{32}$ equals	.203	30
12	$\frac{1\frac{3}{4}}{32}$ "	.297	65	18	$\frac{6\frac{1}{2}}{32}$ "	.188	25
14	$\frac{1\frac{1}{2}}{32}$ "	.281	50				

Two-conductor

10	$\frac{4\frac{1}{2}}$ equals	.641	250	16	$\frac{2\frac{1}{2}}$ equals	.422	100
12	$\frac{3\frac{1}{2}}$ "	.578	200	18	$\frac{2\frac{1}{4}}$ "	.391	85
14	$\frac{3\frac{1}{2}}$ "	.531	160				

Three-conductor

10	$\frac{2\frac{3}{4}}$ equals	.688	320	16	$\frac{1\frac{1}{2}}$ equals	.453	125
12	$\frac{3\frac{1}{4}}$ "	.609	240	18	$\frac{1\frac{1}{2}}$ "	.406	95
14	$\frac{1\frac{3}{4}}$ "	.563	190				

*There are no N.E.C. Standards for the one-conductor rubber sheathed flexible cord. Prices upon application.

Type SJ Tirez Portable Cord

2-conductor



Recommended for pendant drop lights, floor or table lamps, vacuum cleaners and small electrical tools and apparatus.

It is suitable for portable use in offices, dwellings and reasonably dry places where conditions are not so severe, and for pendant use in manufacturing plants and garages.

The cord is practically wearproof, never frays or kinks and is so flexible that its full length is always available without delay or annoyance.

The outer covering or rubber armor is smooth and attractive in appearance and is furnished in black or green as desired.

The colors are permanent and the wear and tear of ordinary service has no appreciable effect on them.

The insulation of each conductor is of a distinctive color for identification and polarity marking.

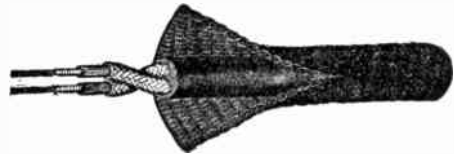
Tirez is packed in convenient cartons containing 250 feet each, so constructed that any desired length may be removed without disturbing the remainder of the coil.

Other lengths may be obtained in coils or on reels.

Size B. & S.	Outside Diameter Inches	Wt. Lbs. per 1000 Ft.	Size B. & S.	Outside Diameter Inches	Wt. Lbs. per 1000 Ft.
16	$\frac{1\frac{1}{2}}$	65	18	$\frac{3}{32}$	50

Prices upon application.

Type PS and P Duracord Portable Cord



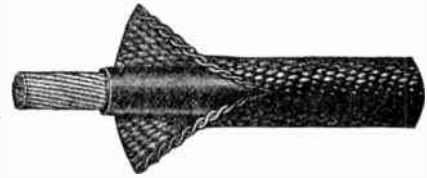
Duracord has a tough covering of thick, heavy, long fibre cotton woven like fire hose, not braided.

Size B. & S.	No. of Conductors	Approx. Outside Diam. In.	Amp. Cap.	Ship. Wt. Lbs. per 1000 Ft.	Size B. & S.	No. of Conductors	Approx. Outside Diam. In.	Amp. Cap.	Ship. Wt. Lbs. per 1000 Ft.
*18PS	2	$\frac{3\frac{1}{2}}$	3	73	6P	2	$\frac{3\frac{1}{2}}$	50	750
18P	2	$\frac{1\frac{1}{2}}$	3	105	16P	3	$\frac{1\frac{1}{2}}$	6	130
16P	2	$\frac{1\frac{1}{4}}$	6	115	14P	3	$\frac{2\frac{1}{4}}$	15	215
14P	2	$\frac{2\frac{1}{4}}$	15	190	12P	3	$\frac{2\frac{1}{4}}$	20	270
12P	2	$\frac{2\frac{1}{2}}$	20	215	10P	3	$\frac{3\frac{1}{2}}$	25	360
10P	2	$\frac{2\frac{3}{4}}$	25	270	8P	3	$\frac{2\frac{3}{4}}$	35	625
8P	2	$\frac{3\frac{1}{2}}$	35	494	6P	3	$\frac{3\frac{1}{2}}$	50	975

Furnished in coils of 250 feet. Prices on application. *This size does not bear Underwriters' tags.

Duracord Single Conductor Cable

This cable is made up in extra flexible stranding, rope lay with code thickness of 30 per cent rubber, and with a heavy woven cover on the outside

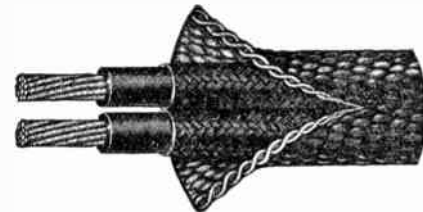


which is impregnated with a water-proof, oil-resisting compound. Used as welding cables, mine cable and motor leads.

Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.	Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.
4	133/25	70	222	0	259/24	125	508
3	168/25	80	260	00	259/23	150	640
2	210/25	90	328	0000	259/21	225	977
1	259/25	100	403				

Prices on application.

Duracord Duplex Cable



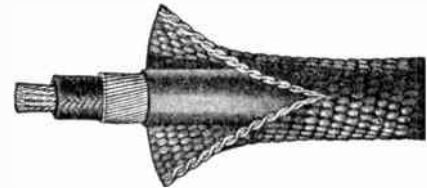
Made up of two flexible rope-laid conductors, insulated with a rubber wall of code thickness. Conductors finished with water-proof braid, laid side by side and covered with water-proof

Duracord Woven Cover. Especially adapted for mining machines and storage batteries.

Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.	Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.
8	84/27	35	326	3	168/25	80	886
6	84/25	50	386	2	210/25	90	940
4	133/24	70	552				

Duracord Concentric Cable
Designed Especially for Mining Machines

Made with an extra flexible inner conductor insulated with a rubber wall of code thickness and covered with a layer of tape and saturated braid.



The outer conductor is then put on, insulated in the same manner as the inner conductor. Over all is the woven cover thoroughly saturated.

Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.	Size	Stranding	Amp. Cap.	Shipping Wt. Lbs. per 1000 Ft.
4	133/25	70	720	2	259/26	90	910
3	133/24	80	815				

Other sizes made on orders of 5000 feet or over.

Automotive Cables

The best quality electrolytic copper, accurately drawn to size and carefully annealed, is used in all conductors.

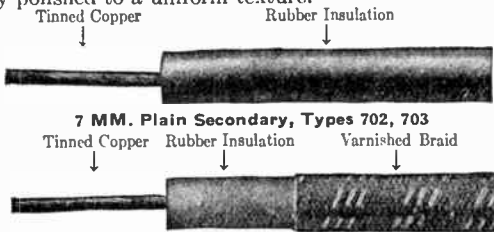
The rubber used in these wires and cables is of the best grade, carefully compounded with the skill gained by years of experience, assuring a product of long life and serviceability. Easy-stripping characteristics, but firmly holds the fine strands of wire.

The varnished cambric tape used is of the best quality obtainable, and has high dielectric strength.

Standard wires are covered with a brown color braid of hard glazed yarn which is varnished. The varnish used is a clear insulating varnish evenly applied producing a moisture and oil resisting coating. Blue tracer threads are also woven in the braid. Specification wires will be made with braid of any color desired.

Armored cables are protected with a galvanized steel ribbon armor, half oval in section, which gives maximum flexibility and longest wearing qualities.

Wires calling for a weatherproof finish are first saturated with a compound which thoroughly penetrates the braid. A second coating of a special compound is then applied and highly polished to a uniform texture.



7 MM. Plain Secondary, Types 702, 703

7 MM. Braided Secondary, Types 711, 712, 713

7 MM. Spark Plug Cable

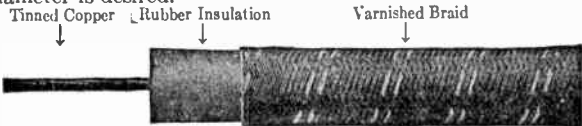
TYPE No. 703 PLAIN.—For use between plugs and magneto, or distributor, where a very high quality high tension cable is desired. Made in accordance with S.A.E. specifications.

TYPE No. 713 BRAIDED.—For use between plugs and magneto, or distributor, where a very high quality high tension cable is desired. Made in accordance with S.A.E. specifications.

TYPE No. 702 PLAIN
TYPE No. 712 BRAIDED
TYPE No. 711 BRAIDED } For use between plugs and magneto, or distributor.

3/32-inch Spark Plug or Secondary Cable

TYPE No. 611 BRAIDED.—For use between plugs and magneto, or distributor, when a cable of good quality but smaller diameter is desired.



9 MM. Braided Secondary, Type 912

Secondary or High Tension Cable

9 MM. Spark Plug Cable

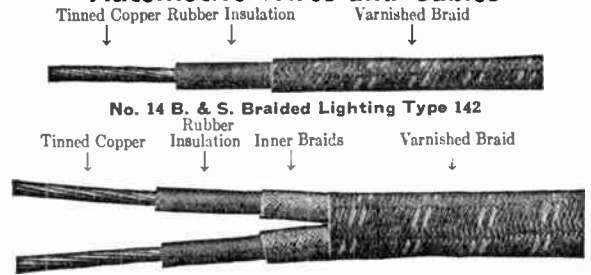
TYPE No. 902 PLAIN } For use with high voltage magnets or coils.
TYPE No. 912 BRAIDED }

TYPE No. 714 SECONDARY CABLE is a new type added recently—Dimensions are given in the following table. This cable is designed for extremely long life and will practically indefinitely withstand the so called "Corona Tests" which cause plain high tension cables to fail in a short time. The rubber is protected by a specially finished flexible black enameled fine cotton braid from oil, gasolene and moisture. Full details and samples will be furnished upon application to the factory.

Type No.	Size B. & S. Gauge	No. of Conductors	Stranding	Diameter Over Rubber	No. of Braids	Approx. Wt.	
						Max. Diam. Over All	Lbs. per 1000 Ft.
902	14	1	41 No. 30's	9 mm.	None	3/16 in.	82
703**	14	1	19 " 27's	7 "	"	9/32 "	52
702	16	1	16 " 28's	7 "	"	9/32 "	49
912	14	1	41 " 30's	9 "	1	13/32 "	95
713**	14	1	19 " 27's	*7 "	1	9/32 "	53
714	Spec.	1	19 " 28's	.....	1	7 mm.	45
712	16	1	16 " 28's	7 mm.	1	5/16 in.	57
711	16	1	16 " 28's	7 "	1	5/16 "	55
611	16	1	16 " 28's	1 1/32 ins.	1	19/64 "	49

*Over all. †Wall rubber. **S.A.E. standard. Prices upon application.

Automotive Wires and Cables



No. 14 B. & S. Duplex Lighting Type 142-D Primary Cable

The rubber insulated lighting cables all have an insulation of high grade rubber compound, 1/32 inch thick. They are covered with a close braid of hard glazed cotton yarn varnished, are flexible and will withstand a great amount of wear.

Single Lighting or Primary Cable

TYPE No. 102.—For use as a low voltage generator cable, where amperage carried is high. Suitable for bus lighting.

TYPE No. 112.—For use as a low voltage generator cable, where amperage carried is high. Suitable for bus lighting.

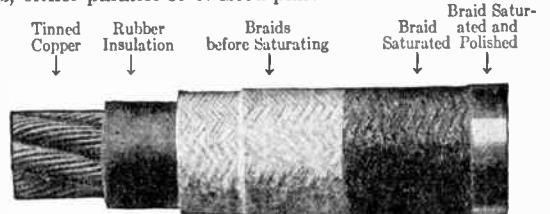
TYPE No. 122.—For use as a low voltage wire for very large headlights or main lighting and ignition currents lead from battery or generator. Suitable for lighting circuits on small buses or large ones using 12 volt systems.

TYPE No. 142.—For general primary or lighting use, battery to coil, headlights, interior body wiring, etc.

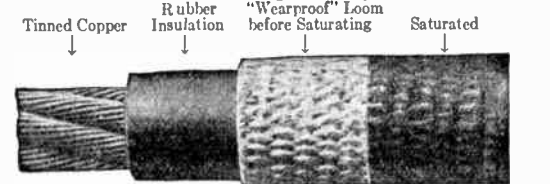
TYPE No. 162.—General utility lighting or primary wire, sufficiently heavy for majority of low voltage circuits.

Type No.	Size B. & S. Gauge	No. of Conductors	Stranding	Thickness Insulation Wall Rubber	No. of Braids	Approx. Max. Diam. Over All	Approx. Wt. per 1000 Ft.
102	10	1	19 No. 23's	1/32 In.	1	7/32 In.	48
122	12	1	19 " 25's	1/32 "	1	13/64 "	33
142	14	1	19 " 27's	1/32 "	1	3/16 "	24
162	16	1	16 " 28's	1/32 "	1	11/64 "	18
182	18	1	16 " 30's	1/32 "	1	3/32 "	14
202	20	1	7 " 28's	1/32 "	1	9/64 "	12
1402	14	1	41 " 30's	*5 mm.	None	13/64 "	34
1423B	14	1	19 " 27's	.....	1	19/64 "	29

*Diameter over rubber. The above lighting cables are also made in two conductor styles, either parallel or twisted pair.



No. 1 B. & S. Starting Cable Type 1-B

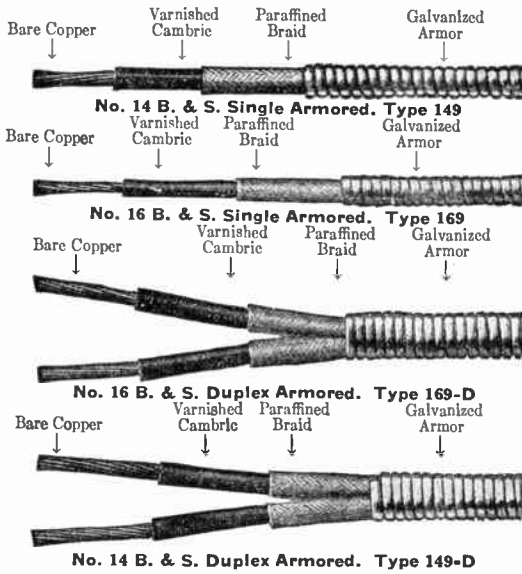


No. 1 B. & S. Starting Cable Type 1-W

Type No.	Size B. & S. Gauge	No. of Conductors	Stranding	Thickness Insulation Wall Rubber	No. of Braids	Approx. Max. Diam. Over All	Approx. Wt. per 1000 Ft.
1-B	1	1	133 No. 22's	3/64 In.	2	5/8	375
1-W	1	1	133 " 22's	3/64 "	Loom	21/32	395
10-B	1	1	133 " 22's	1/16 "	None	1/2	353
11-S	1	1	133 " 22's	3/64 "	1	35/64	354
20-B	2	1	133 " 23's	1/16 "	None	13/32	293
21-S	2	1	133 " 23's	3/64 "	1	1/2	294
40-B	4	1	49 " 21's	1/16 "	None	25/64	182
41-S	4	1	49 " 21's	3/64 "	1	27/64	182

Starting cable can also be insulated with acid proof rubber. Prices upon application.

Automotive Wires and Cables



Flexible Cords



Method of Packing No. 18 Green and Yellow N. C. Cotton Lamp Cord Other Types and Sizes Packed in Coils

Single Armored Cable
 TYPE NO. 129.—For use in charging circuits and for very large headlights when wire is subject to chafing and abrasion.
 TYPE NO. 149.—For use on single contact lighting circuits. Conductor is of sufficient size to fill the majority of requirements. The armor resists abrasion.

TYPE NO. 169.—For use in all small amperage lighting circuits, such as small headlight, dash, tail, tonneau, horn, etc., when desirable to protect against abrasion.

Duplex Armored Cable
 TYPE NO. 129D.—For use as above where two wires are required, making neater and quicker installations.

TYPE NO. 149D.—For use on ungrounded lighting circuits where double contact lamps are used or where it is desired to run two wires together protected against abrasion.

TYPE NO. 169D.—For same use as the single type except on ungrounded systems or to run two wires together.

Armored Lighting Cable

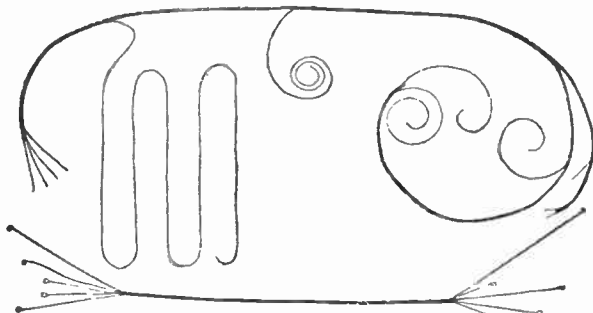
Insulation consists of one layer varnished cambric well overlapped, and one paraffined cotton braid. Copper is not tinned.

Type No.	Size B. & S. Gauge	No. of Conductors	Stranding	Approx. Max. Diam. Over All	Approx. Wt. Lbs. per 1000 Ft.
109	10	1	19 No. 23's	15 ³ / ₆₄ In.	61
129	12	1	19 " 25's	13 ³ / ₆₄ " "	45
149	14	1	19 " 27's	11 ³ / ₆₄ " "	35
169	16	1	16 " 28's	11 ¹ / ₆₄ " "	29
189	18	1	16 " 30's	9 ³ / ₆₄ " "	24

Insulation is one layer of varnished cambric well overlapped, and one paraffined cotton braid on each conductor.

109D	10	2	19 No. 23's	1/4 x 13 ³ / ₆₄ In.	110
129D	12	2	19 " 25's	7 ³ / ₃₂ x 23 ³ / ₆₄ " "	80
149D	14	2	19 " 27's	13 ³ / ₆₄ x 5 ¹ / ₁₆ " "	61
169D	16	2	16 " 28's	3 ³ / ₁₆ x 13 ³ / ₆₄ " "	48
189D	18	2	16 " 30's	5 ³ / ₃₂ x 15 ³ / ₆₄ " "	41

Prices on application.



Special Harness for Passenger Cars and Trucks Built to Manufacturers' Specifications

Quality is the predominating feature of our regular and special flexible cords and cables, as listed hereinafter. Every step in the manufacture of our products is carefully inspected and no expense is spared to produce the best obtainable flexible cords and cables.

Our aim is not only to meet the requirements, as set forth by the National Board of Fire Underwriters, but surpass them. A sample of Western Electric Flexible Cord, which we will gladly furnish, will firmly convince you that it is a quality product.

A large stock of all standard cords is always available so as to give prompt and satisfactory service.

Packing—Lamp Cord

Lamp Cord is packed in sealed containers, light, easy to handle and convenient to store in small spaces. Study the accompanying illustration.

The cartons are strong reinforced pasteboard boxes, each one bearing a full description of its contents.

CAPACITY.—250 feet in coil form, uncoiling from center.

Four cartons are placed in one strong corrugated container, which is sealed with a heavy gummed strip bearing our trademark at short intervals. This forms our standard package, as illustrated.

The following cords put on spools when requested at no extra charge:

No. 18—1/64 and 1/32 Type C Silk and Art Silk	500 feet
" 18—1/64 " 1/32 " PO " " " "	500 "
No. 18—Fixture 1/32 Cotton Mercerized Silk and Art Silk	500 "
No. 18—1/64 Single Cotton Mercerized Silk and Art Silk	1000 "
No. 20—1/64 Type PO Silk and Art Silk	500 "

Special Flexible Cords

Special weatherproof flexible cords are packed in coil form, securely wrapped with burlap. Each coil is clearly labeled.

Flexible Lamp Cord

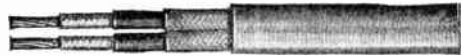
Conductor consists of strands of number 30 B. & S. bare copper, cotton wound, rubber covered, and braided with glazed cotton, mercerized cotton, or silk. When the individual wires of the strand are tinned and concentrically laid, the cotton wind is eliminated unless requested.

OLD CODE INSULATION.—(Not Approved by Underwriters) requires the same diameters as New Code, but slightly lower in quality.

Flexible Cords



Lamp Cord—Type C. Single or Twisted Pair with Cotton or Silk Braid Over Each Conductor



Parallel Cord—Type PO. Has Cotton Braid Over Each of Two Conductors Laid Parallel Under Cotton or Silk Outer Braid

The conductors of our regular cords are composed of a number of 30 B. & S. bare annealed copper strands, grouped into a cable of the required capacity, as follows: No. 8 B. & S., 165 strands; No. 10 B. & S., 104 strands; No. 12 B. & S., 65 strands; No. 14 B. & S., 41 strands; No. 16 B. & S., 26 strands; No. 18 B. & S., 16 strands; No. 20 B. & S., 10 strands; No. 22 B. & S., 7 strands. Sizes smaller than No. 18 are not approved by the Underwriters.

NEW CODE INSULATION.—(Approved by Underwriters) requires $\frac{3}{32}$ -inch wall on number 16 and number 18 B & S; $\frac{1}{16}$ -inch wall on number 14 and larger; $\frac{1}{32}$ -inch wall of rubber now approved by Underwriters for use on Types P, PO and PWP for 18 B. and S. Gauge only.

COMMERCIAL INSULATION.—(Not Approved by Underwriters) requires $\frac{1}{8}$ -inch wall rubber of a grade but slightly lower in quality than New Code Rubber. We can also furnish $\frac{1}{16}$ -inch wall of New Code Insulation.

Seven Points to Cover When Ordering W. E. Flexible Cords

Amount Feet	Size B. & S. Gauge	Insulation	Conductors	Style	Finish	Color*
Examples	1000	18	New Code	Twisted Pair	Lamp Cord	Green & Yellow
	500	16	Old " "	Single	" "	Black
	1000	20	$\frac{1}{4}$ In. New Code	Three Conductor	Parallel " "	Green
	500	22	New Code	Twisted Pair	Lamp " "	Blue
	750	14	Commercial	Single	Reinforced Cord	Black
	500	18	$\frac{1}{4}$ In. New Code 3 Cond.	Twisted Pair	Brewery " "	Weatherproofed

*Two conductor is always understood (unless otherwise specified) for parallel and reinforced cords. †Weatherproof finish is always black and need not be specified. ‡Orders not specifying the insulation required $\frac{1}{32}$ new code will be furnished.

List of Standard Colors

Cotton		Silk and Art Silk		Mercerized	
White	Blue	White	Old Brass	White	Old Gold
Yellow	Olive Green	Yellow	Mahogany	Green	Old Brass
Green	Old Brass	Green	Brown	Black	Mahogany
Black	Light Brown	Black	Tiffany Green	Blue	Brown
Red	Gray	Red	Bronze	Olive Green	Tiffany Green
Dark Brown	Oak	Blue	Orange		Gray
		Old Gold	Gray		

Table of Weights (Lbs.) per 1000 Feet

Size	Insulation	LAMP CORDS		PARALLEL CORDS		REINFORCED CORDS		
		Cotton	Silk	Cotton	Silk	Cotton	Silk	Wd.
12 B. & S.	$\frac{3}{64}$ in. Wall	83	79	85	82	178		187
	$\frac{1}{64}$ " "	60	52	64	56			
14 B. & S.	$\frac{3}{64}$ " "	63	59	65	62	133		141
	$\frac{1}{64}$ " "	37	35	40	3			
16 B. & S.	$\frac{3}{32}$ " "	37	34	38	36	75	70.5	80
	$\frac{1}{64}$ " "	26	24	27	25	52	49	57
18 B. & S.	$\frac{3}{32}$ " "	27	25	29	27	64	60	60
	$\frac{1}{64}$ " "	19	17	20	18	43	40	47
20 B. & S.	$\frac{3}{32}$ " "	22	19	23	21			
	$\frac{1}{64}$ " "	13.5	12	14.5	13			
22 B. & S.	$\frac{3}{32}$ " "	18	16	19	17			
	$\frac{1}{64}$ " "	10.5	9	11	10			

NOTE.—1909 Code Cords, weight the same as New Code. Commercial Cords, weight the same as $\frac{1}{64}$ -inch Wall. The above weights are all based on two conductor cords.

General Construction of Special Flexible Cords

Trade Name	Code Type Letter	Use	CONDUCTOR		Reinforcement and Filler	OUTER COVER			
			Braid	No. of Conductors Used		No. of Cotton Braids	Saturated with Weatherproof Compound and Polished	Dry Braid of Hard Finished Cotton	Color
Brewery Cord	CB	Breweries and other Damp Places	*Cotton wp.	Two	.....	....	Yes	....	Black
Canvasite Cord	CC		" wp.	"	"	One	"
Stage Cable	T	Theatre Stages	Cotton wp.	Two	{ Jute Filler	Two	Yes	....	Black
Packing House Cord	PkWp	Packing Houses	Cotton	Two	{ Jute Filler	Two	Yes	....	Black
Deck Cable	PWp	Boats and General Marine Use	Cotton	Two	{ Rubber Jacket and Jute Filler	One	Yes	....	Black
Border Light Cable	B	Theatre Borders	Cotton wp.	{ Two or More	.....	Two	Yes	....	Black
Elevator Cable	E	Elevator Lighting and Control	Cotton	{ Two or More	{ Steel Supporting Strand	Three	Yes	....	Black
Heater Cord	H	Heating Devices	Asbestos	Two	.....	One	....	Yes	Black
Vacuum Cleaner Cord	P- $\frac{1}{64}$ -in. Wall Rubber	Vacuum Cleaners	Cotton Yellow	Two	{ Rubber Jacket	One	....	Yes	Black
Moving Picture Cable	..	Moving Picture Machines	†Cotton (2)	One	.....	{ †One Asbestos	....	....	Gray

*Wp. saturated with a weatherproof compound. †Braids saturated with a flameproof compound. When ordering please use the trade name.

Special Flexible Stage Cable and Packing House Cord



Constructed to withstand severe abrasion. Conductors are reinforced with jute and rubber jacket. The cord is then covered with an outer weatherproof braid.

Special Flexible Deck Cable



Watertight flexible cord, made to stand severe abrasion. Made as follows: Two conductors of new code cotton braided cord, twisted together, reinforced by jute, and a rubber jacket. It is then covered with a weatherproof braid.

Special Flexible Border Light Cable



The construction of border light cables corresponds with canvasite cord, but consists

of two or more conductors and has two outer braids weatherproofed.

Special Flexible Heater Cord



Conductor consists of a number of small copper strands grouped into a cable, cotton wrapped, insulated with a thin wall of rubber compound asbestos wound.

Special Flexible Canvasite Cord



An acidproof flexible cord, unusually tough and durable. For use in tanneries and other places where mechanical and chemical conditions are severe. Made up similar to Brewery Cord except that it has an extra weatherproof braid.

Special Flexible Brewery Cord



A weatherproof lamp cord which conforms in all respects with the requirements of The National Board of Fire Underwriters. This is a specially designed cord for use in breweries and other places where dampness is prevalent.

Inside Telephone Wire



Packed in coils in burlap bags; each coil specially wrapped in heavy craft paper. Furnished in single or triple conductors when specified. A tracer thread is used in all conductors.

Gauge B.&S.	Description	Wt., per 1000 Ft.	Coil Lengths, Ft.
19	Twisted Pair, Olive Green Finished....	22	200-1500
20	" " " " " "	19	200-1500

Outside Telephone Wire



Furnished in coils. Single and triple conductor, when specified.

Gauge B.&S.	Description	Wt., per 1000 Ft.	Coil Lengths, Ft.
17	Weatherproof, Copper Steel Wire.....	36	200-1500
14	" " Wire.....	65	200-1500
17	" Twisted Pair, Bronze Wire.....	39	200-1500
17	" Parallel Bronze Wire.....	..	.....

Bridle Telephone Wire

Furnished in coils. Single conductors, when specified.

Gauge B.&S.	Description	Wt., per 1000 Ft.	Coil Lengths, Ft.
18	Twisted Pair, Weatherproof Braid.....	33	200-1500
16	" " " " " "	42	200-1500

Outside Drop Wire

Stronger and lighter than copper and quite as flexible. Conductor is a high grade non-rusting iron insulated with good grade rubber compound, cotton braided and weatherproofed. The sizes most generally used are as follows:

Gauge	Description	Inch Diam. In.;	Twisted Pair
19 BWG (18 B.& S.)	7/64	"	"
18 BWG (16 B.& S.)	9/64	"	"
16 BWG (14 B.& S.)	5/32	"	"
14 BWG (12 B.& S.)	3/16	"	"

Flameproof Telephone Wire



Gauge B. & S.	Description	Wt., per 1000 Ft.	Coil Lengths, Ft.
16	Single, Twisted of Triple Conductor...	38	200-1500
20	" " " " " "	19	200-1500
22	" " " " " "	16	200-1500

Pot Head Wire



Standard wire is either 19, 20 or 22 B. & S. gauge in single or twisted conductor. Insulation is suitable to withstand effects of the hot sealing compound and outside exposure without a protecting braid. One conductor of the twisted pair has a double ridge on insulation insuring quality. Weight, per 1000 ft., 19 lbs. Coil length, 200-1500 ft.

Armco Galvanized Iron Drop Wire

For Outside Service

Stronger and lighter than copper and quite as flexible. Manufactured from Armco (American Ingot) Iron, universally known to be the only pure iron manufactured today. It is guaranteed 99.84 per cent pure iron (minimum), is equal or superior to the genuine Swedish, Norway and other brands of pure irons. The purity of iron has a great deal to do with its rust-resisting power. Its uniformity assures uniform conductivity, no pitting to cause weak spots and eventually breaks, uniform strength throughout, 65,000 to 75,000 pounds tensile strength per square inch; mass conductivity 18 per cent as compared to steel at 12 per cent. The conductor is thoroughly galvanized, insulated with a high-grade rubber compound on which is woven a braid, weatherproof and twisted together. The sizes most generally used are as follows: Gauge No. 14 BWG, No. 16 BWG, No. 18 BWG and No. 19 BWG. Prices upon application.

Telegraph Wire

These wires are furnished in strict accordance with the standard specifications of the largest telegraph companies of this country. They are a high-class product and can be furnished in all sizes as required. The sizes ordinarily specified are Nos. 14, 16, 18 single and twisted, with a weatherproof braid, and No. 18 in twisted pair and triple, with brown and black braid. Flameproof wires in size No. 16 single and twisted are also used by the telegraph companies.

**Deltabeston Fixture Wire—Plain
Single Conductor—Stranded**



The flexible conductor is insulated with a $\frac{1}{32}$ -inch wall of the best grade of asbestos fiber, purified by a special process. Felted asbestos fixture wire is recommended for all classes of fixture wiring, including fixtures for gas filled incandescent lamps, car fixtures, etc., and is especially adapted for fixtures in which the temperature liable to be attained by some parts are such as to render the use of rubber covered wires or cords either undesirable or impracticable. Felted asbestos fixture wire is smooth and flexible so that it may be "fished" through fixtures with the utmost ease. Standard length, 250 feet. Furnished on spools.

Size B. & S.	Diam. Overall In.	Stranding B. & S.	Wt., Lbs. per 1000 Ft
10	0 180	65/28	42
12	0 157	66/30	29
14	0 137	41/30	20
16	0 119	26/30	14
18	0 107	16/30	10

Single Conductor—Solid

Either the black finish or colored finish fixture wire described above can be furnished with solid conductor where extreme flexibility is not necessary. Price is five per cent less than similar fixture wire with stranded conductor.

**Deltabeston Fixture Wire
Cotton and Art Silk**

This is the plain, black finish fixture wire with a braided outer covering of art silk or cotton. It is especially adapted for fixtures on which the wiring is exposed to view. It has a small diameter and is neat and attractive in appearance. This wire is furnished in single and two conductors.

**Single Conductor
Plain with Braid**



Size B. & S.	Diam. Overall In.	Standard Length of Spools, Ft.	Wt., Lbs. per 1000 Ft.
12	0.179	250	29
14	0.167	250	22
16	0.149	250	16
18	0.137	250	12

Duplex

Two Plain Conductors Twisted Together and Braided



Size	Diam.	Standard	Wt.
12	0.333	250	59
14	0.294	250	44
16	0.258	250	32
18	0.234	250	23

Parallel

Two Plain Conductors Laid Flat and Braided Together



Twisted Pair

Two Plain Conductors Each Braided and Twisted Together



Size	Diam.	Standard	Wt.
12	0.358	250	60
14	0.324	250	45
16	0.288	250	33
18	0.264	250	25

Deltabeston Boiler Room Wire



This wire is generally furnished in sizes 8, 10, 12 and 14 B. & S. with $\frac{1}{8}$ -inch felted asbestos insulation, lead covered, to prevent absorption of moisture. Prices quoted on application.

**Deltabeston Heater Cord
Two Conductor, Stranded**



Style A, with Asbestos Braid Overall			Style D, with Glazed Cotton Braid on Each Conductor		
Size B. & S.	Diam. Overall In.	Wt., Lbs. per 1000 Ft.	Size B. & S.	Diam. Overall In.	Wt., Lbs. per 1000 Ft.
12	0 399	87	12	0 364	63
14	0 359	67	14	0 324	45
16	0 323	52	16	0 288	33
18	0 299	41	18	0 264	24

Style C, with Glazed Cotton Braid Overall			Style E, with Glazed Cotton Braid on Each Conductor and Glazed Cotton Braid Overall		
Size B. & S.	Diam. Overall In.	Wt., Lbs. per 1000 Ft.	Size B. & S.	Diam. Overall In.	Wt., Lbs. per 1000 Ft.
12	0 334	62	12	0 390	68
14	0 294	41	14	0 352	49
16	0 258	32	16	0 312	35
18	0 234	23	18	0 282	26

Standard length of above, 250 feet. Furnished on spools.

Two Conductor, Braided

Styles A, C, D and E heater cord can be furnished with braided conductor instead of stranded conductor at an increase in price of 15 per cent. The braided conductor is made by braiding 34 B. & S. gauge copper wires instead of stranding 30 B. & S. gauge copper wires as in the stranded conductor. Where the cord is subjected to excessive bending this will be found to prolong the life of conductor.

**Deltabeston Stove Wire
Solid Conductor**



This wire is recommended for the wiring of electric stoves and ranges, in and around ovens, in boiler rooms and similar places where excessive moisture is not present. Standard finish is white but black finish can be supplied at same price, if so desired.

Size B. & S.	Diam. Overall In.	Standard Length of Coils, Ft.	Wt., Lbs. per 1000 Ft.
6	0 322	250	113
8	0 268	250	75
10	0 242	500	52
12	0 221	500	38
14	0 204	500	29
16	0 191	500	22
18	0 180	500	18

**Deltabeston Moving Picture Machine
Cable—Standard
Stranded Conductor**



Size B. & S.	Stranding B. & S.	Diam. Overall In.	Standard Length	Wt., Lbs. per 1000 Ft.
00	133-20	0.690	250-ft. Reels	562
0	133-21	0.635	250 " "	459
1	133-22	0.590	500 " "	377
2	133-23	0.515	500 " "	296
4	84-23	0.455	500 " "	204
6	84-25	0.395	250 " Coils	142
8	52-25	0.310	250 " "	90
10	65-28	0.270	500 " "	64
12	66-30	0.250	500 " "	49
14	41-30	0.230	500 " "	38

**Moving Picture Machine Cable—Special
Extra Flexible Stranded Conductor**

Where extreme flexibility is desired cable similar to the standard described above but having an extra flexible conductor is recommended. Data is given below on sizes 2, 4 and 6 B. & S. of this construction. Prices and data on other sizes furnished upon application.

Size	Wt., Lbs. per 1000 Ft.	Standard Length	Wt., Lbs. per 1000 Ft.
2	2695-36	0 515	500-ft. Reels 296
4	1715-36	0 455	500 " " 234
6	1078-36	0 395	250 " Coils 142

Deltabeston Round Magnet Wire



The insulation is pure asbestos fibre treated by a special process which removes all impurities. The asbestos is applied in an adhesive, uniform, smooth mass of approximately the same wall thickness as double cotton covered magnet wire. It is finally treated with a special compound which renders it both moisture proof and tough. Notwithstanding its toughness the insulation is so flexible that it does not crack or break even when sharp bends are made. A careful inspection of the finished wire is made which insures a perfect, uniformly insulated product.

Standard color of finish is black, but white finish can be supplied at same price when customer desires to apply own compounds to wire after forming in coils.

In the manufacture of Deltabeston wire soft drawn copper of at least 98 per cent conductivity is used. Each reel is tested to satisfy the manufacturer's rigid specifications for uniformity of diameter, elongation, tensile strength and conductivity.

Deltabeston magnet wire has exceptional heat resisting qualities, in fact it is indestructible by any temperatures to which it may be subjected in commercial service. It is unequalled for use in the manufacture and repair of coils for railway, mining and mill type motors, electric locomotive headlights, lifting magnets and in all other apparatus in which severe temperature rises occur.

White enamel (known as W. E.) finish Deltabeston magnet wire is not only fireproof but also acid and oilproof and the special compound used makes the insulation so tough that it will even withstand hammer blows.

It is especially desirable for armature coils and for use when service conditions are extremely severe.

The price is approximately 10 per cent higher than standard Deltabeston.

Size & S.	DIAM., IN.	Over Insulation (Approx.)	Lth., Ft. per Lb.	Shlp. Wt., Lbs. per Reel (Approx.)	Price per Lb. Base Price 30 Cents
3/0	.4100	.429	1.950	200	\$1.05
2/0	.3650	.384	2.446	200	1.05
0	.3249	.339	3.075	200	1.05
1	.2893	.303	3.871	200	1.05
2	.2576	.272	4.864	200	1.05
3	.2294	.242	6.124	200	1.06
4	.2043	.216	7.716	200	1.08
5	.1819	.194	9.690	200	1.10
6	.1620	.174	12.18	200	1.12
7	.1443	.156	15.31	150	1.15
8	.1285	.140	19.32	150	1.20
9	.1144	.126	24.25	150	1.28
10	.1019	.112	30.37	150	1.35
11	.0907	.101	38.33	150	1.41
12	.0808	.091	48.05	150	1.48
13	.0720	.082	60.83	150	1.57
14	.0641	.074	76.28	150	1.68
15	.0571	.067	95.51	150	1.85
16	.0508	.059	119.3	125	2.19
17	.0453	.053	149.6	125	2.53
18	.0403	.048	186.7	50	2.90
19	.0359	.044	231.9	50	3.36
20	.0320	.040	288.6	50	3.86

Each one cent change in base is 3 cents per pound.

Net Additions per Pound to the Net Price for Quantities Less Than Full Spool

Size B & S	Full Spool In Lbs.	150 to 199 Lbs.	125 to 149 Lbs.	50 to 124 Lbs.	25 to 49 Lbs.	5 to 24 Lbs.	1.5 to 4.9 Lbs.	Less than 1.5 Lbs.
3-0 to 6	200	\$.01	\$.02	\$.04	\$.08	\$.16	\$.30	\$.40
7 " 15	150	....	.02	.04	.06	.12	.20	.30
16 and 17	125	....	....	.04	.06	.10	.18	.25
18 to 20	50	....	....	....	.04	.08	.16	.20

Intermediate sizes—take price of next smaller size listed.

Deltabeston Rectangular Magnet Wire



The use of flat and square magnet wires is rapidly increasing. Since a greater cross section of copper is secured the desirability of this form of wire is evident. Until Deltabeston insulation was obtainable on rectangular wires, their use was somewhat limited to motors in which the temperature rises were normal. Since Deltabeston is now procurable in nearly all sizes and shapes, the advantages of flat and square wires may be had together with the benefits derived from a fireproof insulation.

The satisfactory application of an asbestos covering on flat and square magnet wires presents certain difficulties not encountered in the insulating of round wires. To apply a smooth, uniform covering over the rounded corners as well as on the flat surfaces of the wire is obviously essential. The manufacturer has so perfected his methods of manufacture that this is achieved with absolute certainty. The insulation adheres tightly to the conductor and although it is tough, its tenacity is unaffected by sharp bends.

Thick. in Mils Bare	PRICE, PER POUND—BASE PRICE 30 CENTS						
	WIDTH IN MILS—BARE, INCHES						
In.	80	90	100	125	150	175	200
20	\$3.16	\$2.92	\$2.65	\$2.32	....	....	....
25	2.80	2.64	2.42	2.20	2.02	....	....
30	2.43	2.32	2.19	2.02	1.86	\$1.76	\$1.68
40	2.12	2.07	1.97	1.86	1.68	1.63	1.60
50	1.95	1.86	1.76	1.68	1.56	1.52	1.51
60	1.78	1.70	1.62	1.55	1.52	1.47	1.45
80	1.61	1.54	1.48	1.42	1.34	1.32	1.30
90	....	1.50	1.45	1.41	1.33	1.30	1.28
100	....	....	1.43	1.40	1.32	1.29	1.26
125	....	....	....	1.39	1.31	1.27	1.24
150	....	....	....	....	1.28	1.25	1.22
175	....	....	....	....	....	1.22	1.20
200	....	....	....	....	....	....	1.18

Thick. in Mils Bare	PRICE, PER POUND—BASE PRICE 30 CENTS					
	WIDTH IN MILS—BARE, INCHES					
In.	225	250	275	300	350	400
30	\$1.66	....	....	....	....	....
40	1.58	\$1.56	\$1.54	....	....	....
50	1.50	1.49	1.48	\$1.47	\$1.46	....
60	1.43	1.42	1.42	1.40	1.38	\$1.36
80	1.30	1.29	1.29	1.28	1.28	1.27
90	1.28	1.27	1.27	1.26	1.25	1.25
100	1.26	1.25	1.24	1.23	1.22	1.22
125	1.24	1.23	1.22	1.21	1.20	1.20
150	1.22	1.21	1.20	1.19	1.18	1.18
175	1.20	1.19	1.18	1.17	1.16	1.16
200	1.18	1.17	1.16	1.15	1.14	1.14
225	1.16	1.15	1.14	1.13	1.13	1.13
250	....	1.13	1.13	1.12	1.12	1.12
275	....	....	1.12	1.12	1.12	1.12
300	....	....	....	1.12	1.12	1.12

Each one cent change in base is 3 cents per pound list.

Net Additions per Pound to the Net Price for Quantities Less Than Full Spool

Size	Full Spool In Lb.	199 to 100 Lb.	99 to 50 Lb.	49 to 25 Lb.	24 Lb. and Less
All	200	\$.03	\$.06	\$.12	\$.24

Round Magnet Wire

Size B. & S. Wire No.	Single Cotton Covered			Double Cotton Covered			
	Diam. Bare Wire In.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.	Thickness of Ins. In.	Diam. Over All In.	Ft. per Lb.
1	.2893	.009	.2983	3.91	.018	.3073	3.88
2	.2576	.009	.2666	4.94	.018	.2756	4.9
3	.2294	.009	.2384	6.23	.018	.2474	6.17
4	.2043	.009	.2133	7.84	.018	.2223	7.81
5	.1819	.009	.1909	9.88	.014	.1959	9.84
6	.1620	.009	.1700	12.44	.014	.1760	12.37
7	.1443	.009	.1523	15.66	.014	.1583	15.58
8	.1285	.009	.1375	19.71	.014	.1425	19.6
9	.1144	.006	.1204	24.81	.012	.1264	24.71
10	.1019	.006	.1079	31.21	.012	.1119	31.07
11	.0907	.006	.0967	39.5	.010	.1007	39.12
12	.0808	.005	.0858	49.83	.010	.0908	49.12
13	.0720	.005	.0770	62.71	.009	.0820	62.00
14	.0641	.005	.0691	78.79	.009	.0731	77.86
15	.0571	.005	.0621	99.27	.009	.0661	97.80
16	.0508	.005	.0558	125.09	.009	.0598	122.91
17	.0452	.005	.0502	157.59	.009	.0542	154.04
18	.0403	.005	.0453	198.31	.009	.0493	193.64
19	.0359	.005	.0409	249.19	.009	.0449	233.16
20	.032	.005	.0370	313.	.009	.0410	303.
21	.0285	.005	.0335	394.	.009	.0375	379.
22	.0253	.0045	.0298	493.	.009	.0343	471.
23	.0226	.0045	.0271	618.	.009	.0316	584.
24	.0201	.0045	.0246	773.	.009	.0291	726.
25	.0179	.00425	.02215	982.	.0085	.0264	932.
26	.0159	.00425	.02015	1228.	.0085	.0244	1149.
27	.0142	.00425	.01845	1533.	.0085	.0227	1419.
28	.0126	.00425	.01685	1907.	.0085	.0211	1739.
29	.0113	.00425	.01555	2365.	.0085	.0198	2130.
30	.01002	.00425	.01427	2945.	.0085	.01852	2606.
31	.00892	.00425	.01317	3680.	.0085	.01742	3233.
32	.00795	.00425	.01220	4542.	.0085	.01645	3894.
33	.00708	.00425	.01133	5569.	.0085	.01558	4666.
34	.0063	.00425	.01055	6000.	.0085	.01480	5477.
35	.00561	.00425	.00986	8331.	.0085	.01411	6602.
36	.005	.00425	.00925	9960.	.0085	.0135	7556.
37	.00445	.00425	.00870	10884.	.0085	.01295	8462.
38	.00396	.00425	.00821	13536.	.0085	.01246	9860.
39	.00353	.00425	.00778	16174.	.0085	.01203	12052.
40	.00314	.00425	.00739	19900.	.0085	.01164	14334.

Square and Rectangular Magnet Wire

Increasing attention is being given to the economies to be secured by the substitution of Square or Rectangular for round magnet wire. When round wire is used, considerable space is wasted, even when turns are fitted together as closely as possible, whereas the waste spaces are filled when square or rectangular wire is used, and a greater current carrying capacity secured.

Square Magnet Wire

Square magnet wire can be furnished in all sizes from number 14 to 0000 B. & S. gauge. (In computing the gauge the diameter of round wire is comparable to the thickness of square wire.) Sizes smaller than No. 14 cannot be regularly procured owing to the difficulty of winding.

Rectangular Magnet Wire



Rectangular magnet wire sizes have not, as yet, been standardized but can be supplied in sizes from .410 to .020 in thickness and from .460 to .064 in width and the regular insulation is double cotton wound. Rectangular wire is not carried in stock, but made specially on order, and in view of this, orders should not be for less than 200 pounds of any size.

Prices on square and rectangular magnet wire will be quoted upon application.

Enameled Magnet Wire

Size B. & S. Gauge	Diameter of Bare Wire Inches	Increase Thickness of Enamel Insulation Inches	Diameter of Enamel Wire	Weight per 1000 Feet Lbs.	Ohms per Pound	Ohms per Cubic Inch	Turns per Square Inch
8	.12850	.0021	.1306	.012	50.55	.003	57
9	.11440	.0021	.1165	.020	40.15	.005	72
10	.10190	.0021	.1040	.031	31.80	.007	90
11	.09074	.0020	.0927	.050	25.25	.011	113
12	.08081	.0020	.0828	.079	20.05	.019	141
13	.07196	.0020	.0740	.125	15.90	.029	177
14	.06408	.0020	.0661	.200	12.60	.046	221
15	.05707	.0020	.0591	.318	10.00	.073	277
16	.05082	.0020	.0528	.505	7.930	.116	348
17	.04526	.0018	.0470	.805	6.275	.184	437
18	.04030	.0018	.0421	1.278	4.980	.291	548
19	.03589	.0018	.0377	2.032	3.955	.456	681
20	.03196	.0018	.0337	3.239	3.135	.720	852
21	.02846	.0017	.0302	5.138	2.490	1.134	1065
22	.02535	.0016	.0269	8.186	1.970	1.800	1340
23	.02257	.0015	.0241	12.97	1.565	2.820	1665
24	.02010	.0014	.0215	20.60	1.245	4.488	2100
25	.01790	.0013	.0192	32.70	.988	7.080	2630
26	.01594	.0012	.0171	51.95	.784	11.27	3320
27	.01420	.0011	.0153	82.55	.622	17.75	4145
28	.01264	.0010	.0136	131.2	.494	28.33	5250
29	.01126	.0009	.0122	208.7	.391	44.32	6510
30	.01003	.0008	.0109	331.5	.310	70.15	8175
31	.00893	.0008	.0097	526.5	.246	110.4	10200
32	.00795	.0007	.0087	836.5	.196	172.6	12650
33	.00708	.0007	.0077	1332.	.155	279.0	16200
34	.00630	.0006	.0069	2118.	.123	433.2	19950
35	.00561	.0006	.0062	3352.	.098	684.5	25000
36	.00500	.0005	.0055	5340.	.078	1094.	21700
37	.00445	.0005	.0049	8480.	.062	1823.	39600
38	.00396	.0004	.0044	13490.	.049	2693.	49100
39	.00353	.0004	.0039	21450.	.039	4332.	65600
40	.00314	.0004	.0035	34100.	.031	6770.	77600

Prices on application.

Magnet Wire Reels and Spools

Size B. & S. No.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel	Size B. & S. Nos.	Kind of Cover	Reel No.	Diam. In.	Lbs. per Reel
*1	.....	1	28	200	27-31	Cotton	15	5	2-5
1-14	.....	2	23	200	27-31	Silk	15	5	4-8
15-18	.....	11	13	50	32-36	Cotton	16	4	1-2 1/2
19-21	.....	13	9	25	32-36	Silk	16	4	1-5
22-26	Cotton	14	6	7-10	36-40	Cotton	17	3	1-2
21-26	Silk	14	6	8-12	36-40	Silk	17	3	1-2

*No. 1 and larger.

193 Alloy Resistance Wire

This alloy serves successfully in low temperature air heaters, and makes good elevator controllers and rheostat resistances. The upper limit is 1200° F. It gives satisfaction in the finer gauges up to 30. It is a nickel-iron-chromium alloy with much the same characteristics as Climax but is more resistant to oxidation and rusting and gives longer service. 193 Alloy is made in the form of wire and ribbon.

Size B. & S.	Diam. In.	Ohms per 1000 Ft. at 20° C.	Feet per Lb. Bare	Wt., Lbs. per 1000 Ft. Bare	Size B. & S.	Diam. In.	Ohms per 1000 Ft. at 20° C.	Feet per Lb. Bare	Wt., Lbs. per 1000 Ft. Bare
1	.289	6.59	4.33	231.	21	.0285	677.3	446	2.24
2	.258	8.27	5.43	184.	22	.0254	852.6	565	1.77
3	.229	10.5	6.90	145.	23	.0226	1077	709	1.41
4	.204	13.2	8.70	115.	24	.0201	1362	893	1.12
5	.182	16.6	10.9	92.	25	.0179	1717	1123	.89
6	.162	21.0	13.7	73.	26	.0159	2176	1429	.70
7	.144	26.5	17.5	57.	27	.0142	2729	1786	.56
8	.1285	33.0	22.2	45.	28	.0126	3465	2273	.44
9	.114	42.3	27.8	36.	29	.0113	4308	2857	.35
10	.102	52.9	34.5	29.	30	.0100	5500	3623	.276
11	.091	66.4	43.5	23.	31	.0089	6945	4566	.219
12	.081	83.9	55.6	18.	32	.0080	8596	5650	.177
13	.072	106.1	69.9	14.3	33	.0071	10910	7194	.139
14	.064	134.3	88.5	11.3	34	.0063	13860	9091	.110
15	.057	169.3	109.0	9.2	35	.0056	17540	11490	.087
16	.051	211.5	139.0	7.2	36	.0050	22000	14490	.069
17	.045	271.6	179.0	5.6	37	.0045	27160	17860	.056
18	.040	343.8	226.0	4.42	38	.0040	34380	22220	.045
19	.036	424.8	279.0	3.58	39	.0035	44900	29410	.034
20	.032	537.2	353.0	2.83	40	.0031	57240	40000	.025

Specific electrical resistance, 550 ohms per circular mil-foot at 20° C.

Temperature coefficient of electrical resistivity, 0.0008 per degree Centigrade, between 20° C. and 100° C.

Coefficient of linear expansion, 0.0000171 per degree Centigrade.

Specific gravity, 8.15. Weight per cubic inch, .29 pound.

Prices quoted upon application.

18% Nickel Silver Resistance Wire

German Silver

Size B. & S.	Diam. In.	Ohms per 1000 Ft. at 20° C.	Feet per Lb. Bare	Wt., Lbs. per 1000 Ft. Bare	Size B. & S.	Diam. In.	Ohms per 1000 Ft. at 20° C.	Feet per Lb. Bare	Wt., Lbs. per 1000 Ft. Bare
1	.289	2.16	4.18	239	21	.0285	221.6	431	2.32
2	.258	2.70	5.26	190	22	.0254	281.2	546.4	1.83
3	.229	3.43	6.67	150	23	.0226	352.4	684.9	1.46
4	.204	4.32	8.4	119	24	.0201	445.6	870	1.15
5	.182	5.43	10.5	95	25	.0179	561.8	1099	.91
6	.162	6.86	13.9	72	26	.0159	712.0	1389	.72
7	.144	8.68	16.9	59	27	.0142	892.8	1724	.58
8	.128	10.99	21.3	47	28	.0126	1133	2174	.46
9	.114	13.85	26.6	37.6	29	.0113	1409	2740	.365
10	.102	17.30	34.2	29.2	30	.0100	1800	3497	.286
11	.091	21.74	42.2	23.7	31	.0089	2273	4425	.226
12	.081	27.44	53.2	18.8	32	.0080	2813	5464	.183
13	.072	34.72	67.6	14.8	33	.0071	3572	6944	.144
14	.064	43.95	85.5	11.7	34	.0063	4534	8850	.113
15	.057	55.4	107.5	9.3	35	.0056	5733	11111	.090
16	.051	69.2	134.2	7.45	36	.0050	7200	14084	.071
17	.045	88.9	174.5	5.73	37	.0045	8910	17241	.058
18	.040	112.5	218.8	4.57	38	.0040	11250	21739	.046
19	.036	138.9	270.3	3.7	39	.0035	14750	28571	.035
20	.032	175.8	341.3	2.93	40	.0031	20000	38461	.026

Specific resistance per circular mil-foot, 180 ohms, at 20° C.

Temperature coefficient, .00027 per degree C., between 20° C. and 100° C. Specific gravity, 8.5. Weight, per cubic inch, .307 pound.

The composition commonly known as Nickel Silver is that containing 18 per cent of nickel. Its resistance varies somewhat in different lots, according to temper, and is approximately 19 times that of copper.

Thirty per cent nickel silver wire has a resistance approximately 28 times that of copper.

Prices quoted upon application.

Annunciator Wire

Regular

Insulated with two winds of cotton yarn applied in opposite directions, saturated with a special wax compound and highly polished. This makes a very compact insulation. Furnished either on spools containing about 7 lbs., or exactly 1 lb. and in 1-lb. and 1/2 lb. coils, and packed in cases containing approximately 200 lbs. Furnished in colors and styles as follows: either plain copper or tinned; plain copper furnished unless otherwise ordered; red, blue, red and white, brown, brown and white, white, olive, yellow, yellow and white, blue and white, green, green and white and special colors where possible for us to obtain proper colored yarns.

Single Conductor

Size B. & S.	Wt. Lbs. per 1000 Ft.	NET ADDITIONS TO BASE			1-lb. Coils
		6-7-lb. Spools	1-lb. Spools	1/2-lb. Coils	
14	15	\$.06	\$.11	\$.08	\$.07
16	9.5	.08	.13	.10	.09
18	6.5	.11	.16	.13	.12
20	4.5	.18	.23	.20	.19
22	3.2	.22	.27	.24	.23

Tinned wire furnished on application at \$.02 1/2 per pound extra.

Twisted Pairs

Size B. & S.	Wt. Lbs. per 1000 Ft.	6-7-lb. Spools	1-lb. Spools	1/2-lb. Coils	1-lb. Coils
16	19				.10
18	13				.13
20	9				.20
22	7				.24

Tinned wire furnished on application at \$.02 extra.

Damp-proof Office Wire



This wire is double braided, the inner braid saturated with black weatherproof compound. The outer braid is specially treated with wax, highly polished and will not collect dust. Damp-proof office wire is carried regularly in the following colors: red, red and white, blue, blue and white. It is put up in coils of about 10 lbs. each, or on spools of 5 lbs. each, and packed in cases of approximately 200 pounds each.

Sizes 16 and 18 wire, in red, red and white, blue, blue and white, are also carried in duplex wire, being two separately insulated conductors under one braid.

Single Conductor

Size B. & S.	Wt., Lbs. per 1000 Ft.	NET ADDITIONS TO BASE	
		In 10-lb. Coils	On 5-lb. Spools
14	20	\$.12	\$.17
16	14.5	.14	.20
18	10	\$.16	\$.21

Duplex Double Conductor

Size B. & S.	Wt., Lbs. per 1000 Ft.	Net Additions to Base	
		In 10-lb. Coils	In 5-lb. Spools
14	35	\$.14	
16	27	.16	
18	18	.18	

Tinned wire furnished on application.

Annunciator Cables

This cable is designed for connecting the annunciator in an elevator car with the push buttons on the different floors.

Each conductor is composed of 16 strands of No. 30 B. & S. gauge soft untinned copper wire and insulated with two reverse wrappings of cotton and one cotton braid. The insulated conductors are then cabled (using a steel supporting strand if desired, in order to give extra tensile strength, but ordinarily supplied without same) then covered with two cotton braids, the inner one being white and the outer one black. This is a dry cable, and the outer braids are not flameproof.

Prices on application.

O. K. Weather-proof Solid Copper Wire
For Outside Construction Uses



This wire is insulated with three close cotton braids, all thoroughly saturated with O. K. Weather-proof Compound. The outer braid is smoothly polished.

Size B. & S.	Underwriters' Approved Carrying Capacity Amperes	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. D.am., In. Over Insulation	PUT UP FOR SHIPMENT		
					Approx. Diam. Reels Inches	REELS Length Feet	Approx. Weight Pounds
0000	325	767	4050	2 5/8	45	2500	1920
000	275	629	3320	2 1/2	40	3000	1890
00	225	502	2650	2 1/4	40	3500	1760
0	200	407	2150	2 1/4	40	4000	1630
1	150	316	1670	2 1/4	28	800	250
2	125	260	1370	2 1/4	28	1000	260
3	100	199	1050	2 1/4	28	1250	250
4	90	164	865	2 1/4	28	1600	260
5	80	135	710	2 1/4	28	2000	270
6	70	112	590	2 1/4	28	2500	280
8	50	75	395	2 1/4	28	4000	300
10	30	53	280	2 1/4	28	6400	340

Sizes 1, 2, 3 and 4 also put up in coils of approximately 130 pounds. Sizes 5 and 6, 140 pounds. Sizes 8 and 10, 160 pounds.

Size B. & S.	Underwriters' Approved Carrying Capacity Amperes	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. Diam. Over Insulation	PUT UP FOR SHIPMENT BUNDLES CONTAINING APPROX. 100 LBS.	
					No. Coils	Wt., Lbs.
8	50	75	395	1 7/8	4	25
10	30	53	280	1 3/4	4	25
12	25	35	185	1 1/2	4	25
14	20	25	130	1 1/2	4	25
16	10	14	75	1 1/2	4	25
18	5	11	58	1 1/8	4	25

Prices quoted upon application.

O. K. Weather-proof Stranded Copper Wire
For Outside Construction Uses



This wire is insulated with three close cotton braids, all thoroughly saturated with O. K. Weather-proof Compound. The outer braid is smoothly polished.

Size Circular Mils	Underwriters' Approved Carrying Capacity Amperes	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. No. of ft. per Reel	Approx. Diam. Over Insulation	CONCENTRIC STRANDS	
						Number Wires	Diam. Each
1000000	1000	3675	19400	900	1 1/4	61	.128
900000	920	3330	17600	1000	1 1/4	61	.121
800000	840	3000	15800	1000	1 1/4	61	.115
700000	760	2650	14000	1200	1 1/4	61	.107
600000	680	2235	11800	1500	1 1/4	61	.099
500000	600	1900	10000	1800	1 1/4	37	.116
450000	550	1725	9100	1500	1 1/4	37	.110
400000	500	1550	8200	1500	1 1/4	37	.104
350000	450	1345	7100	1800	1 1/4	27	.114
300000	400	1175	6200	2000	1 1/4	27	.105
250000	350	985	5200	2500	1 1/4	19	.115
0000	325	800	4220	2500	5/8	19	.106
000	275	653	3450	3000	5/8	12	.118
00	225	522	2760	3500	5/8	12	.105
0	200	424	2240	4000	5/8	7	.123
1	150	328	1735	800	5/8	7	.109
2	125	270	1425	1000	5/8	7	.097
3	100	206	1090	1200	5/8	7	.087
4	90	170	900	1500	5/8	7	.077
5	80	140	740	2000	5/8	7	.069
6	70	115	610	2500	5/8	7	.061
8	50	78	410	3500	5/8	7	.049

Prices quoted upon application.

O. K. Slow Burning Solid Copper Wire



Especially suited for use in engine and boiler rooms, furnaces and foundries.

This wire has three close braids of cotton, all saturated with a white fire-proof compound. The compound used on the outer braid becomes hard, but the wire still retains its flexibility.

Size B. & S.	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. Diam. Over Insulation	PUT UP FOR SHIPMENT		
				Approx. Diam. Reels Inches	REELS Length Feet	Approx. Weight Pounds
0000	925	4890	3/4	45	2500	2310
000	760	4020	3/4	40	3000	2280
00	600	3170	3/4	40	3500	2100
0	495	2610	3/4	40	4000	1980
0000	925	4890	3/4	28	325	300
000	760	4020	3/4	28	400	300
00	600	3170	3/4	28	500	300
0	495	2610	3/4	28	625	310
1	365	1930	3/4	28	800	290
2	320	1690	3/4	28	1000	320
3	270	1425	3/4	28	1250	340
4	220	1160	3/4	28	1600	350
5	190	1000	3/4	28	2000	380
6	160	845	3/4	28	2500	400

Size B. & S.	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. Diam. Over Insulation	PUT UP FOR SHIPMENT BUNDLES CONTAINING APPROX. 100 LBS.	
				No. Coils	Wt., Lbs.
8	100	530	1 7/8	4	25
10	80	420	1 1/4	4	25
12	55	290	1 1/2	4	25
14	40	210	1 1/2	4	25
16	18	95	1 1/2	4	25
18	14	75	1 1/8	4	25

Prices quoted upon application.

O. K. Slow Burning Stranded Copper Wire



This wire has three close braids of cotton, all saturated with a white fire-proof compound. The compound used on the outer braid becomes hard, but the wire still retains its flexibility.

Size Circular Mils	APPROX. Wt., Lbs. Per 1000 Ft.	LBS. Per Mile	Approx. No. of Ft. per Reel	Approx. Diam. Over Insulation	CONCENTRIC STRANDS	
					Number Wires	Diam. Each
1000000	3980	21000	900	1 3/8	61	.128
900000	3640	19200	1000	1 3/8	61	.121
800000	3280	17300	1000	1 3/8	61	.115
700000	2920	15400	1200	1 3/8	61	.107
600000	2460	13000	1500	1 3/8	61	.099
500000	2080	11000	1800	1 3/8	37	.116
450000	1900	10000	1500	1 3/8	37	.110
400000	1700	9000	1500	1 3/8	37	.104
350000	1500	7900	1800	1 3/8	27	.114
300000	1310	6900	2000	1 3/8	27	.105
250000	1120	5900	2500	1 3/8	19	.115
0000	960	5070	2500	5/8	19	.106
000	785	4150	3000	5/8	12	.118
00	625	3300	3500	5/8	12	.105
0	510	2700	4000	5/8	7	.123
1	380	2000	800	5/8	7	.109
2	335	1770	1000	5/8	7	.097
3	280	1480	1200	5/8	7	.087
4	230	1220	1500	5/8	7	.077
5	195	1030	2000	5/8	7	.069
6	165	870	2500	5/8	7	.061
8	105	555	3500	5/8	7	.049

Prices quoted upon application.

American Brand Weatherproof Copper Wire
For Outside Construction Uses
Triple Braid—Solid Conductor



This wire is triple braided with cotton and thoroughly saturated with scientific American Brand Weatherproof Compound, the outer braid being saturated with a highly waxed finish which is polished, making the wire uniform, pliable and durable.

Size B. & S. Gauge	APPROX. WT.		Approx. Diam. Over Insula'n, In.	Carrying Capacity in Amperes
	Lbs. per 1000 Ft.	Lbs. per Mile		
0000	767	4050	2 5/8	312
000	629	3320	2 3/8	262
00	502	2650	2 1/8	220
0	407	2150	1 7/8	185
1	316	1670	1 5/8	156
2	260	1370	1 3/8	131
3	199	1050	1 1/8	110
4	164	865	1 1/4	92
5	135	710	1 1/8	77
6	112	590	1 1/4	65
8	75	395	1 1/8	46
9	62	325	1 1/4	39
10	53	280	1 1/8	32
12	35	185	1 1/4	23
14	25	130	1 1/8	16
16	20	105	1 1/4	8
18	16	85	1 1/8	5

Weights are guaranteed subject to 3 per cent variation.

Triple Braid Stranded Conductor—Feeder Cables



The stranded conductor wires and feeder cables are insulated with three braids of cotton and thoroughly saturated with scientific American Brand Weatherproof Compound; the outer braid finished with high polished wax, giving the wire a uniform and durable coating that will not crack in handling and bending.

The strands shown in table below are carried in stock, but strands of greater or lesser number of wires can be furnished on order.

Capacity Circular Mils	CONCENTRIC STRAND		APPROXIMATE WEIGHT		Diam. Over Insula'n, Inches
	No. of Wires	Diam. of Each	Lbs. per 1000 Ft.	Lbs. per Mile	
*2,000,000	61	.181	7008	37000	2 1/8
*1,750,000	61	.169	6193	32700	2
*1,500,000	61	.156	5380	28400	1 7/8
*1,250,000	61	.143	4508	23800	1 3/4
1,000,000	37	.164	3674	19400	1 1/2
*900,000	37	.155	3332	17600	1 5/8
800,000	37	.147	2992	15800	1 1/2
750,000	37	.142	2822	14900	1 1/2
*700,000	37	.137	2650	14000	1 1/2
600,000	37	.127	2235	11800	1 3/8
500,000	19	.162	1894	10000	1 1/4
*450,000	19	.153	1724	9100	1 3/8
400,000	19	.145	1553	8200	1 1/8
350,000	19	.135	1345	7100	1
300,000	19	.125	1174	6200	3/4
250,000	12	.144	985	5200	3/4
B. & S. G.					
0000	7	.173	800	4220	7/8
000	7	.155	653	3450	13/16
00	7	.138	522	2760	1 1/16
0	7	.1228	424	2240	1 1/16
1	7	.109	328	1735	9/16
2	7	.097	270	1425	7/8
3	7	.086	206	1090	3/4
4	7	.077	170	900	7/8
5	7	.068	140	740	3/4
6	7	.061	115	610	3/4
8	7	.0484	78	410	3/4

Weights are guaranteed subject to 3 per cent variation.

*Sizes marked not carried in stock.

American Brand Weatherproof Copper Wire
For Outside Construction Uses
Double Braid Solid Conductor



The double braid wire is made up of two closely woven braids. The one next to the conductor is saturated with American Brand Weatherproof Compound and the outer braid is saturated with highly waxed finish and polished, making it durable and flexible. Only to made order.

Size B. & S.G.	APPROXIMATE WEIGHT		Diam. Over All In.
	Lbs. per 1000 Ft.	Lbs. per Mile	
0000	723	3817	2 1/8
000	587	3098	2 3/8
00	467	2467	2 1/4
0	377	1989	1 7/8
1	294	1553	1 5/8
2	239	1264	1 3/8
3	185	977	1 1/4
4	151	795	1 1/4
5	122	646	1 1/4
6	100	529	1 1/4
8	66	349	1 1/4
9	54	283	1 1/4
10	46	241	1 1/4
12	30	158	1 1/4
14	20	107	1 1/4
16	16	83	1 1/4
18	12	64	1 1/4

Weights are guaranteed subject to 3 per cent variation.

Double Braid Strand Conductor—Feeder Cable



The double braided stranded wires and cables are insulated with American Brand Compound, making them flexible and durable. Only made to order, in standard strand unless otherwise specified.

Capacity Circular Mils	CONCENTRIC STRAND		APPROXIMATE WEIGHT		Diam. Over All In.
	No. of Wires	Diam. of Each	Lbs. per 1000 Ft.	Lbs. per Mile	
2,000,000	61	.181	6690	35323	2
1,750,000	61	.169	5894	31119	1 5/8
1,500,000	61	.156	5098	26915	1 3/8
1,250,000	61	.143	4264	22516	1 1/4
1,000,000	37	.164	3456	18246	1 1/2
900,000	37	.155	3127	16513	1 1/2
800,000	37	.147	2799	14779	1 1/2
750,000	37	.142	2635	13913	1 1/2
700,000	37	.137	2471	13045	1 1/2
600,000	37	.127	2093	11052	1 3/8
500,000	19	.162	1765	9318	1 1/4
450,000	19	.153	1601	8452	1 1/4
400,000	19	.145	1436	7584	1 1/4
350,000	19	.135	1248	6589	1 1/4
300,000	19	.125	1083	5721	1 1/4
250,000	12	.144	907	4788	1 1/4
B. & S. G.					
0000	7	.173	745	3935	2 3/8
000	7	.155	604	3190	2 1/8
00	7	.138	482	2544	2 1/8
0	7	.1228	388	2051	2 1/8
1	7	.109	303	1599	2 1/8
2	7	.097	246	1301	2 1/8
3	7	.086	190	1004	2 1/8
4	7	.077	155	820	2 1/8
5	7	.068	126	668	2 1/8
6	7	.061	103	544	2 1/8
8	7	.0484	68	359	2 1/8

Weights are guaranteed subject to 3 per cent variation.

American Brand Slow Burning Underwriters' Copper Wire

Triple Braid Solid Conductor—White Finish



Especially suitable for boiler rooms, furnaces and foundries. This wire does not sustain combustion and according to a recent report of the Underwriters' Laboratories, the samples submitted do not sustain combustion even after the fifth application of the flame for one minute. The wire is easily distinguished from all other makes by one red and one green thread woven in the middle braid. All white.

Size B. & S. Gauge	APPROXIMATE WEIGHT		Approximate Diam. Over Insulation Inches
	Pounds per 1000 Feet	Pounds per Mile	
0000	925	4890	3/4
000	760	4020	23/32
00	600	3170	19/32
0	495	2610	17/32
1	365	1930	15/32
2	320	1690	7/16
3	270	1425	13/32
4	220	1160	3/8
5	190	1000	11/32
6	160	845	5/16
8	100	530	9/32
10	80	420	1/4
12	55	290	1/32
14	40	210	3/16
16	30	160	5/32
18	24	130	1/8

American Brand Weatherproof Hard Drawn Copper Wire

For Outside Construction Uses Triple Braid—Solid Conductor



This wire is especially insulated for telephone and telegraph purposes as well as railway signal work, combining the highest conductivity and greatest tensile strength.

Double braid made to order. Twisted pair made to order.

Size B. & S. Gauge	APPROXIMATE WEIGHT		Diam. in Mils	Breaking Weight Pounds
	Pounds per 1000 Ft.	Pounds per Mile		
6	112	590	.1620	1237
8	75	395	.1285	778
9	62	325	.1144	617
10	53	280	.1019	489
12	35	185	.0808	367
14	25	130	.0641	193
N. B. S. Gauge				
6	146	770	.192	1967
8	109	573	.160	1237
10	74	393	.128	778
12	56	296	.104	617
14	34	182	.080	489
16	24	127	.060	307

Weights are guaranteed subject to 3 per cent variation.

American Brand Slow Burning Wire and Feeder Cables

Triple Braid Stranded Conductor—White Finish



All three braids of cotton are thoroughly saturated with American Brand White Fireproof Compound, giving the wire a smooth, hard finish, retaining its flexibility.

Capacity Circular Mils	CONCENTRIC STRAND		APPROXIMATE WEIGHT		Diam. Over Insulation Inches
	No. of Wires	Diam. of Each	Lbs. per 1000 Ft.	Lbs. per Mile	
2,000,000	61	.232	7800	41000	2 1/8
1,750,000	61	.217	6700	35400	2
1,500,000	61	.201	5830	30800	1 7/8
1,250,000	61	.183	4940	26100	1 3/4
1,000,000	37	.164	3980	21000	1 1/16
900,000	37	.155	3640	19200	1 9/16
800,000	37	.147	3280	17300	1 7/32
700,000	37	.137	2920	15400	1 7/16
600,000	37	.127	2460	13000	1 3/32
500,000	19	.162	2080	11000	1 1/32
450,000	19	.153	1900	10000	1 3/32
400,000	19	.145	1700	9000	1 3/32
350,000	19	.135	1500	7900	31/32
300,000	19	.125	1310	6900	1 1/16
250,000	12	.144	1120	5900	7/8
B. & S. G.					
0000	7	.173	960	5070	27/32
000	7	.155	785	4150	25/32
00	7	.138	625	3300	11/16
0	7	.128	510	2700	19/32
1	7	.109	380	2000	17/32
2	7	.097	335	1770	17/32
3	7	.086	280	1480	15/32
4	7	.077	230	1220	7/16
5	7	.068	195	1030	3/8
6	7	.061	165	870	11/32
8	7	.0484	105	555	9/32

Weights are guaranteed subject to 3 per cent variation.

American Brand Weatherproof Iron Wire

For Outside Construction Uses Double and Triple Braid



The conductor used in this wire is BB. double galvanized telephone and telegraph iron wire, meeting the required laboratory tests, and is insulated with American Brand Weatherproof Compound with highly polished and durable finish, and is extensively used for telegraph and telephone requirements.

Always put up in standard size coils, properly wrapped in burlap.

Size B. W. G. Gauge	DOUBLE BRAID		TRIPLE BRAID		Stand. Size Coils
	Weight per 1000 Ft.	Weight per Mile Pounds	Weight per 1000 Ft.	Weight per Mile Pounds	
4	166.4	878	176.3	930	1/4
6	131.6	671	140.2	740	1/3
8	89.3	470	100.8	525	1/2
9	75.9	400	84.4	450	1/2
10	59.8	350	67.8	400	1/2
12	42.5	225	48.8	260	1/2
14	28.2	145	33.6	175	1/2
16	19.2	100	23.25	125	1
18	12.05	68	15.66	89	1

Weights are guaranteed subject to 3 per cent variation.

Stranded Bare Copper Wire
Annealed or Hard Drawn



Size Circular Mils	WEIGHT		REGULAR STYLE OF STRANDING		Diam. Strand Mils
	Per 1000 Ft.	Per Mile	No. Wires	Diam. Each	
2000000	6180	32630	91	.148	1630
1750000	5403	28530	91	.139	1526
1500000	4630	24450	91	.128	1412
1250000	3859	20380	91	.117	1289
1000000	3090	16320	61	.128	1152
950000	2930	15470	61	.125	1123
900000	2780	14680	61	.121	1094
850000	2620	13830	61	.118	1062
800000	2470	13040	61	.115	1031
750000	2320	12250	61	.111	998
700000	2160	11410	61	.107	964
650000	2010	10610	61	.103	929
600000	1850	9768	61	.099	893
550000	1700	8976	61	.095	855
500000	1540	8131	37	.116	813
450000	1390	7339	37	.110	772
400000	1240	6547	37	.104	728
350000	1080	5702	27	.114	701
300000	926	4889	27	.105	649
250000	772	4076	19	.115	574

Size B. & S.	WEIGHT		REGULAR STYLE OF STRANDING		Diam. of Strand Mils
	Per 1000 Ft.	Per Mile	No. Wires	Diam. Each	
0000	653	3448	19	.105	528
000	518	2735	12	.118	491
00	411	2170	12	.105	438
0	326	1721	7	.123	368
1	258	1362	7	.1093	328
2	205	1082	7	.0974	292
3	163	861	7	.0867	260
4	129	681	7	.0772	232
5	102	539	7	.0688	206
6	81	428	7	.0612	184
8	51	269	7	.0486	146
10	32	169	7	.0385	116
12	20	106	7	.0305	91.5
14	13	69	7	.0242	72.6
16	8	42	7	.0192	57.6
18	5	26	7	.0152	45.6

Prices quoted upon application.

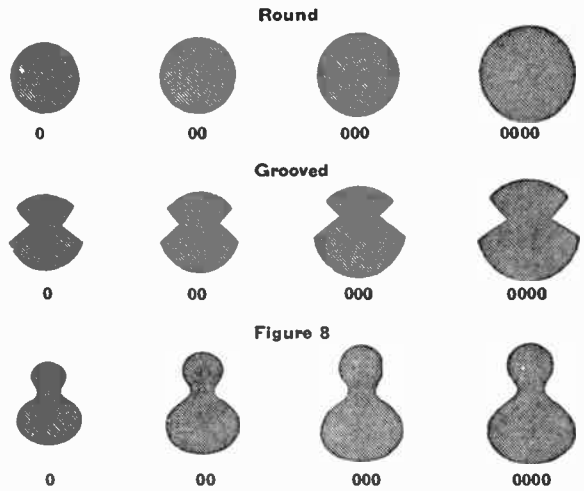
Solid Bare Copper Wire
Annealed or Hard Drawn



Size B. & S.	Diam. Inches	Cap. C. M.	WEIGHT. POUNDS		Approx. Wt. of Coils, Lbs.
			Per 1000 Ft.	Per Mile	
0000	.460	211600	640.5	3382	200
000	.410	167800	507.9	2682	200
00	.365	133100	402.8	2127	200
0	.325	105500	319.5	1687	200
1	.289	83690	253.3	1337	200
2	.258	66370	200.9	1061	200
3	.229	52640	159.3	811	200
4	.204	41740	126.4	667	200
5	.182	33100	100.2	529	200
6	.162	26250	79.46	420	200
7	.144	20820	63.02	333	200
8	.128	16510	49.98	264	200
9	.114	13090	39.63	209	200
10	.102	10380	31.43	166	200
11	.091	8234	24.92	132	200
12	.081	6530	19.77	104	200
13	.072	5178	15.68	83	200
14	.064	4107	12.43	66	200
15	.057	3257	9.86	52	200
16	.051	2583	7.82	41	100
17	.045	2048	6.2	33	100
18	.040	1624	4.92	26	100
19	.036	1288	3.90	21	50
20	.032	1022	3.09	16	50

Prices quoted upon application.

Hard Drawn Copper Trolley Wire



Hard drawn trolley wire is furnished in any of the standard styles, round, grooved, or figure eight.

Trolley wire furnished in sizes 4/0-1/0 inclusive put up on 40-inch reels containing approximately 2000 pounds each or on 32-inch reels containing approximately 1000 pounds each.

The cross sections of the various styles and sizes are shown herewith.

Size B. & S.	Circular Mils	Pounds per Mile	Size B. & S.	Circular Mils	Pounds per Mile
0000	211600	3382	00	133100	2127
000	167800	2682	0	105500	1687

Prices quoted upon application.

O. K. Weather-proof Iron Wire



Size B.W.G.	Length Coils Miles	APPROX. WT. LBS. PER MILE		Size B.W.G.	Length Coils Miles	APPROX. WT. LBS. PER MILE	
		Dbl. Brd.	Triple Brd.			Dbl. Brd.	Triple Brd.
8	1/4	470	520	12	1/2	230	260
9	1/3	400	450	14	1/2	150	175
10	1/2	350	400	..	..	..	..

American Galvanized Arc Lamp Chain



Made in three sizes: Nos. 31 and 33 for suspending arc lamps, and No. 35 for suspending incandescent lamps. It is heavily galvanized and rust-proof.

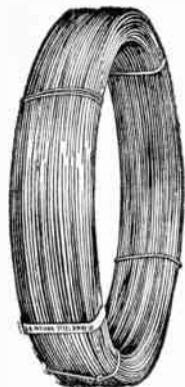
Put up on 500 or 1000-foot reels.

Size No.	Description	Tensile Strength per 1000 Lbs.	Wt. Lbs. per 1000 Feet	Price per 100 Feet
31	For Heavy Street Fixtures	915	118	\$8.50
33	Medium " "	725	89	8.25
35	Light " "	550	71	7.50

Galvanized Attachments

Price, Hook for No. 31 Chain	per 100	\$6.00
" " " " 33	"	6.00
" " " " 35	"	4.00
" Ring " " 31	"	9.00
" " " " 33	"	5.00
" " " " 35	"	3.00
" Connecting Link for No. 31 Chain, per 1000 sets		18.00
" " " " 33	"	38.00
" " " " 35	"	30.00

Extra Double Galvanized Telephone and Telegraph Wire



The Indiana Steel & Wire Company's process of galvanizing (Crapo Patents) overcomes the inherent defects in certain grades of galvanized wire, more especially those which approach pure iron. The use of the process results in a perfect mechanical bond between the zinc coating and the iron base metal, thus insuring a protective coating which will not crack or peel even if the wire is bent or twisted abruptly, as when wrapped around its own diameter.

Aside from the introduction of a molten salt treating bath which in no way adversely affects the finished product, the process follows closely the old standard hot-dip method of applying a zinc coating. The molten salt bath is of

such composition as to prepare the surface of the iron base metal so that after being made chemically clean, fluxed and dipped in the molten zinc, the resulting galvanizing is thick, non-peeling, and contains the maximum amount of pure zinc which means the best possible protection against corrosion.

Extra Best Best (E. B. B.) is highest in electrical conductivity, having a range of electrical resistance of 4700 to 5000 mile ohms.

Best Best (B. B.) Slightly higher in resistance than E. B. B. but combines conductivity with tensile strength to make a popular grade, having a maximum electrical resistance of 5600 mile ohms.

Steel is designed for short-line service, where electrical conductivity can be sacrificed for tensile strength. Maximum resistance 6500 mile ohms.

All grades galvanized under the same improved process.

Size B.W.G.	Diam. In.	Wt., Lbs. per Mile	Miles Wire in Bundle	APPROX. BREAKING STRAIN, LBS.		
				E. B. B.	B. B.	Steel
4	.238	811	1/4	2028	2271	2433
6	.203	590	1/3	1475	1652	1770
8	.165	390	1/2	975	1092	1170
9	.148	314	1/2	785	879	942
10	.134	258	1/2	645	722	774
11	.120	206	1/2	515	577	618
12	.109	170	1/2	425	476	510
14	.083	99	1/2	247	277	297

Prices upon application.

American Galvanized Steel Strand Guy Wire

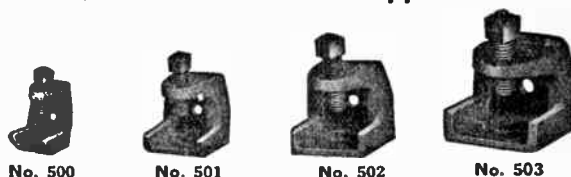
Composed of Seven Wires Twisted Together



Diam. Inches	Wt., Lbs. per 1000 Ft.	Regular		Siemen's Martin	
		Approx. Strength Lbs.	Price per 100 Ft.	Approx. Strength Lbs.	Price per 100 Ft.
5/8	813	11600	\$8.50	19100	\$8.25
1/2	517	7400	5.50	12100	5.25
7/16	399	5700	4.50	9350	4.30
3/8	296	4250	3.50	6950	3.25
5/16	205	3200	2.50	5350	2.50
1/4	121	1900	1.75	3150	1.70
3/16	73	1150	1.25	1900	1.35
1/8	32	540	1.00	910	.90

Diam. Inches	Wt., Lbs. per 1000 Ft.	High Strength		Extra High Strength	
		Approx. Strength Lbs.	Price per 100 Ft.	Approx. Strength Lbs.	Price per 100 Ft.
5/8	813	29600	\$12.00	42400	\$14.60
1/2	517	18800	7.25	26900	8.80
7/16	399	14500	6.00	20800	7.20
3/8	296	10800	4.40	15400	5.25
5/16	205	8000	3.20	11200	4.25
1/4	121	4750	2.25	6650	2.85
3/16	73	2850	1.80	3990	2.40
1/8	32	1330	1.20	1830	1.60

Universal Insulator Supports



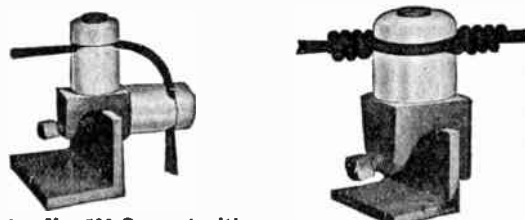
Universal Insulator Supports are specially designed malleable iron clamps for securing insulators in any position to open steel framework for wiring mills, foundries, factories, shops, bridges, piers, elevated railways, subways, train sheds and similar structures. They are easily attached, and by their use, electric wiring for lights, motors, generators, cranes, etc., can be installed with a saving of labor and material.

The principal advantage of the single set screw feature is the three-point contact which is more rigid and secure than the four-point contact. A wrench can be used more freely than when two set screws were close together.

Cat. No.	Size of Support Inches	Standard Tapping for Screws and Bolts (See Note A)	Price per 100
500	1	1/4-inch—20 (No. 14-20)	\$20.00
501	1 1/2	3/8 " —18 (" 18-18)	34.00
502	2	3/8 " —16 (" 24-16)	46.00
503	2 1/2	1/2 " —13	68.00

Prices include leather washers for insulators, but do not include machine screws or bolts for insulators.

Table of Wires, Insulators, Supports and Screws



Showing No. 500 Support with Two No. 5 1/2 Split Insulators Support is Tapped Special for No. 10-24-thread Machine Screw

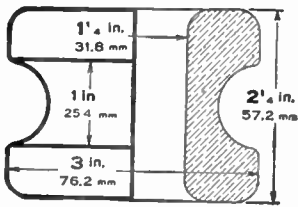
Showing No. 502 Support with No. 3 1/2 Insulator. Support is Tapped Standard for No. 24-16-thread Machine Screw

These combinations of wire sizes, insulators and supports should be followed only after consideration of the problem in hand, taking account of character of work and stresses involved, strength of insulators, etc. Table shows largest size of wires suitable for insulators listed; smaller wires may, of course, be used as desired.

See Notes	Largest Wire Insulator Fitting Groove	Insulator Std. No.	Size of Insulator Support Inches	Screws and Bolts Sherardized		Price per 100
				Size		
.....	No. 12	5 1/2	1	2	-in. No. 14-20-P.H.	\$1.46
A	" 12	5 1/2 Split	1	2 1/4	" " 10-24 "	1.18
.....	" 8	33 Sec.	1 1/2	2 3/4	" " 18-18 "	2.88
A	" 6	9419	1 1/2	2 1/2	" " 14-20 "	1.84
.....	" 6	4 1/2	1 1/2	2 1/4	" " 18-18 "	2.26
.....	" 4	3 1/2	2	2 1/2	" " 24-16 "	3.68
A	" 4	9420	2	2 1/4	" " 18-18 "	2.88
B	" 2	2	2	2 1/2	" " 24-16 "	3.68
B	" 1	26	2	2 1/2	" " 24-16 "	3.68
B	" 0	24	2	2 1/4	" " 24-16 "	3.44
B	" 0	30	2	2 1/2	" " 24-16 "	3.68
C	" 2-0	3 W. G.	2	2 1/2	" " 24-16 "	3.68
C	" 2-0	1	2	3 1/4	" " 24-16 "	6.11
B-C	2500000C.M.	49	2 1/2	2	x 1/2-in. bolt	3.86
B-C	300000 "	Murdock-B	2	3 1/2	x 3/8 " "	3.04
B-C	300000 "	Murdock-B	2 1/2	3 1/2	x 1/2 " "	4.64
A-B-C	500000 "	29	2 1/2	3	x 3/8 " "	2.88
B-C	1000000 "	52	2 1/2	3 3/4	x 1/2 " "	4.90
B-C	1000000 "	53	2 1/2	3 1/2	x 1/2 " "	4.64
B-C	1000000 "	Murdock-A	2 1/2	4	x 1/2 " "	4.90
.....	To fit glass ins.	38 and Glass	2 1/2		Special wood pin and bolt	10.00

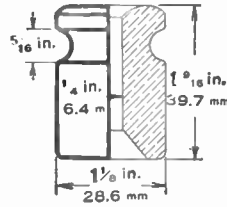
NOTE A.—Items marked require supports to be tapped special for screws or bolts, without extra charge.

NOTE B.—Should have iron washer under screw or bolt head. NOTE C.—B. & D. Cleats also recommended.



No. 0 Thomas Porcelain Insulators

Cat. No. 0
 No. in Bbl. 350
 Ship. Weight per Bbl. lbs. 350
 Price. per 1000 \$300.00

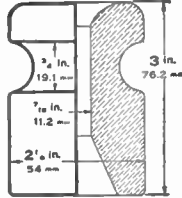


No. 5 1/2 Thomas Porcelain Insulators

Catalogue No. 5 1/2
 No. in Bbl. 3500
 Ship. Weight per Bbl. lbs. 410
 Price. per 1000 \$38.00

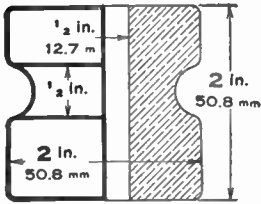
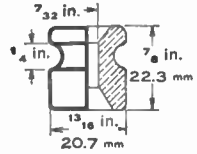
No. 1 Thomas Porcelain Insulators

Catalogue No. 1
 No. in Bbl. 600
 Ship. Weight per Bbl. lbs. 420
 Price. per 1000 \$182.00



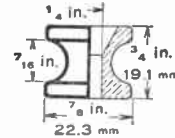
No. 6 Thomas Porcelain Insulators

Catalogue No. 6
 No. in Bbl. 13500
 Ship. Weight per Bbl. lbs. 465
 Price. per 1000 \$22.00



No. 2 Thomas Porcelain Insulators

Catalogue No. 2
 No. in Bbl. 850
 Ship. Weight per Bbl. lbs. 420
 Price. per 1000 \$120.00

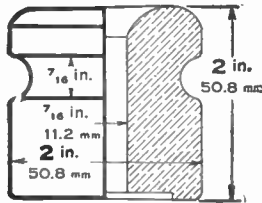


No. 7 Thomas Porcelain Insulators

Catalogue No. 7
 No. in Bbl. 15000
 Ship. Weight per Bbl. lbs. 370
 Price. per 1000 \$26.00

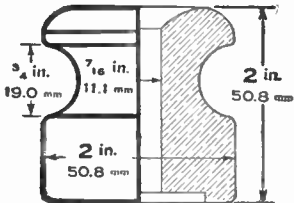
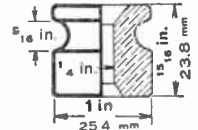
No. 3 Thomas Porcelain Insulators

Catalogue No. 3
 No. in Bbl. 900
 Ship. Weight per Bbl. lbs. 435
 Price. per 1000 \$110.00



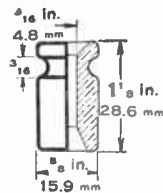
No. 8 Thomas Porcelain Insulators

Catalogue No. 8
 No. in Bbl. 8000
 Ship. Weight per Bbl. lbs. 375
 Price. per 1000 \$26.00



No. 3 1/2 Thomas Porcelain Insulators

Catalogue No. 3 1/2
 No. in Bbl. 900
 Ship. Weight per Bbl. lbs. 400
 Price. per 1000 \$110.00

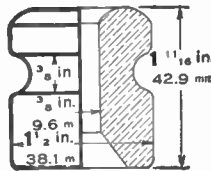


No. 9 Thomas Porcelain Insulators

Catalogue No. 9
 No. in Bbl. 20000
 Ship. Weight per Bbl. lbs. 400
 Price. per 1000 \$25.00

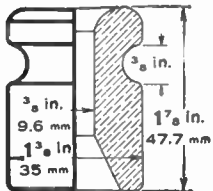
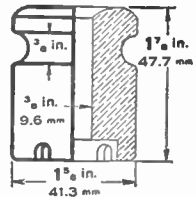
No. 4 Thomas Porcelain Insulators

Catalogue No. 4
 No. in Bbl. 2000
 Ship. Weight per Bbl. lbs. 400
 Price. per 1000 \$55.00



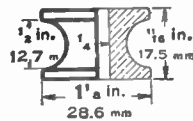
No. 10 Thomas Porcelain Insulators

Catalogue No. 10
 No. in Bbl. 1500
 Ship. Weight per Bbl. lbs. 415
 Price. per 1000 \$75.00



No. 4 1/2 Thomas Porcelain Insulators

Catalogue No. 4 1/2
 No. in Bbl. 1700
 Ship. Weight per Bbl. lbs. 400
 Price. per 1000 \$55.00

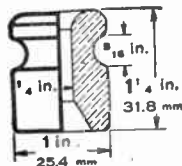


No. 11 Thomas Porcelain Insulators

Catalogue No. 11
 No. in Bbl. 10000
 Ship. Weight per Bbl. lbs. 330
 Price. per 1000 \$45.00

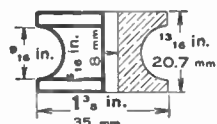
No. 5 Thomas Porcelain Insulators

Catalogue No. 5
 No. in Bbl. 6000
 Ship. Weight per Bbl. lbs. 430
 Price. per 1000 \$29.00

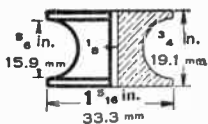


No. 12 Thomas Porcelain Insulators

Catalogue No. 12
 No. in Bbl. 5000
 Ship. Weight per Bbl. lbs. 275
 Price. per 1000 \$58.00

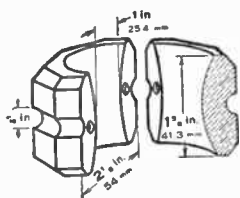


**No. 13 Thomas
Porcelain Insulators**



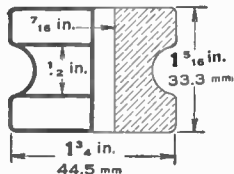
Catalogue No. 13
No. in Bbl. 4500
Ship. Weight per Bbl. lbs. 300
Price. per 1000 \$81.00

**No. 22 Thomas
Porcelain Insulators**



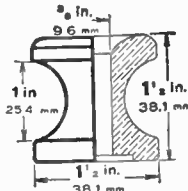
Cat. No. 22
No. in Bbl. 1000
Ship. Weight per Bbl. lbs. 400
Price. per 1000 \$156.00

**No. 15 Thomas
Porcelain Insulators**



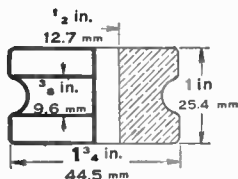
Catalogue No. 15
No. in Bbl. 2000
Ship. Weight per Bbl. lbs. 415
Price. per 1000 \$76.00

**No. 23 Thomas
Porcelain Insulators**



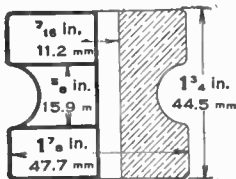
Cat. No. 23
No. in Bbl. 2000
Ship. Weight per Bbl. lbs. 250
Price. per 1000 \$76.00

**No. 16 Thomas
Porcelain Insulators**



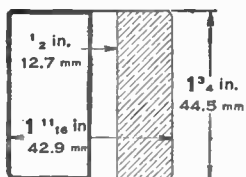
Cat. No. 16
No. in Bbl. 2200
Ship. Weight per Bbl. lbs. 420
Price. per 1000 \$75.00

**No. 24 Thomas
Porcelain Insulators**



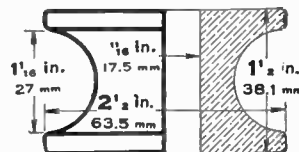
Cat. No. 24
No. in Bbl. 1200
Ship. Weight per Bbl. lbs. 425
Price. per 1000 \$102.00

**No. 17 Thomas
Porcelain Insulators**



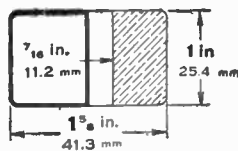
Cat. No. 17
No. in Bbl. 1200
Ship. Weight per Bbl. lbs. 400
Price. per 1000 \$75.00

**No. 25 Thomas
Porcelain Insulators**



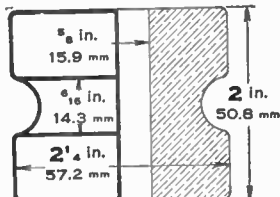
Cat. No. 25
No. in Bbl. 750
Ship. Wt. per Bbl. lbs. 330
Price. per 1000 \$142.00

**No. 18 Thomas
Porcelain Insulators**



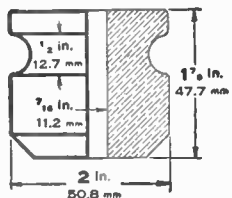
Catalogue No. 18
No. in Bbl. 3000
Ship. Weight per Bbl. lbs. 350
Price. per 1000 \$60.00

**No. 26 Thomas
Porcelain Insulators**



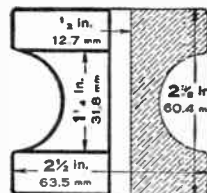
Cat. No. 26
No. in Bbl. 700
Ship. Wt. per Bbl. lbs. 420
Price. per 1000 \$142.00

**No. 19 Thomas
Porcelain Insulators**



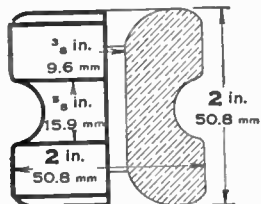
Catalogue No. 19
No. in Bbl. 850
Ship. Weight per Bbl. lbs. 450
Price. per 1000 \$116.00

**No. 29 Thomas
Porcelain Insulators**



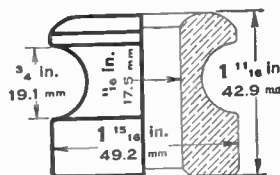
Cat. No. 29
No. in Bbl. 500
Ship. Weight per Bbl. lbs. 400
Price. per 1000 \$200.00

**No. 20 Thomas
Porcelain Insulators**



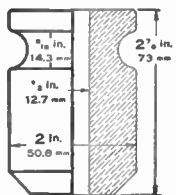
Catalogue No. 20
No. in Bbl. 1000
Ship. Weight per Bbl. lbs. 440
Price. per 1000 \$130.00

**No. 30 Thomas
Porcelain Insulators**



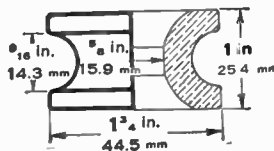
Cat. No. 30
No. in Bbl. 1000
Ship. Wt. per Bbl. lbs. 415
Price. per 1000 \$102.00

**No. 21 Thomas
Porcelain Insulators**

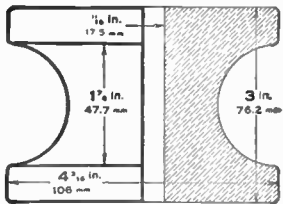


Catalogue No. 21
No. in Bbl. 600
Ship. Weight per Bbl. lbs. 440
Price. per 1000 \$170.00

**No. 31 Thomas
Porcelain Insulators**

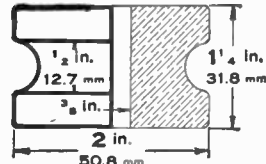


Cat. No. 31
No. in Bbl. 2100
Ship. Wt. per Bbl. lbs. 250
Price. per 1000 \$90.00



No. 32 Thomas Porcelain Insulators

Cat. No. 32
 No. in Bbl. 140
 Ship. Wt. per Bbl. lbs. 325
 Price..... per 1000 \$655.00

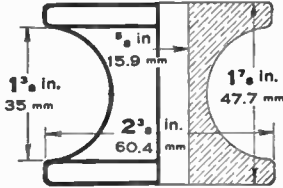


No. 41 Thomas Porcelain Insulators

Cat. No. 41
 No. in Bbl. 1300
 Ship. Wt. per Bbl. lbs. 400
 Price..... per 1000 \$95.00

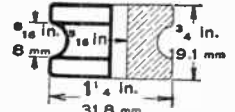
No. 34 Thomas Porcelain Insulators

Cat. No. 34
 No. in Bbl. 600
 Ship. Wt. per Bbl. lbs. 395
 Price..... per 1000 \$176.00



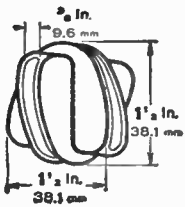
No. 45 Thomas Porcelain Insulators

Cat. No. 45
 No. in Bbl. 5000
 Ship. Wt. per Bbl. lbs. 300
 Price..... per 1000 \$45.00



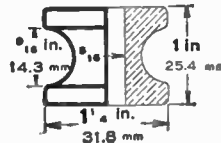
No. 35 Thomas Porcelain Insulators

Cat. No. 35
 No. in Bbl. 1500
 Ship. Wt. per Bbl. lbs. 415
 Price..... per 1000 \$275.00



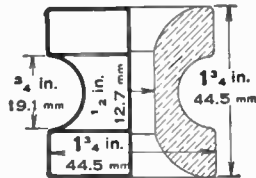
No. 46 Thomas Porcelain Insulators

Cat. No. 46
 No. in Bbl. 4500
 Ship. Wt. per Bbl. lbs. 350
 Price..... per 1000 \$49.00



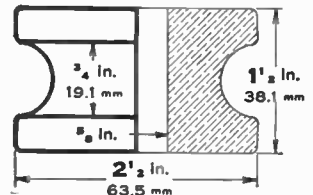
No. 36 Thomas Porcelain Insulators

Cat. No. 36
 No. in Bbl. 1500
 Ship. Wt. per Bbl. lbs. 415
 Price..... per 1000 \$90.00



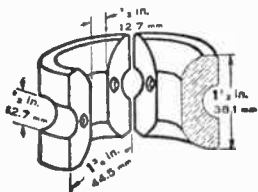
No. 48 Thomas Porcelain Insulators

Cat. No. 48
 No. in Bbl. 850
 Ship. Wt. per Bbl. lbs. 450
 Price..... per 1000 \$142.00



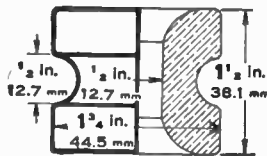
No. 37 Split Thomas Porcelain Insulators

Cat. No. 37 split
 No. in Bbl. 1500
 Ship. Wt. per Bbl. lbs. 370
 Price..... per 1000 \$114.00



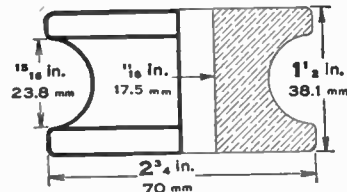
No. 37 Solid Thomas Porcelain Insulators

Cat. No. 37 solid
 No. in Bbl. 1500
 Ship. Wt. per Bbl. lbs. 370
 Price..... per 1000 \$90.00



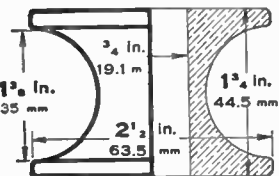
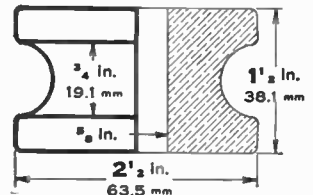
No. 50 Thomas Porcelain Insulators

Cat. No. 50
 No. in Bbl. 450
 Ship. Wt. per Bbl. lbs. 400
 Price..... per 1000 \$196.00



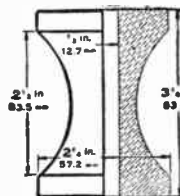
No. 49 Thomas Porcelain Insulators

Cat. No. 49
 No. in Bbl. 700
 Ship. Wt. per Bbl. lbs. 425
 Price..... per 1000 \$149.00



No. 39 Thomas Porcelain Insulators

Cat. No. 39
 No. in Bbl. 650
 Ship. Wt. per Bbl. lbs. 395
 Price..... per 1000 \$158.00

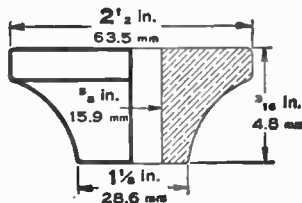


No. 51 Thomas Porcelain Insulators

Cat. No. 51
 No. in Bbl. 500
 Ship. Weight per Bbl. lbs. 300
 Price..... per 1000 \$209.00

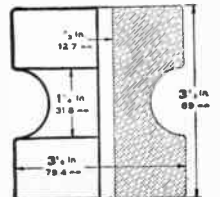
No. 40 Thomas Porcelain Insulators

Cat. No. 40
 No. in Bbl. 2000
 Ship. Wt. per Bbl. lbs. 400
 Price..... per 1000 \$100.00

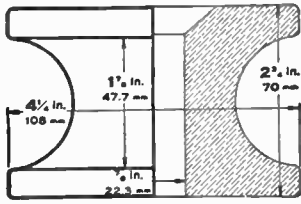


No. 52 Thomas Porcelain Insulators

Cat. No. 52
 No. in Bbl. 200
 Ship. Weight per Bbl. lbs. 400
 Price..... per 1000 \$397.00

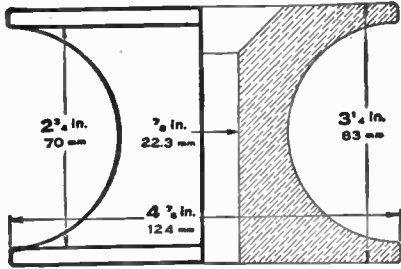


No. 53 Thomas Porcelain Insulators



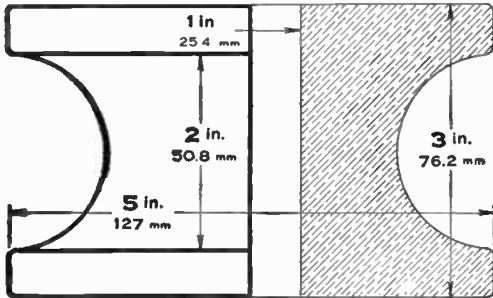
Catalogue No.....	53
Number in Barrel.....	120
Shipping Weight per Barrel.....	pounds 280
Price.....	per 1000 \$650.00

No. 54 Thomas Porcelain Insulators



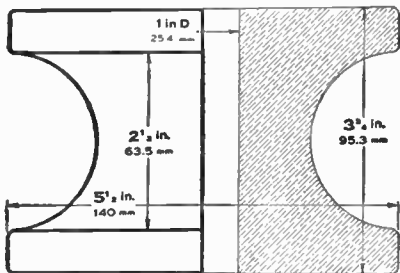
Catalogue No.....	54
Number in Barrel.....	105
Shipping Weight per Barrel.....	pounds 300
Price.....	per 1000 \$881.00

No. 55 Thomas Porcelain Insulators



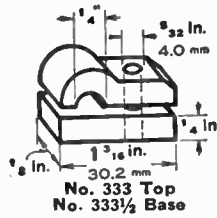
Catalogue No.....	55
Number in Barrel.....	100
Shipping Weight per Barrel.....	pounds 325
Price.....	per 1000 \$881.00

No. 56 Thomas Porcelain Insulators



Catalogue No.....	56
Number in Barrel.....	75
Shipping Weight per Barrel.....	pounds 325
Price.....	per 1000 \$1355.00

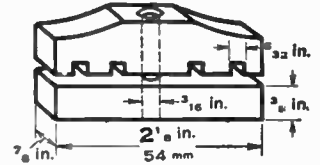
Thomas Porcelain Telephone Cleats



Cat. No.	333
	333 1/2

Number in Barrel	21500	Shipping Weight per Bbl. Pounds	465	Price per 1000	\$23.00
	22000		475		20.00

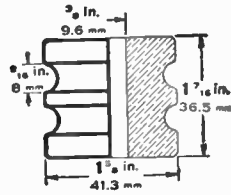
Thomas Porcelain Telephone Cleats



Cat. No.	314	Shipping Weight per Bbl. Pounds	350	Price per 1000	\$46.00
	315		375		44.00

No. 314 Top
No. 315 Base

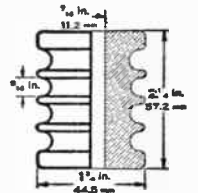
No. 6061 Thomas Porcelain Telephone Knobs



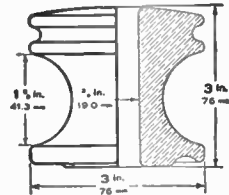
Cat. No.....	6061
No. in Bbl.....	2000
Ship. Wt. per Bbl.....	lbs. 455
Price.....	per 1000 \$88.00

No. 6062 Thomas Porcelain Telephone Knobs

Cat. No.....	6062
No. in Bbl.....	1000
Ship. Wt. per Bbl.....	lbs. 375
Price.....	per 1000 \$150.00

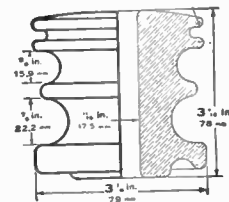


No. 5897 Thomas Porcelain Secondary Rack Insulators



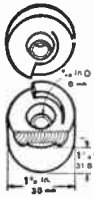
Catalogue Number.....	5897
Number in Box.....	50
Shipping Weight per Barrel.....	pounds 60
Price.....	per 1000 \$360.00

No. 6342 Thomas Porcelain Secondary Rack Insulators



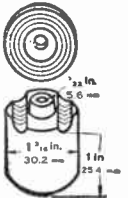
Catalogue Number.....	6342
Number in Box.....	50
Shipping Weight per Barrel.....	pounds 70
Price.....	per 1000 \$390.00

No. 33 Thomas Porcelain Split Wiring Knobs



Catalogue No.....	33
Wire Nos.....	12 to 14
No. in Bbl.....	1500
Ship. Wt. per Bbl..... lbs.	435
Price..... per 1000	\$76.00

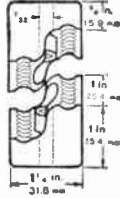
No. 51/2 Thomas Porcelain Split Wiring Knobs



Cat. No.....	51/2
Wire Nos.....	12 to 14
No. in Bbl.....	3000
Ship. Wt. per Bbl..... lbs.	415
Price..... per 1000	\$52.00

No. 551/2 Thomas Porcelain Split Wiring Knobs

Catalogue No.....	551/2
Wire Nos.....	12 to 14
No. in Bbl.....	2500
Ship. Wt. per Bbl..... lbs.	410
Price..... per 1000	\$75.00



Porcelain Split Insulators

No. 9419

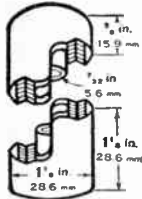
Has four grooves and will take wire sizes 8 to 10.

Cat. No.	Diam. Inches	Height Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 1000
9419	1 1/2	1 7/8	2000	500	\$87.00

No. 9420

Four grooves; will take wire sizes 4 to 6.

Cat. No.	Diam. Inches	Height Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 1000
9420	1 5/16	2 1/8	1000	500	\$142.00



No. 101 Thomas Porcelain Split Wiring Knobs

Catalogue No.....	101
Wire Nos.....	12 to 14
No. in Bbl.....	3000
Ship. Wt. per Bbl..... lbs.	425
Price..... per 1000	\$62.00

Nail-It Split Insulators

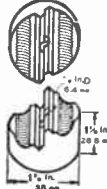
Nail-it consists of cap, base, 10d nail and nail head assembled. It has two grooves and will take wire sizes 12 to 14.

Cat. No.	Diam. Inches	Height Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 1000
1	1 3/16	1 3/4	2800	450	\$70.00



No. 5135 Thomas Porcelain Split Wiring Knobs

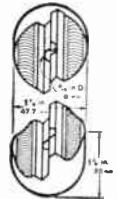
Catalogue No.....	5135
Wire Nos.....	8 to 10
No. in Bbl.....	1500
Ship. Wt. per Bbl..... lbs.	410
Price..... per 1000	\$110.00



Screw-It Split Insulators

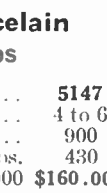
Screw-it consists of base, cap and 3-inch screw assembled. No. 1 New Code and Detroit have two grooves and will take wire sizes 12 to 14. Nos. 9419 and 9420, four grooves, will take wire sizes 8 to 10 and 4 to 6 respectively.

Cat. No.	Diam. Inches	Height Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 1000
1 New Code	1 3/16	1 3/4	2800	500	\$90.00
Detroit	1 1/4	1 3/4	2600	490	100.00
9419 Type	1 1/2	1 7/8	1800	500	150.00
9420 "	1 5/16	2 1/8	900	500	225.00



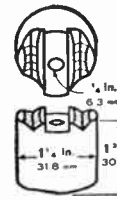
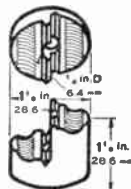
No. 5147 Thomas Porcelain Split Wiring Knobs

Catalogue No.....	5147
Wire Nos.....	4 to 6
No. in Bbl.....	900
Ship. Wt. per Bbl..... lbs.	430
Price..... per 1000	\$160.00



No. 5517 Thomas Porcelain Split Wiring Knobs

Catalogue No.....	5517
Wire Nos.....	12 to 14
No. in Bbl.....	3750
Ship. Wt. per Bbl..... lbs.	465
Price..... per 1000	\$75.00

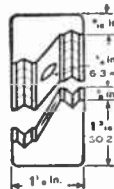


Detroit Thomas Porcelain Split Wiring Knobs

Catalogue No.....	Detroit
Wire Nos.....	12 to 14
No. in Bbl.....	3000
Ship. Wt. per Bbl..... lbs.	450
Price..... per 1000	\$62.00

Midget Thomas Porcelain Split Wiring Knobs

Catalogue No.....	Midget
Wire Nos.....	12 to 14
No. in Bbl.....	4000
Ship. Wt. per Bbl..... lbs.	500
Price..... per 1000	\$62.00



Federal Porcelain Clamp Ring Bushings

Made of 1 piece of the best grade of vitrified porcelain. Clamping rings are of metal, threaded to fit threads on the porcelain. Clamping ring may be reversed for material thicker than 1/4 inch.



Cat. No.	K. O. Conduit Size, In.	Inside Inches	Max. Size R. C. Wire	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
A-1	*1/4	9/32	10	500	16	\$.05
A-1 1/2	1/2	9/32	10	250	18	.06
A-2	1/2	13/32	8	250	17	.06
A-3	3/4	9/16	3	250	24	.07
A-4	1	3/4	00	125	18	.08
A-5	1 1/2	1 1/8	450000	125	25	.12
A-6	2	1 5/8	1000000	60	24	.25
B-1 Extra Long	*1 1/4	9/32	10	250	15	.10
K-1 Elbow	*1/4	9/32	10	250	15	.15
K-2 "	1/2	13/32	8	125	13	.20

Type B Federal Extra Long Porcelain Clamp Bushings

Can be used with material 5/8 to 3/4 inch in thickness. Length over all, 1 1/16 inches; under head, 1 5/8 inches. Will fit No. 10 solid single braid rubber covered wire.

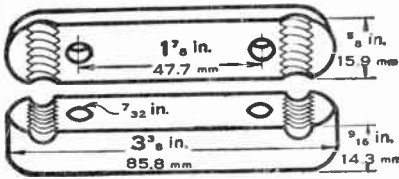
Cat. No.	Diam., In. Inside Outside	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
B-1	9/32 1 1/4	250	15	\$.10



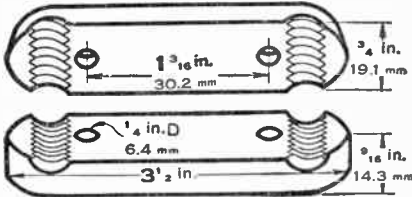
Thomas Two and Three-wire Cleats

Style B & D Thomas Single Wire Cleats

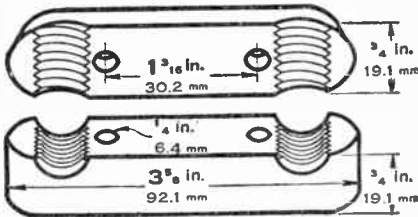
Standard Cleats



No. 334



No. 335



No. 350

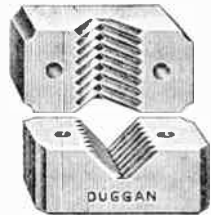
Unless three-wire cleats are specified, orders will be filled with two-wire cleats as shown in illustrations.

Wire Size No.	No. in Bbl.	Shipping Weight Pounds per Bbl.	Glazed		Unglazed	
			Cat. No.	Price per 1000	Cat. No.	Price per 1000
12 to 14	1850	385	334-G	\$90.00	334-UG	\$52.00
8 " 10	1500	425	335-G	100.00	335-UG	60.00
2 " 6	1250	395	350-G	150.00	350-UG	88.00

Mill Cleats

The following designs are exactly the same as those listed and illustrated above, excepting that cleats with a heavy one-inch base are furnished. These are extremely valuable for construction in damp places or where cleats are attached to metal supports as in mills, foundries, etc.

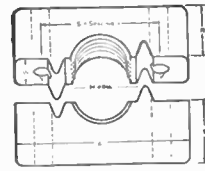
Cat. No.	Wire Size in No.	No. in Bbl.	Shipping Weight Pounds per Bbl.	Glazed		Unglazed	
				Price per 1000	Price per 1000	Price per 1000	Price per 1000
334 1/2-G	12 to 14	1400	400	\$135.00			
335 1/2-G	8 " 10	1100	420	150.00			
350 1/2-G	2 " 6	850	390	225.00			
334 1/2-UG	12 to 14	1400	400	\$78.00			
335 1/2-UG	8 " 10	1100	420	90.00			
350 1/2-UG	2 " 6	850	390	120.00			



Duggan Cleats One-wire Glazed

No. 4 holds wires No. 16 to No. 8.
 No. 5 holds wires No. 8 to No. 2.
 No. 6 holds wires No. 0.00 to 250000.
 No. 7 holds wires No. 6 to No. 2.
 No. 8 holds cables 300000 to 500000.
 No. 8 1/2 holds cables 600000 to 1000000. No. 9 holds cables 1250000 to 1750000.

Cat. No.	Regular			Style A		
	Std. Pkg.	Wt. Lbs.	Price per 1000	Cat. No.	Std. Pkg.	Price per 1000
4	3000	500	\$74.00	4A	2300	\$80.00
5	1000	490	110.00	5A	1350	120.00
6	700	480	180.00	6A	600	196.00
7	1500	490	110.00	7A	1300	120.00
8	500	480		8A	500	330.00
8 1/2	400	480		8 1/2 A	400	410.00
9	200	480		9A	250	480.00



Light Cap and Light Base

New	Cat. Nos.	Old	DIMENSIONS, INCHES				Groove
			L	S	W	H	
110	1	-Reg.	1 7/8	1 1/8	7/8	1/4	1/4
111	1 1/2	"	2 1/4	1 3/8	1	5/16	3/8
112	2	"	2 3/8	1 11/16	1 1/8	5/16	1/2
113	2 1/2	"	3	1 15/16	1 1/4	3/8	5/8
114	3	"	3 3/8	2 1/4	1 3/8	3/8	3/4

Light Cap and Heavy Base

115	1	-A	1 7/8	1 1/8	7/8	1/4	1/4
116	1 1/2	-A	2 1/4	1 3/8	1	5/16	3/8
117	2	-A	2 3/8	1 11/16	1 1/8	5/16	1/2
118	2 1/2	-A	3	1 15/16	1 1/4	3/8	5/8
119	3	-A	3 3/8	2 1/4	1 3/8	3/8	3/4

Heavy Cap and Heavy Base

120	1	-B	1 7/8	1 1/8	7/8	1/4	1/4
121	1 1/2	-B	2 1/4	1 3/8	1	5/16	3/8
122	2	-B	2 3/8	1 11/16	1 1/8	5/16	1/2
123	2 1/2	-B	3	1 15/16	1 1/4	3/8	5/8
124	3	-B	3 3/8	2 1/4	1 3/8	3/8	3/4
125	3 1/4	-B	3 3/8	2 1/4	1 3/8	3/8	3/4
126	3 1/2	-B	4 1/4	2 15/16	1 5/8	7/16	1 3/16
127	4	-B	4 3/4	3 1/4	1 13/16	9/16	1 1/16
128	4 1/4	-B	5 3/8	3 3/16	2	9/16	2
129	4 1/2	-B	6	4 3/8	2 1/4	9/16	2 3/8

Standard Packing

Cat. No.	Number in Barrel	Gross Wt. Lbs. per Bbl.	Cat. No.	Number in Barrel	Gross Wt. Lbs. per Bbl.
110	2000	420	120	1400	420
111	1600	465	121	1050	440
112	1250	420	122	800	420
113	700	430	123	600	425
114	500	430	124	400	430
115	1600	410	125	350	440
116	1250	460	126	250	440
117	1000	430	127	200	475
118	650	425	128	140	475
119	450	435	129	100	490

Prices

Cat. No.	Size of Wire Received B & S Gauge	No.	Price per 1000
110	No. 11 to No. 6	6	\$74.00
111	" 6 " " 2	2	96.00
112	" 2 " " 0	0	110.00
113	" 0 " " 000	000	140.00
114	" 000 " 200000 C. M.	200000 C. M.	180.00
115	" 14 " No. 6	6	80.00
116	" 6 " " 2	2	108.00
117	" 2 " " 0	0	125.00
118	" 0 " " 000	000	156.00
119	" 000 " 200000 C. M.	200000 C. M.	196.00
120	" 14 " No. 6	6	86.00
121	" 6 " " 2	2	120.00
122	" 2 " " 0	0	140.00
123	" 0 " " 000	000	172.00
124	" 000 " 200000	200000	212.00
125	" 10 Duplex Parallel Conduit Cable 3/8 by 7/8 Inches		269.00
126	200000 to 500000 C. M.	500000 C. M.	260.00
127	500000 " 1000000 C. M.	1000000 C. M.	330.00
128	800000 " 1250000 C. M.	1250000 C. M.	500.00
129	1000000 " 2000000 C. M.	2000000 C. M.	620.00

Porcelain Tubes



Price, per 100

For Tubes Up to and including 24 Inches Long

Length Under Head Inches	INSIDE AND OUTSIDE DIMENSIONS OF TUBES IN INCHES							
	$\frac{1}{4} \times \frac{1}{4}$	$\frac{3}{8} \times \frac{1}{2}$	$\frac{1}{2} \times \frac{3}{4}$	$\frac{5}{8} \times \frac{1}{2}$	$\frac{3}{4} \times \frac{1}{2}$	$1 \times \frac{1}{2}$	$1\frac{1}{4} \times \frac{1}{2}$	
1/2	\$1.60	\$2.00						
1	1.70	2.10	\$2.70	\$4.00	\$6.00	\$10.00		
1 1/2	1.80	2.20	2.80	4.60	7.00	11.20		
2	1.90	2.40	3.00	5.20	8.00	12.50		
2 1/2	2.10	2.70	3.30	5.80	9.00	13.80	\$19.00	
3	2.30	3.00	3.70	6.50	10.00	15.00	21.00	
4	3.00	4.00	4.80	8.00	11.60	16.80	24.00	
5	3.90	5.00	6.00	9.50	13.20	18.60	27.20	
6	5.00	6.00	7.20	11.00	14.80	20.40	30.60	
8	9.00	10.50	13.00	14.00	18.00	24.00	37.60	
10	16.70	18.60	21.50	25.00	29.00	37.50	45.00	
12	24.40	26.70	30.00	34.00	39.00	50.00	70.00	
14	32.10	34.80	38.50	43.00	49.20	62.50	87.00	
16	39.80	42.90	47.00	52.00	59.40	75.00	104.00	
18	47.50	51.00	55.50	61.00	69.60	87.50	121.00	
20	55.20	59.10	64.00	70.00	79.80	100.00	138.00	
24	70.60	75.30	81.00	88.00	100.00	125.00	172.00	

Length Under Head Inches	INSIDE AND OUTSIDE DIMENSIONS OF TUBES IN INCHES					
	$1\frac{1}{2} \times 2\frac{1}{2}$	$1\frac{3}{4} \times 2\frac{1}{2}$	$2 \times 2\frac{1}{2}$	$2\frac{1}{4} \times 3\frac{1}{2}$	$2\frac{1}{2} \times 3\frac{1}{2}$	$2\frac{3}{4} \times 4\frac{1}{4}$
2 1/2	\$25.50	\$34.00	\$46.00	\$59.00	\$74.00	\$92.00
3	28.00	37.00	50.00	64.00	80.00	100.00
4	32.00	44.50	63.00	83.50	109.00	145.00
5	36.00	52.00	76.00	103.00	138.00	190.00
6	40.50	60.00	90.00	122.50	167.00	235.00
8	49.00	75.00	116.00	161.50	225.00	325.00
10	58.00	90.00	143.00	200.50	283.00	415.00
12	102.50	160.00	170.00	240.00	342.00	505.00
14	123.50	190.00	280.00	400.00	560.00	595.00
16	144.50	220.00	320.00	452.00	624.00	820.00
18	166.00	250.00	360.00	504.00	688.00	890.00
20	187.50	280.00	400.00	556.00	752.00	960.00
24	230.00	340.00	480.00	660.00	880.00	1100.00

Special Porcelain Tubes



To obtain list price of floor, curved and curved end, split and cross-over tubes, multiply as follows:

Solid Floor Tubes

Multiply list by three. For list price on these tubes add three inches to length of standard tubes.

Split Floor Tubes

Multiply list by six. For list price on these tubes add three inches to length of standard tubes.

Headless Tubes Above Eight Inches Long

Multiply list by 4. On these tubes measurements are to be computed over all.

Headless Tubes Eight Inches Long and Under

Same list as standard tubes. On these tubes measurements are to be computed over all.

Curved and Curved End Tubes

Multiply list by three. On these tubes measurements are to be computed over all.

Split Regular Tubes

Multiply list by 10. On these tubes measurements are to be computed under head.

Cross-over Split Tubes

Multiply list by 12. On these tubes measurements are to be computed between heads.

Cross-over Solid Tubes

Multiply list by six. On these tubes measurements are to be computed between heads.

Add 50 per cent to list for glazed tubes.

Porcelain Tubes



Standard Package Quantities and Weights Per Standard Package

Length Under Head Inches	INSIDE AND OUTSIDE DIMENSIONS OF TUBES IN INCHES					
	$\frac{5}{16} \times \frac{9}{16}$		$\frac{3}{8} \times 1\frac{1}{16}$		$\frac{1}{2} \times 1\frac{1}{16}$	
	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.
1/2	15000	375	12500	375		
1	11000	375	9500	375	8500	360
1 1/2	9000	375	8000	375	7500	360
2	7000	375	7000	370	5000	355
2 1/2	6000	360	5000	350	4000	350
3	5400	355	3800	340	2700	340
4	3900	315	2900	340	2000	335
5	3200	330	2500	340	1700	340
6	3000	330	2000	335	1500	340
8	2200	340	1600	340	1200	335
10	1700	335	1200	320	1000	335
12	1200	340	1000	305	800	340
14	1000	335	800	200	700	320
16	800	340	700	300	550	300
18	500	340	450	290	475	250
20	450	340	400	290	300	270
24	400	340	400	300	300	260

Length Under Head Inches	INSIDE AND OUTSIDE DIMENSIONS OF TUBES IN INCHES					
	$\frac{5}{8} \times 1\frac{1}{16}$		$\frac{3}{4} \times 1\frac{1}{16}$		$1 \times 1\frac{1}{16}$	
	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.
1	4500	380	3700	330	2000	350
1 1/2	3200	375	2500	320	1500	360
2	2500	355	1800	310	1100	345
2 1/2	2000	325	1500	295	900	330
3	1800	320	1250	285	750	315
4	1450	325	850	250	600	300
5	1200	320	700	255	500	290
6	1000	305	600	255	400	280
8	700	275	450	245	325	290
10	500	255	350	240	245	270
12	375	220	325	240	190	255
14	310	215	250	230	150	230
16	250	205	185	205	140	230
18	200	205	160	200	110	210
20	160	175	125	180	85	195
24	160	195	125	210	85	215

Length Under Head Inches	INSIDE AND OUTSIDE DIMENSIONS OF TUBES IN INCHES					
	$1\frac{1}{4} \times 1\frac{1}{16}$		$1\frac{1}{2} \times 2\frac{1}{16}$		$1\frac{3}{4} \times 2\frac{1}{16}$	
	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.	Std. Pkg.	Wt. Lbs.
2 1/2	525	320	350	325	250	380
3	425	310	300	315	225	370
4	360	310	250	305	200	360
5	325	305	225	305	175	340
6	250	300	180	305	150	320
8	180	290	140	300	100	300
10	140	265	110	300	80	290
12	120	265	90	280	70	280
14	100	255	75	275	90	260
16	85	175	65	265	60	255
18	70	235	55	250	50	250
20	55	215	40	220	50	240
24	55	240	40	250	50	250

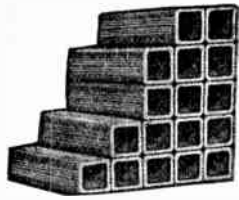
For tubes larger than 1 3/4 x 24 inches, a standard package is 50.

Barrel size is 20-inch head and 30-inch stave.

A standard package or unit container cannot be made up of assorted sizes.

A standard package is a barrel for which a charge will be made. When ordered put up in paper boxes, or in wooden or corrugated boxes of kegs containing 500 or 1000 pieces or pairs, an additional charge will be made. Prices for special packages will be furnished upon application.

Vitrified Clay Conduit

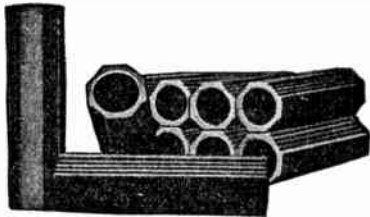


Square Duct, Single

The conduit clays are of peculiar character in being naturally compounded by having the proper fluxing materials associated in relatively correct proportions in a high grade plastic fire clay which possesses certain necessary properties rarely found in other clays. In burning, these fluxing materials in combination in the one clay, produce vitrification of the clay mass, one of the most essential features of good conduit. Also the salt glazing of clay is caused by a chemical reaction and few clays are favored with properties giving a successful salt glaze finish.

Single-duct Conduit

Single-duct conduit permits of the breaking of joints. It allows two heavy insulating walls between all cables where multiple duct conduit only allows for one. Single-duct conduit is thus adapted particularly for the building up of high-service trunk lines for the transmission of power and light. It is also used for the construction of single-cable terminals and laterals of low tension and telephone lines.



Round Duct Single

It is also used for the construction of single-cable terminals and laterals of low tension and telephone lines.

Square Duct, Single					
Length of Piece Feet	Duct Feet in Piece	Approx. Wt. Lbs. per Duct Foot	Diam. Duct Inches	Duct Feet in Min. Carload	Price per Duct Ft.
1.5	1.5	11	3 1/2	5800	\$.25
1.5	1.5	15.3	4 1/4	5400	.25
Round Duct, Single					
1.5	1.5	10	3 1/4	6700	\$.25
1.5	1.5	12	4 1/8	5000	.25

Two and Three-duct Multiple Conduit

The two and three-duct standard conduit is intended for the laying of two or three cables in terminals or laterals from the main trunk line, or for the purpose of building up trunk lines to the number of ducts required. On account of the narrow lateral diameter of this ware, it has been found impossible to manufacture this style of conduit in pieces longer than two feet, and insure good, straight pieces. In many cases it will prove cheaper to lay an extra duct in the longer multiple conduit, especially if the future contemplates the use of the extra duct.

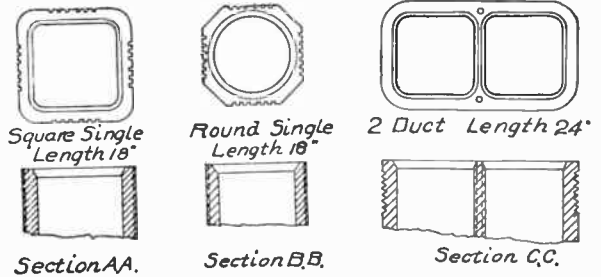
Two-duct, Multiple					
Length of Piece Feet	Duct Feet in Pieces	Approx. Wt. Lbs. per Duct Foot	Diam. Duct Inches	Duct Feet in Min. Carload	Price per Duct Ft.
2	4	10	3 1/4	7500	\$.25
Three-duct, Multiple					
2	6	10	3 1/4	8200	\$.25

Four, Six and Nine-duct Multiple Conduit

Telephone and telegraph specifications ordinarily demand a larger percentage of four, six or nine-duct than of the smaller forms. These designs are the more economical and permit of considerable saving in installation over the smaller forms. There is no constructive reason why single-duct conduit should take the place of multiples in building up a telephone trunk line. The long multiples present the advantage of economy, constructive simplicity, working efficiency and ease in pulling cables.

Four-duct, Multiple					
Length of Piece Feet	Duct Feet in Pieces	Approx. Wt. Lbs. per Duct Foot	Diam. Duct Inches	Duct Feet in Min. Carload	Price per Duct Ft.
3	12	8	3 1/4	9300	\$.25
Six-duct, Multiple					
3	18	8	3 1/4	10000	\$.25
Nine-duct, Multiple					
3	27	10	3 1/4	10400	\$.25

Vitrified Salt Glazed Clay Conduit



Square Single Length 18"

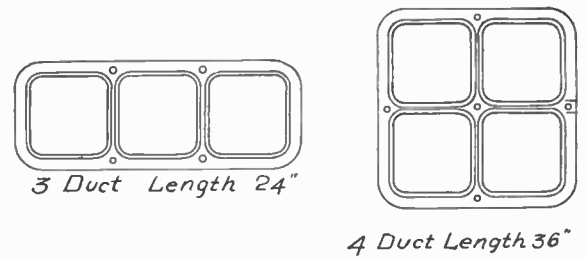
Round Single Length 18"

2 Duct Length 24"

Section A.A.

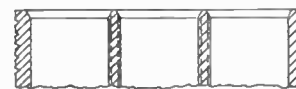
Section B.B.

Section C.C.

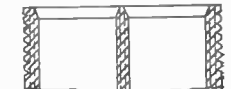


3 Duct Length 24"

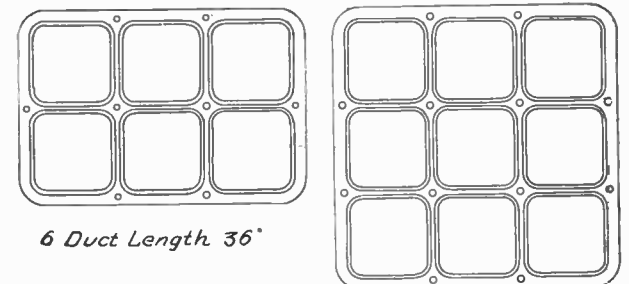
4 Duct Length 36"



Section D.D.

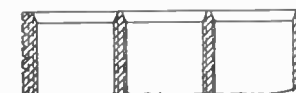


Section F.F.

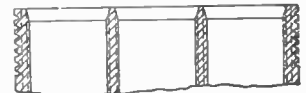


6 Duct Length 36"

9 Duct Length 36"



Section G.G.



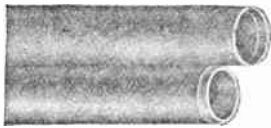
Section E.E.

Dowel Pins

Metal dowel pins are made of commercial wrought iron. They are circular in cross section, 3 inches long, 5/8 inches in diameter of shaft, with a thin collar projection mid-way into the shaft to prevent the pin from slipping more than half-way into the conduit hole. C. P. C. Conduit is reamed about the dowel pin holes to allow the conduit pieces to make a close-butt-joint over the dowel pin collar.

Prices upon application.

Bermico Fibre Conduit



Socket Joint Type

Bermico fibre conduit is manufactured in a long established pulp and paper plant that specializes in high grade products. It is produced under standardized conditions under the supervision of expert chemists and engineers.

The pure spruce pulp fibre is converted into 8-foot lengths of conduit in automatic machines which produce a higher degree of precision than any skilled operative could produce, wall thicknesses for example being gauged automatically to the thousandth of an inch.

Automatically regulated and elaborate machinery is used to slowly dry and season the conduit, overcoming the defects of ordinary drying methods such as blistering, warping, etc. The result is straight, tough, uniform tubes all exactly up to standard.

Impregnating is effected in great steel sealed chambers forcing out all moisture and forcing in the binding material under correct temperature conditions and for the right length of time.

Machining is done automatically, both ends of the conduit being milled at once insuring uniformity.



Sleeve Joint Type

The use of only first quality materials, expert supervision and exactness of construction results in a product which meets the highest standards for dielectric and physical strength, moisture absorption and uniformity.

Lengths: approximately 8 feet, except 2 and 2½-inch sizes which are 5 feet; 3-inch can be furnished in 5 and 8-foot lengths.

Socket Joint Type

Size Inside Diameter Inches	Approx. Net. Wt. per Ft. Lbs.	Approx. Max. Gross Wt., Lbs. in Full 36-ft. Car	Approx. Max. No. of Ft. in 3000-lb. Carload	Approx. Min. No. of Ft. in 3000-lb. Carload	Price per Foot
2	.92	32500	35000	31300	\$.10
2½	1.10	33300	30000	27000	.11
3	1.35	34000	25000	22000	.12
3½	1.65	35000	21000	18000	.13
4	1.85	30800	16500	16000	.15
4½	2.25	30000	13300	13200	.19

***Bermico Sleeve Joint Type**

Size Inside Diameter Inches	Approx. Net. Wt. per Ft. Lbs.	Approx. Max. Gross Wt., Lbs. in Full 36-ft. Car	Approx. Max. No. of Ft. in 3000-lb. Carload	Approx. Min. No. of Ft. in 3000-lb. Carload	Price per Foot
2	0.95	31600	33000	31300	\$.13
2½	1.20	32700	27000	24700	.14
3	1.45	33700	23000	20500	.15
3½	1.75	35300	20000	17000	.16
4	2.00	31300	15500	14850	.18
4½	2.45	31000	12500	12100	.23

*One coupling supplied with each length.

†Prices and data on 5 to 6-inch sizes inclusive of conduit and fittings furnished upon application.

Standard Crates For Socket Joint Type Conduit

Size Inside Diameter Inches	Approx. Gross Wt., Lbs.	Approx. No. of Feet	Outside Dimension of Crate Inches
2	275	200	60½x24½x14¾
2½	320	200	60½x27¾x17⅝
3	290	150	98 x19½x19½
3½	310	125	98 x22 x22
4	280	100	98 x24½x24½
4½	330	100	98 x27¾x27¾

For Sleeve Joint Type Conduit

Size Inside Diameter Inches	Approx. Gross Wt., Lbs.	Approx. No. of Feet	Outside Dimension of Crate Inches
2	295	200	60½x24½x14¾
2½	355	200	60½x27¾x17⅝
3	330	150	98 x19½x19½
3½	335	125	98 x22 x22
4	320	100	98 x24½x24½
4½	375	100	98 x27¾x27¾

Bermico Fibre Conduit Bends and Fittings



45° Bend, 36-inch Radius

Bends 2 and 2½-inch are furnished in approximately 5-foot lengths.

Bends 3-inch and larger are furnished in approximately 8-foot lengths.

Prices on bends are based on 5-foot lengths. Bends over 5 feet long will be charged as listed below and an extra charge will be made on the straight conduit basis for that part over 5 feet.

An extra charge will be made for bends of special degree or radius, for cutting to special length, furnishing material to sketch, and material cut to waste.

Socket Joint Type

Size Inside Diameter Inches	Radius of Standard 45° and 90° Bends Inches	Radius of Standard "S" Bends (20-inch Offset) Inches	Approx. Gross Wt., Lbs. Standard Crate Bends	Standard Crate of Bends Contains Pieces	Price, Each Standard Bend	Price, Each 45° and 90° Elbows
2	18-24-36	36	260	25	\$1.75	\$2.15
2½	24-36	36	295	25	1.80	2.15
3	36	36	285	20	1.85	2.20
3½	36	36	305	15	2.00	2.20
4	36	36	295	12	2.25	2.25
4½	36	36	250	9	3.25	3.00

***Bermico Sleeve Joint Type**

Size Inside Diameter Inches	Radius of Standard 45° and 90° Bends Inches	Radius of Standard "S" Bends (20-inch Offset) Inches	Approx. Gross Wt., Lbs. Standard Crate Bends	Standard Crate of Bends Contains Pieces	Price, Each Standard Bend	Price, Each 45° and 90° Elbows
2	18-24-36	36	270	25	\$1.90	\$2.25
2½	24-36	36	310	25	2.00	2.25
3	36	36	295	20	2.10	2.35
3½	36	36	320	15	2.30	2.35
4	36	36	305	12	2.60	2.45
4½	36	36	260	9	3.65	3.25

*One coupling supplied with each bend or elbow.

†Prices and data on 5 to 6-inch sizes inclusive of conduit and fittings furnished upon application.

Extra Couplings

Size Inside Diameter Inches	O. S. Measurement of Crate, Inches	Number to Each Crate	Approx. Wt., Lbs. per Crate	Price Each
2	25 x30 x37½	960	267	\$.10
2½	25¼x32¾x39	864	260	.11
3	29¼x37¾x42½	720	343	.12
3½	41¾x31¾x29½	504	250	.14
4	47¾x34 x31	432	307	.16
4½	47¼x34½x29½	336	305	.20

Approximate Dimensions of Elbows for Socket and Bermico Sleeve Joint Types

90° Elbows

Size Inside Diameter Inches	Radius Inches	L Inches	Wall Thickness Inches
2	2½	6	¼
2½	2½	6½	¼
3	3	6½	¼
3½	3	7	¼
4	3½	7½	¼
4½	1½	8	⅝

90° Elbow

45° Elbows

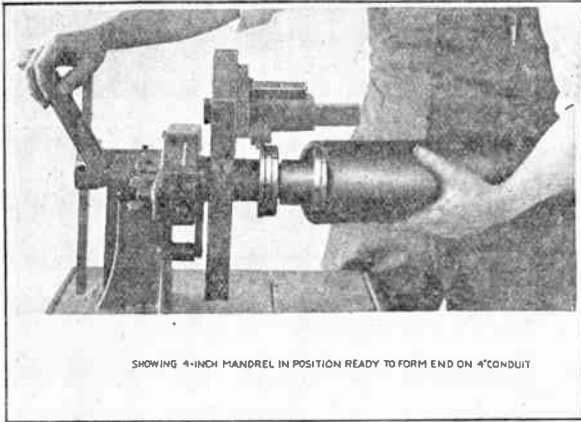
Size Inside Diameter Inches	Radius Inches	L Inches	Wall Thickness Inches
2	2½	8½	¼
2½	2½	9	¼
3	3	9	¼
3½	3	9½	¼
4	3½	10½	¼
4½	4½	12	⅝



45° Elbow

Bermico Fibre Conduit Field Machines

Creosoted Wood Conduit



SHOWING 4-INCH MANDREL IN POSITION READY TO FORM END ON 4" CONDUIT

The Bermico Conduit Field Machine for sleeve, general and socket joints enables the conduit-laying crew to machine a short length of conduit to a perfect fit.

The machine is light, portable, inexpensive and ensures a finished conduit possessing tight joints. Both types of machine carry all mandrels, cutting tools, tool holders, and other parts required for machining joints on 2, 2½, 3, 3½, 4, 4½ and 6-inch conduit, including necessary adjusting and tightening wrenches. No wrenches or other tools should be used except those supplied with the outfit.

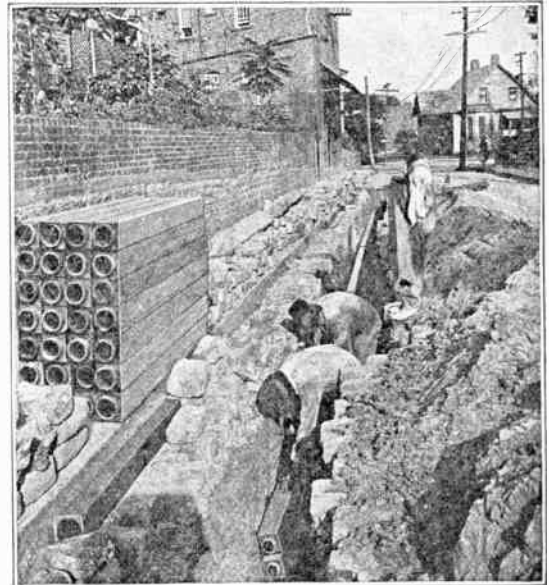
The taper or angle for all joints is set by manner the machine is assembled at factory and cannot be changed. It is set exactly right, and remains so.

The screw-joint type machine cuts the standard male thread, and finishes thread complete in one operation. Operator can only vary the depth of cut, and a little practice will enable him to get correct depth. This type carries also a cutting tool for trimming the entering end of the conduit before thread is cut. This trim is made quickly and ensures a tight seat for the conduit-end when butted end to end.

While spare parts may be obtained, each conduit machine is assembled in a rugged cabinet with a padlocked lid which also functions as the operating stand for the machine when in use. This cabinet contains a tool compartment in which all accessory parts are snugly held, handy for instant use. If the machine is properly closed and padlocked when not in use, there should be no occasion for buying duplicate parts.

Parts for Conduit Field Machine

- No. 1.—Expanding Mandrel Adapters for 6-inch Conduit
 - No. 2.—Expanding Mandrel Adapters for 4½-inch Conduit
 - No. 3.—Expanding Mandrel Adapters for 4-inch Conduit
 - No. 4.—Expanding Mandrel Adapters for 4½-inch Conduit
 - No. 5.—Expanding Mandrel Adapters for 3-inch Conduit
 - No. 6.—Expanding Mandrel for 2½-inch Conduit
 - No. 7.—Mandrel-key for 2½-inch Mandrel and Above
 - Nos. 8, 12, 13, 14.—Milled Cone and Parts for Locking Mandrel on Shaft, for All Sizes above 2-inch
 - No. 9.—Mandrel-key for 2-inch Conduit Only
 - Nos. 10, 11.—Expanding Mandrel for 2-inch Mandrel with Springs, Washers, and Nut
 - No. 15.—Operating Handle
 - No. 16.—Wrench for Adjusting Cutter Horn to the Desired Size of Conduit
 - No. 17.—Spacer for Spacing the Expanding Mandrel Adapters
 - No. 18.—Tool-holder Assembly
 - No. 19.—Key-wrench
 - No. 20.—Feed Rack for Operating Feed Screw; with Washer and Nut
 - No. 21.—Mandrel-expanding Shaft and Lever
 - No. 22.—Washer for End of Mandrel Shaft
- Prices and special catalogue upon application.



This material is manufactured from yellow pine at the plants at Norfolk, Virginia, and Atlanta, Georgia and from Douglas fir at our plant at Tacoma, Washington; creosoted full vacuum treatment is an economical and satisfactory conduit for the carrying of all forms of lead cable and wires.

Comes in random lengths.

Outside measurement, 4½x4½ inches.

Has a 3-inch hole in center, a mortise at one end and a tenon on the other.

It is in general use by the large telegraph companies and telephone companies all over the country and by many railroads.

Uses for which it is adapted:

RAILROADS.—Trunking, underground signal wires, high tension transmission lines, yard drainage where clay conduit is easily broken through, and system is usually placed on the surface of the ground.

TELEPHONE COMPANIES.—All underground work.

TELEGRAPH COMPANIES.—All underground work.

POLICE AND FIRE ALARM SYSTEMS.—For carrying wires, either high or low tension under ground.

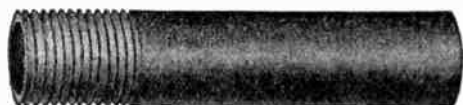
CENTRAL STATIONS.—For distribution mains and services.

SPECIFICATION CREOSOTED CONDUIT.—Free from large, unsound or loose knots, or other defects which would impair strength. Creosoted steam and vacuum treatment, dead oil of coal tar under pressure either 12 pounds per cubic foot (full cell) or 8 pounds per cubic foot (empty cell) as ordered.

Any additional information regarding the practicability of installing this conduit will be furnished upon request.

Prices on application.

**Rigid Steel Conduit
Enamelled Conduit**



Enamelled conduit is manufactured from mild drawn steel tubing. Before enameling, the tubing is thoroughly cleaned and freed from dirt, grease, scale, silicates and burrs. This process leaves an absolutely clean surface for the application of the compound.

Galvanized Conduit



Galvanized conduit is manufactured from mild steel tubing of the best quality. The ends are carefully reamed to facilitate the fishing of wires. All tubes are thoroughly cleaned both inside and outside by special process before being heavily coated with zinc.

Sherarduct



Sherarduct Rigid Conduit is made of full weight mild spellerized steel tube and finished under the famous sherardizing process. In this process pure zinc is alloyed with the steel tube both inside and outside to form a rustproof finish which is so entirely a part of the pipe that it cannot be knocked or chipped off.

Conduit

Stand. Pipe Size, Inches	DIAMETER, INCHES		Threads per Inch	Wt., Lbs. per 100 Ft.	Price per 100 Ft.
	Inside	Outside			
1/2	.622	.810	14	85.2	\$8.50
3/4	.824	1.050	14	113.4	11.50
1	1.049	1.315	11 1/2	168.4	17.00
1 1/4	1.380	1.660	11 1/2	228.1	23.00
1 1/2	1.610	1.900	11 1/2	273.1	27.50
2	2.067	2.375	11 1/2	367.8	37.00
2 1/2	2.469	2.875	8	581.9	58.50
3	3.068	3.500	8	761.6	76.50
3 1/2	3.548	4.000	8	920.2	92.00
4	4.026	4.500	8	1088.9	109.00
4 1/2	4.506	5.000	8	1264.2	127.00
5	5.047	5.563	8	1481.0	148.00
6	6.065	6.625	8	1918.5	192.00

Elbows

Size Inches	Radius Inches	Offset Inches	Wt., Lbs. per 100	Price per 100
1/4	3.750	6.750	41.5	\$19.00
3/8	3.750	6.750	55.4	19.00
1/2	3.875	6.718	83.2	19.00
3/4	4.500	6.843	111.0	25.00
1	5.750	8.500	207.0	37.00
1 1/4	6.625	9.781	317.0	45.00
1 1/2	8.375	11.687	447.0	60.00
2	9.250	13.750	715.0	110.00
2 1/2	10.500	17.000	1416.0	180.00
3	11.750	17.250	1850.0	480.00
3 1/2	13.750	23.000	2930.0	1060.00
4	16.000	22.437	3470.0	1225.00
4 1/2	18.000	24.437	4310.0	1855.00
5	24.000	32.000	6541.0	2575.00
6	30.000	36.750	9584.0	3200.00

Couplings

Stand. Pipe Size, Inches	Wt., Lbs. per 100	Price per 100	Stand. Pipe Size, Inches	Wt., Lbs. per 100	Price per 100
1/2	11.6	\$7.00	3	219.8	\$60.00
3/4	20.9	10.00	3 1/2	424.1	80.00
1	34.3	13.00	4	474.1	100.00
1 1/4	53.5	17.00	4 1/2	550.0	150.00
1 1/2	74.3	21.00	5	700.0	165.00
2	120.8	28.00	6	750.0	240.00
2 1/2	172	40.00	...	.....	.....

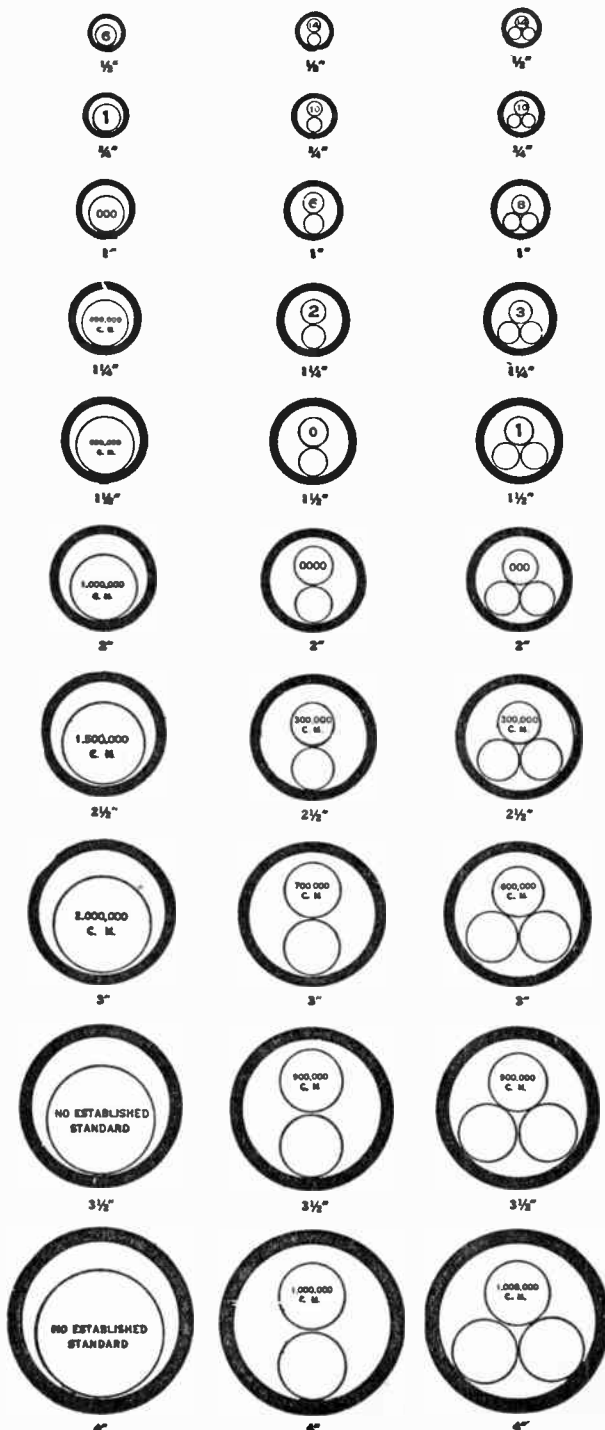
Standard Sizes of Conduits

For the Installation of Wires and Cables

As Adopted and Recommended by the National Association of Electricians

Based on the use of not more than three 90-degree elbows in runs taking up to and including No. 10 wires, and two elbows for wires longer than No. 10. Wires Nos. 8 and larger are stranded.

Single wire combinations are based on straight run without elbows. Special permission is required of the inspection department having jurisdiction for the installation of more than nine wires in the same conduit.



In ordering, specify finish desired.

Conduit Locknuts—Galvanized

Cat. No.	Size In.	Std. Pkg.	Price per 100	Cat. No.	Size In.	Std. Pkg.	Price per 100
300	1000	2.50		307	2 1/2	100	\$30.00
301	5000	2.50		308	3	100	50.00
302	5000	3.50		309	3 1/2	25	70.00
303	1	1000	6.00	310	4	25	100.00
304	1 1/2	500	10.00	311	4 1/2	10	140.00
305	1 1/2	500	15.00	312	5	10	160.00
306	2	200	20.00	313	6	10	200.00



Malleable Iron Conduit Bushings Galvanized

Cat. No.	Size In.	Std. Pkg.	Price per 100	Cat. No.	Size In.	Std. Pkg.	Price per 100
100	1000	\$6.00		106	2	100	\$40.00
101	5000	6.00		107	2 1/2	100	60.00
102	5000	8.00		108	3	50	90.00
103	1	1000	15.00	109	3 1/2	25	200.00
104	1 1/2	500	20.00	110	4	25	300.00
105	1 1/2	500	25.00	111	4 1/2	10	400.00



National Bushcaps

Sherardized Bushings—Tin Caps
National Bushcaps placed on the open ends, when conduits are installed, will keep them clean and clear until wires are drawn in. Std. pkg. 1000.

Price, 1/2-inch..... per 100 \$6.00
" 3/4 " " " " 100 8.00
" 1 " " " " 100 15.00



Reducing Bushings



Size Inches	Std. Pkg.	Price Each	Size Inches	Std. Pkg.	Price Each
3/4 to 1/2	50	\$.15	2 to 1	25	\$.50
1 " 1/2	50	.20	2 " 1 1/4	25	.50
1 " 3/4	50	.20	2 " 1 1/2	25	.50
1 1/4 " 1/2	50	.30	2 1/2 " 1/2	25	1.00
1 1/4 " 3/4	50	.30	2 1/2 " 3/4	25	1.00
1 1/4 " 1	50	.30	2 1/2 " 1	25	1.00
1 1/2 " 1/2	50	.40	2 1/2 " 1 1/4	25	1.00
1 1/2 " 3/4	50	.40	2 1/2 " 1 1/2	25	1.00
1 1/2 " 1	50	.40	2 1/2 " 2	25	1.00
1 1/2 " 1 1/4	50	.40	3 " 1/2	25	1.35
2 " 1/2	25	.50	3 " 3/4	25	1.35
2 " 3/4	25	.50	3 " 1	25	1.35

Erickson Conduit Couplings

Malleable Iron, Galvanized



Does away with running threads. Permits opening run of conduit at any point desired.

Enables starting circuit from the 2 outlets and makes a good and strong connection

at any point in the run. Saves labor.

Cat. No.	Size In.	For Conduit, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
675	1/2	1/2	100	25	\$16.00
676	3/4	3/4	50	33	20.00
677	1	1	25	53	28.00
678	1 1/4	1 1/4	25	96	50.00
679	1 1/2	1 1/2	25	120	75.00
680	2	2	20	190	130.00
681	2 1/2	2 1/2	20	370	250.00
682	3	3	10	408	400.00

Chase Couplings

Chase couplings are plain finish but can be galvanized to order.

Cat. No.	Size In.	Std. Pkg.	Wt. per 100 in Lbs.	List Price per 100
830	1/4	100	4	\$10.00
831	3/8	200	5	10.00
832	1/2	200	7	10.00
833	3/4	100	10	12.00



Chase Nipples—Galvanized

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
842	1/2	200	5	\$5.00
843	3/4	100	6	8.00
844	1	100	12	15.00
845	1 1/4	100	19	18.00
846	1 1/2	50	27	20.00
847	2	50	45	30.00
848	2 1/2	25	68	50.00



New York Ground Clamps

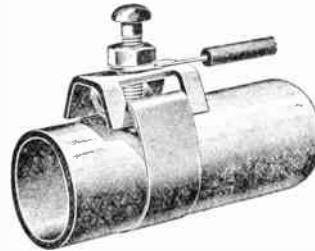
Type A

For use on signalling systems, telephone and telegraph circuits. Furnished in three sizes or with strap in coils.

Size In.	Price Per 100	Size In.	Price Per 100
1	\$8.00	3	\$12.00
2	10.00		

Type B

For heavy circuits — no soldering required. Post drilled for any two sizes: Either No. 4, 6, 8, 10, 12 or 14 wire.



Type A

Size Inches	Price per 100	Size Inches	Price per 100
1	\$31.00	3	\$35.00
2	33.00	4	37.50

Type D

For electric light and motor work. Lug used for soldering wire to clamp.

Size Inches	Price per 100	Size Inches	Price per 100
1	\$31.00	3	\$35.00
2	33.00	4	37.50

Tinned Copper Strap

Furnished in coil which can be "cut as needed" depending on size of pipe. This is particularly economical on large pipes. Coils of strap put up in 10-foot lengths.

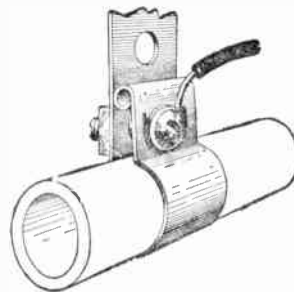
Order by inch sizes, stating whether strap is wanted cut to length and attached at one end or in coils, to be cut by consumer as needed.

Strap, for any type, furnished in 10-foot coils instead of inch sizes, if so desired.

- 100 1-inch straps equal to 70 feet in coils.
- 100 2-inch straps equal to 100 feet in coils.
- 100 3-inch straps equal to 130 feet in coils.
- 100 4-inch straps equal to 160 feet in coils.

Sherman Ground Clamps

An all copper, one-piece clamp which can be drawn up tight. The roll portion for soldering is turned in to rest against opposite tongue of clamp, preventing the two ends from tipping together when tightened; holding the ears parallel, and insuring large amount of drawing power.



Can be used for both soldered and solderless connections.

Cat. No.	Size Pipe Inches	Carton	Std. Pkg.	Approx. Wt. Lbs., Std. Pkg.	Price Each
1	3/8 to 1	100	1000	110	\$.20
2	3/8 " 2	100	1000	150	.25
3	3/8 " 3	50	500	100	.30
4	3/8 " 4	...	250	52	.60

Tempered Steel Fish Tapes

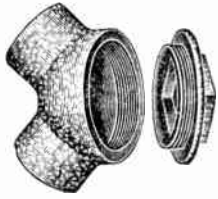
Furnished in any desired length, up to 500 feet. Put up in coils.

Cat. No.	Width In.	Thickness In.	Price per 100 Feet
2000	1/8	.031	\$4.50
2001	3/16	.035	5.50



Type L Bendhicks

A short elbow, weatherproof fitting for making a short bend in a conduit system. Is fitted with a weatherproof capped opening to allow an easy passage of wires around the sharp angle. No locknuts or bushings required to make it weatherproof. Thoroughly galvanized throughout by hot dip process.



Cat. No.	Size Conduit Inches	Unit Pkg.	Std. Pkg.	Price Each
L-1/2	1/2	20	100	\$.60
L-3/4	3/4	10	100	.70
L-1	1	10	50	.90
L-1 1/4	1 1/4	6	24	2.50
L-1 1/2	1 1/2	4	20	3.00
L-2	2	2	10	6.00
L-2 1/2	2 1/2	1	4	8.00
L-3	3	1	4	10.00
L-3 1/2	3 1/2	2	2	16.00
L-4	4	1	2	18.00

T & B Adjustable Conduit Hangers



Type A fits beams 2 3/4 to 7 3/8 inches; Type B fits beams 7 to 12 inches.

Adjustable and will support any number of conduits from one to eight, which may run at any angle with the beams and close against the beam, or far enough below to permit a second line of conduits to be run above. Clamps are made of stamped steel.

Clamp Complete with Support as Below	TYPE A				TYPE B			
	Std. Pkg.	Cat. No.	Wt., Lbs. per 100	Price per 100	Cat. No.	Wt., Lbs. per 100	Price per 100	
1- 1/2 inch	100	710	45	\$34.00	760	74	\$49.00	
1- 3/4 "	100	711	46	38.00	761	75	53.00	
1-1 "	50	712	48	44.00	762	77	59.00	
1-1 1/4 "	50	713	51	48.00	763	80	63.00	
1-1 1/2 "	25	714	52	52.00	764	81	67.00	
1-2 "	25	715	56	60.00	765	85	75.00	
1-2 1/2 "	25	716	59	68.00	766	88	83.00	
1-3 "	25	717	63	78.00	767	92	93.00	
2- 1/2 "	100	718	58	38.00	768	87	53.00	
2- 3/4 "	100	719	65	42.00	769	94	57.00	
4- 1/2 "	50	720	72	46.00	770	101	61.00	
4- 3/4 "	50	721	80	50.00	771	109	65.00	
6- 1/2 "	25	722	97	54.00	772	126	69.00	
6- 3/4 "	25	723	112	62.00	773	141	77.00	
8- 1/2 "	25	724	111	62.00	774	140	77.00	
8- 3/4 "	25	725	127	70.00	775	160	85.00	
2- 1/2 " and 2- 3/4 " inch	25	726	90	50.00	776	119	65.00	
2- 1/2 " " 4- 3/4 " "	25	727	105	58.00	777	134	73.00	
4- 1/2 " " 2- 3/4 " "	25	728	104	58.00	778	133	73.00	
4- 1/2 " " 4- 3/4 " "	25	729	113	66.00	779	148	81.00	
2-1 "	25	730	73	48.00	780	102	63.00	
2-1 1/4 "	25	731	85	52.00	781	114	67.00	
2-1 1/2 "	25	732	95	56.00	782	124	71.00	

Supports

Cat. No.	For Conduit	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
733	1- 1/2 inch	100	12	\$8.00
734	1- 3/4 "	100	13	10.00
735	1-1 "	50	15	16.00
736	1-1 1/4 "	50	18	20.00
737	1-1 1/2 "	25	19	24.00
738	1-2 "	25	23	32.00
739	1-2 1/2 "	25	26	40.00
740	1-3 "	25	30	50.00
741	2- 1/2 "	100	25	12.00
742	4- 1/2 "	100	39	18.00
743	2- 3/4 "	50	32	14.00
744	4- 3/4 "	50	47	22.00
745	2-1 "	25	40	20.00
746	2-1 1/4 "	25	52	24.00
747	2-1 1/2 "	25	62	28.00

Clamps Only, Including Bolts

Cat. No.	Description	Std. Pkg.	Wt., Lbs. per 100	Price per 100
700	Type A Fits Flange 2 3/4 to 7 3/8 Inches	100	33	\$30.00
701	B " " 7 " 12 "	100	62	45.00
703	Special Bolts	100	6	5.00

Ovalduct Conduit and Fittings

Sherardized



Ovalduct Conduit

Ovalduct Conduit is made in 10-foot lengths from seamless drawn steel tube sherardized inside and outside, then enameled upon the interior.

It readily takes a duplex wire and may be bent to conform to wiring conditions. The system includes complete fittings, elbows, couplings, bushings for fittings to special boxes and adapters adapting the Ovalduct to regular 1/2-inch conduit.

Ovalduct Conduit is made of 1/8-inch metal and the cross section of the tube is elliptical, the shorter diameter being 3/8-inch and the longer one 5/8-inch.



Ovalduct Ceiling or Outlet Box

Designed for use in making alterations and additions to conduit work in completed fireproof structures where the original wiring has been installed in standard rigid iron conduit.

The use of Ovalduct Conduit makes the channeling of the ceilings or walls unnecessary. It is laid in a small groove in the plaster and fastened to the ceiling or walls with short tie wires which are fished around the tile through two small holes or strapped on.

By the use of Ovalduct, an extension may be made by simply channeling the plaster, installing and burying the Ovalduct in the plaster. Special ceiling boxes with oval knockouts are made, and where an extension is to be made from a standard conduit outlet the old ceiling box is removed, the Ovalduct Box installed in its place, the Ovalduct Tubing run to the necessary point and a similar Ovalduct Outlet Box installed at the proper or desired point.

Ovalduct Conduit

Description	Price per Foot
Sherardized Inside and Outside, then Enameled Inside	\$.20



Coupling

Bushing

Adapter

Ovalduct Elbows

Description	Price Each
Sherardized, Rustproof	\$.20

Ovalduct Couplings

Ovalduct Coupling	\$.06
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Ovalduct Bushings

For Connecting Elbow or Ovalduct to Outlet Box	\$.08
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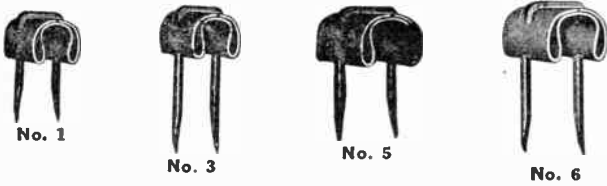
Ovalduct Adapters

Adapter from Rigid Round Conduit to Ovalduct	\$.20
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Ovalduct Ceiling or Outlet Boxes

Standard Ceiling Box with Five 1/2-inch Conduit Knockouts in Bottom and Six Ovalduct Knockouts in the Side	\$.24
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Blake Insulated Staples



Illustrations Are Actual Size

The fibre insulation of Blake Insulated Staples is of double thickness where it contacts with the wires and of sufficient length to safely insure against injuring the wires in driving the staples over them, even if they be driven most carelessly. At no point can the wires come in contact with an uninsulated part of the staple. The staples may be driven over two or more wires without danger of causing a short circuit or even a ground.

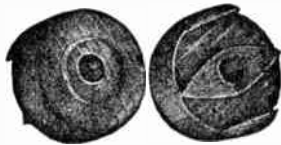
Nos. 1 and 5 are for use in hardwood; Nos. 3 and 6 are for general use. Nos. 1 and 3 are for single wire and twisted pair; Nos. 5 and 6 for extra heavy pair wire and twisted 3-wire.

Packed 100 in a small container—10 small containers (1000 staples) per carton.

Cat. No.	CARTON		STANDARD CASE		PRICE	
	Quantity	WEIGHT Lbs. Oz.	Quantity	Wt. Lbs.	per 100	per 1000
1	1000	1 9	25000	42	\$.25	\$1.60
3	1000	2 0	25000	52	.25	1.60
5	1000	2 1	25000	55	.30	1.80
6	1000	2 5	25000	61	.30	1.80

No. 20 Blake Cleats

Made of compressed wood. For use in places where Blake Staples will not hold, as on plastered walls and similar places. The center partition protects the wire from the nail or screw.



Price, No. 20.....per 1000 \$2.75

No. 18 Milonite Perfection Insulated Nails



Recommended for installing two-conductor or three-conductor twisted insulated wire.

They are easy to handle and install and prevent short circuiting.

Furnished in light oak, dark oak, dark green and black.

Made with shank 1/2, 5/8, and 7/8 inch long.

Price, No. 18, All Lengths.....per 1000 \$2.50

Leather Nail Heads



Required where porcelain insulators or porcelain cleats are installed by the use of nails, as they provide protection to the insulator or cleat when the nail is driven in.

Packed in boxes which weigh one pound each and contain about 1000 nail heads.

Price.....per box \$1.00

Eureka Fibre Insulators



Cat. No.	Size In.	Style Fibre	Price per 1000
*1	3/4	Gray	\$6.00
*1	3/4	Black	6.00
**101	3/4	Gray	6.00
**102	3/4	Black	6.00

*Brass

**Oxidized brass.

National Adjustable Fixture Studs

Nos. 2251 and 2256, unit pkg. 50, std. pkg. 1000. Bolts with nuts, unit pkg. 500, std. pkg. 1000.

Cat. No.	Size In.	Description	Price per 100
2251	3/8	Male	\$5.00
2252	1/2	"	6.50
.....	3/8	x 3/8 Round Head Sherardized Steel Bolts with Nuts.....	\$.50



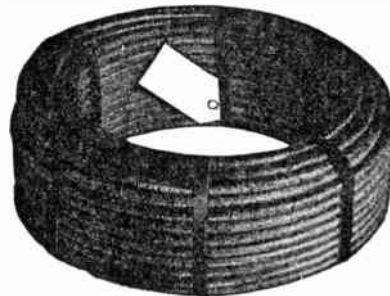
Hickey Fixture Hangers

Made of malleable iron and galvanized to prevent rust.



Cat. No.	Description	Price per 100
1315	3/8-inch male 1/2-inch female	\$30.00
1316	1/2 " " 1/2 " "	30.00
1317	3/8 " " 3/4 " "	30.00
1318	1/2 " " 3/4 " "	30.00

Non-metallic Flexible Conduit



Composed of closely woven canvas. To the lining is cemented a layer of spirally wound fiber strip which acts as the framework of the tube. Over this framework is a tightly woven envelope of cotton coated with a compound containing finely divided mica.

It is moisture proof and stands a very severe fire test. It is regularly examined and labeled by the Underwriters' Laboratories and each length is fished before leaving factory.

Size 3/2 inch is .05 inch larger than nominal size. Sizes 1/4 inch to 1 inch are .07 inch larger than nominal size. Sizes 1 1/4 inch to 2 inch are .125 larger than nominal size.

Inside Diam. In.	Feet in Coil	Wt. Lbs. per 1000 Ft.	Price per Ft.	Inside Diam. In.	Feet in Coil	Wt. Lbs. per 1000 Ft.	Price per Ft.
7/8	250	53	\$.05 1/2	1	100	225	\$.25
1/4	250	57	.06	1 1/4	100	300	.33
3/8	250	76	.09	1 1/2	Odd lengths	340	.40
1/2	200	92	.12	1 3/4	" "	450	.47
5/8	200	115	.15	2	" "	460	.55
3/4	150	137	.18	.....	.....	.....	.....

No. 911 H & H Conduit Clamps

With this clamp it is possible to use shallow wall cases on flexible metallic conduit installations. This clamp obviates the necessity of carrying two types of boxes in stock, one for flexible non-metallic and one for flexible metallic conduit installations. Standard package, 100.



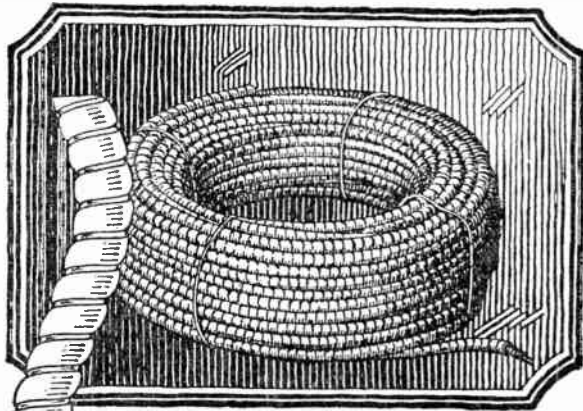
Price, No. 911.....per 100 \$6.50

Nos. 5007 and 5008 H & H Conduit Fasteners



These are brass fasteners for holding flexible conduit in wall cases. Insert conduit through outlet in wall cases. Force fastener over end of conduit as shown in illustration; the teeth of fastener will engage the fabric.

Price, No. 5007 for 1/4-inch Conduit.....per 100 \$1.00
 " " 5008 " 3/8 " " " " " 100 1.00



Lying here it is just a coil of metal-covered wire. But properly installed in your home by a capable contractor, and connected to the light and power company's lines, it becomes a path charged with energy.

Put plenty of backbone into your home

HERE'S a backbone that will save yours. It's an electrical spinal column—a coil of metal-covered wire that encloses and protects wires, just as your backbone encloses and protects nerves. And these wires, like your nerves, are a pathway for energy.

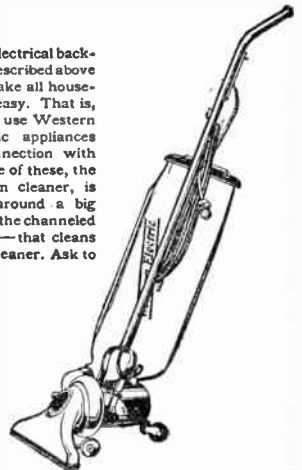
An electrical contractor will install this conduit

There's an expert at your service to wire your house effectively so that you will get the most out of electric service. Your electrical contractor—he knows.

He knows where a switch or an outlet should be placed to save steps. Where a fixture should be located to give the best light. And many other things, big and little, that spell convenience.

But convenience isn't all. How about reliability? Your electrical contractor will make valuable recommendations on this point. He'll suggest the proper switches, fuses, conduit, etc.—the kind that will last as long as your house stands—the only kind that will prove economical. And the only kind he can get at the Western Electric warehouse.

The electrical backbone described above will make all housework easy. That is, if you use Western Electric appliances in connection with it. One of these, the vacuum cleaner, is built around a big idea—the channeled nozzle—that cleans rugs cleaner. Ask to see it.

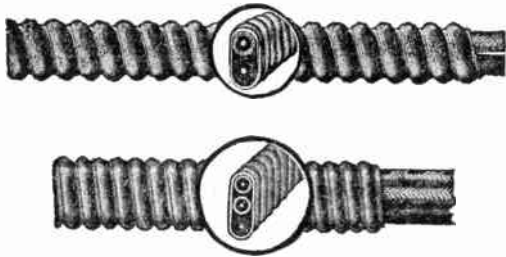


Western Electric

**QUALITY ELECTRICAL SUPPLIES
WHOLESALE ONLY**

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

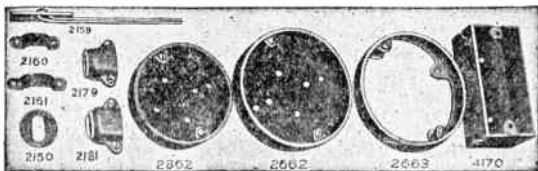
Ovalflex Flat Armored Cable



Ovalflex has the great advantage over round armored cable in that its depth is from $\frac{3}{8}$ -inch to $\frac{1}{4}$ -inch less. On this account, it can be readily covered by the thickness of plaster commonly used on brick and tile surfaces, while round armored cable cannot. It can be bent edgewise to about the same radius as ordinary armored cable, and flatwise to a much smaller radius. On account of these features, surface installations of Ovalflex are neat and inconspicuous and may be used in many places where surface installations of round armored cable would not be tolerated.

Size B. & S	Description	Feet per Coil	Wt., Lbs. per 1000 Feet	Price per 1000 Feet
14-2	2 No. 14 Conductors	125	320	\$93.00
14-3	3 " 14 "	125	...	125.00

Ovalflex Fittings



The fittings for Ovalflex are few and simple. They include a 4-inch box, a $3\frac{1}{4}$ -inch box and a 4-inch extension ring. The large box is commonly used for concealed work, and the small one for exposed work, with any suitable type of standard cover in either case. The extension ring is for tapping from outlet boxes for surface extensions with Ovalflex or for tapping from concrete boxes for concealed extensions in the plaster.

Cat. No.	Description	Price per 100
2150	Adapter, for Use with Nos. 2179 and 2181 in $\frac{1}{2}$ -in. Conduit Knockouts.....	\$2.60
2159	Toggle Fastener, for 14-2 or 14-3.....	5.30
2160	Strap " " 14-2.....	1.90
2161	" " " 14-3.....	2.20
2179	Connector, for 14-2 (Oval K. O.).....	14.60
2181	" " 14-3 ".....	16.00
2662	Outlet Box, 4x $\frac{3}{4}$ -inch, for 14-2 and 14-3....	37.00
2663	Extension Ring, 4x $\frac{3}{4}$ -inch, for 14-2 and 14-3....	40.00
2862	Outlet Box, 3 $\frac{1}{2}$ x $\frac{3}{4}$ -inch, for 14-2 and 14-3....	34.00
*4170	Flush Device Box, 4x1 $\frac{1}{2}$ -inch by 1 $\frac{1}{2}$ -inch Deep.....	40.00
4172	Spacer for 4170 (i.e., Box Less Sides).....	38.00

*No. 4170 is tapped for standard ears but is supplied without them unless otherwise specified. Where ears are exposed as in old work, standard switch plates are not long enough to cover this box. No. 4170 is sectional and gangs can be made up by using spacer No. 4172.

No. 2176 Ovalflex Adapters



A squeeze connector, for 14-2 Ovalflex, $\frac{1}{2}$ -inch K.O.
Price, No. 2176.....per 100 \$26.60

Flexsteel Flexible Conduit



Walls will not open under severe strain. It is so constructed as to meet extreme bending possibilities and to give the greatest flexibility, and when bent it stays put and in place. The interior, like the exterior, is flat and presents an especially smooth fishing surface.

Size In.	Outside Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 100 Ft.	Size In.	Outside Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 100 Ft.
$\frac{5}{16}$	.50	203	250	\$5.00	1 $\frac{1}{4}$	1.60	1680	50	\$26.00
$\frac{3}{8}$	.62	350	250	7.50	1 $\frac{1}{2}$	1.90	2000	25-50	35.00
$\frac{1}{2}$	.88	590	100	10.00	2	2.40	2335	25-50	45.00
$\frac{3}{4}$	1.10	820	50	13.00	2 $\frac{1}{2}$	3.20	3000	25	52.00
1	1.35	1260	50	21.00	3	....	3360	25	75.00

Flexsteel Armored Conductors



The perfectly flat, smooth exterior results in great advantages in cutting, stripping and pulling around corners, joists, etc. The opposed channel construction of the strip allows the utmost range of flexibility, and will not spread no matter how small the radius to which bent. Steel strip used is thoroughly annealed and zinc coated. Distinguishing braids on each conductor permit certain and quick identification of polarities.

Single Conductor—Type S

Solid					Stranded				
Size B. & S. Gauge	Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 1000 Ft.	Size B. & S. Gauge	Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 1000 Ft.
14S	.40	190	250	\$61.00	10S	.48	220	250	\$95.00
12S	.43	200	250	71.00	8S	.50	270	250	115.00
10S	.45	220	250	90.00	6S	.62	500	250	160.00
8S	.48	270	250	106.00	4S	.70	570	250	205.00
6S	.60	500	250	145.00	2S	.75	690	200	266.00
....	....	....	....	....	1S	.84	960	100	315.00

Twin Conductor—Type FS

14FS	.60	400	250	\$104.00	8FS	.78	780	150	\$285.00
12FS	.63	452	250	135.00	6FS	.90	940	100	400.00
10FS	.66	510	200	185.00	4FS	1.06	210	100	550.00
*14FS	.55	425	250	104.00	....	....	....	....	....

*Single strip.

Three Conductor—Type FS3

14FS3	.63	458	250	\$138.00	8FS3	.80	862	150	\$375.00
12FS3	.66	505	250	170.00	6FS3	1.00	1160	100	500.00
10FS3	.70	600	200	235.00	4FS3	1.08	1300	100	650.00

Lead Covered—Single Conductor—Type SL

Stranded									
Size B. & S. Gauge	Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 1000 Ft.	Size B. & S. Gauge	Diam. Inches	Wt. per 1000 Ft.	Lbs. Approx. per Coil	Price per 1000 Ft.
10SL	.52	460	250	\$120.00	4SL	.72	880	150	\$249.00
8SL	.55	520	200	145.00	2SL	.76	1180	150	319.00
6SL	.62	790	200	196.00	1SL	.82	1600	100	388.00

Lead Covered—Twin Conductor—Type FSL

Solid					Stranded				
14FSL	.66	617	100-200	\$164.00	8FSL	.90	1210	100-150	\$420.00
12FSL	.70	693	100-200	225.00	6FSL	1.08	1900	100	560.00
10FSL	.76	900	100-150	275.00	....	....	....	....	....

Lead Covered—Three Conductor—Type FSL3

14FSL3	.69	740	100-150	\$210.00	8FSL3	.96	1410	100-150	\$500.00
12FSL3	.76	906	100-150	265.00	....	....	....	....	....
10FSL3	.78	1040	100-150	325.00	....	....	....	....	....

Flexsteel Armored Lamp Cord



Size	.....	18F	16F	14F
Diameter	.....inches	.43	.45	.54
Approximate Feet	.....per coil	150-250	150-250	150-250
Price	.....per 1000 feet	\$80.00	95.00	130.00

Flexsteel Reinforced Armored Lamp Cord



Size	18M	16FM	14FM
Diameter .....	.54	.59	.64
Approx. Feet per Coil	150-250	150-250	150-250
Price	per 1000 ft. \$115.00	135.00	175.00



Nos. 2163A-2167 Flexsteel Box Connectors

For Armored Cable and Conduit

No. 2163, for 3/8-inch Conduit, 14FS, 12FS, 14FS3, 8SL, 6S, 6SL, 14FM, 16FM, 18FM, 14F

(1/2-inch Knockout)

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2163A	.656	50	100	15	\$7.50

No. 2164, for 12FS3, 10FS3, 12FSL3, 4SL, 2SL, 10FS, 14FSL, 12FSL, 14FSL3, 10FSL, 2S, 4S (1/2-in. Knockout)

2164	.781	25	100	18	\$9.00
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No. 2166, for (1/2-inch Conduit, 8FSL, 10FSL3, 8FS3, 6FS, 1S, 8FS, 1SL, (1/2-in. Knockout)

2166	.937	25	100	20	\$9.00
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No. 2167, for 3/4-inch Conduit, 4FS, 6FS3, 4FS3, 6FSL, 8FSL3 (3/4-inch Knockout)

2167	1.187	25	100	30	\$12.00
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Nos. 2169-2175 Flexsteel Box Connectors

For Armored Cable and Conduit



No. 2169, for 1-inch Conduit, (1-inch Knockout)

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2169	1.437	10	50	25	\$18.00

No. 2170, for 1 1/4-inch Conduit, (1 1/4-inch Knockout)

2170	1.828	10	50	35	\$25.00
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No. 2171, for 1 1/2-inch Conduit, (1 1/2-inch Knockout)

2171	2.094	10	50	37	\$35.00
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No. 2172, for 2-inch Conduit (2-inch Knockout)

2172	2.562	10	20	20	\$55.00
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No. 2173, for 2 1/2-inch Conduit (2 1/2-inch Knockout)

2173	3.265	5	25	25	\$75.00
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No. 2175, Double Connectors for anything that takes 2163

2175	.656	20	100	25	\$18.00
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Nos. 2200-2207 Flexsteel Panel Box Connectors

For Armored Cable and Conduit

No. 2200, for 3/8-inch Conduit, 14FS, 12FS, 10FS, 14FS3, 12FS3, 14FSL, 6S, 6SL, 14FM, 18FM, 16FM (1/2-inch Knockout)

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2200	.687	20	100	17	\$13.00

No. 2201, for 10FS3, 4SL, 2S, 4S, 12FSL, 14FSL3, 2SL, 10FSL, 12FSL3, (1/2-inch Knockout)

2201	.781	20	100	20	\$18.00
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No. 2202, for 1/2-inch Conduit, 8FSL, 10FSL3, 8FS3, 6FS, 1S, 1SL, 8FS, (1/2-inch Knockout)

2202	.937	20	100	30	\$18.00
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No. 2203, for 3/4-inch Conduit, 4FS, 4FS3, 6FSL, 8FSL3, (3/4-inch Knockout)

2203	1.125	20	100	45	\$25.00
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No. 2204, for 1-inch Conduit (1-inch Knockout)

2204	1.437	5	20	12	\$30.00
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No. 2205, for 1 1/4-inch Conduit (1 1/4-inch Knockout)

2205	1.828	5	20	17	\$40.00
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No. 2206, for 1 1/2-inch Conduit (1 1/2-inch Knockout)

2206	2.094	5	20	22	\$50.00
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No. 2207, for 2-inch Conduit (2-inch Knockout)

2207	2.468	5	20	27	\$70.00
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45° Flexsteel Elbow Box Connectors

For Armored Cable and Conduit



No. 2208, for 3/8-inch Conduit, 14FSL, 14FS, 12FS, 14FS3, 12FS3, 10FS, 8SL, 6S, 6SL, 14FM, 18FM, 16FM

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2208	.687	20	100	17	\$12.00

No. 2209, for 1/2-inch Conduit, 4S, 2S, 1S, 4SL, 2SL, 1SL, 8FS, 6FS, 10FS3, 8FS3, 12FSL, 10FSL, 8FSL, 14FSL3, 12FSL3, 10FSL3

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2209	.953	20	100	18	\$15.00

90° Flexsteel Elbow Box Connectors

For Armored Cable and Conduit

No. 2210, for 3/8-inch Conduit, 14FSL, 14FS, 12FS, 14FS3, 12FS3, 10FS, 8SL, 6S, 6SL, 14FM, 18FM, 16FM

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2210	.687	20	100	22	\$16.00

No. 2211, for 1/2-inch Conduit, 4S, 2S, 1S, 4SL, 2SL, 1SL, 8FS, 6FS, 10FS3, 8FS3, 12FSL, 10FSL, 8FSL, 14FSL3, 12FSL3, 10FSL3

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2211	.953	20	100	22	\$20.00

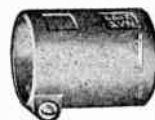


Nos. 2182-2189 Flexsteel Flexible Conduit Couplings



Cat. No.	Inside Diam. Inches	For Conduit Size, Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2182	.531	5/8	25	50	5	\$8.00
2183	.672	3/8	25	100	15	9.00
2184	.953	1/2	10	100	30	10.00
2185	1.156	3/4	10	100	35	12.00
2186	1.437	1	5	50	25	16.00
2187	1.828	1 1/4	5	50	45	25.00
2188	2.094	1 1/2	5	25	35	30.00
2189	2.562	2	5	25	50	45.00

Nos. 2190-2195 Flexsteel Rigid to Flexible Conduit Couplings



Cat. No.	Inside Diam. Inches	For Conduit Size, Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2190	.953	1/2	10	100	22	\$12.50
2191	1.156	3/4	10	100	27	16.00
2192	1.437	1	5	50	25	21.00
2193	1.828	1 1/4	5	50	45	30.00
2194	2.094	1 1/2	5	25	35	40.00
2195	2.562	2	5	25	50	60.00

No. 2220A Flexsteel Lamp Cord Connectors

Hard fibre bushing for use with No. 2220 in hanging armored lamp cord on conduit outlet boxes.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2220A	50	200	7	\$7.50

No. 2220 Flexsteel Lamp Cord Connectors



No. 2220, for No. 16 or No. 18 armored lamp cord. Has 3/8-inch threaded nipple.

Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2220	.468	50	200	15	\$7.50

No. 2221 Flexsteel Lamp Cord Connectors

No. 2221, for No. 16 or No. 18 armored lamp cord. Has 1/8-inch threaded nipple.



Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2221	.453	50	200	15	\$7.50

No. 2222 Flexsteel Lamp Cord Connectors

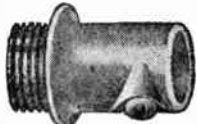
No. 2222, for No. 14 armored lamp cord, or No. 16 or No. 18 reinforced armored lamp cord. Has 3/8-inch bushing.



Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2222	.562	25	100	18	\$7.50

No. 2226 Flexsteel Lamp Cord Connectors

No. 2226, for connecting No. 16 or No. 18 armored lamp cord to outlet box covers having 1/2-inch knockouts.



Cat. No.	Inside Diam. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2226	.500	50	200	25	\$7.50

No. 2224 Flexsteel Lamp Cord Connectors

Brass nipple and coupling for use with No. 2221 in hanging armored lamp cord on deep rosettes.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2224	50	200	6	\$7.50

No. 2225 Flexsteel Lamp Cord Connectors

Brass nipple and coupling for use with No. 2221 in hanging armored lamp cord on deep rosettes.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2225	50	200	10	\$10.00

T & B Squeeze Combination Couplings

Malleable Iron—Galvanized



For connecting flexible and rigid metallic conduits, also for connecting flexible metallic conduit to outlet boxes by means of chase nipple. One-piece malleable iron, galvanized. Cannot pull apart.

Cat. No.	Size Inches	MADE TO HOLD	Std. Pkg.	Wt., Lbs. per 100	Price per 100
230	1/2	1/2-in. S. S. or D.S. Conduit.	100	19	\$12.50
231	3/4	3/4 " " " " " "	100	29	16.00
232	1	1 " " " " " " Conduit Only	50	35	21.00
233	1 1/4	1 1/4 " " " " " " " "	50	43	30.00
234	1 1/2	1 1/2 " " " " " " " "	50	75	40.00
235	2	2 " " " " or D.S. Conduit.	50	98	60.00

T. & B. Inclined Set Screw Connectors

Locknuts are furnished with connectors without charge.



Cat. No.	Size In.	K. O. In.	No.	Wt. per Std. 100 in Pkg. Lbs.	Price per 100
240	3/8	1/2	14W2, 14W3, 12W2	100 8	\$7.50

T & B Dead Ground Cable Boxes For Armored Conductors



Nos. 553, 554 and 555



Nos. 556 and 557

These boxes have a simple, yet effective connecting and grounding device, based on the wedge and inclined plane principle, which entirely does away with the multiplicity of parts required in boxes of other makes.

The mechanical and electrical connection between box and armor is perfect. They are easy to install.

Boxes are galvanized.

Shallow boxes are 3 inches in diameter by 3/4 inch deep.

Standard package, 100.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. per 100	Price per 100
553	Shallow Box for Straight Electric Work, 3/8-inch Fixture Stem	50		\$22.00
554	Shallow Box for Comb. Gas and Electric, to Slip 3/8-inch Gas Pipe	47		22.00
555	Shallow Box for Comb. Gas and Electric, to Slip 1/2-inch Gas Pipe	47		22.00
556	Shallow Box for Comb. Gas and Electric, to Slip 3/8-inch Gas Pipe	60		22.00
557	Shallow Box for Comb. Gas and Electric, to Slip 1/2-inch Gas Pipe	60		22.00
549	Shutter for Use with Cable Box No. 556	4		5.00
548	" " " " " " " " 557	5		6.00

T & B Cable Boxes

Particularly well adapted to narrow bracket installations because of its small diameter.

Boxes are 2 3/4 inches in diameter by 3/4 inch deep.



No. 565

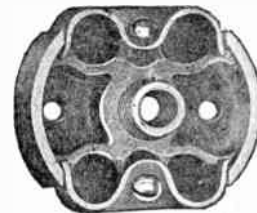
Cat. No.	Description	Std. Pkg.	Wt., Lbs. per 100	Price per 100
565	For Straight Electric Work, 3/8-inch Fixture Stem	100	50	\$22.00
566	For Combination Gas and Electric to Slip 3/8-inch Gas Pipe	100	50	22.00

T & B Clamp Loom Boxes

Particularly well adapted to narrow bracket installations because of its small diameter.

Boxes are 2 3/4 inches in diameter by 3/4 inch deep.

No. 568 has set screw to bond gas pipe.



No. 567

Cat. No.	Description	Std. Pkg.	Wt., Lbs. per 100	Price per 100
567	For Straight Electric Work, 3/8-inch Fixture Stem	100	50	\$22.00
568	For Combination Gas and Electric, to Slip 3/8-inch Gas Pipe	100	50	22.00

National Metal Molding and Fittings

Sherardized

The old No. 222, which was made in 2 parts, cap and base, is replaced with the new No. 022 which is a neat, oval-shaped, single tube. The new style is of the same dimensions as the old and presents the same neat appearance. More than enough room is provided to easily fish 2 wires.

The old No. 333 is now replaced with the new No. 033 which is the same as the old standard except that the method of attachment to fittings and devices has been greatly improved and it comes with base and capping assembled. However, it can be easily separated. Besides, it has been made slightly roomier so that 4 wires may be fished without difficulty.

In the past, Metal Molding base was secured to elbows, tees, boxes, etc., by screws engaging key hole shaped slots which had to be punched by special tool. In each metal molding fitting and device there are now springy tongues into which the molding may be pushed and made to fit firmly and snugly, without punching holes.

National Metal Molding



No. 033



No. 022

No. 033 is a 2-piece Metal Molding for 2, 3, or 4 wires which is shipped assembled. It may be installed assembled as a conduit by those who prefer to fish wires. If it is desired to lay the wires in, it may be easily separated by prying up capping at one end with screw driver, then sliding screw driver along the length of molding between cap and base.

No. 033 is 1 inch wide, 2/4 inch high; 8 feet 4 inches long, and packed 12 lengths in a bundle.

No. 022 is a neat single tube for 2 wires. Ample room is provided for fishing of wires.

No. 022 is 5/8 inch wide, 1 3/32 inch high, 10 feet long, and packed 10 lengths in a bundle.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100 Ft.
033	100 Feet	1000 Feet	375	\$16.00
022	100 "	1000 "	225	13.00

No. 335 Tee Fittings



Tee with cover recessed for splices.

Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
335	033	30	30	6	\$28.00

No. 336 90° Flat Elbow Fittings

With cover, recessed for splices.



Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
336	033	30	60	7 1/2	\$22.00

No. 437 45° Flat Elbow Fittings

With cover.



Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
437	033	20	20	1 1/2	\$22.00

No. 337 External Elbow Fittings



With cover.

Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
337	033	30	30	4	\$22.00

No. 338 Internal Elbow Fittings

With cover.



Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
338	033	30	60	6	\$22.00

No. 323 Joint Caps



For use with coupling No. 332 to cover space between 2 abutting sections of 033 Molding.

Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
323	033	50	1000	5	\$1.00

No. 332 Couplings

For splicing 033 Molding, also used to support 033 Molding instead of straps. Use No. 8 flat-head screws.



Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
332	033	50	500	16	\$5.25

No. 355 Ground Clamps



For attaching ground wire.

Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
355	033	20	20	1	\$10.00

No. 376 Corner Box Fittings

Has a twistout on each side and one at each end for Molding, and a knockout for 1/2-inch rigid conduit in both arms of the base. No bushings are needed to connect 033 Molding. For 022 Molding use No. 300 connector.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
376	10	10	4	\$50.00

No. 436 Couplings



For connecting fittings such as elbows and tees. May be used with the old style screw connection or new push-fit.

Cat. No.	For Use with Mold-ing No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
436	033	50	50	1	\$3.00

No. 2180 Box Connectors

With 1/2-inch locknut. Will take 033 Molding into 1/2-inch knockout, fittings of conduit type or rigid conduit coupling. Will also hold 14-3 Ovalflex.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price per 100
2180	10	20	4	\$25.00

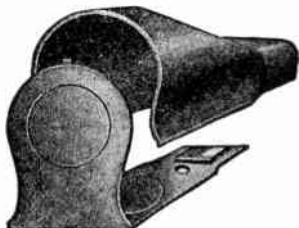
No. 500 Bushings



Must be inserted in all ends of 033 Molding entering devices with push-fit or tongue-and-groove bases, to protect the wires from raw edge of capping.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
500	50	500	2	\$1.50

No. 406 Combination Fittings



For 033 Molding with push-fit tongue at one end. Has a 1/2-inch knockout in bottom and end for either conduit or armored cable.

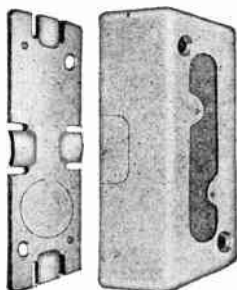
A chase nipple and 1/2-inch locknut is furnished.

To connect to No. 002 molding, simply insert connector or reducer No. 300.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
406	10	50	11	\$35.00

No. 407 Utility Boxes

For Condulet Type Covers



This simple utility box has a number of advantages that appeal to the wiremen who want to do neat and permanent work in quick time. It has plenty of room for splices, and may be used with blank Condulet cover as a junction box. With suitable covers it may be used as a ceiling rosette for drop cords, pendant fixtures, etc., as a convenience outlet, or a lamp receptacle; or with porcelain covers having 2 or more holes to connect with cleat or knob wiring.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
407	10	50	14	\$50.00

Covers for Utility Box No. 407

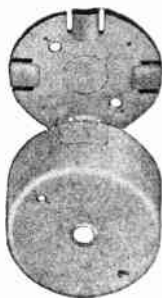


Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
370	Blank Metal	20	20	2	\$30.00
371	Porcelain 1-hole . . .	10	10	2	30.00
372	" 2 "	10	10	2	30.00
373	" 3 "	10	10	2	30.00

No. 339 Drop Cord Boxes

Cover is provided with eyelet.

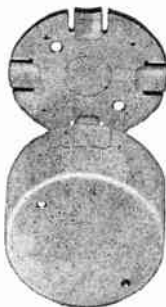
Box is 2 3/4 inches in diameter and 1 inch deep over all. Base is provided with one 1/2-inch conduit knockout in center, two 1/4-inch holes, 1 3/4 inches center to center for supporting screws, and 4 push-fit tongues for 033 Molding. No. 022 Molding can be connected to the box by means of the No. 300 adapter. Cover is 1 inch deep and carries 4 twist-outs. All boxes are provided with 2 screws in covers.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
339	20	20		\$50.00

No. 341 Junction Boxes

Plain cover.



Box is 2 3/4 inches in diameter and 1 inch deep over all. Base is provided with one 1/2-inch conduit knockout in center, two 1/4-inch holes, 1 3/4 inches center to center for supporting screws, and 4 push-fit tongues for 033 Molding. No. 022 Molding can be connected to the box by means of the No. 300 adapter. Cover is 1 inch deep and carries 4 twist-outs. All boxes are provided with 2 screws in covers.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
341	20	20	7	\$50.00

No. 342 Device Boxes

For Surface Receptacles and Snap Switches

Box is 2 3/4 inches in diameter and 1 inch deep over all. Base is provided with one 1/2-inch conduit knockout in center, two 1/4-inch conduit knockout in center, two 1/4-inch holes, 1 3/4 inches center to center for supporting screws, and 4 push-fit tongues for 033 Molding. No. 022 Molding can be connected to the box by means of the No. 300 adapter. Cover is 1 inch deep and carries 4 twist-outs. All boxes are provided with 2 screws in covers.

Cover carries 4 pairs of No. 6-32-inch tapped holes on centers of 1 5/16, 1 3/8, 1 1/2, and 1 5/8 inches.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
342	20	20	6	\$50.00

No. 363 Split Plates



4 1/2-inch split plate for canopy base (used with No. 363-A or 363-B).

Plate is provided with supporting holes on both 2 3/4 and 3 1/4-inch centers so that it can be attached directly to cover lugs of either 3 1/4 or 4-inch outlet boxes.

Two No. 6-32x7/8-inch flat head screws are supplied with each plate, for attaching No. 363-A or 365-B.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
363	022 and 033	10	10	3 1/2	\$50.00

No. 363A Outlet Covers

4 1/2-inch closed outlet cover (used with Nos. 363 or 365-C). For use with Molding Nos. 022 and 033.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
363A	10	10	4	\$30.00

No. 363B Outlet Covers



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt. Lbs. Std Pkg.	Price per 100
363B	022 and 033	10	10	4 1/2	\$40.00

No. 363C Yokes



Yoke with screws for attaching No. 363 to 4-inch open outlet box covers such as National No. 26C.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
363C	022 and 033	1	10	1	\$5.00

Solid Canopy Bases

No. 365

4½-inch solid canopy base, complete with plate.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
365	022 and 033	10	20	16	\$70.00

No. 365A

This fitting includes fixture stud rigidly attached to base.

365A	022 and 033	10	20	18	\$100.00
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No. 365B

4½-inch solid canopy base cover only (used with No. 365-C).

365B	022 and 033	10	20	9	\$30.00
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No. 365C Solid Plates

4½-inch plate for canopy base (used with Nos. 363A or 365B).



Two No. 6-32x⅝-inch flat head screws are supplied with each plate for attaching No. 363A, 363B, or 365B.

Plate is provided with five ½-inch conduit knockouts. Two of the fixture stud holes are tapped for ⅜x24-inch stove bolts, and two are clear ¼-inch diameter. There are four ¼-inch securance holes on 2¼-inch centers.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
365C	022 and 033	10	20	7	\$40.00

No. 366 Canopy Bases

6-inch solid canopy base, complete with plate.

Plate is provided with five ½-inch conduit knockouts. Two of the fixture stud holes are tapped for ⅜x24-inch stove bolts, and two are clear ¼-inch diameter. There are four ¼-inch securance holes on 2¼-inch centers.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
366	022 and 033	10	10	13½	\$100.00

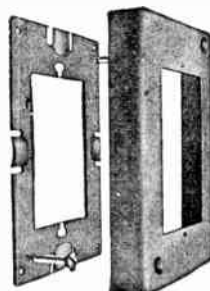
No. 400 Receptacle Bases for Fluted Shell Devices



Base is provided with tongue and groove. No. 033 Molding is pushed directly into fittings, the end must be protected by No. 500 bushing.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
400	022 or 033	5	50	16	\$36.00

No. 441 Single Adapters



Single adapter for connecting No. 022 or No. 033 Metal Molding to flush devices.

For use in picking up circuits from outlets in concealed work equipped with a single switch or outlet box.

Four twist-outs for 033 Molding. No. 022 Molding may be connected by means of adapter No. 300.

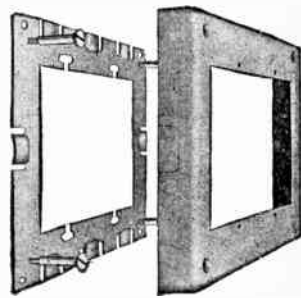
Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
441	022 or 033	10	10	3½	\$54.00

No. 442 2-gang Adapters

2-gang adapter for connecting No. 022 or No. 033 Metal Molding to flush devices.

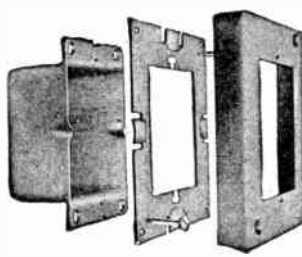
For use in picking up circuits from existing outlets in concealed work.

Eight twist-outs for 033 Molding. No. 022 Molding may be connected by means of adapter No. 300. To install flush devices in new work, any 2-gang switch box may be attached to plate similarly to single box No. 438.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
442	022 or 033	1	10	5¾	\$150.00

No. 438 Flush Switch and Receptacle Boxes



To be recessed in wall for No. 022 or No. 033 Metal Molding.

With No. 022 Molding use No. 300 adapter.

No. 438 includes a shallow switch box 1⅝ inches deep. It requires a hole 2¼ inches wide by 3 inches long.

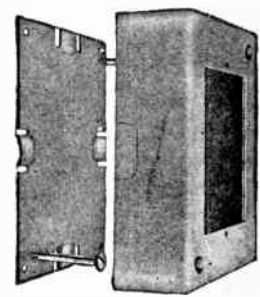
Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
438	022 or 033	10	10	6	\$80.00

No. 439 1-gang Surface Switch and Receptacle Boxes

One-gang surface box for switches and receptacles for No. 022 or No. 033 Molding.

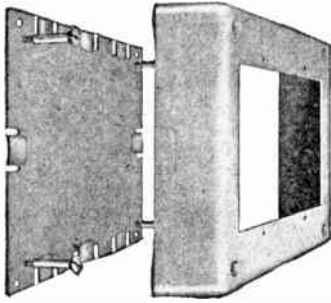
With No. 022 Molding use No. 300 adapter.

This box is 1¾ inches deep, 3⅞ inches wide and 4⅞ inches long. It will take any shallow device and practically all old style deep switches and receptacles.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
439	022 or 033	1	10	8	\$75.00

No. 440 2-gang Surface Switch and Receptacle Boxes



Two-gang surface box for switches and receptacles for No. 022 or No. 033 Metal Molding.

With No. 022 Molding use No. 300 adapter.

This box is 4 7/8 inches high, 5 inches wide and 1 3/4 inches deep.

Will take any shallow device and practically all old style deep switches and receptacles.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
440	022 or 033	10	10	5	\$110.00

No. 354 Plain Double Straps



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
354	033 Only	50	50	1 1/2	\$3.00

No. 434 Base Plate Type Single Straps



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
434	033 Only	100	100	2 1/2	\$7.30

No. 435 Base Plate Type Double Straps



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
435	033 Only	50	50	2	\$9.00

No. 421 Lead Expansion Shields



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
421	022 and 033	25	25	1/2	\$13.00

No. 425 Folding Straps



For capping.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
425	033 Only	100	100	1	\$1.50

No. 428 Fastening Straps



Fastening strap for base and capping.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
428	033 Only	100	100	1	\$3.00

No. 426 2-line Suspension Strips



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
426	022 and 033	50	50	1 1/2	\$8.00

No. 427 3-line Suspension Strips



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
427	022 and 033	20	20	2	\$11.00

No. 348 Drop Cord Rosettes

Solderless type with terminal block. Base is provided with tongue and groove. No. 033 Molding is pushed directly into fittings, the end must be protected by No. 500 bushing.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
348	022 or 033	5	100	34	\$36.00

No. 360 660-watt Convenience Outlets



Will take parallel or tandem blade plugs. Base is provided with tongue and groove. No. 033 Molding is pushed directly into fittings, the end must be protected by No. 500 bushing.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
360	022 or 033	5	50	22	\$82.00

No. 356 660-watt Keyless Sockets

Will take parallel or tandem blade plugs. Base is provided with tongue and groove. No. 033 Molding is pushed directly into fittings, the end must be protected by No. 500 bushing.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
356	022 or 033	5	100	42	\$76.00

No. 430 Fixture Rosettes

1/8 and 3/8-inch pipe, solderless type. Base is provided with tongue and groove. No. 033 Molding is pushed directly into fittings, the end must be protected by No. 500 bushing.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
430	022 or 033	5	50	21	\$80.00

No. 345 Plain Single Straps



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
345	033 Only	100	100	1	\$1.50

No. 420 Spring Head Toggle Bolts



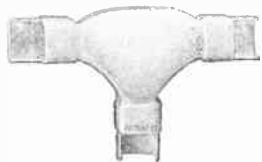
Cat. No.	Size Bolt, In.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
420A	5/32x2	022 and 033	100	100	1	\$6.00
420B	5/32x3	022 " 033	100	100	1 1/2	6.70
420C	5/32x4	022 " 033	100	100	2	7.40

No. 419 Toggle Bolts



Cat. No.	Size Bolt, In.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
419A	1/8x4	033 Only	50	50	2	\$15.00
419B	3/16x4	033 "	50	50	3	17.00
419C	1/4x4	033 "	50	50	4	18.00

No. 235 Tee Fittings



With cover recessed for splices.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
235	022	20	20	3	\$28.00

No. 236 90° Flat Elbow Fittings

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
236	022	20	100	11	\$22.00

No. 237 45° Flat Elbow Fittings

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
237	022	10	20	2	\$22.00

No. 238 Internal Elbow Fittings

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
238	022	10	50	5 1/2	\$22.00

No. 239 External Elbow Fittings

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
239	022	10	50	5 1/2	\$22.00

No. 269 Porcelain Couplings

For wood molding or open work.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
269	022	10	10	2	\$30.00

No. 255 Ground Clamps



For attaching ground wire.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
255	022	10	10	3/4	\$8.00

No. 245 Single Straps



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
245	022	50	500	4 1/2	\$1.00

No. 232 Coupling and Fastening Clips



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
232	022	50	500	7	\$5.80

No. 223 Joint Caps



Joint cap for use with coupling No. 232 to cover space between 2 abutting sections of No. 022 Molding.

Prices upon application.

No. 301 Connectors



1/2-inch connector for outlet boxes or conduit.

A 1/2-inch pipe coupling must be used with No. 301 to connect to conduit.

Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
301	022	20	20	2 3/4	\$24.00

No. 300 Adapters

This little fitting makes No. 022 Molding fit all Metal Molding boxes and devices.



Cat. No.	For Use with Molding No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
300	022	10	100	5	\$7.00

No. 334 Cross Fittings



With cover recessed for splices. Screw connection type, requiring keyhole in end of Molding.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
334	30	20	6 1/2	\$34.00

No. 344 Couplings



For connecting Molding. Screw connection type, requiring keyhole in end of Molding.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
344	50	100	3	\$5.00

No. 377 Bushings



For use with boxes.
Screw connection type, requiring keyhole in end of Molding.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
377	50	100	4	\$7.00

Porcelain Covers for No. 404



Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
367	2-wire	10	10	2	\$20.00
363	3 "	1	10	2	20.00

Box Connectors

With locknut.

Screw connection type, requiring keyhole in end of Molding.



Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
401	For 1/2-inch Knockout	10	20	3	\$30.00
401A	" 3/4 " " " " "	1	1	3 oz.	40.00

Couplings



For rigid conduit.

Screw connection type, requiring keyhole in end of molding.

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
402	For 1/2-inch Rigid Conduit	5	20	3 1/2	\$30.00
402A	" 3/4 " " " " "	1	1	3 oz.	40.00

Angle Couplings

Screw connection type, requiring keyhole in end of Molding.



Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
403	For 1/2-inch Conduit	5	10	2	\$36.00
403A	" 3/4 " " " " "	1	1	3 oz.	44.00

No. 404 Couplings



For open work (with No. 367 or 368).

Screw connection type requiring keyhole in end of Molding.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
404	1	10	3 1/2	\$36.00

No. 405 Branch Couplings

For 1/2-inch conduit.

Screw connection type, requiring keyhole in end of Molding.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
405	1	30	7 1/2	\$70.00

No. 414 Connectors



For armored cable or flexible metallic conduit. Screw connection type, requiring keyhole in end of Molding. In connecting molding by means of No. 414, this must be done at a junction box such as Nos. 341, 342, 375, etc.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
414	10	10	1 1/2	\$40.00

No. 415 Left-hand Elbow Couplings



For 1/2-inch conduit.

Screw connection type, requiring keyhole in end of Molding.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
415	1	10	2	\$36.00

No. 416 Right-hand Elbow Couplings

For 1/2-inch conduit.

Screw connection type, requiring keyhole in end of Molding.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
416	1	10	2	\$36.00

Angle Box Connectors

With locknut.



Screw connection type, requiring keyhole in end of Molding.

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
417	For 1/2-inch Knockout	5	10	2	\$36.00
417A	" 3/4 " " " " "	1	1	3 Oz.	44.00

No. 390 660-watt Receptacles

With composition cap.

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
390	10	10	4 1/2	\$70.00

No. 393 5-ampere Single-pole Non-indicating Snap Switches

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
393	10	10	4 1/2	\$82.00

No. 394 5-ampere Single-pole Indicating Snap Switches

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
394	10	10	4 1/2	\$90.00



No. 396 250-watt Chain Pull Sockets

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
396	10	10	4 1/2	\$124.00



No. 398 250-watt Key Sockets

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
398	10	10	4 1/2	\$78.00



No. 399 660-watt Keyless Sockets



When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
399	10	10	4	\$54.00

Fixture Rosettes

Solderless contact type.

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.



Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
429	For 1/8-inch Pipe	10	10	3 1/2	\$70.00
429A	" 3/8 "	10	10	3 1/2	70.00

No. 432 Drop Cord Rosettes

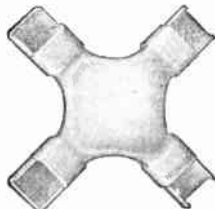
Solderless contact type.

When mounted on No. 342 junction box, this line is used where it is desired to locate a device at a junction of 2 lines of Molding, crossover or a turn in the line.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
432	10	10	3 3/4	\$50.00

No. 234 Cross Fittings



Cover recessed for splices.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
234	10	10	4 1/2	\$40.00

No. 375 Rectangular Junction Boxes

With screws for cover.

With No. 222 use No. 278 bushing. No. 377 is needed to connect No. 333 Molding to this box.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
375	20	20	5	\$40.00

Porcelain Covers for No. 375 Junction Boxes

Cat. No.	No. of Holes	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
378	1	1	10	2 1/2	\$20.00
379	2	1	10	2 1/2	20.00
380	3	1	10	2 1/2	20.00
381	4	1	10	2 1/2	20.00



No. 383 Flat Steel Covers for No. 375 Junction Boxes

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
383	20	20	2	\$10.00



No. 392 5-ampere Single-pole Indicating Snap Switches



Porcelain base with groove. Steel plate for either single or double end work. With No. 222 Molding use No. 300 adapter.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
392	10	10	5 1/4	\$90.00



No. 395 250-watt Chain Pull Sockets

Porcelain base with groove.

Steel plate for either single or double end work. With No. 222 Molding use No. 300 adapter.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
395	10	10	5	\$140.00

No. 397 250-watt Key Sockets

Porcelain base with groove.

Steel plate for either single or double end work. With No. 222 molding use No. 300 adapter.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
397	10	10	5	\$88.00

No. 322 National Metal Molding Bending Tools

A simple tool that bends both sizes of metal molding to any desired curve or offset.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
322	1	10	28	\$2.00

No. 418 National Metal Molding Punches

For 033 Molding Only



The new push-fit method of attaching Metal Molding base to fittings and the plan of installing the molding does away with the need for punching keyhole slots in ends of molding. However, for those who have stocks of fittings equipped with screws, or who prefer to install the base separately and lay in the wires, No. 418 is listed.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
418	1	1	12	\$8.00

No. 422 National Metal Molding Shears

For 033 Molding Only



Metal Molding No. 022 must be cut by a file or a hacksaw with fine-toothed tubing blade. No. 033 Molding may be cut with a hacksaw when backing and capping are assembled or capping and base may be cut separately without No. 422 Shear.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
422	1	1	8	\$6.85

Wiremold Conduit and Fittings

General Description

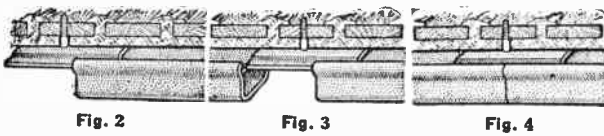
Wiremold Conduit is made in both two and four-wire sizes. It is furnished in ten-foot lengths and is designed for surface wiring exclusively.

The base and capping is permanently assembled at the factory, hence conductors cannot be laid into it as in similar materials, but must be fished in all cases.

The base is galvanized and its capping is finished with special, high-grade enamel of neutral tint particularly selected to blend with colorings of average walls and ceilings.

Wiremold Conduit and its accompanying fittings require no special tools of any kind for assembly; only a screw driver, hack saw and No. 600 Wiremold Bender are needed for installation.

Like rigid conduit, Wiremold is furnished with one coupling to each length, as shown in Fig. 1.



To install Wiremold, push the coupling forward until screw hole is clear and then fasten to wall with a No. 8 flat head screw as shown in Fig. 2. Slip the next length over edges of coupling as shown in Fig. 3 and close up as in



Fig. 4. Base plates of all Wiremold Fittings are provided with coupling tongues similar to the tongue shown in broken end view of a fitting base plate in Fig. 5. Wiremold Conduit is connected with Wiremold Fittings by simply shoving the ribs in the upper side edges over the coupling tongues as shown in Fig. 6.

Wiremold Conduit



No. 700 Wiremold Conduit System for surface wiring is designed for use in large installations requiring four-wire circuits, such as factories, railroad buildings, lofts, warehouses, department stores, office building, hospitals, school buildings and the like.

No. 500 is for smaller installations requiring two-wire circuits.

Wiremold conduit is rolled from high grade sheet steel and is so finished that the portion which lays against the surface wired over is galvanized, while the section visible after installation is finished in a neutral tone enamel that will blend with any color scheme and act as a ground coat for graining or staining. Also covers with one coat of flat white.

Furnished in standard ten-foot lengths with one coupling to each length, like pipe.

Wiremold Conduit and its accompanying fittings require no special tools of any kind for assembly and only screw driver, hack saw, 32 tooth, flexible back type, and No. 600 Wiremold Bender for installation.

Cat. No.	Size	Unit Pkg.	Wt., Lbs. Unit Pkg.	Price per 100 Ft.
500	2-wire	100 Ft.	33	\$12.00
700	4-wire	100 "	36	15.00

No. 5701 Wiremold Base Couplings



One No. 5701 Base Coupling is furnished with each length of No. 501 and No. 700 Wiremold Conduit, but extra couplings must be used where short lengths are installed.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5701	50	500	9	\$.03

Wiremold Conduit Bushings

For use wherever Wiremold enters fittings. The bushing is slipped into the end of Wiremold and should be installed in all cases before molding is assembled with fittings. It is locked tightly in place by the base plate of fittings.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
502	50	500	5	\$.03
702	50	500	2	.03

No. 5703 Wiremold Supporting Clips

Designed to support Wiremold in the middle of lengths. It is secured to the wall with a No. 8 flat head wood screw and Wiremold snapped into it. The screw hole is slotted to allow clip to be adjusted.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5703	50	500	8	\$.03

Wiremold Supporting Straps



No. 504



No. 704

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
504	50	500	5	\$.03
704	50	500	16	.03

No. 505 Wiremold One-hole Supporting Straps



No. 505 is to support No. 500 Wiremold in the middle of lengths where runs are made on concrete or tile surfaces which are hard to drill for supporting screws.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
505	5	100	1	\$.03

Wiremold Connection Covers

Designed to cover cracks between adjoining lengths of No. 500 and No. 700 Wiremold which have not been cut square enough to make a good appearing joint.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
506	50	500	5	\$.03
706	50	500	5	.03

No. 5709 Wiremold Ground Couplings



No. 5709 is a standard, screwless ground coupling for Wiremold Conduit. In installing it, first solder the ground wire into its lug and then push the coupling over the base into the grooved edges of No. 500 or No. 700 Wiremold Conduit.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5709	5	100	2	\$.04

Wiremold Elbows



No. 5711

No. 5712

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5711	90° Flat	10	100	12	\$.18
5712	45° "	5	50	4	.20



No. 5717

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5717	External	10	100	17	\$.20



No. 5718

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5718	Internal	10	100	11	\$.18

Wiremold Plain Tees and Crosses



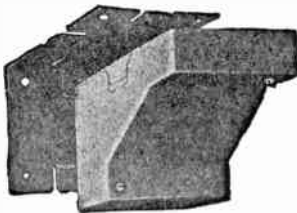
No. 515



No. 516

Cat. No.	Description	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
515	Tee	5	100	16	\$.24
516	Cross	5	50	11	.28

No. 5719 Wiremold Corner Boxes



Designed to provide in a single fitting, with abundant splice room, for the many corner junctions and other combinations, such as, twisted elbow, twisted tees, twisted cross, that can be made with Wiremold Conduit.

Consists of a base plate provided with four holes for No. 8 flat head supporting screws and two knockouts for 1/2-inch pipe or BX connector, also four tongues on side edges and one tongue in back center for slip joint connections with both No. 500 or No. 700 Wiremold Conduit, and a cover piece. The cover piece has four double twistouts making it possible to use this fitting with both No. 500 or No. 700 Wiremold Conduit. Note that this fitting is reversible.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5719	5	50	21	\$.31

No. 5720 Wiremold Narrow Fittings



A small, rigid, straight line fitting for use with Wiremold conduit in wiring places having narrow dimensions, such as wall

cases, store windows, show cases, etc.

Has a base with exceptionally long tongues to provide a rigid connection with both No. 500 or No. 700 Wiremold conduit, and a cover equipped with a male nipple to take any standard 1/8-inch socket for reflectors. Tongues of the base are scored to permit breaking them off to make a dead end and the cover has double twistouts to permit making extensions with both No. 500 or No. 700 Wiremold conduit.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5720	5	50	11	\$.41

No. 5721 Wiremold One-piece Rosettes

An all steel rosette for drop cords and may also be used with a 1/8-inch male loop for chain pendants. Base is provided with tapped hole for use of contact block when desired and cover has four double twistouts for use with both Nos. 500 or 700 Wiremold conduit.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5721	5	100	33	\$.27

No. 5724 Wiremold Fixture Rosettes



Steel rosette with contact block for taps, fibre insulation washer to hang heavy drop cords and special chase nipple with lock-nut to hang 3/8 or 1/2-inch fixtures. Cover has four double twistouts for use with both Nos. 500 or 700 Wiremold conduit.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5724	5	50	20	\$.59

No. 5725 Wiremold Receptacle Bases

All steel, equipped with ready-to-wire tap block and standard fluted or wrinkled ring, so that any standard Schedule B device designed to fit fluted or wrinkled socket caps may be mounted upon it. Cover has four double twistouts for use with both Nos. 500 or 700 Wiremold conduit.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5725	5	100	42	\$.61

No. 5726 Wiremold Keyless Receptacles



All steel keyless standard Edison type, equipped with special, easy-to-wire keyless socket interior and designed for use at lighting outlets or at any point where a screw type receptacle is desired. Cover has four double twistouts for use with both Nos. 500 or 700 Wiremold conduit.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5726	5	100	42	\$.79

No. 5727 Wiremold Attachment Plugs

Made up of a steel housing in which is mounted a standard, easy-to-wire, 10-amp. attachment plug base with double T slots for plug caps having either tandem or parallel blades. Cover has four double twistouts for use with both Nos. 500 or 700 Wiremold conduit.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5727	5	100	42	\$.91

No. 5728 Wiremold Utility Boxes

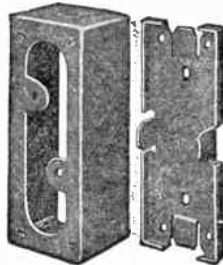


Has a base with two holes for No. 8 flat head supporting screws and a knockout for 1/2-inch pipe or BX connector, also four tongues for slip joint connections with both Nos. 500 and 700 Wiremold Conduit. In addition the cover has a 3/8-inch knockout in which there is a 1 1/2-inch flanged hole with a plug for use as a junction box and by pushing the plug may be used as a rosette for drop cords.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5728	10	100	39	\$.24

No. 5729 Wiremold Condulet Type Utility Boxes

Has a base with two holes for No. 8 flat head supporting screws and knockout for 1/2-inch pipe or BX connector, also four tongues on ends and sides for slip joint connections with both No. 500 and No. 700 Wiremold Conduit. The cover piece has four double twistouts for use with both No. 500 and No. 700 Wiremold Conduit, and an opening which will take all standard 1/2-inch condulet covers.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5729	10	100	35	\$.23

No. 5731 Wiremold Blank Covers

For use with Nos. 5732 and 5733 boxes where they are used as pull or junction boxes or for hanging light pendant fixtures with large stems, as it is provided with a 1/2-inch pipe knockout.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5731	5	100	8	\$.11

No. 5732 Wiremold Outlet Boxes

Designed as a base for a standard five-ampere snap or toggle switch but may also be used as a junction or pull box and for mounting back wired fittings with 2 1/2-inch base. Cover has four double twistouts for use with both Nos. 500 or 700 Wiremold Conduit.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5732	5	100	23	\$.33

No. 5733 Wiremold Outlet Boxes

Outside dimensions: Diameter, 3 inches; height, 1 inch. Device screw spacing: 1 1/2-inch, 1 3/8-inch, 1 3/4-inch centers.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5733	5	100	27	\$.51

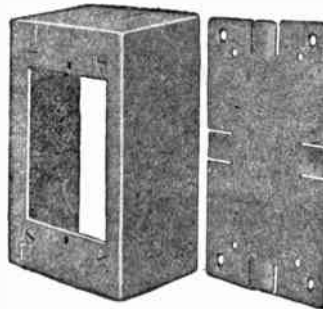
No. 5736 Wiremold Blank Covers

A 4-inch blank cover for use with boxes Nos. 5737, 5738, 5739 and 5739A where they are used as a pull or junction boxes or for hanging 1/2-inch fixtures or drop cords.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5736	5	100	13	\$.14



No. 5748 Wiremold Surface Type Switch Boxes



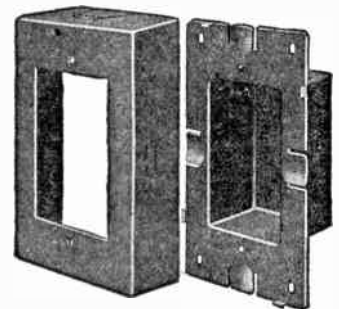
Consists of a base plate with four holes for No. 8 flat head supporting screws and a knockout for 1/2-inch pipe or BX connector, also four tongues for slip joint connections, with both Nos. 500 and 700 Wiremold Conduit, and a cover piece.

An ideal fitting for use with Call or Signal systems.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5748	1	20	13	\$.63

No. 5749 Wiremold Flush Switch and Receptacle Boxes

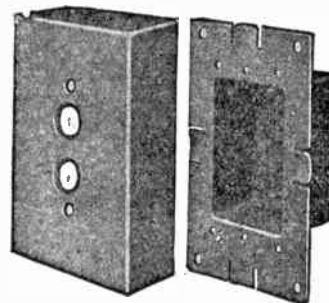
Made in single gang only. Consists of a switch box with 4 holes for No. 8 flat head supporting screw and four tongues for slip joint connections with both Nos. 500 and 700 Wiremold Conduit, and a cover piece.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5749	1	20	13	\$.79

No. 5750 Wiremold Push Switch Boxes

Made in single gang only. For use in installing any shallow type push switch with Wiremold, and consists of a shallow type flush switch case and a special cover with standard openings for push buttons and mounting screws.

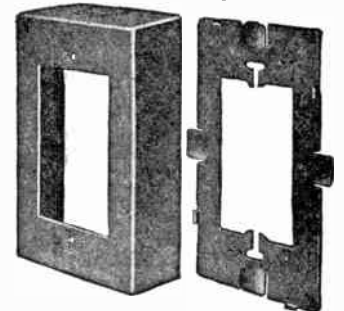


Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5750	1	20	14	\$.73

Wiremold Flush Switch and Receptacle Adapters

For use in picking up and extending a circuit in both Nos. 500 and 700 Wiremold Conduit from existing outlets.

Adapters are not complete fittings in themselves but are designed to mount over the old switch box found in a wall at existing switch and receptacle outlets.



Cat. No.	No. in Gang	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5751	1	1	20	9	\$.65
5752	2	1	10	7	1.09
5753	3	1	10	9	1.15

No. 5737 Wiremold Extension Boxes



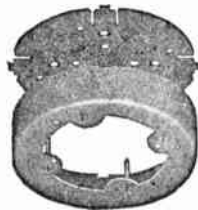
Primarily designed for use in extending Nos. 500 and 700 Wiremold Conduit from existing outlets, its base plate having four tongues for slip joint connections, and special slots for attaching to 3¼ and 4-inch boxes.

Both base and cover are split so that it may be installed by simply dropping canopy.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5737	5	50	28	\$.61

No. 5738 Wiremold Fixture Boxes

Primarily designed for use in hanging fixtures but is also equipped with screw holes in its cover to permit mounting any device which may be hung on a 3¼-inch or 4-inch box. The base has four tongues for slip joint connections with Wiremold Conduit and the cover is provided with abundant splice room and has four double twistouts for use with both Nos. 500 and 700 Wiremold Conduit. With the use of No. 5736 Wiremold Blank Cover this fitting may be used as a junction box. Outside dimensions: diameter, 4¾ inches; height, 1 inch. Fixture and device screw spacings on 2¾ and 3½-inch centers. Base has four holes for fixture studs and five knockouts for ½-inch pipe or BX connectors.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5738	5	50	30	\$.49

No. 5739 Wiremold 6¾-inch Fixture Boxes

Primarily designed for use in hanging fixtures with canopies up to 6¾ inches in diameter, but can also be used for any device which may be mounted on 3¼ or 4-inch boxes.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5739	5	20	22	\$.63

No. 5739A Wiremold 6¾-inch Extension Boxes

For use in extending Wiremold conduit from existing fixture outlets. Both the base and cover are split so they may be installed by simply dropping canopy.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5739A	5	20	22	\$.86

Wiremold Box Connectors



Nos. 5781 and 5781-A are for use to couple Nos. 500 and 700 Wiremold Conduit to fittings having knockouts for ½-inch and ¾-inch pipe.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5781	5	50	3	\$.25
5781-A	5	50	4	.25

Wiremold Pipe Couplings

Nos. 5782 and 5782-A are for use in coupling Nos. 500 and 700 Wiremold Conduit to ½-inch or ¾-inch pipe.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5782	5	50	4	\$.38
5782-A	5	50	7	.38

No. 5783 Wiremold ½-inch Elbow Box Connectors



For use where an elbow coupling between Wiremold and fittings, having knockouts for ½-inch conduit is necessary.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5783	5	20	3	\$.48

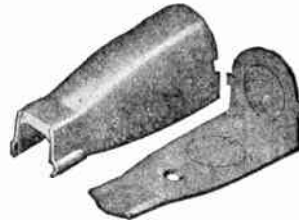
No. 5784 Wiremold ½-inch Elbow Pipe Couplings

For use where a direct elbow coupling must be made between Wiremold and ½-inch conduit.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5784	5	20	4	\$.53

No. 5785 Wiremold Combination Connectors



Cat. No.	Wt., Lbs. Std. Pkg.	Price Each
5785	8	\$.45

Unit pkg., 5; std. pkg., 50.

No. 588 Wiremold Open Work Couplings

No. 588 is designed for use where a tap is made from No. 500 Wiremold to open work, as in coming out to meter, fractional horse power motors and similar devices.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
588	5	20	4	\$.29

No. 701 Wiremold Reducing Connectors



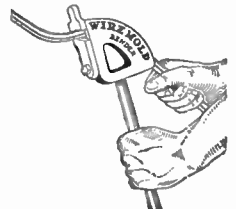
No. 701 four-wire connector is used to connect No. 700 Wiremold with No. 500 Wiremold fittings.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
701	10	100	7	\$.16

No. 600 Wiremold Benders

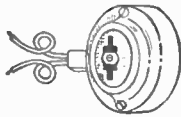
A light hand tool that bends or offsets Wiremold on close, easily finished radii.

Handle not furnished. Use about two feet of ½-inch pipe.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
600	1	10	25	\$ 2.00

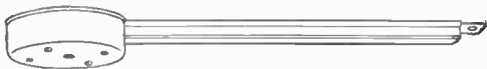
No. BO Wiremold Bracket Outlets



A safe, permanent, neat fitting bracket that can be attached to any side-wall fixture and always ready for use. Avoids unscrewing lamps and removing shades. Equipped with standard plug and No. 14 wire to meet all appliance requirements. Furnished in brass finish to harmonize with most fixtures. Prices for special finishes upon application.

Cat. No.	Unit Pkg.	Std. Pkg.	Price Each
BO	5	50	\$.60

No. CO Wiremold Ceiling Outlets



A simple, rugged unit to provide a convenient outlet in kitchens or other places where the only electrical connection is through a ceiling fixture. This unit consists of a short length of Wiremold Conduit and a box with its base plate permanently attached to the conduit. Unit may be extended from any ceiling canopy for attaching a pendant with plug. An ideal outlet for any electrical appliance. Finished in white enamel.

Cat. No.	Unit Pkg.	Std. Pkg.	Price Each
CO	1	10	\$.62

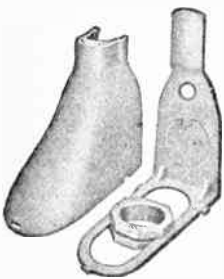
No. WO Wiremold Window Outlets



This unit consists of a short length of Wiremold Conduit permanently attached to base plate of 4-inch round box and assembled for 16-inch centers or, centers less than 16 inches may be made by cutting the conduit of each unit. Base plate of box is equipped with 5 tongues and its cover with 5 twistouts to permit making extensions of any number of units at any desired angle. Cover of box is provided with standard screw spacings to take all 3-inch or 4-inch box porcelain receptacles.

Cat. No.	Unit Pkg.	Std. Pkg.	Price Each
WO	1	10	\$.62

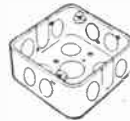
No. 5786 Wiremold Adjustable Connectors



Eliminates offsetting wiremold conduit in connecting with surface type panel cabinets. The base has a chase nipple with locknut in an elongated slot in the bottom to connect with knockout in cabinet and to permit of adjusting fitting flush with wall. In the back is a knockout for 1/2-inch pipe and a tongue at the end for slip joint connection with No. 500 or No. 700 wiremold conduit and a cover piece as shown. The cover piece just as it comes from factory will fit No. 500 conduit and by breaking off the crescent-shaped twistout will fit No. 700 conduit.

Cat. No.	Unit Pkg.	Wt., Lbs.	Quantity	Std. Pkg.	Wt., Lbs.	Price Each
5786	5	1 1/4	50	13	.....

No. 51151 4-inch Square Outlet Boxes



Black enamel or galvanized finish. Has 1/4-inch nail holes in bottom for fixture studs or nails. Twist out on 2 opposite sides for 1/2-inch gas pipe.

**Five 1/2-inch Knockouts in Bottom
Eight 1/2-inch Knockouts in Sides**

Cat. No.	Depth Inside Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
51151	1 1/2	100	98	\$32.00

**Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 3/4-inch Knockouts in Sides**

51151, 3/4-inch	1 1/2	100	98	\$32.00
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No. 52151 4-inch Square Outlet Boxes

Black enamel or galvanized finish. Boxes have 1/4-inch holes in bottom for fixture studs or nails.



Five 1/2-inch Knockouts in Bottom and Ten in Sides

Cat. No.	Depth Inside In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52151	1 1/2	100	98	\$32.00

**Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 3/4-inch Knockouts in Sides**

Cat. No.	Depth Inside Inches	Standard Package	Wt., Lbs. Std. Pkg.	Price per 100
52151, 3/4-inch	1 1/2	100	98	\$32.00

No. 53151 4-inch Extension Rings for 4-inch Square Boxes

Ten 1/2-inch or Eight 3/4-inch Knockouts

Two tapped cover lugs at each end and 2 untapped lugs at one end.

Furnished in black enamel or galvanized finish.

Cat. No.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
53151	1 1/2	100	65	\$35.00

No. 51C4 Covers for 4-inch Square Boxes

Raised closed cover with flange for gas pipe. Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
51C4	10	100	50	\$20.00

No. 51C5 Covers for 4-inch Square Boxes

Raised open cover 3/8 inches deep, 2 3/8 inches opening. Lugs tapped for 3/32 screws on 2 3/4-inch centers. Flange for gas pipe.

Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
51C5	10	100	45	\$22.00

No. 51C55 Covers for 4-inch Square Boxes

Raised open cover 3/8 inches deep, 2 3/8 inches opening with flange or gas pipe.

Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
51C55	10	100	43	\$21.00

No. 52C1 Covers for 4-inch Square Boxes

Flat closed cover.

Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C1	10	100	40	\$13.00

No. 52C2 Covers for 4-inch Square Boxes



Raised closed cover. Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C2	10	100	49	\$15.00

No. 52C3 Covers for 4-inch Square Boxes

Raised open cover, 2 7/8 inches opening.

Lugs tapped for 5/16 screws on 2 3/4-inch centers. Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C3	10	100	32	\$17.00

No. 52C7 Covers for 4-inch Square Boxes



Raised closed cover with 1/2-inch knockout in center. Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C7	10	100	52	\$16.00

No. 52C12 Covers for 4-inch Square Boxes

Raised cover with 3/8-inch metal turned back bushing for drop cord.

Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C12	10	100	49	\$17.00

No. 52C13 Covers for 4-inch Square Boxes

For Flush Devices



Has extra securance holes so that cover may be turned 90 degrees if desired.

Black enamel or galvanized finish.

Cat. No.	Depth Inches	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C13	1/2	1	100	44	\$21.00

No. 52C14 Covers for 4-inch Square Boxes

For Flush Devices

Has extra securance holes so that cover may be turned 90 degrees if desired.

Black enamel or galvanized finish.



Cat. No.	Depth Inches	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C14	3/4	1	100	46	\$22.00

No. 52C15 and 52C16 Covers for 4-inch Square Boxes

For Flush Devices



Has extra securance holes so that cover may be turned 90 degrees if desired.

Black enamel or galvanized finish.

Cat. No.	Depth Inches	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C15	1	1	100	47	\$23.00
52C16	1 1/4	1	100	51	24.00

No. 52C17, 52C18, 52C19 and 52C21 Covers for 4-inch Square Boxes

For Flush Devices

Black enamel or galvanized finish.



Cat. No.	Depth Inches	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C17	1/2	2	100	44	\$26.00
52C18	3/4	2	100	48	27.00
52C19	1	2	100	52	28.00
52C21	1 1/4	2	100	59	29.00

No. 52C28 Covers for 4-inch Square Boxes



Flat cover for all surface mounted devices with screw centers 3/8 to 1 1/8 inches.

Black enamel or galvanized finish.

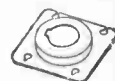
Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C28	10	100	36	\$16.00

No. 52C35 Covers for 4-inch Square Boxes

Raised cover for sign receptacles, screw ring type, opening 1 1/2 inches.

Notched for protruding lug on porcelain.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C35	10	100	42	\$16.00

No. 52C36 Covers for 4-inch Square Boxes



Raised cover for sign receptacles, screw ring type, opening 1 1/2 inches, bent under tongue for 5 notched porcelain.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C36	10	100	42	\$16.00

No. 52C44 Covers for 4-inch Square Boxes

Flat cover with intruding tongue.

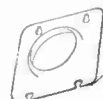
For Federal sign receptacles.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C44	10	100	40	\$14.00

No. 52C48 Covers for 4-inch Square Boxes



Raised cover, 3/8 inches deep, with 2 7/8-inch diameter opening.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C48	10	100	40	\$16.00

No. 52C57 Covers for 4-inch Square Boxes

Cover for French fixtures, 1x2-inch opening, 1/16 inches deep.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C57	10	100	37	\$45.00

No. 52C62 Covers for 4-inch Square Boxes

Has extra securance holes so that cover may be turned 90 degrees if desired.

Black enamel or galvanized finish.



Cat. No.	Depth Inches	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C62	1/4	1	100	44	\$21.00

No. 52C63 Covers for 4-inch Square Boxes

Cover for Elixir devices.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
52C63	10	100	44	\$42.00

No. 72151 4 1/16-inch Square Outlet Boxes



Black enamel or galvanized.
Has 1/4-inch holes in bottom for fixture studs and nails.

Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 1/2-inch Knockouts in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72151	1 1/2	100	123	\$50.00

Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 3/4-inch Knockouts in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72151, 3/4-in.	1 1/2	100	123	\$50.00

No. 24151 3 1/4-inch Octagon Outlet Boxes



Box has 1/4-inch holes in bottom for fixture studs and nails.

Furnished in black enamel or galvanized finish.

Four 1/2-inch Knockouts in Sides
One in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24151	1 1/2	100	61	\$24.00

Four 3/4-inch Knockouts in Sides, One in Bottom

24151, 3/4-inch	1 1/2	100	61	\$24.00
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No. 72171 4 1/16-inch Square Outlet Boxes

Black enamel or galvanized finish.
Has 1/4-inch holes in bottom for fixture studs and nails.

Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 1/2-inch Knockouts in Sides



Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72171	2 1/8	100	155	\$60.00

Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 3/4-inch Knockouts in Sides

72171, 3/4-in.	2 1/8	100	155	\$60.00
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Three 1/2-inch and Two 3/4-inch Knockouts in Bottom
Eight 1-inch Knockouts in Sides

72171, 1-in.	2 1/8	100	155	\$60.00
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No. 24155 3 1/2-inch Octagon Outlet Boxes

Box has 1/4-inch holes in bottom for fixture studs and nails.

Furnished in black enamel or galvanized finish.



One 1/2-inch and Eight Loom Knockouts in Bottom
Four 1/2-inch and Four Loom Knockouts in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24155	1 1/2	100	61	\$24.00

Nos. 72C1 and 72C2 Covers for 4 1/16-inch Square Outlet Boxes



No. 72C1, flat closed cover; No. 72C2, raised closed cover.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72C1	10	100	48	\$18.00
72C2	10	100	63	20.00

No. 72C3 Covers for 4 1/16-inch Boxes

Raised open cover, 2 7/8-inch opening.
Lugs tapped for 5/16 screws, 2 3/4-inch centers.
Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72C3	10	100	54	\$22.00

Nos. 72C7 and 72C12 Covers for 4 1/16-inch Square Outlet Boxes



No. 72C7, raised cover with 1/2-inch knockout in center; No. 72C12, raised cover with 3/8-inch bushing.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72C7	10	100	63	\$21.00
72C12	10	100	63	22.00

Nos. 72C14 and 72C18 Covers for 4 1/16-inch Square Outlet Boxes

For Flush Devices

Black enamel or galvanized finish.

Cat. No.	Depth In.	No. of Devices	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72C14	3/4	1	100	56	\$24.00
72C18	3/4	2	100	62	28.00



No. 72C48 Covers for 4 1/16-inch Square Outlet Boxes

Raised cover with 2 7/8-inch opening, 3/8 inch deep.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
72C48	10	100	54	\$21.00

No. 24C1 Covers for 3 1/4-inch Octagon Outlet Boxes



Flat closed cover.

Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C1	10	100	24	\$9.00

No. 24C2 Covers for 3 1/4-inch Octagon Outlet Boxes

Raised closed cover.

Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C2	10	100	26	\$11.00

No. 24C6 Covers for 3 1/4-inch Octagon Outlet Boxes



Flat cover with 1/2-inch knockout in center.

Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C6	10	100	24	\$10.00

No. 24C7 Covers for 3 1/4-inch Octagon Outlet Boxes

Raised cover with 1/2-inch knockout in center.

Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C7	10	100	26	\$12.00

No. 24C12 Covers for 3/4-inch Octagon Outlet Boxes



Raised cover with 3/8-inch metal bushing for drop cord.
Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C12	10	100	26	\$13.00

No. 24C28 Covers for 3/4-inch Octagon Outlet Boxes

Flat cover for all surface mounted devices with screw centers 1/8 inch to 1 1/8 inches.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C28	10	100	24	\$12.00

No. 24C33 Covers for 3/4-inch Octagon Outlet Boxes

Flat cover for A. M. F. S. 2 screw sign receptacles. 1 3/8-inch opening; 1 1/8-inch screw spacing.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C33	10	100	24	\$10.00

No. 24C35 Covers for 3/4-inch Octagon Outlet Boxes

Raised cover for sign receptacles, screw ring type, opening 1 1/2 inches. Notched for protruding lug on porcelain.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C35	10	100	25	\$12.00

No. 24C36 Covers for 3/4-inch Octagon Outlet Boxes

Raised cover for sign receptacles, screw ring type, opening 1 1/2 inches bent under tongue for 5 notched porcelain.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C36	10	100	25	\$12.00

No. 24C44 Covers for 3/4-inch Octagon Outlet Boxes

Flat cover with intruding tongue for Federal sign receptacles.

Black enamel or galvanized finish.

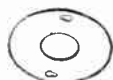


Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C44	10	100	24	\$10.00

No. 24C49 Covers for 3/4-inch Octagon Outlet Boxes

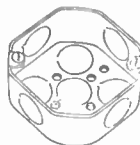
Flat cover for Benjamin 2 screw sign receptacles.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
24C49	10	100	24	\$10.00

No. 54151 4-inch Octagon Outlet Boxes



Has 1/4-inch holes in bottom for fixture studs and nails.

Black enamel or galvanized finish.

Five 1/2-inch Knockouts in Bottom and Four in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54151	1 1/2	100	75	\$28.00

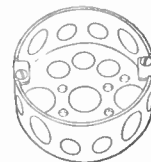
Three 1/2-inch and Two 3/4-inch Knockouts in Bottom Four 3/4-inch Knockouts in Sides

54151, 3/4-inch	1 1/2	100	75	\$28.00
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No. 54155 4-inch Round Outlet Boxes

Has 1/4-inch holes in bottom for fixture studs and nails.

Black enamel or galvanized finish.



Three 1/2-inch and Six Loom Knockouts in Bottom

Four 1/2-inch and Eight Loom Knockouts in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54155	1 1/2	100	75	\$30.00

No. 54171 4-inch Octagon Outlet Boxes

Has 1/4-inch holes in bottom for fixture studs and nails.

Furnished in black enamel or galvanized finish.

Five 1/2-inch Knockouts in Bottom Four in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54171	2 1/8	100	98	\$38.00

Three 1/2-inch and Two 3/4-inch Knockouts in Bottom Four 3/4-inch Knockouts in Sides

54171, 3/4-inch	2 1/8	100	98	\$38.00
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Three 1/2-inch and Two 3/4-inch Knockouts in Bottom Four 1-inch Knockouts in Sides

54171, 1-inch	2 1/8	100	98	\$38.00
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No. 55151 Extension Rings for 4-inch Octagon Outlet Boxes

Two tapped cover lugs at each end and 2 untapped lugs at one end.

Furnished in black enamel or galvanized finish.



Four 1/2-inch or 3/4-inch Knockouts in Sides

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
55151	1 5/8	100	51	\$31.00

No. 55171 Extension Rings for 4-inch Octagon Boxes

Two tapped cover lugs at each end and 2 untapped lugs at one end.

Black enamel or galvanized finish.

Four Knockouts in Either Side 1/2, 3/4 or 1-inch



Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
55171	2 1/4	100	74	\$41.00

No. 54C1 Covers for 4-inch Octagon Outlet Boxes



Flat closed cover.
Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C1	10	100	30	\$12.00

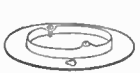
No. 54C2 Covers for 4-inch Octagon Outlet Boxes

Raised closed cover.
Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C2	10	100	41	\$14.00

No. 54C3 Covers for 4-inch Octagon Outlet Boxes



Raised open cover, $\frac{3}{8}$ inch deep, $2\frac{1}{8}$ -inch opening. Lugs tapped for $\frac{3}{32}$ screws on $2\frac{3}{4}$ -inch centers.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C3	10	100	37	\$16.00

No. 54C6 Covers for 4-inch Octagon Outlet Boxes

Flat cover with $\frac{1}{2}$ -inch knockout in the center.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C6	10	100	30	\$13.00

No. 54C7 Covers for 4-inch Octagon Outlet Boxes



Raised cover with $\frac{1}{2}$ -inch knockout in center.

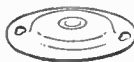
Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C7	10	100	41	\$15.00

No. 54C12 Covers for 4-inch Octagon Outlet Boxes

Raised cover with $\frac{3}{8}$ -inch metal turned back bushing for drop cord.

Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C12	10	100	41	\$16.00

No. 54C28 Covers for 4-inch Octagon Outlet Boxes

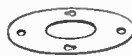


Flat cover for all surface mounted devices with screw centers $\frac{1}{8}$ to $1\frac{1}{8}$ inches.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C28	10	100	27	\$15.00

No. 54C33 Covers for 4-inch Octagon Outlet Boxes



Flat cover for A. M. E. S. 2 screw sign receptacles, $1\frac{3}{8}$ -inch opening, $1\frac{1}{16}$ inch screw spacing.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C33	10	100	27	\$13.00

No. 54C35 Covers for 4-inch Octagon Outlet Boxes

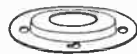
Raised cover for sign receptacles screw ring type, opening $1\frac{1}{2}$ inches. Notched for protruding lug on porcelain.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C35	10	100	37	\$15.00

No. 54C36 Covers for 4-inch Octagon Outlet Boxes



Raised cover for sign receptacles, screw ring type, opening $1\frac{1}{2}$ inches.

Bent under tongue for 5 notched porcelain. Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C36	10	100	37	\$15.00

No. 54C37 Covers for 4-inch Octagon Outlet Boxes

Flat cover for flush floor receptacles. Notched opening $1\frac{1}{2}$ inches in diameter, $1\frac{1}{8}$ inch screw centers.

Black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C37	10	100	27	\$13.00

No. 54C44 Covers for 4-inch Octagon Outlet Boxes



Flat cover with intruding tongue for Federal sign receptacles.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C44	10	100	27	\$13.00

No. 54C48 Covers for 4-inch Octagon Outlet Boxes

Raised open cover, $\frac{3}{8}$ inch deep, with $2\frac{7}{8}$ inches opening. Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C48	10	100	37	\$15.00

No. 54C49 Covers for 4-inch Octagon Outlet Boxes



Flat cover for Benjamin 2 screw sign receptacles.

Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C49	10	100	27	\$13.00

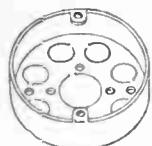
No. 54C63 Covers for 4-inch Octagon Outlet Boxes

Raised cover for Elexit devices. Furnished in black enamel or galvanized finish.



Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
54C63	10	100	37	\$40.00

No. 26125 3 1/4-inch Ceiling Outlet Boxes



Ears drilled and tapped. Has 1/4 inch holes in bottom for fixture studs or nails. Black enamel or galvanized finish.

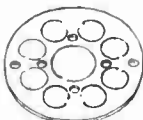
One 1/2-inch and Seven Loom Knockouts in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
26125	5/8	100	40	\$18.00

No. 26716 3 1/4-inch Plates for Use with No. 26125

Has one 1/2 inch and 8 loom knockouts. Black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
26716	10	100	25	\$12.00



No. 36115 3 1/2-inch Ceiling Outlet Boxes With Ears

Has 1/4-inch holes in bottom for fixture studs and nails.

Three 1/2-inch and Four Loom Knockouts in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
36115	1/2	100	38	\$18.00



No. 36116 3 1/2-inch Ceiling Outlet Boxes Without Ears

Same as No. 36115 without ears. Furnished in black enamel or galvanized finish.

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
36116	1/2	100	38	\$14.00



No. 56111 4-inch Ceiling Outlet Boxes With Ears

Has 1/4-inch holes in bottom for fixture studs and nails. Black enamel or galvanized finish.

Five 1/2 or 3/4-inch Knockouts in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56111	1/2	100	50	\$19.00



No. 56112 4-inch Ceiling Outlet Boxes Without Ears

Same as No. 56111 but has no ears. Furnished in black enamel or galvanized finish.

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56112	1/2	100	48	\$15.00



No. 56121 4-inch Ceiling Outlet Boxes With Ears

Has 1/4-inch holes in bottom for fixture studs and nails. Black enamel or galvanized finish.

Five 1/2 or 3/4-inch Knockouts in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56121	3/4	100	58	\$20.00



No. 56122 4-inch Ceiling Outlet Boxes Without Ears

Same as No. 56121 but without ears. Black enamel or galvanized finish.

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56122	3/4	100	56	\$16.00



No. 56115 4-inch Ceiling Outlet Boxes With Ears

Has 1/4-inch holes in bottom for fixture studs and nails.

Black enamel and galvanized finish.

Three 1/2-inch and Six Loom Knockouts in Bottom

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56115	1/2	100	49	\$19.00

No. 56116 4-inch Ceiling Outlet Boxes Without Ears

Same as No. 56115 but without ears. Black enamel or galvanized finish.

Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56116	1/2	100	47	\$15.00



No. 56712 4-inch Ceiling Plates

Has five 1/2-inch knockouts. Furnished in black enamel or galvanized finish.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56712	10	100	32	\$14.00



No. 56125 4-inch Ceiling Boxes With Ears

Has 1/4-inch holes in bottom for fixture studs and nails.

Black enamel or galvanized finish.

Three 1/2-inch and Six Loom Knockouts in Bottom

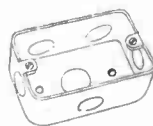
Cat. No.	Depth Inside, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
56125	3/4	100	60	\$20.00



Ceiling Boxes with Loom Clamps

Numbers 26125, 26716, 36115, 36116, 56115, 56116, and 56125 may be ordered with loom clamps. Additional price for one clamp, \$4.00 per hundred boxes. Additional price for 2 clamps, \$5.00 per hundred boxes.

No. 58361 Switch Boxes



Has 1/4-inch holes in bottom for fixture studs and nails. Designed for flush rotary snap switches and plug receptacles.

Black enamel or galvanized finish.

One 1/2-inch Knockout in Each End

Two 1/2-inch and One 1/2-inch Knockouts in Opposite Sides

One 1/2-inch Knockout in Bottom

Cat. No.	Length Inches	Width Inches	Depth Inches	Wt., Lbs. Std. Pkg.	Price per 100
58361	4	2 1/4	1 1/8	70	\$25.00

Price, Flat Closed Cover for Box No. 58361..per 100 \$12.00

No. 58371 Switch Boxes

Has 1/4-inch holes in bottom for fixture studs and nails. Designed for flush rotary snap switches and plug receptacles.

Black enamel or galvanized finish.

One 1/2-inch Knockout in Each End

Three 1/2-inch Knockouts in Each Side

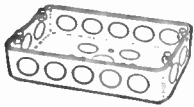
One 1/2-inch Knockout in Bottom

Cat. No.	Length Inches	Width Inches	Depth Inches	Wt., Lbs. Std. Pkg.	Price per 100
58371	4	2 1/4	2 1/8	81	\$30.00

Price, Flat Closed Cover for Box No. 58371..per 100 \$12.00



Gang Boxes



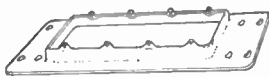
All boxes are 4½ inches wide and 1⅞ inches deep inside.

The length varies as shown in table.

Suitable holes are provided in bottom for nails. Black enamel or galvanized finish.

No. of Gangs	Lgth. In.	NO. OF KNOCKOUTS			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
		Bottom	Each Side	Each End			
2	6⅞	5	5	2	50	85	\$60.00
3	8⅝	10	6	2	25	54	90.00
4	10½	10	8	2	25	60	120.00
5	12¼	10	8	2	20	65	160.00
6	14	10	10	2	15	50	310.00
7	16	10	10	2	10	43	470.00
8	17¾	10	12	2	5	23	500.00
9	19½	10	14	2	5	24	550.00

Gang Box Covers

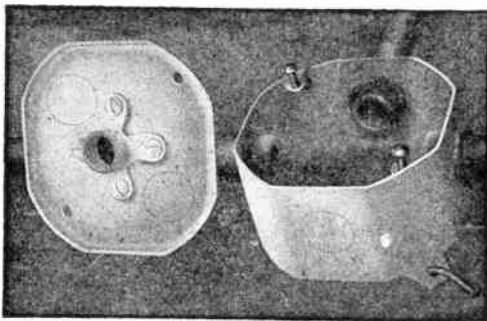


Furnished in black enamel or galvanized finish.

Gangs	Cat. No. of Box Designed for	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2	3002	50	37	\$30.00
3	3003	25	21	45.00
4	3004	25	27	60.00
5	3005	20	27	75.00
6	3006	15	23	145.00
7	3007	10	18	260.00
8	3008	5	11	290.00
9	3009	5	12	330.00

National Outlet Boxes for Concrete Work

Sherardized Finish



Cat. No.	Universal No.	KNOCKOUTS FOR CONDUIT INCHES					Wt., Lbs. per 100	Price per 100
		1½	1½	1½	1½	1½		
3100	54521	1½	1½	1½	1½	1½	94	\$30.00
3101	54521	1½	1½	¾	1½	¾	94	30.00
3200	54531	2	1½	1½	1½	1½	112	30.00
3201	54531	2	1½	¾	1½	¾	112	30.00
3300	54551	3	1½	1½	1½	1½	144	40.00
3301	54551	3	1½	¾	1½	¾	144	40.00
3319	54551	3	¾	1	¾	1	144	40.00
3700	54561	3½	1½	1½	1½	1½	81	45.00
3701	54561	3½	1½	¾	1½	¾	81	45.00
3719	54561	3½	¾	1	¾	1	81	45.00
3400	54571	4	1½	¾	1½	¾	87	50.00
3401	54571	4	1½	¾	1½	¾	87	50.00
3419	54571	4	¾	1	¾	1	87	50.00
3501	54581	5	1½	¾	1½	¾	93	60.00
3519	54581	5	¾	1	¾	1	93	60.00

No. 2365 National Cable and Loom Boxes



No. 2365

Made of stamped steel. Clamps will hold standard armored cables or flexible non-metallic tubing in same box. No. 2365 is 3¼ inches in diameter and ¾ inch deep. If No. 8-32 screws, ½ inch long, are inserted in the tapped cover lug holes, standard 3¼-inch outlet box covers may be used. Large base sockets and other devices may also be fastened to it. No. 2366 is identical with No. 2365 except that instead of stud, a

sleeve is provided for attachment to combination gas and electric outlets. Furnished with set screw, which screws and binds it to the pipe.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2365	With ¾-inch Fixture Stem.....	100	44	\$16.00
2366	" Sleeve for ¾-inch Gas Pipe.	100	44	16.00
2367	" Female Thread.....	100	44	16.00

No. 2829-L1 National Loom Boxes

Provided with one loom clamp. No cover lugs. One ½-inch knockout, eight loom. Dimensions 3½x½ inches.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2829-L1	100	35	Black Enamel \$7.20	\$8.05

No. 2829-L2 National Loom Boxes



Provided with two loom clamps. No cover lugs. One ½-inch knockout, eight loom. Dimensions, 3½x½ inches.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2829-L2	100	38	Black Enamel \$8.40	\$9.25

No. 2841-L1 National Loom Boxes

Provided with one loom clamp. No cover lugs. One ½-inch knockout, eight loom. Dimensions, 3½x¾ inches.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2841-L1	100	40	Black Enamel \$7.80	\$8.65

No. 2841-L2 National Loom Boxes



Provided with two loom clamps. No cover lugs. One ½-inch knockout, eight loom. Dimensions, 3½x¾ inches.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2841-L2	100	43	Black Enamel \$9.00	\$9.85

No. 2626-L1 National Loom Boxes

Provided with one loom clamp. No cover lugs. Three ½-inch knockouts, six loom. Dimensions, 4x½ inches.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2626-L1	100	43	Black Enamel \$7.50	\$8.40

No. 2626-L2 National Loom Boxes



Provided with two loom clamps. No cover lugs. Three ½-inch knockouts, six loom. Dimensions, 4x½ inches.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	Sherardized
2626-L2	100	46	Black Enamel \$8.70	\$9.60

No. 2632-L1 National Loom Boxes



Provided with one loom clamp. With cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x1/2 inches.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2632-L1	100	45	\$8.90	\$9.80

No. 2632-L2 National Loom Boxes

Provided with two loom clamps. With cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x1/2 inches.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2632-L2	100	48	\$10.10	\$11.00

No. 2638-L1 National Loom Boxes



Provided with one loom clamp. No cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x3/4 inches.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2638-L1	100	50	\$7.80	\$8.60

No. 2638-L2 National Loom Boxes

Provided with two loom clamp. No cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x3/4 inches.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2638-L2	100	53	\$9.00	\$9.85

No. 2644-L1 National Loom Boxes



Provided with one loom clamp. With cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x3/4 inches.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2644-L1	100	52	\$9.00	\$10.20

No. 2644-L2 National Loom Boxes

Provided with two loom clamps. With cover lugs. Three 1/2-inch knockouts, six loom. Dimensions, 4x3/4 inches.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2644-L2	100	55	\$10.20	\$11.40

No. 2708-L2 National Loom Boxes



Provided with two loom clamps. With cover lugs. Bottom, three 1/2-inch knockouts, six loom; side, four 1/2-inch knockouts, eight loom. Dimensions, 4x1 1/2 inches, octagon.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2708-L2	100	70	\$14.10	\$15.30

No. 2708-L4 National Loom Boxes

Provided with four loom clamps. With cover lugs. Bottom, three 1/2-inch knockouts, six loom; side, four 1/2-inch knockouts, eight loom. Dimensions, 4x1 1/2 inches, octagon.

Drilled and tapped for four clamps; extra clamps and screws, \$1.25 per 100.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	PRICE, PER 100	
			Black Enamel	Sherardized
2708-L4	100	76	\$16.50	\$17.70

Union Set-up Boxes

With Straight Bar Hanger and Fixture Stud For Conduit



Cat. No.	Description	Price per 100
109B	Box, 4-inch Round, 1/2 inch Deep, without Ears; Four 1/2-inch Knockouts. (Also Furnished with Four 3/4-inch Knockouts.)	\$48.00
109LB	Box, 4-in. Round, 3/2 Inches Deep, with Ears Tapped 5/32 on 3 1/2-inch Centers; otherwise Same as 109B.....	52.00

For Loom

260B	Box, 3 1/2-inch Round, 1/2 Inch Deep, without Ears; 8 Loom Knockouts.....	\$47.00
260CB	Same as 260B, but with 2 Loom Clamps..	52.00
261B	Box, 3 1/2-inch Round, 1/2 Inch Deep, with Ears Tapped 5/32 on 2 3/4-inch Centers; 8 Loom Knockouts.....	51.00
261CB	Same as 261B, but with 2 Loom Clamps....	56.00

With Shallow Offset Hanger and Fixture Stud



102FB	Box, 4-inch Square, 1 1/2 Inches Deep; Ten 1/2-inch Knockouts in Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in bottom. (Also Furnished with Eight 3/4-inch Knockouts in Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in Bottom.)....	\$73.00
102FB Special	Box, 4-inch Square, 1 1/2 Inches Deep, Two 1/2-inch and One 3/4-inch Knockouts in Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in Bottom.....	73.00
103FB	Box, 4-inch Octagon, 1 1/2 Inches Deep, with Ears Tapped 5/32 on 3 1/2-inch Centers; Four 1/2-inch Knockouts in Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in Bottom. (Also Furnished with Four 3/4-inch Knockouts in Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in Bottom.)....	69.00
103FB Special	Box, 4-inch Octagon, 1 1/2 Inches Deep, Ears Tapped 5/32 on 3 1/2-inch Centers; Two 1/2-inch and Two 3/4-inch Knockouts in Opposite Sides, and Two 1/2-inch and Two 3/4-inch Knockouts in Bottom.....	69.00
106FB	Box, 3 1/4-inch Octagon, 1 1/2 Inches Deep, with Ears Tapped 5/32 on 2 3/4-inch Centers; Four 1/2-inch Knockouts in Sides. (Also Furnished with Four 3/4-inch Knockouts in Sides.).....	65.00
246FB	Box, 4-inch Octagon, 1 1/2 Inches Deep, with Ears Tapped 5/32 on 3 1/2-inch Centers; Four 1/2-inch and 4 Loom Knockouts in Sides, and Two 1/2-inch and 6 Loom Knockouts in Bottom.....	71.00
277FB	Box, 3 1/4-inch Octagon, 1 1/2 Inches Deep, with Ears Tapped 5/32 on 2 3/4-inch Centers; Four 1/2-inch and 4 Loom Knockouts in Sides, and 4 Loom Knockouts in Bottom..	65.00

With Deep Offset Hanger and Fixture Stud

102FBD	Box, 4-inch Square, 1 1/2 Inches Deep, Same as Furnished with 102FB.....	\$73.00
102FBD Special	Box, 4-inch Square, 1 1/2 Inches Deep, Same As Furnished with 102FB Special.....	73.00
103FBD	Box, 4-inch Octagon, 1 1/2 Inches Deep, Same as Furnished with 103FB.....	69.00
103FBD Special	Box, 4-inch Octagon, 1 1/2 Inches Deep, Same as Furnished with 103FB Special.....	69.00
106FBD	Box, 3 1/4-inch Octagon, 1 1/2 Inches Deep, Same as Furnished with 106FB.....	65.00
246FBD	Box, 4-inch Octagon, 1 1/2 Inches Deep, Same as Furnished with 246FB.....	71.00
277FBD	Box, 3 1/4-inch Octagon, 1 1/2 Inches Deep, Same as Furnished with 277FB.....	65.00

Straight Box Hangers and Studs



No. 900 Straight Box Hanger



No. 900 Hanger with Box Attached

The straight box hanger and stud is furnished complete. Stud is slotted, allowing free movement along the bar, yet may easily be tightened by the locknut in any selected place. Makes it possible to set box at desired spot although conduit may be a little off length.

Cat. No.	Length of Bar Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
900	18	100	1000	62	\$25.00
900A	24	100	1000	62	30.00

No. 920 Old Work Hangers

For use where it is desired to install conduit boxes in old buildings or in places where plastering has been completed.

Complete data and instructions for use will be furnished upon application.

Cat. No.	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
920	100	500	35	\$25.00

No. 901 Loom Box and Bar Hangers



The No. 901 Loom Box and Bar Hanger provides a 3 1/4-inch outlet box, 2 loom clamps, adjustable fixture stud and support. There are 8 knockouts in the bottom, all of which are easily accessible. There is no slipping when the loom clamp takes hold. Drill and tap holes are provided so that the clamps may be reversed to cover the desired knockout or additional clamps may be furnished if desired.

Bar is 18 inches long with adjustable fixture stud.

Standard finish, black enamel.

Boxes can be furnished less clamps, also with ears.

With 2 Loom Clamps

Cat. No.	Box, Inches Diameter	Depth	No. of Knockouts	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
901	3 1/2	1 1/2	8	50	100	102	\$44.00
*901E	3 1/2	3/4	8	50	100	107	48.00

Without Loom Clamps

901A	3 1/2	1 1/2	8	50	100	100	\$39.00
*901AE	3 1/2	3/4	8	50	100	100	43.00

*With ears.

No. 903 Cable Box and Bar Hangers



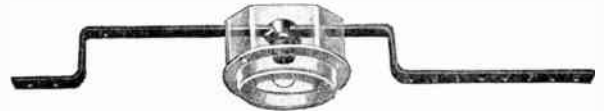
The No. 903 Cable Box and Hanger provides a 2 3/4-inch outlet box, fixture stud, 4 box connectors and support. The cost of the pan and 2 or more box connectors, fixture stud and labor of assemblage and mounting to the joist, is saved by the use of this device. The 4-wedge type opening will take all armored cable including the new size whose outside diameter is 2 1/2-inch or smaller. Box can be adjusted to any desired position on 18-inch bar. No ears.

Standard finish, black enamel.

Cat. No.	Box, Inches Diam.	Depth	No. of Knockouts	Car-ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
903	2 3/4	3/4	4	50	100	104	\$45.00

No. 915 Deep Off-set Bar Hangers and Studs

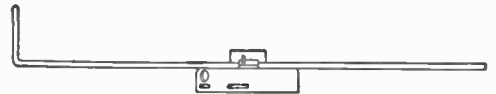
For 1 5/8-inch Deep Boxes with Plaster Cover



The depth of the off-set is exactly right to bring mouth of cover flush with plaster line.

No.	Length Bar Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
915	18	50	500	67	\$25.00

National Box and Bar Sets



No. 2270 National Box and Bar Set

For convenience of users complete assemblies or sets have been arranged consisting of the No. 2260 Bendit box bar, having mounted thereon ready for use certain outlet boxes and adjustable 3/8-inch fixture stud. These sets are packed in cartons of 50. Particular attention is requested to No. 2270 Set, carrying No. 2365 box, for either or both cable and loom. No. 2365 box has self contained cable clamp and bushings and integral 3/8-inch stud, sherardized (zinc treated) finish.

Cat. No.	Cat. No.	DESCRIPTION OF BOX Size In. Knockouts	Loom or Cable	Loom Clamps	Cover Lugs	Car-ton	Wt. Lbs. Black Enamel	PRICE PER 100 Sherardized
2270	2365	3 1/4 x 3/4	4-Loom or Cable	2	Yes	54	....	\$24.00
2271	*2829	3 1/2 x 1/2	1-1/2-in. 8 Loom	0	No	48	\$18.00	....
2272	*2829-L1	3 1/2 x 1/2	1-1/2 " 8	" 1	"	50	19.25	....
2273	*2829-L2	3 1/2 x 1/2	1-1/2 " 8	" 2	"	52	20.50	....
2277	2626	4 x 1/2	3-1/2 " 6	" 0	"	53	18.75	....
2279	2626-L2	4 x 1/2	3-1/2 " 6	" 2	"	55	21.25	....
2286	2644	4 x 3/4	3-1/2 " 6	" 0	Yes	58	20.00	....
2288	2644-L2	4 x 3/4	3-1/2 " 6	" 2	"	60	22.50	....
Boxes with 1/2-inch Knockouts Only, for Cable and Conduit								
2292	2624	4 x 1/2	5-1/2-in.	0	No	53	\$18.75	\$19.75
2295	2642	4 x 3/4	5-1/2 "	0	Yes	56	20.00	21.50

*Boxes Nos. 2829, 2829-L1 and L2 may be had with cover lugs for standard 3 1/4-inch covers and devices for \$1.50 per 100 boxes, extra. These boxes tapped to receive 4 loom clamps.

No. 2260 National Bendit Box Hanger Bars without Boxes
Size; 3/8 inch thick, 1/2 inch wide, 18 inches long. Sherardized clamp or saddle with 2 screws. A handy bending tool is packed in each carton.

Cat. No.	Std. Pkg.	Unit Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
2260	500	100	290	\$12.00

No. 2175 National Duplex Connector



The National Duplex Connector not only takes less time to install than two single connectors, but it insures neater work. It also saves about 6 inches of cable at every outlet of the sort indicated.

The holes for conductors in No. 2175 are 3/4 inch the same as for standard 3/8-inch single connectors. It will thus take any standard make of No. 14-2 or 14-3 armored conductors, or 3/8-inch flexible conduit, as well as National No. 12-2.

Standard package, 100. Unit package, 20. Standard package, weight 25 pounds.

Price, No. 2175..... per 100 \$18.00

No. 902 Conduit Box and Bar Hangers

For Conduit and Armored Cable



The No. 902 Conduit Box and Bar Hanger provides a 4-inch outlet box having five 1/2-inch conduit knockouts, fixture stud and support used with bushings and locknuts on rigid iron conduit installation or with box connectors on flexible steel conduit work.

The patented sliding fixture stud allows free movement on bar yet may be easily tightened by the locknut in any selected place.

Bar is 18 inches long with adjustable fixture stud.

Standard finish, black enamel.

Can be furnished with ears if desired.

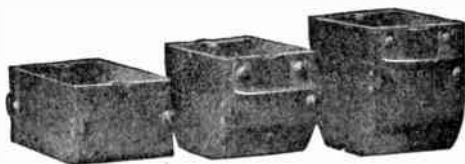
Without Ears

Cat. No.	Box, INCHES Diameter	Depth	No. of Knock-outs	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
902	4	1/2	5	50	100	102	\$40.00

With Ears

902E	4	3/4	5	50	100	114	\$45.00
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National Sectional Switch Boxes



4170 4160 4164

National Sectional Switch Boxes are solid. Any number of units may be assembled in a gang and the knockout removed, without danger of loosening the sections. Instead of the spacers being merely held in the position the wireman happens to place them, setting up the screws actually forces the parts tightly together. These boxes are designed so that the spacers used for making up gangs, are exactly the same as those used in single boxes. Boxes are black enameled. Standard package quantity is 100.

Boxes with Beveled Corners and 5/8-inch Knockouts for Loom With or without Loom Clamps

Cat. No.	Description	Depth In.	Wt. Lbs. Std. Package	Price per 100
4160	Box, without Clamps	2	65	\$16.00
4162	Spacer, without Clamps	2	33	13.00
4164	Box, without Clamps	2 1/2	74	18.00
4166	Spacer, without Clamps	2 1/2	37	14.00

For boxes (Cat. No. 4161, 2 inches deep and 4165, 2 1/2 inches) and spacers (4163, 2 inches and 4167, 2 1/2 inches) with loom clamps—add to above prices \$1.50 per hundred.

Boxes with Square Corners and 1 1/16-inch Knockouts for Armored Cable

Cat. No.	Description	Depth In.	Wt. Lbs. Std. Package	Price per 100
4168	Box, with Clamps	2 1/2	76	\$20.00
4169	Spacer, with Clamps	2 1/2	38	16.00

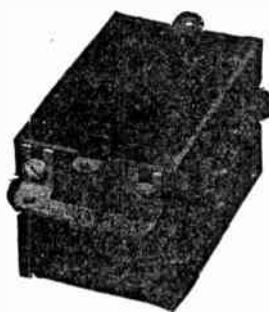
Boxes for shallow partitions or outside walls. Square corners, with 1/2-inch knockouts in ends, for rigid conduit or armored cable, and 5/8-inch knockouts in sides, for loom.

Cat. No.	Description	Depth In.	Wt. Lbs. Std. Package	Price per 100
4170	Box	1 1/2	65	\$18.00
4171	Spacer	1 1/2	35	14.00

The above box and spacer are without ears. If boxes with ears are desired (4171 for box, and 4173 for spacer) add to the above prices \$2.25 per hundred. Where ears are exposed as in old work, standard switch plates are not long enough to cover this box.

Types S, C and A Gem Sectional Switch Boxes

For Non-metallic Flexible Conduit



Equipped with reversible and sliding ears which have an adjustment of 1/2 inch up to 3/4 inch, suitable for both old and new work.

Types S, C and A boxes are square-cornered and are particularly adapted for new work on account of the space that is available in corners for wiring, bushing etc.

Length, 3 inches; width, 2 inches.

Knockouts, 5/8 inch, 2 in each side, 2 in each end and 4 in bottom.

Regularly finished with coat of black insulating enamel. Galvanized at a slight advance in price.

Type	Depth In.	Description	Std. Pkg.	Wt. Lbs. per 100	Price Each
S	2	No Clamps	100	67	\$.50
S	2	Unit without Sides or Clamps	100	39	.40
C	2 1/2	No Clamps	100	78	.50
C	2 1/2	Unit without Sides or Clamps	100	45	.40
A	3	No Clamps	50	88	.50
A	3	Unit without Sides or Clamps	50	48	.43

Types D, F, FC and E Gem Sectional Switch Boxes

For Non-metallic Flexible Conduit

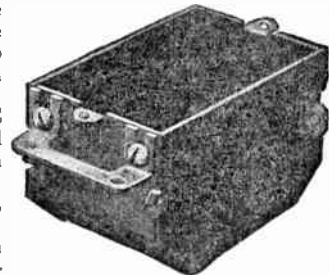
Equipped with reversible and sliding ears which have an adjustment of 1/2 inch up to 3/4 inch, suitable for both old and new work.

Types D, F, FC and E boxes are bevel-cornered and are practical for use in rewiring old buildings.

Length, 3 inches; width, 2 inches.

Knockouts, 5/8 inch, 2 in each side and 2 in each beveled corner only.

Finished with coat of black enamel. Galvanized extra.



Type	Depth In.	Description	Std. Pkg.	Wt. Lbs. per 100	Price Each
D	2	No Clamps	100	64	\$.50
D	2	Unit without Sides or Clamps	100	37	.40
F	2 1/4	No Clamps	100	69	.50
F	2 1/4	Unit without Sides or Clamps	100	39	.40
FC	2 1/4	With No. 2 Clamps	100	73	.60
FC	2 1/4	Unit with No. 2 Clamps without Sides	100	43	.50
E	2 1/2	No Clamps	100	73	.50
E	2 1/2	Unit without Sides or Clamps	100	42	.40

Gem Sectional Switch Boxes For Flexible Metallic Conduit



The knockouts provided will accommodate BX Nos. 10, 12 and 14 B. & S. twin conductors and BX3 Nos. 12 and 14 B. & S. triple conductors, also 5/8-inch and 3/8-inch flexible steel conduit when ends are protected by brass bushing caps. Knockouts: 2 3/8 inch; 2 in each side; 2 in each end; and 4 in bottom. With No. 1 clamps.

Description	TYPE XS				TYPE X			
	Std. Pkg.	Depth In.	Wt. Lbs. Std. Pkg.	Price per 100	Depth In.	Wt. Lbs. Std. Pkg.	Price per 100	
With Sides	100	2	78	\$60.00	2 1/2	83	\$60.00	
Without Sides	100	2	45	50.00	2 1/2	47	50.00	

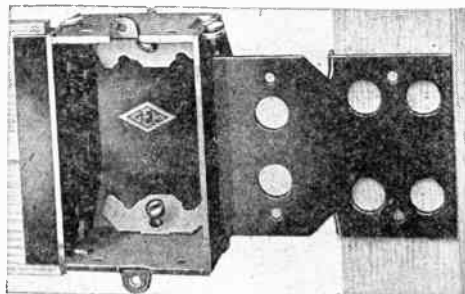
Gem Sectional Switch Boxes

With Lath Support and Mounting Bracket

Gem Sectional Switch Boxes for loom, armored cable and conduit are now available equipped with lath support and mounting bracket.

Two lugs bent inward on the mounting bracket provide a gauge that automatically squares the box with the joist on which it is fastened.

These boxes have the same features as the regular Gem Sectional Switch Boxes and can be ganged with ease.



With Bevel Corners

Type	Depth In.	Description	Std. Pkg.	Wt. Lbs. per 100	Price Each
FB	2 1/4	For Flexible, Non-metallic Conduit (Loom) ..	50	42	\$.75
FCB	*2 1/4	" " " " " " ..	50	44	.75

With Square Corners

XB	**2 1/2	For Steel Armored Conductor.	50	50	.75
BB	2 3/4	" Rigid Conduit.	50	50	.75

*With No. 2 inside clamps. **With No. 1 inside clamps.

Type R Gem Sectional Switch Boxes



For Rigid Conduit

The Type R Box is designed for installation in thin walls and partitions.

Knockouts, one in each end, for half-inch conduit only. This box is suitable for new work only.

Length, 3 3/4 inches.

Width, 2 inches.

Depth, 1 1/2 inches.

Type	Description	Std. Pkg.	Wt. Lbs. per 100	Price Each
R	For New Work Only	100	65	\$.50
R	Unit, without Sides	100	33	.40

Types BS, BM, B and BD Gem Sectional Switch Boxes

For Rigid Conduit



These switch boxes accommodate all standard makes of switches and receptacles and can be furnished with 1/2-inch or 3/4-inch conduit knockouts. May also be used for flexible tubing or larger than 1/2-inch size if desired and for standard BX conductors by using box connectors.

All boxes are 3 inches long and 2 inches wide.

FINISH.—Regularly furnished with coat of black insulating enamel. Galvanized extra.

Type	Depth In.	Description	Std. Pkg.	Wt. Lbs. per 100	Price Each
BS	2	Use Type R Bushing	100	67	\$.50
BS	2	Unit without Sides. Use Type R Bushing	100	39	.40
BM	2 1/2	Use Type R Bushing	100	78	.50
BM	2 1/2	Unit without Sides. Use Type R Bushing	100	45	.40
B	2 3/4	.....	100	86	.50
B	2 3/4	Unit without Sides	100	47	.40
BD	3 1/2	.....	50	52	.50
BD	3 1/2	Unit without Sides	50	29	.40

Nos. 170 and 170A Union Sectional Switch Boxes

For Loom or Rigid Conduit



No. 170 box is four inches long, two inches wide and 1 1/8 inches deep. The end outlets are for 1/2-inch conduit, the two outlets in each side for loom or 3/8-inch flexible conduit. Not provided with external supporting ears. Has one mounting hole in bottom. Particularly adapted for thin partition and outside wall work. No. 170A box is a single sectional box same as No. 170 but is provided with external ears for attaching to wall or plaster.

No. Cat.	Depth Inches	No. of Gangs	Ears	Std. Pkg.	Wt. Lbs. per 100	Price Each
170	1 1/8	1	Without	100	75	\$.20
170-2-G	1 1/8	2	"	50	54	.38
170-S	1 1/8	Spacer	"	100	40	.18
170-A	1 1/8	1	With	100	77	.30
170-A-2-G	1 1/8	2	"	50	55	.54

No. 170A box with ears not suitable for old work, because standard switch plates will not cover ears.

Union Solid Drawn Switch Boxes

For Flexible Non-metallic Conduit

For use in old or new work. Equipped with reversible and sliding ears.

Single gang has two knockouts in each side and two in each beveled corner for loom. Furnished with 1/2-inch conduit knockout in bottom, if specified.

2-gang, two knockouts in each side four in each beveled corner for loom. Two knockouts provided in bottom for 1/2-inch conduit.

3-gang has two knockouts in each side and six in each beveled corner for loom. Furnished with three knockouts in bottom for 1/2-inch conduit, if required.



Cat. No.	Type	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
		Depth	Width	Length			
SS	Single	2 1/2	2	3	100	64	\$.30
SS2	2-gang	2 1/2	3 3/4	3	50	54	.50
SS3	3	2 1/2	5 1/2	5	50	67	.70

Type DS Union Door Switch Boxes

For Rigid or Flexible Conduit

Approved by Underwriters' Laboratories, Inc. Made of 14-gauge steel, finished with black insulating enamel; can be furnished galvanized, at a small advance.

No. 1.—For Perkins and Arrow E Door Switches. One 3/8-inch knockout in one end and bottom for flexible non-metallic and 1/2-inch knockout in opposite end for rigid. Screw centers 3 3/4 in.

No. 2.—Same as above, but with 3/8-inch knockouts and clamps. No. 3.—For Diamond H Door Switches. One 3/8-inch knockout for flexible non-metallic conduit and 1/2-inch knockout for rigid. Screw centers 3 1/8 inches. No. 4.—Same as above, but with 3/8-inch knockouts and clamps. No. 5.—For H & H Door Switches. One 3/8-inch knockout for flexible conduit; 1/2-inch knockout for rigid. Screw centers 3 3/4 inches. No. 6.—Same as above, but with 3/8-inch knockouts and clamps.



Type	Clamps	DIMENSIONS, INCHES			Std. Pkg.	Wt. Lbs. per 100	Price Each
		Length	Width	Depth			
DS-1	Without	3 5/8	1 3/8	2 5/8	100	75	\$.50
DS-2	With	3 5/8	1 3/8	2 5/8	100	76	.65
DS-3	Without	3 1/4	1 3/8	2 5/8	100	68	.50
DS-4	With	3 1/4	1 3/8	2 5/8	100	69	.65
DS-5	Without	3	1 3/8	3	100	69	.50
DS-6	With	3	1 3/8	3	100	70	.65

**No. 155 Union Sectional Switch Boxes
For Rigid Conduit**

For Push Button Switches and Plug Receptacles



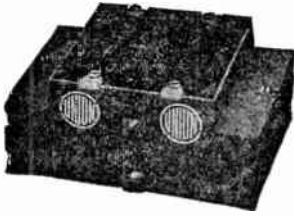
The No. 155 single switch box provides ample room for making splices, taps or junctions. Both the top side cover-plates can be removed by loosening the screws, which permits easy access to the wires. The box is 4 inches long, 4 inches wide. Two knockouts in each side, two in each end for 1/2-inch or 3/4-inch conduit. Screw centers 3 3/7 inches.

FINISH.—Regularly supplied with black enamel or galvanized finish. When finish is not specified black enamel will be furnished.

Cat. No.	Depth Inches	No. of Gangs	Std. Pkg.	Wt., Lbs. per 100	Price Each
155	2 5/8	1	50	73 1/2	\$.34

**No. 160 Union Sectional Conduit Switch Boxes
For Rigid Conduit**

For Push Button Switches and Plug Receptacles



No. 160 Box

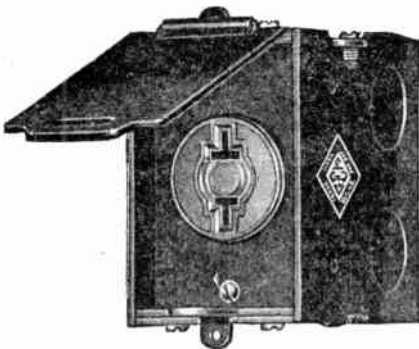
No. 160 Spacer

The hook eye construction permits rapid assembling when additional gangs are required. With the aid of spacers, this box can be built up to any size for accommodating additional switches. Four inches long, 5 3/4 inches wide. Four knockouts in each side, two in each end, for 1/2 or 3/4-inch rigid conduit. Screw centers 3 3/7 inches. No. 160 spacer is 4 inches long, 1 3/8 inches wide. Screw centers 3 3/7 inches.

Cat. No.	Depth Inches	No. of Gangs	Std. Pkg.	Wt., Lb. per 100	Price Each
160	2 5/8	2	25	51	\$.60
160S	2 5/8	Spacer	100	49	.26

FINISH.—Regularly supplied with black enamel or galvanized finish. When finish is not specified, black enamel will be furnished.

Gem Sectional Laundry Boxes



Designed to prevent the theft of current which is so often the case in apartment buildings. Each box is equipped with a hinged cover and lug for padlocking.

The box complete consists of the unit as shown mounted in the regular Gem B Conduit Switch Box. The unit

can be inserted in any of the regular Gem switch boxes by removing the ears and using the same screws to fasten the fitting.

The Gem Laundry Box can be built into any number of gangs from single boxes, each unit having its own cover.

Type	Depth Inches	Description	Std. Pkg.	Wt., Lbs. per 100	Price Each
66	2 3/4	Box, Complete with Cover and Receptacle.....	50	59	\$1.50
99	2 3/4	Unit, Consists of Box Cover Attachment with Receptacle.....	50	21	1.00

**T & B Cast Iron Junction and Pull Boxes
Unflanged Type**



Cat. No.	Inside Dimensions			PRICE, EACH		
	L.	W.	D.	Box Only	Cover Only	Box and Cover
860	3 1/2	x 3 1/2	x 2	\$.30	\$.20	\$.50
861	4	x 4	x 2	.45	.20	.65
890	4	x 4	x 2 1/2	.50	.20	.70
862	4	x 4	x 3	.55	.20	.75
863	5	x 5	x 3	.65	.35	1.00
892	5	x 5	x 3 3/4	.70	.35	1.05
893	5 1/2	x 5 1/2	x 5	1.15	.50	1.65
865	6	x 4	x 1 1/2	.50	.25	.75
864	6	x 3	x 2	.50	.20	.70
866	6	x 4	x 2	.50	.25	.75
867	6	x 5	x 3	.85	.35	1.20
894	6	x 6	x 2	.90	.50	1.40
962	6	x 6	x 3	1.00	.50	1.50
868	6	x 6	x 4	1.15	.50	1.65
963	6	x 6	x 5	1.35	.50	1.85
964	6	x 6	x 6	1.65	.50	2.15
869	7	x 5	x 3	1.15	.50	1.65
870	7	x 7	x 3	1.65	.60	2.25
871	8	x 6	x 3	1.65	.60	2.25
965	8	x 8	x 3	2.10	.65	2.75
872	8	x 6	x 4	1.70	.60	2.30
873	8	x 8	x 4	2.45	.65	3.10
874	8	x 6	x 6	2.90	.60	3.50
956	9	x 4	x 2 1/2	2.00	.50	2.50
957	9	x 5 1/4	x 1 3/4	2.00	.65	2.65
876	9 1/2	x 5 1/2	x 3	2.25	.65	2.90
875	9	x 6	x 4	2.55	.65	3.20
877	10	x 5	x 2 1/2	1.85	.65	2.50
878	10	x 6	x 4	2.55	.70	3.25
879	10 1/4	x 2 3/4	x 1 3/4	1.15	.35	1.50
880	12	x 6	x 3	2.15	.85	3.00
968	12	x 6	x 4	3.20	.85	4.05
882	12	x 6	x 6	4.25	.85	5.10
881	12	x 12	x 4	5.30	1.20	6.50
969	12	x 12	x 6	6.50	1.20	7.70
970	14	x 10	x 8	11.00	1.50	12.50
883	14	x 14	x 10	16.25	1.75	18.00
884	15	x 7	x 4 1/2	4.40	1.00	5.40
885	18	x 6	x 3 1/2	3.25	1.20	4.45
971	18	x 12	x 4	11.00	1.80	12.80

T & B Round Weatherproof Boxes



Cat. No.	Description	Wt., Lbs. per 100	Price per 100
170	Diam., 3 1/2 Inches; depth, 1 1/4 Inches ..	116	\$35.00
171	" 3 1/2 " " 1 1/2 " " ..	121	45.00
172	" 3 1/2 " " 3 " " ..	163	62.00
Covers For Round Weatherproof Boxes			
173	Plain	40	14.00
174	" Drilled and Tapped, 3/8, 1/2, or 3/4-inch	31	16.00

**T & B Cast Iron Junction and Pull Boxes
Flanged Type**

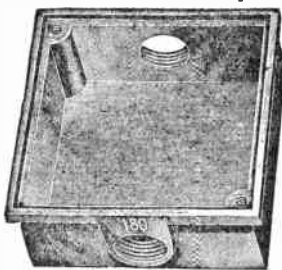


Cat. No.	Inside Dimensions L. W. D.		PRICE, EACH			
			Box Only	Cover Only	Box and Cover	Rubber Gaskets
895	4x	4x3	\$.75	\$.30	\$1.05	\$.24
914	6x	4x3	1.00	.40	1.40	.30
896	6x	5x3	1.25	.50	1.75	.35
897	6x	6x3	1.35	.55	1.90	.40
898	6x	6x4	1.45	.55	2.00	.40
915	6x	6x6	2.00	.55	2.55	.40
899	8x	4x3	1.30	.50	1.80	.35
900	8x	6x3	1.85	.65	2.50	.50
902	8x	6x4	2.15	.65	2.80	.50
901	8x	8x3	2.10	.70	2.80	.55
903	8x	8x4	2.70	.70	3.40	.55
916	8x	6x6	2.75	.65	3.40	.50
904	8x	8x6	3.10	.70	3.80	.55
905	10x	10x8	7.00	1.00	8.00	.70
908	12x	6x4	3.10	.90	4.00	.60
910	12x	6x6	4.85	.90	5.75	.60
917	12x	8x4	4.25	1.10	5.35	.65
918	12x	8x8	6.75	1.10	7.85	.65
909	12x	12x4	5.45	1.30	6.75	.75
911	12x	12x6	7.20	1.30	8.50	.75

When ordering box only, use catalogue number and add letter B; for cover only add letter C; to illustrate, No. 860B means box only, No. 860C, cover only, but No. 860 means box and cover complete.

Price, 1/2-inch Drilling Holes..... each	\$1.12
" 3/4 " " " " " " " " " " " " " "	.15
" 1 " " " " " " " " " " " " " "	.23
" 1 1/4 to 3-inch Drilling Holes..... " " " " " " " " " " " " " "	.30
" 1/2-inch Drilling and Tapping Holes..... " " " " " " " " " " " " " "	.18
" 3/4 " " " " " " " " " " " " " "	.24
" 1 " " " " " " " " " " " " " "	.45
" 1 1/4 " " " " " " " " " " " " " "	.63
" 1 1/2 to 3-inch Drilling and Tapping Holes... " " " " " " " " " " " " " "	.90

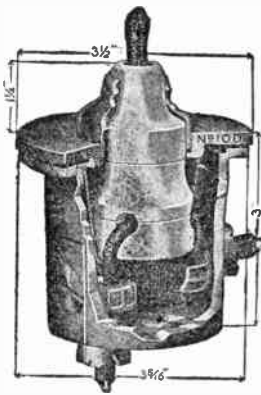
T & B Square Weatherproof Boxes



Cat. No.	Description	Wt. Lbs. per 100	Price per 100
180	3 1/2 x 3 1/2 Inches; Depth, 1 1/4 Inches.....	173	\$35.00
190	3 1/2 x 3 1/2 " " " 1 1/2 "	205	45.00
191	3 1/2 x 3 1/2 " " " 2 1/2 "	270	60.00
Covers for Square Weatherproof Boxes			
181	Plain.....	43	\$14.00
182	" Drilled and Tapped, 3/8 Inch.....	29	16.00
184	" " " " 1/2 or 3/4 Inch.....	56	16.00
187	1 1/8-inch Plain Hole in Center.....	34	14.00
188	Rotary Switch Cover.....	64	20.00
189	Plug Receptacle Cover.....	53	24.00
192	Flat Switch Cover.....	52	12.00
193	Bracket Outlet Cover.....	33	12.00

Drilling and tapping charged extra.

No. 100 T & B Floor Boxes



Approved by National Board. Just the right size for private house work.

Hot galvanized; no rubber bushings to break; no hard taps required for wiring; no screws to hold strap in place; water-tight.

Packed in a neat, strong box, clearly marked to show contents.

Weight of complete box, 2 1/2 pounds.

Cat. No.	Description	Price Each
101	Iron Box with Three Plugs.....	\$.85
102	Brass Cover without Disc.....	1.50
103	" Disc for Cover, 1 3/4-inch Diam.....	.75
104	" Nozzle.....	1.25
105	Receptacle and Supporting Strap.....	.90
106	Brass Cover with 1/2-inch Removable Plug.....	2.25
107	Large Rubber Gasket.....	.20
108	Small " ".....	.10
100	Box Complete, as Illustrated.....	4.00

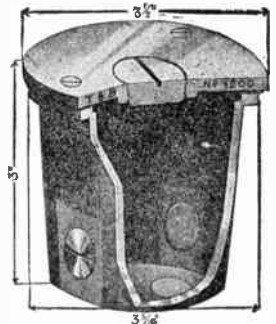
No. 1200 T & B Floor Boxes

For telephone and electric light outlets. Hot galvanized. Weatherproof.

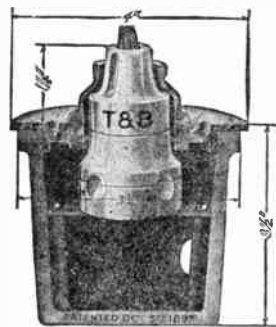
Cat. No.	Description	Price Each
1201	Iron Box with Three Plugs....	\$.85
1202	Brass Cover with 1/2-inch removable plug.....	2.25
1200	Box Complete, as Illustrated.....	3.00

Weight of complete box, 1 3/4 pounds.

Packed in a neat, strong box, clearly marked to show contents.



No. 1100 T & B Watertight Floor Boxes



Takes from 1/2-inch to 1-inch conduit with receptacle in place.

Receptacle can be taken out without removing any screws.

No hard taps required; no rubber bushings to break.

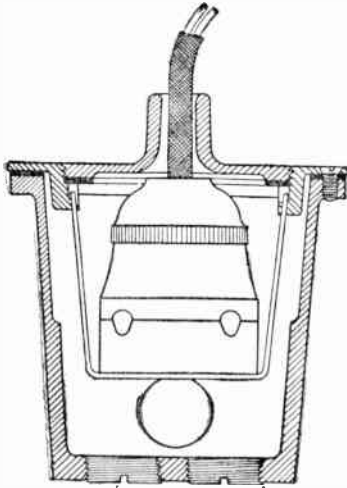
Specify number, size and location of holes.

Packed in a neat, strong box, clearly marked to show contents.

Cat. No.	Description	Price Each
1101	Iron Box.....	\$1.10
1102	Brass Cover without Disc.....	1.75
1103	" Disc for Cover.....	.75
1104	" Nozzle.....	1.50
1105	Receptacle and Supporting Strap.....	.90
1107	Large Rubber Gasket.....	.20
1108	Small " ".....	.10
1106	Brass Cover with 1/2-inch Removable Plug....	2.50
1100	Box Complete, as Illustrated.....	5.00

Weight of complete box, 3 3/4 pounds.

Type 800 Fountain Floor Boxes
Non-adjustable

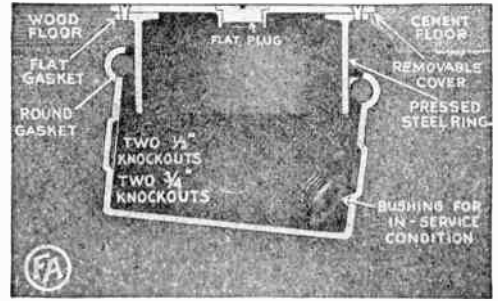


A watertight floor box in which receptacle can be installed after the floor is laid without breaking floor joints.

Single Parts

Cat. No.	Description	Price Each
800	Complete Four 1/2 inch Tapped Holes, 3 Plugged	\$4.00
801	Box Body, Iron Galvanized	.85
802	Brass Floor Flange	1.50
803	" Cord Nozzle	1.00
804	" Flat Closing Cover	.50
805	Receptacle Bridge	.20
806	Gasket for Floor Flange	.20
807	" " Nozzle or Flat Cover	.10

FA Competition Type Floor Boxes



Made for cement and granolithic type floor work. Pressed steel ring with cover is readily adjustable, for a variation of 3/4 inch; also made special for greater variation and is made a permanent part of box and floor by means of a fine cement mortar grouting.

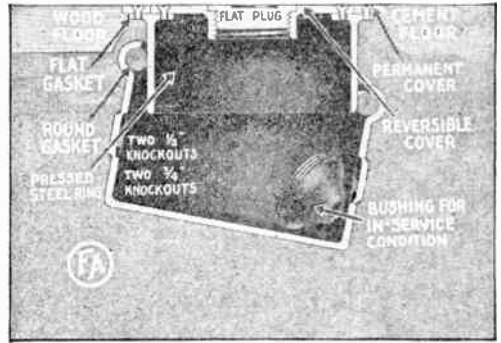
Box is 4 inches round by 3 1/4 inches deep. Made of drawn steel. Four sides are made flat, each side and bottom with 1/2-inch knockout. Contractor can ream knockouts to 1-inch conduit size. Round gasket in groove, makes box watertight at any angle. Drawn steel flange ring, complete with gasket and removable cover fitted with flat plug, also with composition bushing.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FB5	24	112	\$5.00

Each floor box described above is packed in an individual carton.

Price does not include receptacle.

FA Reversible Cover Floor Boxes



Adjustable floor boxes are made for cement and granolithic type floor work. Pressed steel ring with cover is readily adjustable for a variation of 3/4-inch; also made special for greater variation and is made a permanent part of box and floor by means of a fine cement mortar grouting.

The reversible cover when not in place leaves a clear opening of 3 inches for connecting wires and installing receptacle. Any standard universal flush receptacles with ears removed can be installed by means of special steel hangers furnished with box.

The box is of drawn steel, 4 inches round by 3 1/4 inches deep. Four sides made flat, two sides and bottom with 1/2-inch knockouts, and two sides with 3/4-inch knockouts. Contractor can ream knockouts to 1-inch conduit size. Round gasket in groove makes box watertight at any angle. The cover is of drawn steel, flanged ring, complete with gasket and permanent cover rim and reversible cover, fitted with flat plug, also with composition split bushing.

Cat. No.	Std. Pkg.	Weight of Standard Package	Price Each
FB345	24	112	\$6.00

Receptacles not furnished. Each floor box packed in individual carton. Floor boxes are simple to install.

Type 300 and 301 Single Floor Boxes



Adjustment 3 to 3 3/4 inches. Cast iron, octagonal box body, galvanized.

Stock boxes four 1/2-inch tapped conduit holes, 3 of which are plugged.

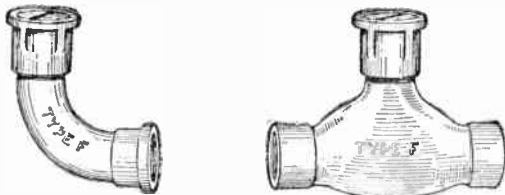
The 3/4 and 1-inch holes drilled and tapped when specified. Cover sets flush with top of adjustable flange on a gasket having an opening, into which any of

the Type 800 fittings can be used. Lugs are cast on adjustable flange for installing any standard type of plug receptacle, in which case No. 813 nozzle is used.

Cat. No.	Description	Price Each
300	Complete with, Bridge No. 805, Receptacle No. 810, Nozzle No. 803 and Closing Cover No. 804	\$5.50
301	With Cover No. 804 or Choice of Nos. 808 or 809	4.50

Floor Elbows and Tees

Malleable Iron, Hot Galvanized and Brass Floor Couplings

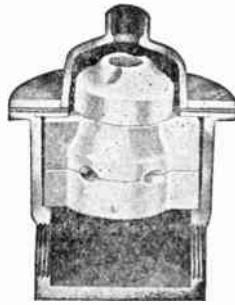


Size	Description	Price
1/2	1/2-inch Elbows Complete with Brass Floor Coupling	\$1.12
3/4	" " " " " "	1.40
1	" " " " " "	1.80
1 1/4	" " " " " "	4.50
3/4	" Tees	1.95
1	" " " " " "	2.65
1 1/4	" " " " " "	6.50

Fullman Non-adjustable Floor Outlets



No. 477



Sectional View

No. 477 Outlets

The design and construction of the No. 477 outlet is simple. It has few parts, small outside dimensions and plenty of room inside for wiring. Fitted with Hubbell Receptacle and Bell Nozzle. The receptacle is locked in position with a flat steel ring which also serves as a support for the bell nozzle or flush brass plug. This construction permits use of only one rubber gasket.

Cover plate is 3½ inches in diameter with 2-inch opening for bell nozzle or flush brass plug.

Height, 3¼ inches to top of cover plate.

There is one conduit hole in each side and two in bottom tapped for ½-inch conduit. Three of the holes are plugged.

All brass parts are brushed brass finish. All iron and steel parts are Sherardized to prevent rust.

Comes in standard packages of 25 complete outlets.

Special brass flange rings can be furnished at an extra charge if outlets are to be used in granolithic, cement, marble or similar flooring to prevent chipping when cover is removed.

Complete outlet, as furnished, consists of box body, porcelain plug and receptacle, flat steel ring, rubber gasket, brass cover plate, flush brass plug and bell nozzle.

Net weight each, 2½ pounds.

Price, No. 477, Complete.....each \$4.00

No. 490 Outlets

Complete outlet is similar to No. 477 and consists of Nos 481, 482, 484 and 487 parts listed below. The No. 465 and 467 nozzles can be used in cover plate.

Net weight each, 1¾ pounds.

Price, No. 490, Complete.....each \$2.20

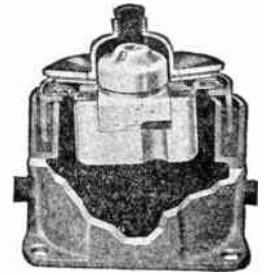
Separate Parts

Cat. No.	Description	Net Wt. Lbs. Ea.	Price Each
478	Porcelain Plug and Receptacle.....	¼	\$.60
479	Brass Bell Nozzle.....	1/8	.80
480	2-inch Flush Brass Plug for No. 483 Cover	1/8	.25
481	Box Body Only.....	1¼	1.30
482	Brass Cover Plate with ½-inch Tapped Hole	3/8	.65
483	Brass Cover Plate with 2-inch Hole.....	¼	.70
484	Rubber Gasket.....	1/16	.10
485	Flat Steel Ring.....	3/16	.10
486	Receptacle Strap.....	1/16	.15
487	½-inch Flush Brass Plug for No. 482 Cover	1/8	.15

**Fullman Adjustable Floor Outlets
No. 401 Complete Outlets**



No. 401 Outlet with No. 466 Nozzle



Sectional View
No. 401 Outlet and No. 466 Nozzle with Receptacle

Cover plates are 4¼ inches in diameter, 5/8 inch thick, sheet brass with threaded opening for 2-inch flush brass plug or No. 466 bell nozzle. Can also be furnished with ½-inch flush brass plug.

Height, 3¾ inches, if standard No. 402 box body and No. 405 adjusting ring are used.



External View of
No. 401 Outlet with
No. 402 Box Body

Has four holes tapped for ½-inch conduit, three of which are plugged. Can be tapped for larger conduits if sketches are furnished showing size and location of conduit holes. Only one conduit hole can be tapped in each of four sides of box bodies.

All brass parts furnished brushed brass finish. All iron and steel parts sherardized to prevent rust.

Complete outlet consists of box body, sealing cement, adjusting ring, brass flange ring, rubber gasket and brass cover plate with 2-inch flush brass plug for No. 466 nozzle. Choice of box bodies, Nos. 402 and 404. Choice of adjusting rings Nos. 405, 406, 407 or 408.

Net weight, 5 pounds.

Price, No. 401, Complete.....each \$4.50

No. 400 Complete Outlets

This floor outlet is identical in design to the No. 401 floor boxes except that the cover plate is provided with hole tapped for standard ½-inch conduit extension on No. 465 or 467 nozzles.

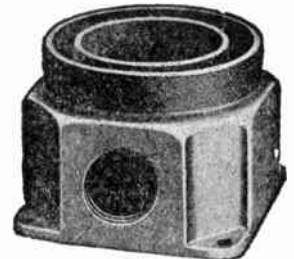
Price, No. 400, Complete.....each \$4.00

Porcelain receptacles and plugs illustrated with outlets are not included in prices.

Separate Parts



No. 402 Body



No. 404 Body

No. 402 Standard Box Bodies Only

Can be tapped for ½-inch, ¾-inch, or 1-inch conduit. If larger conduit holes are required, specify No. 404 Box Body.

Net weight, 3½ pounds.
Price, No. 402.....each \$2.27

No. 404 Deep Box Bodies Only

Can be tapped for conduits up to 1½-inch with room for bushing inside or for 2-inch conduit without room for bushing.

Net weight, 6¼ pounds.
Price, No. 404.....each \$2.27

Patterson Non-adjustable Floor Boxes

Patterson Non-adjustable Floor Outlet Boxes are designed for wood floor work and for work where it is unnecessary to have the plates of the boxes adjustable.

Boxes shown on this page are double gasketed throughout, thoroughly waterproof; all parts, except floor box itself, are heavy cast bronze; the box is galvanized iron.

In No. 3000 standard 10-ampere receptacles are provided with plugs. With other floor boxes on this page, receptacles and plugs cannot be used.

Iron floor boxes are regularly drilled and tapped for four 1/2-inch conduit entrances, two in sides and two in bottom, adapting them to flexible or rigid conduit work without extra drilling. They will be furnished, when specially ordered to take 3/4-inch conduit on two sides and 1/2-inch on bottom. Removable plugs are furnished closing all but one outlet.

Cardboard shims are furnished with each box and with these shims bronze plate can be easily brought flush with the floor without taking extreme care in cutting; the setting of a Patterson Floor Box is thus made quicker and easier than any floor box on the market.

Receptacles may be removed from box for easy wiring by simply loosening two screws.

Rubber gasket fits into undercut of bronze plate, so that it does not easily fall out.

Patterson Floor Outlet Boxes may be set with an expansion bit guaranteeing rapid work.

Nos. 3000 and 3000B



No. 3000 with Outlet Nozzle and Flush Disc

No. 3000B with Blank Bronze Plate

**With Outlet Nozzle and Flush Disc
Furnished Complete with 10-ampere, 250-volt
Receptacle and Plug**

Cat. No.	Diam. Plate, In.	Bronze All, In.	Depth Over, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3000	3 3/8	3 3/8	2 5/8	25	95	\$4.00
Parts for No. 3000 Boxes						
3001	Iron box only, with three iron plugs.....					.85
3002	Large cast brass flange for No. 3000 box...					1.50
3004	Cast brass outlet nozzle.....					1.25
3005	Flush brass disc for flange.....					.75
3006	Large rubber gasket.....					.20
3007	Small ".....					.10
3008	Porcelain receptacle and supporting strap...					.90

With Blank Bronze Plate

Receptacles and Plugs Cannot be Used in these Boxes

3000B	3 3/8	3 3/8	2 5/8	25	86	\$3.00
Parts for No. 3000B Boxes						
3009	Iron box only with three iron plugs.....					.85
3010	Large cast brass flange with 1/2-inch plug in center.....					2.25

Other parts same as for No. 3000.

**No. 3000BN
With Double Outlet Nozzle**

Receptacles and Plugs Cannot be Used in These Boxes

Cat. No.	Diam. Plate, In.	Bronze All, In.	Depth Over, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3000BN	3 3/8	3 3/8	2 5/8	25	92	\$4.00
Parts for No. 3000BN Boxes						
3014	Iron box only with three iron plugs.....					.85
3015	Large cast brass flange for 3000BN box.....					2.25
3017	Cast brass double outlet nozzle.....					1.50

Other parts same as for No. 3000.

No. 3000BN with Double Outlet Nozzle

R&S Non-adjustable Floor Boxes



A high grade floor box intended for use in wood flooring, easy to install and can be firmly secured.

Box is made of galvanized cast iron, floor plate of heavy brass and provided with suitable gaskets to make it watertight.

These fittings are furnished with or without receptacles and plugs, providing for uniformity when used for either high or low tension installations.

Height, 3 1/4 inches; diameter of floor plate, 3 1/2 inches. Two 1/2-inch outlets on sides; two 1/2-inch

outlets on bottom; three outlets plugged. Cannot be tapped for larger conduit. Receptacle and plug, 10 amperes 250 volts, furnished with No. 2580. All parts of these floor boxes are interchangeable and various available combinations of boxes and accessories can be furnished. Each box is packed in a strong carton.

No. 2580

Furnished complete with receptacle, plug, cone nozzle and 2 1/4-inch diam. ter flush cap. Weight, about 2 1/2 pounds.

Price, No. 2580.....each \$2.85

No. 2590

Plain box and cover with 1/2-inch pipe flush cap. Weight, about 1 3/4 pounds.

Price, No. 2590.....each \$2.35

No. 2591

Consists of plain box and cover with 2 1/8-inch diameter flush cap; same as 2580 but without receptacle, plug and cone nozzle. Weight, about 1 3/4 pounds.

Price, No. 2591.....each \$2.80

R&S Bulb Type Tees

The bulb type tee fittings are designed to accommodate a composition connector, which is furnished in connection with a retaining ring, which holds the connector in place.

The adjustable top will accommodate a cone nozzle used in connection with the connector, and will also take our standard line of receptacles with extensions.

A maximum vertical adjustment of 1 inch is provided.



No. 2626

No. 2625

Consists of a cast iron tee body drilled for 1/2-inch conduit; heavy brass adjustable top, and 2 1/8-inch diameter blind cap with 1/2-inch flush plug.

Price, No. 2625.....each \$2.90

No. 2626

Consists of a cast iron tee body drilled for 3/4-inch conduit, heavy brass adjustable top, 2 1/8-inch diameter blind cap containing 1/2-inch flush plug.

Price, No. 2626.....each \$3.00

No. 2627

Consists of a cast iron tee body for 1-inch conduit, and a heavy brass adjustable top, with 2 1/8-inch diameter blind cap, containing a 1/2-inch flush plug.

Price, No. 2627.....each \$3.10

No. 2635

Same as No. 2625 except that a special beveled flange and blind cap are provided for use with linoleum flooring.

Price, No. 2635.....each \$3.50

No. 2636

Same as No. 2635 except that the cast iron tee is tapped for 3/4-inch conduit.

Price, No. 2636.....each \$3.60

No. 2637

Same as No. 2635 except that cast iron tee is tapped for 1-inch conduit.

Price, No. 2637.....each \$3.75

R&S Adjustable Floor Boxes



No. 2502

No. 2502

The same as No. 2500 with the addition that a heavy brass flange ring is provided, which prevents the chipping of the finished floor on frequent removal of the cover plate.

Price, No. 2502.....each \$3.75

No. 2503

The same as No. 2501 with the addition of a heavy brass flange ring to prevent chipping of the finished floor on frequent removal of the cover plate.

Price, No. 2503.....each \$4.15

R&S Adjustable Floor Boxes



No. 2512

R & S Adjustable Floor Boxes are of simple design, making them easy to install by reducing the number of parts comprising a complete fitting to a minimum. They are ruggedly designed to withstand the rough usage to which they are put. All surfaces and exposed parts are carefully machined to blend harmoniously with the most elaborate decorations.

No. 2511

Single-gang rectangular adjustable floor box, consisting of cast iron box, heavy brass adjusting flange, rubber gasket, and a brass cover containing a 1/2-inch pipe size flush cap.

Price, No. 2511.....each \$6.25

No. 2512

Two-gang rectangular floor box and consists of a two-gang cast iron box, heavy brass adjusting flange, rubber gasket and two brass covers containing 1/2-inch flush cap.

Price, No. 2512.....each \$7.80

No. 2513

Three-gang rectangular floor box, consisting of a three-gang cast iron box, heavy brass adjusting flange, rubber gasket and three brass covers with 1/2-inch flush caps.

Price, No. 2513.....each \$11.85

No. 2514

Four-gang rectangular floor box, consisting of a four-gang cast iron box, heavy brass adjusting flange, rubber gasket and four brass covers with 1/2-inch flush caps.

Price, No. 2514.....each \$15.65

No. 365

Special rectangular floor box.

Price, No. 365.....each \$11.00

R & S Adjustable Floor Outlets

Shallow Type

Galvanized cast iron box with bosses for conduit and provided with a heavy brass adjustable top fitted with combination 2 1/8-inch diameter and 1/2-inch pipe size flush cap.

These fittings are not adapted for a self contained receptacle and plug.

All parts of these floor outlets are interchangeable. The adjustment is 3/8-inch vertical only and the outlets are from 1/2 to 1 inch.

Packed in bulk only.

Style A



No. 2651

Style A is designed for use in uncovered cement floor.

Minimum height is 2 5/8 inches and diameter of floor plate is 2 7/8 inches.

Size Conduit Inches	One Outlet		Two Outlets Straight Through		Two Outlets Right Angle		Approx. Net Weight Pounds
	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	
1/2	2651	\$2.60	2652	\$2.70	2653	\$2.70	2 1/2
3/4	2656	2.70	2657	2.80	2658	2.80	2 1/2
1	2661	2.80	2662	2.90	2663	2.90	2 3/4

Size Conduit Inches	Three Outlets		Four Outlets		Approx. Net Weight Pounds
	Cat. No.	Price Each	Cat. No.	Price Each	
1/2	2654	\$2.85	2655	\$3.05	2 1/2
3/4	2659	2.95	2660	3.15	2 1/2
1	2664	3.10	2665	3.45	2 3/4

Style B



No. 2671

Style B is designed for linoleum, cork or rubber covered cement floor, the covering being held in place by a beveled flange.

Minimum height is 2 7/8 inches and diameter of floor plate is 3 3/8 inches.

Size Conduit Inches	One Outlet		Two Outlets Straight Through		Two Outlets Right Angle		Approx. Net Weight Pounds
	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each	
1/2	2671	\$3.20	2672	\$3.30	2673	\$3.30	2 3/4
3/4	2676	3.30	2677	3.40	2678	3.40	2 3/4
1	2681	3.40	2682	3.50	2683	3.50	3

Size Conduit Inches	Three Outlets		Four Outlets		Approx. Net Weight Pounds
	Cat. No.	Price Each	Cat. No.	Price Each	
1/2	2674	\$3.45	2675	\$3.65	2 3/4
3/4	2679	3.55	2680	3.75	2 3/4
1	2684	3.70	2685	4.05	3

R & S Floor Outlets

Elbows, Tees and Adjustable Tops

Future requirements for service connections may be anticipated by systematically studding the floor with these outlets, all radiating from one or more pull boxes, from which any changes or additions may subsequently be made by the pulling of wires.

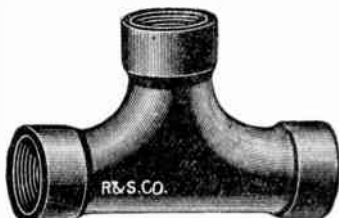
The complete outlet consists of a galvanized iron long radius conduit fitting, and brass adjustable top with watertight cap, which can be raised or lowered to meet the final surfacing of floor.

Elbows



Cat. No.	Size Conduit Inches	DIMEN., IN.		Approx. Wt., Lbs. Each	Price Each
		A	B		
1900	1/2	2 5/8	4	3/4	\$.50
1901	3/4	3 1/8	4 5/8	1	.65
1902	1	3 1/4	4 3/4	1 1/8	.80
1903	1 1/4	4 1/2	5 3/8	3	1.40
1904	1 1/2	5 1/8	6	4 1/4	2.50
1914	2	7 3/8	10 3/4	8 3/4	4.15

Tees



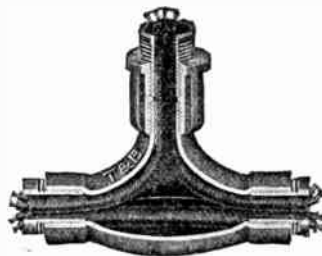
Cat. No.	Size Conduit In.	DIMEN., IN.		Approx. Wt., Lbs. Each	Price Each
		A	B		
1905	1/2	2 5/8	4	7/8	\$.80
1906	3/4	3 1/8	4 5/8	1 1/4	.95
1907	1	3 1/4	4 3/8	1 1/2	1.20
1908	1 1/4	4 1/2	5 3/8	4 1/4	2.50
1909	1 1/2	5 1/8	6	5 1/2	3.50
1910	2	7 3/8	10 3/4	13 3/4	5.50

Adjustable Tops



Cat. No.	Size Conduit and Cap In.	Vertical Adjustment In.	DIMEN., IN.		Approx. Wt., Lbs. Each	Price Each
			A	B		
1915	1/2	1/2	1 1/4	1 3/16	1/4	\$.50
1916	3/4	1/2	1 1/4	1 3/16	3/8	.60
1917	1	1/2	1 5/8	1 3/4	1 1/2	1.00
1918	1 1/4	3/4	1 9/16	2 1/8	3/4	2.00
1919	1 1/2	3/4	1 3/4	2 1/2	1	2.50
1920	2	3/4	2 3/8	3 3/8	2	4.40

T & B Bulb Tees



Bulb Tee with Brass Floor Coupling

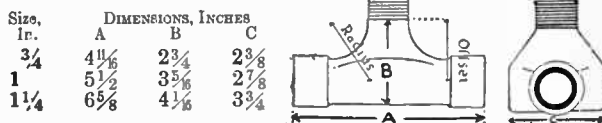
Malleable iron, galvanized. Easy to pull wire through.

Cat. No.	Size Inches	Wt. per 100	Price per 100
464	3/4	102	\$100.00
465	1	155	150.00
466	1 1/4	282	400.00

Standard package, No. 464, 50; No. 465, 25; No. 466, 10.

Dimensions

Radius and Offset are the same as Bushed Elbow according to size.



T & B Bushed Elbows



Bushed Elbow with Brass Floor Coupling

Cat. No.	Size Inches	Wt. per 100	Price per 100
460	1/2	28	\$32.00
461	3/4	46	45.00
462	1	72	65.00
463	1 1/4	130	200.00

Standard package, No. 460, 100; No. 461, 100; No. 462, 25; No. 463, 10.

Dimensions



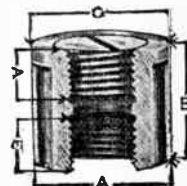
T & B Brass Floor Couplings



Designed for use with above Bushed Elbows and Bulb Tees. Can be used to great advantage with ordinary conduit elbows.

Cat. No.	Size Inches	Wt. per 100	Price per 100
480	1/2	23	\$80.00
481	3/4	35	95.00
482	1	58	115.00
483	1 1/4	95	250.00

Size In.	DIMENSIONS, INCHES				
	A	B	C	D	E
1/2	1 1/8	1 1/4	1 3/8	1 1/2	5/8
3/4	1 1/4	1 3/8	1 7/8	1 5/8	5/8
1	1 5/8	1 9/8	1 3/4	1 3/4	3/4
1 1/4	2 1/8	1 5/8	2 3/8	1 11/8	1 1/8



CONDULETS

Condulets are an important factor in any conduit installation, as they simplify wiring problems and produce a finished appearance.

In casting Condulets a soft gray iron is used. This insures great strength and ruggedness, and enables them to resist the action of acid fumes, gases, and moisture. Each Condulet is specially designed to meet a certain requirement, and there is one for practically every need. Furthermore, since each type is designed to meet one rather than several requirements, it is possible to make it so compact and neat that it improves rather than detracts from the general appearance of the conduit system.

The hubs have a tapered thread to insure a tight joint, and an integral bushing which protects the insulation of the wire from abrasion by any burrs that may be on the end of the conduit.

There are Condulets that take a great variety of covers and wiring devices; those that can be used as junction boxes only; those that house a switch or plug receptacle, or both; and those that may be classed as special conduit outlets.

Condulets are easy to install, which represents a saving in labor.

Special bulletins will be furnished on application showing a wide variety of types of Condulets, which, owing to lack of space, it was impossible to list in this catalogue.

“Condulet the Job”

Type A Obound Condulet Bodies



Galvanized or black enamel finish. Take Obound covers and Condulettos. Also other wiring devices, see Pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
A1	1/2	200	145		\$.24	A7	2 1/2	5	50		\$4.20
A2	3/4	100	100		.31	A8	3	5	55		5.00
A3	1	50	65		.43	A9	3 1/2	5	70		8.15
A4	1 1/4	25	60		.62	A10	4	5	70		9.00
A5	1 1/2	10	40		.80	A011	4 1/2	1	20		11.50
A6	2	5	30		1.66	A012	5	1	25		14.00

Type B Obound Condulet Bodies

Galvanized or black enamel finish. Take Obound covers and Condulettos. Also other wiring devices, see Pages 422 to 424, Condulet catalogue No. 2000. For small conductors.



Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
B1	1/2	200	155		\$.29	B4	1 1/4	25	60		\$.80
B2	3/4	100	100		.36	B5	1 1/2	10	40		1.04
B3	1	50	70		.50	B6	2	5	30		2.14

Type BE Obound Condulet Bodies



Galvanized or black enamel finish.

Take Obound covers only.

Have removable top which makes it possible to pull conductors through the body without bending.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
BE1	1/2	200	300		\$.60	BE8	3	5	160		\$9.00
BE2	3/4	100	175		.75	BE9	3 1/2	5	225		15.25
BE3	1	50	150		1.10	BE10	4	5	250		17.00
BE4	1 1/4	25	100		1.70	BE011	4 1/2	1	80		37.00
BE5	1 1/2	10	60		2.25	BE012	5	1	85		40.00
BE6	2	5	60		3.90	BE014	6	1	90		45.00
BE7	2 1/2	5	90		8.15						

Type C Obound Condulet Bodies

Galvanized or black enamel finish. Take Obound covers and Condulettos, or other wiring devices.



Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
C1	1/2	200	185		\$.36	C5	1 1/2	10	45		\$1.22
C2	3/4	100	120		.41	C6	2	5	40		2.43
C3	1	50	90		.59	C7	2 1/2	5	45		4.80
C4	1 1/4	25	70		.94	C8	3	5	60		6.20

Type CO Obound Condulet Bodies

Galvanized or black enamel finish.

Take Obound covers and Condulettos, or other wiring devices, see Pages 422 to 424, Condulet catalogue No. 2000.

This type provides an offset of four inches in a conduit system often encountered in brick walls of varying thickness.



Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
CO1	1/2	50	75		\$.50
CO2	3/4	50	95		.65
CO3	1	25	60		.75
CO4	1 1/4	10	35		1.25
CO5	1 1/2	10	50		1.60
CO6	2	5	45		3.25
CO7	2 1/2	5	60		5.20
CO8	3	5	70		7.90
CO9	3 1/2	5	90		12.60
CO10	4	5	95		13.08

Type COV Obound Condulet Bodies



Galvanized or enamel. Take Obound covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

When connected by a nipple of suitable length, two COV bodies form a cross-over for two or more pipes or conduits.

For 2 1/2 and 3-inch sizes, to cross over 3 1/2-inch conduit, use CO7 and CO8 respectively.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
COV14	1/2	50	80		\$.50						
COV24	3/4	50	100		.65						
COV34	1	25	60		.75						
COV45	1 1/4	10	35		1.25						
COV56	1 1/2	10	50		1.60						
COV67	2	5	45		3.25						

Type D Obound Condulet Bodies

Take Obound covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet at Catalogue No. 2000.

Standard finish is galvanized or black enamel.



Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
D1	1/2	50	50		\$.34	D6	2	5	35		\$2.43
D2	3/4	50	60		.41	D7	2 1/2	5	50		4.80
D3	1	25	50		.57	D8	3	5	75		6.20
D4	1 1/4	10	35		.94	D9	3 1/2	5	80		9.00
D5	1 1/2	10	45		1.22	D10	4	5	90		11.00

Type E Obound Condulet Bodies



Take Obound covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet Cat. No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
E1	1/2	200	150		\$.29	E5	1 1/2	10	40		\$1.04
E2	3/4	100	95		.35	E6	2	5	30		2.14
E3	1	50	70		.50	E7	2 1/2	5	45		4.20
E4	1 1/4	20	60		.80	E8	3	5	55		5.00

Type F New Service Entrance Condulets

Standard finish is galvanized or black enamel.

Type F Condulets of the same size may be assorted to make a standard package, regardless of style of cover.



With 2-wire Porcelain Covers

Cat. No.	Form	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
F162	6	1/2	100	100		\$.35
F262	6	3/4	100	105		.40
F362	6	1	50	80		.60

With 3-wire Porcelain Covers

Cat. No.	Form	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
F163	6	1/2	100	100		\$.35
F263	6	3/4	100	105		.40
F363	6	1	50	80		.60

With 4-wire Porcelain Covers

Cat. No.	Form	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
F364	6	1	50	80		\$.60

Type FE Obound Condulet Bodies

For Service Entrance

Galvanized or black enamel finish. Take Obound covers only.

A convenient type for service entrance as it permits the conductor to be pulled through without bending.



Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
FE1	1/2	100	220		\$.50	FE 8	3	5	120		\$10.20
FE2	3/4	100	240		.65	FE 9	3 1/2	3	175		18.10
FE3	1	50	155		1.05	FE 10	4	5	180		25.00
FE4	1 1/4	25	140		1.64	FE011	4 1/2	1	90		55.00
FE5	1 1/2	10	75		2.52	FE012	5	1	75		57.00
FE6	2	5	65		4.40	FE014	6	1	75		60.00
FE7	2 1/2	5	115		8.20	.....	.....	.....	.....	.....	.....

Type LB Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LB11	1/2	200	185	\$.40
LB22	3/4	100	125	.45
LB33	1	50	90	.65
LB44	1 1/4	25	95	1.05
LB55	1 1/2	10	45	1.40
LB66	2	5	40	2.50
LB77	2 1/2	5	50	5.00
LB88	3	5	65	6.50
LB99	3 1/2	5	90	10.50
LB1010	4	5	100	12.00

Type LF Obround Condulet Bodies

Galvanized or black enamel finish. Take Obround covers, Obround Condulettos, or other wiring devices.

Types LF, LB, LL and LR bodies of the same size may be assorted to make a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LF11	1/2	200	235	\$.40
LF22	3/4	100	135	.45
LF33	1	50	110	.65
LF44	1 1/4	25	85	1.05
LF55	1 1/2	10	50	1.40
LF66	2	5	45	2.50
LF77	2 1/2	5	60	5.00
LF88	3	5	75	6.50
LF99	3 1/2	5	105	10.50
LF1010	4	5	120	12.00

Type LL Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LL11	1/2	200	185	\$.40
LL22	3/4	100	125	.45
LL33	1	50	90	.65
LL44	1 1/4	25	95	1.05
LL55	1 1/2	10	45	1.40
LL66	2	5	40	2.50
LL77	2 1/2	5	50	5.00
LL88	3	5	65	6.50
LL99	3 1/2	5	90	10.50
LL1010	4	5	100	12.00

Type LR Obround Condulet Bodies

Galvanized or black enamel finish. Take Obround covers, Obround Condulettos, or other wiring devices.

Types LR, LB, LF and LL bodies of the same size may be assorted to make a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LR11	1/2	200	185	\$.40
LR22	3/4	100	125	.45
LR33	1	50	90	.65
LR44	1 1/4	25	95	1.05
LR55	1 1/2	10	45	1.40
LR66	2	5	40	2.50
LR77	2 1/2	5	50	5.00
LR88	3	5	65	6.50
LR99	3 1/2	5	90	10.50
LR1010	4	5	100	12.00

Type LBB Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers, Obround Condulettos, and other wiring devices.

Types LBB, LFB, LLB and LRB bodies of the same size may be assorted to make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LBB11	1/2	100	100	\$.40
LBB22	3/4	50	65	.45
LBB33	1	50	90	.65
LBB44	1 1/4	25	75	1.05
LBB55	1 1/2	10	45	1.40
LBB66	2	5	40	2.50
LBB77	2 1/2	5	50	5.00
LBB88	3	5	70	6.50
LBB99	3 1/2	5	90	10.50
LBB1010	4	5	100	12.00

Type LFB Obround Condulet Bodies

Galvanized or black enamel finish. Take Obround covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet Catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LFB11	1/2	100	110	\$.40
LFB22	3/4	50	75	.45
LFB33	1	50	95	.65
LFB44	1 1/4	25	80	1.05
LFB55	1 1/2	10	50	1.40
LFB66	2	5	45	2.50
LFB77	2 1/2	5	55	5.00
LFB88	3	5	75	6.50
LFB99	3 1/2	5	100	10.50
LFB1010	4	5	110	12.00

Type LLB Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers, Obround Condulettos, and other wiring devices.

Types LLB, LBB, LFB and LRB bodies of the same size may be assorted to make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LLB11	1/2	100	100	\$.40
LLB22	3/4	50	65	.45
LLB33	1	50	90	.65
LLB44	1 1/4	25	75	1.05
LLB55	1 1/2	10	45	1.40
LLB66	2	5	40	2.50
LLB77	2 1/2	5	50	5.00
LLB88	3	5	70	6.50
LLB99	3 1/2	5	90	10.50
LLB1010	4	5	100	12.00

Type LRB Obround Condulet Bodies

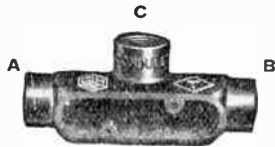
Galvanized or black enamel finish. Take Obround covers and Condulettos. Also other wiring devices, see pages 422 to 424, Condulet Catalogue No. 2000.



Types LRB, LBB, LFB and LLB bodies of the same size may be assorted to make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LRB11	1/2	100	100	\$.40
LRB22	3/4	50	65	.45
LRB33	1	50	90	.65
LRB44	1 1/4	25	75	1.05
LRB55	1 1/2	10	45	1.40
LRB66	2	5	40	2.50
LRB77	2 1/2	5	50	5.00
LRB88	3	5	70	6.50
LRB99	3 1/2	5	90	10.50
LRB1010	4	5	100	12.00

Type T Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

The cover or wiring device for this type is the same size as the hubs at the ends of the cover opening. Type T bodies with the same size cover opening may be assorted to make a standard package.

Cat. No.	SIZE, INCHES			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
T111	1/2	1/2	1/2	100	130	\$.48
T121	1/2	1/2	3/4	100	130	.56
T131	1/2	1/2	1	100	130	.63
T212	3/4	3/4	1/2	75	120	.57
T222	3/4	3/4	3/4	75	120	.57
T232	3/4	3/4	1	75	120	.65
T242	3/4	3/4	1 1/4	75	120	.77
T252	3/4	3/4	1 1/2	75	120	.90
T313	1	1	1/2	50	110	.80
T323	1	1	3/4	50	110	.80
T333	1	1	1	50	110	.80
T343	1	1	1 1/4	50	110	.97
T353	1	1	1 1/2	50	110	1.15
T363	1	1	2	50	110	1.45
T414	1 1/4	1 1/4	1/2	20	70	1.22
T424	1 1/4	1 1/4	3/4	20	70	1.22
T434	1 1/4	1 1/4	1	20	70	1.22
T444	1 1/4	1 1/4	1 1/4	20	70	1.22
T515	1 1/2	1 1/2	1/2	10	45	1.69
T525	1 1/2	1 1/2	3/4	10	45	1.69
T535	1 1/2	1 1/2	1	10	45	1.69
T555	1 1/2	1 1/2	1 1/2	10	45	1.69
F666	2	2	2	5	40	2.55
T777	2 1/2	2 1/2	2 1/2	5	55	5.00

Type TA Obround Condulet Bodies



Galvanized or black enamel finish.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TA1	1/2	50	75	\$.70
TA2	3/4	50	95	.75
TA3	1	25	70	1.00
TA4	1 1/4	10	50	1.55
TA5	1 1/2	10	75	2.30
TA6	2	5	45	3.95

Type TB Obround Condulet Bodies



Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

The cover or wiring device is the same size as the hubs at the ends of the cover opening.

Catalogue Nos. TB222 and TB232 may be assorted to make a standard package.

Catalogue Nos. TB313, TB323 and TB333 may be assorted to make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TB111	1/2	100	130	\$.48
TB222	3/4	50	80	.57
TB232	3/4-1-3/4	50	80	.65
TB313	1-1/2-1	25	60	.80
TB323	1-3/4-1	25	60	.80
TB333	1-1-1	25	60	.80
TB444	1 1/4	10	40	1.22
TB555	1 1/2	10	50	1.69
TB666	2	5	45	2.55
TB777	2 1/2	5	60	5.00
TB888	3	5	80	7.50
TB999	3 1/2	5	110	11.00
TB1010	4	5	120	13.00

Type TL Obround Condulet Bodies

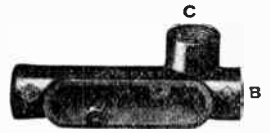


Galvanized or black enamel finish. Take Obround covers, Obround Conduletts, or other wiring devices. Types TL and TR bodies with the same size cover opening may be assorted to make a standard package.

Cat. No.	SIZE, INCHES			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
TL111	1/2	1/2	1/2	100	130	\$.48
TL121	1/2	1/2	3/4	100	130	.56
TL131	1/2	1/2	1	100	130	.63
TL212	3/4	3/4	1/2	50	80	.57
TL222	3/4	3/4	3/4	50	80	.57
TL232	3/4	3/4	1	50	80	.65
TL313	1	1	1/2	25	60	.80
TL323	1	1	3/4	25	60	.80
TL333	1	1	1	25	60	.80
TL444	1 1/4	1 1/4	1 1/4	10	45	1.22
TL555	1 1/2	1 1/2	1 1/2	10	60	1.69

Type TR Obround Condulet Bodies

Galvanized or black enamel finish. Take Obround covers, and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.



Cat. No.	SIZE, INCHES			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
TR111	1/2	1/2	1/2	100	130	\$.48
TR121	1/2	1/2	3/4	100	130	.56
TR131	1/2	1/2	1	100	130	.63
TR212	3/4	3/4	1/2	50	80	.57
TR222	3/4	3/4	3/4	50	80	.57
TR232	3/4	3/4	1	50	80	.65
TR313	1	1	1/2	25	60	.80
TR323	1	1	3/4	25	60	.80
TR333	1	1	1	25	60	.80
TR444	1 1/4	1 1/4	1 1/4	10	45	1.22
TR555	1 1/2	1 1/2	1 1/2	10	60	1.69

Type U Obround Condulet Bodies



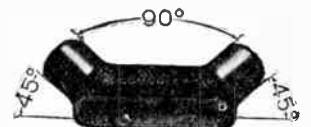
Galvanized or black enamel finish. Take Obround covers, Obround Conduletts, or other wiring devices.

Types U, UB, and UF bodies of the same size may be assorted to make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
U11	1/2	100	100	\$.48
U22	3/4	50	80	.54
U33	1	50	100	.78
U44	1 1/4	25	80	1.26
U55	1 1/2	10	60	1.68
U66	2	5	45	3.00
U77	2 1/2	5	55	6.00
U88	3	5	70	7.80
U99	3 1/2	5	90	12.60
U1010	4	5	100	14.40

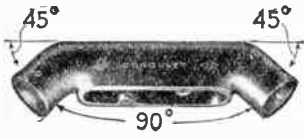
Type UB Obround Condulet Bodies

Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
UB11	1/2	100	100	\$.48
UB22	3/4	50	80	.54
UB33	1	50	100	.78
UB44	1 1/4	25	80	1.26
UB55	1 1/2	10	60	1.68
UB66	2	5	45	3.00
UB77	2 1/2	5	55	6.00
UB88	3	5	70	7.80
UB99	3 1/2	5	90	12.60
UB1010	4	5	100	14.40

Type UF Obround Condulet Bodies



Galvanized or enamel. Take Obround covers, Obround Conduletts, or other wiring devices. Types UF, U and UB bodies of the same size may be assorted to make a standard package.

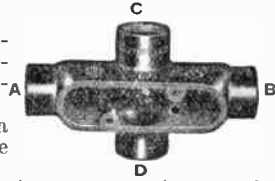
Cat. No.	Size In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
UF11	1/2	100	110	\$.48
UF22	3/4	50	85	.54
UF33	1	50	110	.78
UF44	1 1/4	25	85	1.26
UF55	1 1/2	10	65	1.68
UF66	2	5	50	3.00
UF77	2 1/2	5	60	6.00
UF88	3	5	80	7.80
UF99	3 1/2	5	100	12.60
UF1010	4	5	110	14.40

Type X Obround Condulet Bodies

Galvanized or enamel. Take Obround covers and conduletts. Also other wiring devices. see pages 422 to 424, Condulet catalogue No. 2000.

The cover or wiring device for a type X Condulet body is the same size as the largest hub.

Type X bodies with the same size cover opening may be assorted to make a standard package.



Cat. No.	SIZE, INCHES				Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C	D			
X1111	1/2	1/2	1/2	1/2	75	105	\$.60
X2111	3/4	1/2	1/2	1/2	50	70	.77
X2112	3/4	3/4	1/2	1/2	50	70	.77
X2222	3/4	3/4	3/4	3/4	50	70	.77
X3112	1	3/4	1/2	1/2	35	95	1.05
X3222	1	3/4	3/4	3/4	35	95	1.05
X3113	1	1	1/2	1/2	35	95	1.05
X3223	1	1	3/4	3/4	35	95	1.05
X3333	1	1	1	1	35	95	1.05
X4113	1 1/4	1	1/2	1/2	20	70	1.40
X4222	1 1/4	3/4	3/4	3/4	20	70	1.40
X4223	1 1/4	1	3/4	3/4	20	70	1.40
X4333	1 1/4	1	1	1	20	70	1.40
X4114	1 1/4	1 1/4	1/2	1/2	20	70	1.40
X4224	1 1/4	1 1/4	3/4	3/4	20	70	1.40
X4444	1 1/4	1 1/4	1 1/4	1 1/4	20	70	1.40
X5114	1 1/2	1 1/4	1/2	1/2	10	70	1.78
X5224	1 1/2	1 1/4	3/4	3/4	10	70	1.78
X5225	1 1/2	1 1/2	3/4	3/4	10	70	1.78
X5333	1 1/2	1	1	1	10	70	1.78
X5334	1 1/2	1 1/4	1	1	10	70	1.78
X5335	1 1/2	1 1/2	1	1	10	70	1.78
X5555	1 1/2	1 1/2	1 1/2	1 1/2	10	70	1.78

Type CUB Obround Condulet Bodies

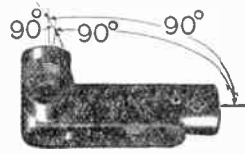


Galvanized or enamel. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Provides a cross-over where necessary to bridge a single pipe or conduit.

Cat. No.	Size In.	Size of Conduit Crossed Over Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CUB12	1/2	3/4	25	50	\$.75
CUB14	1/2	1 1/4	25	55	.85
CUB23	3/4	1	25	65	.90
CUB24	3/4	1 1/4	10	40	.95
CUB34	1	1 1/4	10	50	1.40
CUB45	1 1/4	1 1/2	10	60	1.90
CUB56	1 1/2	2	10	70	2.40
CUB67	2	2 1/2	5	60	4.80

Type LBL Obround Condulet Bodies



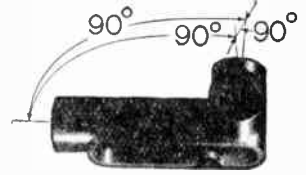
Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LBL1	1/2	50	60	\$.65
LBL2	3/4	25	40	.80
LBL3	1	25	55	.95

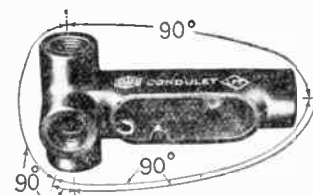
Type LBR Obround Condulet Bodies

Galvanized or black enamel finish. Types LBR, LBL, LFT and LU bodies of same size may be assorted to make a standard package.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LBR1	1/2	50	60	\$.65
LBR2	3/4	25	40	.80
LBR3	1	25	55	.95



Type LFT Obround Condulet Bodies



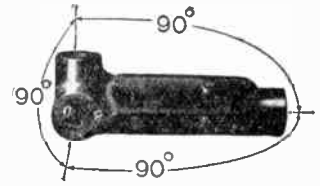
Galvanized or black enamel finish. Wiring devices, pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LFT1	1/2	50	90	\$1.05
LFT2	3/4	25	60	1.15
LFT3	1	25	75	1.30

Type LU Obround Condulet Bodies

Galvanized or black enamel finish. For wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LU1	1/2	50	80	\$.65
LU2	3/4	25	55	.80
LU3	1	25	60	.95



Type LBA Obround Condulet Bodies

Flanged. Galvanized or black enamel finish.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LBA1	1/2	50	100	\$.80
LBA2	3/4	25	60	.90
LBA3	1	25	70	1.10
LBA4	1 1/4	10	40	1.80
LBA5	1 1/2	10	60	2.00
LBA6	2	5	40	3.00



Type LBV Obround Condulet Bodies

Flanged. Galvanized or black enamel finish.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LBV1	1/2	50	100	\$.80
LBV2	3/4	25	60	.90
LBV3	1	25	70	1.10
LBV4	1 1/4	10	40	1.80
LBV5	1 1/2	10	60	2.00
LBV6	2	5	40	3.00



Type LFM Obround Condulet Bodies

Flanged. Galvanized or enamel. Take Obround covers and Conduletts, or other wiring devices.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LFM1	1/2	25	65	\$1.15
LFM2	3/4	25	75	1.30
LFM3	1	25	85	1.55



Type TM Obround Condulet Bodies

Flanged. Galvanized or black enamel finish. Take Obround covers and certain other wiring devices.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TM1	1/2	25	80	\$1.30
TM2	3/4	25	90	1.45
TM3	1	25	100	1.70



Type BM Obround Condulet Bodies



Flanged. Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BM1	1/2	25	70	\$1.15
BM2	3/4	25	75	1.30
BM3	1	25	85	1.55

Type DF Obround Condulet Bodies

Flanged. Galvanized or black enamel finish. Take Obround covers only.

Cat. No.	No. of Hubs	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DF1	1	1/2	25	75	\$1.15
DF2	1	3/4	25	85	1.30
DF3	1	1	25	95	1.55



Type DM Obround Condulet Bodies

Flanged. Galvanized or black enamel finish. Take Obround covers and Conduletts. Also other wiring devices, see pages 422 to 424, Condulet catalogue No. 2000.

Cat. No.	No. of Hubs	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DM1	2	1/2	25	75	\$1.35
DM2	2	3/4	25	85	1.50
DM3	2	1	25	95	1.75



Type OCB Condulet Branch Extensions

Galvanized or black enamel finish. For Condulet bodies of the Obround series. Take covers. Furnished with screws. Provide a means of making extensions to existing conduit installations by bridging from one Condulet to another through the cover opening.



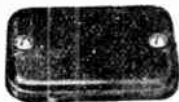
Cat. No.	For Condulet Bodies Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OCB11	1/2 to 1/2	50	35	\$.40
OCB21	3/4 " 1/2	50	40	.50
OCB22	3/4 " 3/4	50	65	.60
OCB31	1 " 1/2	25	35	.70
OCB32	1 " 3/4	25	40	.80
OCB33	1 " 1	25	45	.90

Covers for Type OCB Condulet Branch Extensions

Covers for the type OCB are made both blank and with Obround opening to take Obround covers or wiring devices. Furnished with screws.

Blank Covers—Galvanized or Black Enamel Finish

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OCB100	For OCB11 . . .	50	35	\$.25
OCB200	" OCB21 and OCB22	50	65	.40
OCB300	For OCB31, OCB32 and OCB33	25	60	.55



Covers with Openings

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
OCB101	With 1/2-inch Opening . . .	50	30	\$.30
OCB202	With 3/4-inch Opening . . .	50	60	.45
OCB303	With 1-inch Opening . . .	25	55	.65



1-wire Porcelain Condulet Covers



For Obround Condulet bodies. Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
11	1/2	13/32	200	50	\$.10
21	3/4	13/32	100	35	.15
31	1	13/32	50	30	.25
41	1 1/4	13/32	25	25	.36
51	1 1/2	1 3/8	10	20	.48
61	2	1 3/4	5	15	.60
81	2 1/2 or 3	2 3/16	5	20	.80
91	3 1/2 " 4	3 1/4	5	30	.90
1401	4 1/2, 5 or 6	3 1/4	1	10	2.00

Special

A special cover with larger wire holes than the standard covers.

11S	1/2	5/8	200	50	\$.10
21S	3/4	23/32	100	35	.15
31S	1	1	50	30	.25
41S	1 1/4	1 1/8	25	25	.36
51S	1 1/2	1 3/8	10	20	.48
61S	2	1 3/4	5	15	.60
81S	2 1/2 or 3	2 3/8	5	20	.80
91S	3 1/2 " 4	3 3/8	5	30	.90

Duracord

Made in two sizes only for use with Duracord.

11D	1/2	17/32	200	50	\$.10
21D	3/4	17/32	100	35	.15

2-wire Porcelain Condulet Covers

For Obround Condulet bodies. Furnished with screws.



Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
12	1/2	3/8	200	50	\$.10
22	3/4	13/32	100	35	.15
32	1	1/2	50	30	.25
42	1 1/4	11/16	25	25	.36
52	1 1/2	11/16	10	20	.48
62	2	1	5	15	.60
82	2 1/2 or 3	1 7/16	5	20	.80
92	3 1/2 " 4	1 5/8	5	30	.90
1402	4 1/2, 5 or 6	2 1/4	1	10	2.00

3-wire Porcelain Condulet Covers



For Obround Condulet bodies. Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
13	1/2	5/16	200	50	\$.10
23	3/4	13/32	100	35	.15
33	1	1/2	50	30	.25
43	1 1/4	11/16	25	25	.36
53	1 1/2	11/16	10	20	.48
63	2	1	5	15	.60
83	2 1/2 or 3	1 7/16	5	20	.80
93	3 1/2 " 4	1 5/8	5	30	.90
1403	4 1/2, 5 or 6	2 1/4	1	10	2.00

4 and 5-wire Porcelain Condulet Covers



For Obround Condulet bodies.
Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

4-wire					
Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
1400	1/2	5/16	200	50	\$.10
2400	3/4	5/16	100	35	.15
3400	1	13/32	50	30	.25
4400	1 1/4	17/32	25	25	.36
5400	1 1/2	5/8	10	20	.48
6400	2	1	5	15	.60
8400	2 1/2 or 3	1 1/16	5	20	.80
9400	3 1/2 " 4	1 15/16	5	30	.90
1404	4 1/2, 5 or 6	1 7/8	1	10	2.00
5-wire					
2500	3/4	5/16	100	35	\$.15
3500	1	13/32	50	30	.25
4500	1 1/4	17/32	25	25	.36
5500	1 1/2	5/8	10	20	.48
6500	2	13/16	5	15	.60
8500	2 1/2 or 3	1 1/16	5	20	.80
9500	3 1/2 " 4	1 1/2	5	30	.90
1405	4 1/2, 5 or 6	1 9/16	1	10	2.00

6 and 7-wire Porcelain Condulet Covers

For Obround Condulet bodies.
Furnished with screws.



Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

6-wire					
Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
2600	3/4	5/16	100	35	\$.15
3600	1	3/8	50	30	.25
4600	1 1/4	1/2	25	25	.36
5600	1 1/2	17/32	10	20	.48
6600	2	5/8	5	15	.60
8600	2 1/2 or 3	7/8	5	20	.80
9600	3 1/2 " 4	1 3/16	5	30	.90
1406	4 1/2, 5 or 6	1 5/16	1	10	2.00
7-wire					
3700	1	11/32	50	30	\$.25
4700	1 1/4	7/16	25	25	.36
5700	1 1/2	15/32	10	20	.48
6700	2	19/32	5	15	.60
8700	2 1/2 or 3	25/32	5	20	.80
9700	3 1/2 " 4	1	5	30	.90
1407	4 1/2, 5 or 6	1 1/8	1	10	2.00

8 and 9-wire Porcelain Condulet Covers



For Obround Condulet Bodies.
Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of the style of cover.

8-wire					
Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
3800	1	5/16	50	30	\$.25
4800	1 1/4	3/8	25	25	.36
5800	1 1/2	13/32	10	20	.48
6800	2	1/2	5	15	.60
8800	2 1/2 or 3	21/32	5	20	.80
9800	3 1/2 " 4	27/32	5	30	.90
1408	4 1/2, 5 or 6	1	1	10	2.00
9-wire					
3900	1	19/64	50	30	\$.25
4900	1 1/4	21/64	25	25	.36
5900	1 1/2	23/64	10	20	.48
6900	2	29/64	5	15	.60
8900	2 1/2 or 3	19/32	5	20	.80
9900	3 1/2 " 4	25/32	5	30	.90
1409	4 1/2, 5 or 6	7/8	1	10	2.00

Blank Metal Condulet Covers



Sheet Steel

For Obround Condulet bodies Galv. or black enamel. Furnished with screws.

Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package.

Cat. No.	Size Cover In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
100	1/2	200	30	\$.08
200	3/4	100	15	.11
300	1	50	10	.23
400	1 1/4	25	10	.32
500	1 1/2	10	10	.45
600	2	5	5	.56
800	2 1/2 or 3	5	10	.75
900	3 1/2 " 4	5	15	.80

Blank Metal Condulet Covers

Cast Iron, Flat

For Obround Condulet bodies. Galv. or black enamel. Furnished with screws.



Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package.

Cat. No.	Size Cover In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
100f	1/2	200	50	\$.16
200f	3/4	100	40	.22
300f	1	50	30	.35
400f	1 1/4	25	25	.50
500f	1 1/2	10	15	.70
600f	2	5	10	.90
800f	2 1/2 or 3	5	10	1.15
900f	3 1/2 " 4	5	15	1.25

Blank Metal Condulet Covers

Cast Iron, Dome



For Obround Condulet bodies. Galv. or black enamel. Furnished with screws.

Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package.

Cat. No.	Size Cover In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
100g	1/4	200	50	\$.16
200g	3/4	100	40	.22
300g	1	50	30	.35
400g	1 1/4	25	25	.50
500g	1 1/2	10	15	.70
600g	2	5	10	.90
800g	2 1/2 or 3	5	10	1.15
900g	2 1/2 " 4	5	15	1.25

Metal Condulet Covers with Nipples

For Obround Condulet bodies. Sheet steel with brass male nipple. Galv. or black enamel. Furnished with screws.



Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

1/8-inch Male									
Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each	Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
15	1/2	200	40	\$.20	45	1 1/4	25	15	\$.46
25	3/4	100	25	.25	55	1 1/2	10	10	.58
35	1	50	20	.35	...	...	...	...	...
1/4-inch Male									
113	1/2	200	40	\$.23	413	1 1/4	25	15	\$.49
213	3/4	100	25	.28	513	1 1/2	10	10	.61
313	1	50	20	.38	...	...	...	...	...
3/8-inch Male									
17	1/2	200	40	\$.25	47	1 1/4	25	15	\$.51
27	3/4	100	25	.30	57	1 1/2	10	10	.63
37	1	50	20	.40	...	...	...	...	...
1/2-inch Male									
215	3/4	100	25	\$.35	415	1 1/4	25	15	\$.56
315	1	50	20	.45	515	1 1/2	10	10	.68

Metal Condulet Covers with Nipples



For Obround Condulet bodies. Sheet steel with brass female nipple. Galvanized or black enamel finish. Furnished with screws.

Plack enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

1/8-inch Female

Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs.	Price Each	Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs.	Price Each
16	1/2	200	40	\$.20	46	1 1/4	25	15	\$.46
26	3/4	100	25	.25	56	1 1/2	10	10	.58
36	1	50	20	.35					

1/4-inch Female

114	1/2	200	40	\$.23	414	1 1/4	25	15	\$.49
214	3/4	100	25	.28	514	1 1/2	10	10	.61
314	1	50	20	.38					

3/8-inch Female

18	1/2	200	40	\$.25	48	1 1/4	25	15	\$.51
28	3/4	100	25	.30	58	1 1/2	10	10	.63
38	1	50	20	.40					

1/2-inch Female

216	3/4	100	25	\$.35	416	1 1/4	25	15	\$.56
316	1	50	20	.45	516	1 1/2	10	10	.68

1-wire Composition Condulet Covers

Standard

For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF11	1/2	13/32	200	50	\$.20
CF21	3/4	19/32	100	40	.30
CF31	1	19/32	50	30	.50
CF41	1 1/4	19/32	25	25	1.00
CF51	1 1/2	1 1/8	10	20	1.10
CF61	2	1 3/4	5	18	1.20
CF81	2 1/2 or 3	2 1/16	5	25	1.60
CF91	3 1/2 " 4	3 1/4	5	30	2.50
CF1401	4 1/2, 5 or 6	3 1/4	1	15	4.00

1-wire Composition Condulet Covers

Special



For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF11S	1/2	5/8	200	50	\$.20
CF21S	3/4	25/32	100	40	.30
CF31S	1	1	50	30	.50
CF41S	1 1/4	1 1/8	25	25	1.00
CF51S	1 1/2	1 3/8	10	20	1.10
CF61S	2	1 3/2	5	18	1.20
CF81S	2 1/2 or 3	1 3/2	5	25	1.60
CF91S	3 1/2 " 4	1 3/2	5	30	2.50

2-wire Composition Condulet Covers

For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF12	1/2	3/8	200	50	\$.20
CF22	3/4	15/32	100	40	.30
CF32	1	1 1/2	50	30	.50
CF42	1 1/4	1 1/16	25	25	1.00
CF52	1 1/2	1 3/16	10	20	1.10
CF62	2	1	5	18	1.20
CF82	2 1/2 or 3	1 7/16	5	25	1.60
CF92	3 1/2 " 4	1 15/16	5	30	2.50
CF1402	4 1/2, 5 or 6	2 1/4	1	15	4.00

3 and 4-wire Composition Condulet Covers



For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF13	1/2	3/8	200	50	\$.20
CF23	3/4	15/32	100	40	.30
CF33	1	1 1/2	50	30	.50
CF43	1 1/4	1 1/16	25	25	1.00
CF53	1 1/2	1 15/16	10	20	1.10
CF63	2	1	5	18	1.20
CF83	2 1/2 or 3	1 7/16	5	25	1.60
CF93	3 1/2 " 4	1 15/16	5	30	2.50
CF1403	4 1/2, 5 or 6	2 1/4	1	15	4.00

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF1400	1/2	5/16	200	50	\$.20
CF2400	3/4	5/16	100	40	.30
CF3400	1	13/32	50	30	.50
CF4400	1 1/4	17/32	25	25	1.00
CF5400	1 1/2	5/8	10	20	1.10
CF6400	2	1	5	18	1.20
CF8400	2 1/2 or 3	1 7/16	5	25	1.60
CF9400	3 1/2 " 4	1 15/16	5	30	2.50
CF1404	4 1/2, 5 or 6	1 1/8	1	15	4.00

5 and 6-wire Composition Condulet Covers

For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF2500	3/4	5/16	100	40	\$.30
CF3500	1	13/32	50	30	.50
CF4500	1 1/4	17/32	25	25	1.00
CF5500	1 1/2	5/8	10	20	1.10
CF6500	2	1 1/8	5	18	1.20
CF8500	2 1/2 or 3	1 1/16	5	25	1.60
CF9500	3 1/2 " 4	1 1/2	5	30	2.50
CF1405	4 1/2, 5 or 6	1 3/8	1	15	4.00

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF2600	3/4	5/16	100	40	\$.30
CF3600	1	3/8	50	30	.50
CF4600	1 1/4	1 1/2	25	25	1.00
CF5600	1 1/2	17/32	10	20	1.10
CF6600	2	5/8	5	18	1.20
CF8600	2 1/2 or 3	7/8	5	25	1.60
CF9600	3 1/2 " 4	1 13/16	5	30	2.50
CF1406	4 1/2, 5 or 6	1 3/8	1	15	4.00

7 and 8-wire Composition Condulet Covers



For Obround Condulet bodies. One piece. Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF3700	1	1 1/32	50	30	\$.50
CF4700	1 1/4	7/16	25	25	1.00
CF5700	1 1/2	15/32	10	20	1.10
CF6700	2	1 1/32	5	18	1.20
CF8700	2 1/2 or 3	25/32	5	25	1.60
CF9700	3 1/2 " 4	1	5	30	2.50
CF1407	4 1/2, 5 or 6	1 1/8	1	15	4.00

Cat. No.	Size Cover, In.	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF3800	1	5/16	50	30	\$.50
CF4800	1 1/4	3/8	25	25	1.00
CF5800	1 1/2	13/32	10	20	1.10
CF6800	2	1 1/2	5	18	1.20
CF8800	2 1/2 or 3	2 1/32	5	25	1.60
CF9800	3 1/2 " 4	2 1/32	5	30	2.50
CF1408	4 1/2, 5 or 6	1	1	15	4.00

Blank Composition Condulet Covers



For Obround Condulet bodies.

One piece.

Furnished with screws.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF100	1/2	200	50	\$.20
CF200	3/4	100	40	.30
CF300	1	50	30	.50
CF400	1 1/4	25	25	1.00
CF500	1 1/2	10	20	1.10
CF600	2	5	18	1.20
CF800	2 1/2 or 3	5	25	1.60
CF900	3 1/2 " 4	5	30	2.50
CF14000	4 1/2, 5 or 6	1	15	4.00

Split Composition Condulet Covers



For Obround Condulet bodies.

Furnished with screws.

Can be installed after the wires have been pulled in and connected up.

Can also be used to replace covers on existing installations when the number of wires in the conduit is to be changed; or to replace broken covers.

Composition Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

1-wire					
Cat. No.	Size Cover In.	Diam. Hole In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CFR11	1/2	5/8	200	50	\$.40
CFR21	3/4	23/32	100	40	.60
CFR31	1	1	50	30	1.00
CFR41	1 1/4	1 1/8	25	30	2.00
CFR51	1 1/2	1 3/8	10	25	2.20
CFR61	2	1 3/4	5	20	2.40
2-wire					
CFR12	1/2	3/8	200	50	\$.40
CFR22	3/4	13/32	100	40	.60
CFR32	1	1/2	50	30	1.00
CFR42	1 1/4	1 1/16	25	30	2.00
CFR52	1 1/2	1 3/16	10	25	2.20
CFR62	2	1	5	20	2.40
3-wire					
CFR13	1/2	3/8	200	50	\$.40
CFR23	3/4	13/32	100	40	.60
CFR33	1	1/2	50	30	1.00
CFR43	1 1/4	1 1/16	25	30	2.00
CFR53	1 1/2	1 3/16	10	25	2.20
CFR63	2	1	5	20	2.40
4-wire					
CFR14	1/2	5/16	200	50	\$.40
CFR24	3/4	5/16	100	40	.60
CFR34	1	13/32	50	30	1.00
CFR44	1 1/4	1 1/32	25	30	2.00
CFR54	1 1/2	5/8	10	25	2.20
CFR64	2	1	5	20	2.40

Porcelain Condulet Covers with Nipples



For Obround Condulet bodies.

With brass male nipple. Furnished with screws.

Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

1/8-inch Male

Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each	Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
19	1/2	200	60	\$.25	49	1 1/4	25	40	\$.58
29	3/4	100	40	.30	59	1 1/2	10	25	.72
39	1	50	30	.43	...	...	...	...	...
1/4-inch Male									
119	1/2	200	60	\$.30	419	1 1/4	25	40	\$.63
219	3/4	100	40	.35	519	1 1/2	10	25	.77
319	1	50	30	.48	...	...	...	...	...
3/8-inch Male									
111	1/2	200	60	\$.35	411	1 1/4	25	40	\$.68
211	3/4	100	40	.41	511	1 1/2	10	25	.82
311	1	50	30	.53	...	...	...	...	...
1/2-inch Male									
121	1/2	200	60	\$.40	421	1 1/4	25	40	\$.73
221	3/4	100	40	.46	521	1 1/2	10	25	.87
321	1	50	30	.58	...	...	...	...	...

Porcelain Condulet Covers with Nipples

For Obround Condulet bodies.

With brass female nipple. Furnished with screws.



Black enameled, galvanized, and porcelain Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

1/8-inch Female

Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each	Cat. No.	Size Cover In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
110	1/2	200	60	\$.25	410	1 1/4	25	40	\$.58
210	3/4	100	40	.30	510	1 1/2	10	25	.72
310	1	50	30	.43	...	...	...	...	...
1/4-inch Female									
120	1/2	200	60	\$.30	420	1 1/4	25	40	\$.63
220	3/4	100	40	.35	520	1 1/2	10	25	.77
320	1	50	30	.48	...	...	...	...	...
3/8-inch Female									
112	1/2	200	60	\$.35	412	1 1/4	25	40	\$.68
212	3/4	100	40	.41	512	1 1/2	10	25	.82
312	1	50	30	.53	...	...	...	...	...
1/2-inch Female									
122	1/2	200	60	\$.40	422	1 1/4	25	40	\$.73
222	3/4	100	40	.46	522	1 1/2	10	25	.87
322	1	50	30	.58	...	...	...	...	...

Porcelain Covers



For Obround Condulet bodies. For use with drop cord and fixture pull switch.

Has one wire hole and one 1/8-inch male nipple.

Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Wire Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
191	1/2	13/32	200	55	\$.35
291	3/4	13/32	100	40	.40
391	1	1/2	50	30	.50

Porcelain Condulet Covers



For Obround Condulet bodies. Has two wire holes and is for use with weatherproof socket. Furnished with screws.

Porcelain, black enameled, and galvanized Obround covers of the same size may be assorted to make a standard package regardless of style of cover.

Cat. No.	Size Cover, In.	Diam. Wire Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
14	1/2	5/16	200	50	\$.16
24	3/4	5/16	100	35	.25
34	1	5/16	50	25	.40

Obround Conduletts

Lamp receptacle with shade holder groove. For Obround Condulet bodies. Furnished with screws.

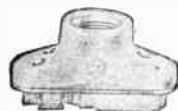
Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR16	1/2	200	100	\$.30
JR26	3/4	100	60	.35
JR36	1	50	55	.40



Obround Conduletts

Lamp receptacle without shade holder groove. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR17	1/2	200	100	\$.25
JR27	3/4	100	60	.30
JR37	1	50	55	.35



Obround Conduletts

Fixture rosette with 1/8-inch male nipple. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR19	1/2	100	65	\$.40
JR29	3/4	100	70	.45
JR39	1	50	45	.50



Obround Conduletts

Fixture rosette with 1/8-inch female nipple. For Obround Condulet bodies. Furnished with screws.

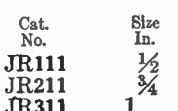
Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR18	1/2	100	65	\$.40
JR28	3/4	100	70	.45
JR38	1	50	45	.50



Obround Conduletts

Fixture rosette with 3/8-inch male nipple. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR111	1/2	100	65	\$.40
JR211	3/4	100	70	.45
JR311	1	50	45	.50



Obround Conduletts

Fixture rosette with 3/8-inch female nipple. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR112	1/2	100	65	\$.40
JR212	3/4	100	70	.45
JR312	1	50	45	.50



Obround Conduletts

Cord rosette with one outlet. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR11	1/2	200	120	\$.30
JR21	3/4	100	65	.35
JR31	1	50	50	.40



Obround Conduletts

Cord rosette with two outlets. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR131	1/2	100	60	\$.35
JR231	3/4	100	65	.40
JR331	1	50	50	.45



Obround Conduletts

Polarity plug receptacle, Hubbell 6-ampere. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR125	1/2	100	60	\$.40
JR225	3/4	100	70	.45
JR325	1	50	45	.50



Obround Conduletts

Polarity plug receptacle, Hubbell 20-ampere. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR12	1/2	100	60	\$.55
JR22	3/4	100	70	.60
JR32	1	50	45	.65



Obround Conduletts

Attachment plug receptacle, Hubbell 6-ampere. For Obround Condulet bodies. Furnished with screws.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JR15	1/2	100	60	\$.40
JR25	3/4	100	70	.45
JR35	1	50	45	.50



Gaskets for Obround Condulet Bodies

Cat. No.	Size In.	Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Price Each
Gask. 1	1/2	200	\$.10	Gask. 6	2	25	\$.25
" 2	3/4	100	.10	" 8	2 1/2 or 3	25	.40
" 3	1	50	.15	" 9	3 1/2 " 4	25	.50
" 4	1 1/4	25	.20	" 86	4 1/2, 5 or 6	25	.70
" 5	1 1/2	25	.20				



Gaskets for Obround Condulet Bodies

For use with sheet steel covers.

Cat. No.	Size In.	Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Price Each
Gask. 158	1/2	200	\$.10	Gask. 163	2	25	\$.40
" 159	3/4	100	.10	" 164	2 1/2 or 3	25	.60
" 160	1	50	.15	" 165	3 1/2 " 4	25	1.00
" 161	1 1/4	25	.20	" 166	4 1/2, 5 or 6	25	1.50
" 162	1 1/2	25	.20				



Gaskets for Obround Condulet Bodies

For use between cap and base of Conduletto attachment or polarity plug receptacles, or any two-part Conduletts.

Cat. No.	Size In.	Std. Pkg.	Price Each
Gask. 31	1/2	200	\$.10
" 32	3/4	100	.10
" 33	1	50	.15



Gaskets for Obround Condulet Bodies

For use between Condulet bodies and threaded couplings of types F or FE Condulets.

Cat. No.	Size In.	Std. Pkg.	Price Each	Cat. No.	Size In.	Std. Pkg.	Price Each
Gask. 11	1/2	100	\$.05	Gask. 15	1 1/2	25	\$.10
" 12	3/4	100	.05	" 16	2	25	.15
" 13	1	50	.08	" 17	2 1/2 or 3	25	.20
" 14	1 1/4	25	.10	" 19	3 1/2 " 4	25	.25



Type BC Mogul Condulet Bodies



Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BC3	1	25	90	\$1.90
BC4	1 1/4	10	40	2.15
BC5	1 1/2	10	80	4.15
BC6	2	5	50	5.00
BC7	2 1/2	5	85	9.30
BC8	3	5	100	11.00
BC9	3 1/2	5	165	22.00
BC10	4	5	180	24.00

Type BEE Mogul Condulet Bodies

Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BEE3	1	25	75	\$1.70
BEE4	1 1/4	10	35	1.90
BEE5	1 1/2	10	70	3.70
BEE6	2	5	45	4.50
BEE7	2 1/2	5	75	8.15
BEE8	3	5	85	9.75
BEE9	3 1/2	5	140	17.00
BEE10	4	5	150	19.00

Type BLB Mogul Condulet Bodies



Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BLB3	1	25	90	\$1.90
BLB4	1 1/4	10	40	2.15
BLB5	1 1/2	10	80	4.15
BLB6	2	5	50	5.00
BLB7	2 1/2	5	85	9.30
BLB8	3	5	100	11.00
BLB9	3 1/2	5	165	22.00
BLB10	4	5	180	24.00

Type BT Mogul Condulet Bodies

Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BT3	1	25	105	\$2.25
BT4	1 1/4	10	55	2.50
BT5	1 1/2	10	90	4.65
BT6	2	5	60	5.60
BT7	2 1/2	5	100	10.40
BT8	3	5	120	12.25
BT9	3 1/2	5	190	28.00
BT10	4	5	210	30.00

Type BTB Mogul Condulet Bodies



Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BTB3	1	25	105	\$2.25
BTB4	1 1/4	10	55	2.50
BTB5	1 1/2	10	90	4.65
BTB6	2	5	60	5.60
BTB7	2 1/2	5	100	10.40
BTB8	3	5	120	12.25
BTB9	3 1/2	5	190	28.00
BTB10	4	5	210	30.00

Type BU Mogul Condulet Bodies

Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BU3	1	25	90	\$1.90
BU4	1 1/4	10	45	2.15
BU5	1 1/2	10	80	4.15
BU6	2	5	50	5.00
BU7	2 1/2	5	85	9.30
BU8	3	5	100	11.00
BU9	3 1/2	5	165	22.00
BU10	4	5	180	24.00

Type BUB Mogul Condulet Bodies



Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BUB3	1	25	90	\$1.90
BUB4	1 1/4	10	45	2.15
BUB5	1 1/2	10	80	4.15
BUB6	2	5	50	5.00
BUB7	2 1/2	5	85	9.30
BUB8	3	5	100	11.00
BUB9	3 1/2	5	165	22.00
BUB10	4	5	180	24.00

Type BUF Mogul Condulet Bodies

Galvanized or black enamel finish.
Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BUF3	1	25	90	\$1.90
BUF4	1 1/4	10	45	2.15
BUF5	1 1/2	10	80	4.15
BUF6	2	5	50	5.00
BUF7	2 1/2	5	85	9.30
BUF8	3	5	100	11.00
BUF9	3 1/2	5	165	22.00
BUF10	4	5	180	24.00

Type BX Mogul Condulet Bodies



Galvanized or black enamel finish.

Take Mogul covers. Have an unusually long cover opening to avoid kinking heavy wires when pulling in or feeding through a conduit system.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BX3	1	25	125	\$2.50
BX4	1 1/4	10	60	2.75
BX5	1 1/2	10	100	5.15
BX6	2	5	70	6.25
BX7	2 1/2	5	110	11.60
BX8	3	5	140	13.90
BX9	3 1/2	5	210	35.00
EX10	4	5	235	38.00

1-wire Composition Covers

For Mogul Condulet bodies. Furnished with screws.



Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF241	1 or 1 1/4	1 5/16	10	25	\$1.90
CF261	1 1/2 " 2	2	5	15	3.50
CF281	2 1/2 " 3	2 5/16	5	20	5.50
CF291	3 1/2 " 4	2 5/16	5	30	8.25

2 and 3-wire Composition Covers



For Mogul Condulet bodies. Furnished with screws.

Composition, black enameled, and galvanized Mogul covers of the same size may be assorted to make a standard package, regardless of style of cover.

2-wire					
Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF242	1 or 1 1/4	1 5/16	10	25	\$1.90
CF262	1 1/2 " 2	1 1/16	5	15	3.50
CF282	2 1/2 " 3	1 1/2	5	20	5.50
CF292	3 1/2 " 4	2	5	30	8.25
3-wire					
Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF243	1 or 1 1/4	2 1/32	10	25	\$1.90
CF263	1 1/2 " 2	1	5	15	3.50
CF283	2 1/2 " 3	1 3/8	5	20	5.50
CF293	3 1/2 " 4	1 15/16	5	30	8.25

4, 5 and 6-wire Composition Covers

For Mogul Condulet bodies. Furnished with screws.



Composition, black enameled, and galvanized Mogul covers of the same size may be assorted to make a standard package, regardless of style of cover.

4-wire					
Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF244	1 or 1 1/4	1 9/32	10	25	\$1.90
CF264	1 1/2 " 2	7/8	5	15	3.50
CF284	2 1/2 " 3	1 1/4	5	20	5.50
CF294	3 1/2 " 4	1 5/8	5	30	8.25
5-wire					
Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF245	1 or 1 1/4	1 7/32	10	25	\$1.90
CF265	1 1/2 " 2	3/4	5	15	3.50
CF285	2 1/2 " 3	1 1/8	5	20	5.50
CF295	3 1/2 " 4	1 1/16	5	30	8.25
6-wire					
Cat. No.	Size Inches	Diam. Wire Hole, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF246	1 or 1 1/4	1 1/2	10	25	\$1.90
CF266	1 1/2 " 2	1 1/16	5	15	3.50
CF286	2 1/2 " 3	1	5	20	5.50
CF296	3 1/2 " 4	1 3/8	5	30	8.25

7, 8 and 9-wire Composition Covers



For Mogul Condulet bodies. Furnished with screws.

Composition, black enameled, or galvanized Mogul covers of the same size may be assorted to make a standard package, regardless of style of cover.

7-wire					
Cat. No.	Size Inches	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF247	1 or 1 1/4	1 1/2	10	25	\$1.90
CF267	1 1/2 " 2	1 1/16	5	15	3.50
CF287	2 1/2 " 3	1	5	20	5.50
CF297	3 1/2 " 4	1 3/8	5	30	8.25
8-wire					
Cat. No.	Size Inches	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF248	1 or 1 1/4	7/8	10	25	\$1.90
CF268	1 1/2 " 2	5/8	5	15	3.50
CF288	2 1/2 " 3	5/8	5	20	5.50
CF298	3 1/2 " 4	1 3/16	5	30	8.25
9-wire					
Cat. No.	Size Inches	Diam. Hole, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF249	1 or 1 1/4	3/8	10	25	\$1.90
CF269	1 1/2 " 2	9/16	5	15	3.50
CF289	2 1/2 " 3	5/8	5	20	5.50
CF299	3 1/2 " 4	1 3/16	5	30	8.25

Blank Composition Covers

For Mogul Condulet bodies. Furnished with screws.



Cat. No.	Size Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
CF240	1 or 1 1/4	10	25	\$1.90
CF260	1 1/2 " 2	5	15	3.50
CF280	2 1/2 " 3	5	20	5.50
CF290	3 1/2 " 4	5	30	8.25

Blank Cast Iron Covers

Without Gasket



For Mogul Condulet bodies. Galvanized or black enamel finish.

No gaskets are furnished with these covers, nor can they be used with gaskets.

Screws are included with covers.

Black enameled, galvanized, and composition Mogul covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
BG47	1 or 1 1/4	10	35	\$1.10
BG67	1 1/2 " 2	5	25	1.75
BG87	2 1/2 " 3	5	40	4.00
BG97	3 1/2 " 4	5	55	6.00

Blank Cast Iron Covers

With Gasket

For Mogul Condulet bodies. Galvanized or black enamel finish.



These covers are designed for use with gaskets, which are furnished.

Screws are included with covers.

Black enameled, galvanized, and composition Mogul covers of the same size may be assorted to make a standard package, regardless of style of cover.

Cat. No.	Size Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
BG48	1 or 1 1/4	10	40	\$1.50
BG68	1 1/2 " 2	5	30	2.40
BG88	2 1/2 " 3	5	45	5.40
BG98	3 1/2 " 4	5	60	7.50

Type G Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see Pages 414 to 417, Condulet catalogue No. 2000. 250 assorted bodies of the G-H series with adjustable bar make a standard package.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
G151	5	1/2	100	120	\$.55
G252	5	3/4	50	75	.65
G353	5	1	25	45	.90
G1101	10	1/2	50	55	.65
G2102	10	3/4	25	50	.80
G3103	10	1	25	55	1.00
G1201	20	1/2	50	75	.90
G2202	20	3/4	25	55	.95
G3203	20	1	25	65	1.20

Type GA Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see Pages 414 to 417, Condulet catalogue No. 2000. 250 assorted bodies of the G-H series with adjustable bar make a standard package.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GA151	5	1/2	100	125	\$.75
GA252	5	3/4	50	90	.85
GA353	5	1	25	55	1.10
GA1101	10	1/2	50	70	.85
GA2102	10	3/4	25	55	1.00
GA3103	10	1	25	60	1.20
GA1201	20	1/2	50	75	1.10
GA2202	20	3/4	25	65	1.20
GA3203	20	1	25	70	1.50

Type GL Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see Pages 414 to 417, Condulet catalogue No. 2000. Furnished with adjustable bar and screws.



250 assorted bodies of the G-H series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GL151	5	1/2	100	120	\$.60
GL252	5	3/4	50	75	.70
GL353	5	1	25	40	.95
GL1101	10	1/2	50	55	.70
GL2102	10	3/4	25	50	.85
GL3103	10	1	25	50	1.05
GL1201	20	1/2	50	75	.95
GL2202	20	3/4	25	55	1.05
GL3203	20	1	25	65	1.35

Type GT Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see Pages 414 to 417, Condulet catalogue No. 2000. 250 assorted bodies of the G-H series with adjustable bar make a standard package.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GT151	5	1/2	100	125	\$.75
GT252	5	3/4	50	90	.85
GT353	5	1	25	55	1.10
GT1101	10	1/2	50	70	.85
GT2102	10	3/4	25	55	1.00
GT3103	10	1	25	60	1.20
GT1201	20	1/2	50	75	1.10
GT2202	20	3/4	25	65	1.20
GT3203	20	1	25	70	1.50

Type GX Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000.



250 assorted bodies of the G-H series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GX151	5	1/2	100	155	\$.90
GX252	5	3/4	50	100	1.00
GX353	5	1	25	60	1.35
GX1101	10	1/2	50	75	1.00
GX2102	10	3/4	25	60	1.15
GX3103	10	1	25	70	1.45
GX1201	20	1/2	50	75	1.25
GX2202	20	3/4	25	70	1.40
GX3203	20	1	25	75	1.80

Type H Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000.



250 assorted bodies of the G-H Series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H115	5	1/2	100	115	\$.45
H25	5	3/4	50	70	.55
H35	5	1	25	40	.80
H110	10	1/2	50	50	.55
H210	10	3/4	25	45	.70
H310	10	1	25	50	.90
H120	20	1/2	50	70	.80
H220	20	3/4	25	50	.85
H320	20	1	25	55	1.10

Type HA Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000.



250 assorted bodies of the G-H series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HA15	5	1/2	100	115	\$.50
HA25	5	3/4	50	70	.60
HA35	5	1	25	40	.85
HA110	10	1/2	50	50	.60
HA210	10	3/4	25	45	.75
HA310	10	1	25	50	.95
HA120	20	1/2	50	70	.85
HA220	20	3/4	25	50	.90
HA320	20	1	25	55	1.20

Type HH Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000.



250 assorted bodies of the G-H series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HH151	5	1/2	100	120	\$.55
HH252	5	3/4	50	75	.65
HH353	5	1	25	50	.90
HH1101	10	1/2	50	60	.65
HH2102	10	3/4	25	50	.80
HH3103	10	1	25	55	1.00
HH1201	20	1/2	50	75	.90
HH2202	20	3/4	25	60	.95
HH3203	20	1	25	65	1.20

Type HHC Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000. 250 assorted bodies of the G-H series with adjustable bar make a standard package.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HHC151	5	1/2	100	125	\$.75
HHC252	5	3/4	50	80	.83
HHC353	5	1	25	55	1.10
HHC1101	10	1/2	50	75	.85
HHC2102	10	3/4	25	55	1.00
HHC3103	10	1	25	65	1.20
HHC1201	20	1/2	50	80	1.10
HHC2202	20	3/4	25	65	1.20
HHC3203	20	1	25	75	1.50

Type HLA Condulet Bodies

With Adjustable Bar

Galvanized or black enamel finish. Take covers or round base wiring devices. For wiring devices see pages 414 to 417, Condulet catalogue No. 2000.



250 assorted bodies of the G-II series with adjustable bar make a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HLA15	5	1/2	100	120	\$.60
HLA25	5	3/4	50	75	.70
HLA35	5	1	25	50	.95
HLA110	10	1/2	50	60	.70
HLA210	10	3/4	25	50	.85
HLA310	10	1	25	55	1.05
HLA120	20	1/2	50	75	.95
HLA220	20	3/4	25	60	1.05
HLA320	20	1	25	65	1.35

1 and 2-wire Porcelain Covers



For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.

Porcelain, black enameled, and galvanized covers of the same size may be assorted to make a standard package, regardless of style of cover.

Any assortment of 250 of these covers will be considered a standard package.

1-wire for Form 5 or Form 10 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
5101	13/32	100	40	\$.15

2-wire for Form 5 or Form 10 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
5102	5/16	100	40	\$.15

1-wire for Form 20 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
201	13/32	50	40	\$.35

2-wire for Form 20 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
202	5/8	50	40	\$.35

3 and 4-wire Porcelain Covers

For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.

Porcelain, black enameled, and galvanized covers of the same size may be assorted to make a standard package, regardless of style of cover. Any assortment of 250 of these covers will be considered a standard package.



3-wire for Form 5 or Form 10 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
5103	5/8	100	40	\$.15

4-wire for Form 5 or Form 10 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
51040	5/8	100	40	\$.15

3-wire for Form 20 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
203	5/8	50	40	\$.35

4-wire for Form 20 Bodies

Cat. No.	Diam. Wire Holes, In.	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
20400	5/8	50	40	\$.35

Porcelain Covers with Nipples



With brass male nipple. For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.

Porcelain, black enameled and galvanized covers of the same size may be assorted to make a standard package, regardless of style of cover. Any assortment of 250 of these covers will be considered a standard package.

Cat. No.	For Form	Size, Nipple Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
5109	5 or 10	1/8	100	45	\$.25
51019	5 " 10	1/4	100	45	.30
51011	5 " 10	3/8	100	45	.35
51021	5 " 10	1/2	100	45	.40
209	20	1/8	50	45	.45
2019	20	1/4	50	45	.50
2011	20	3/8	50	45	.60
2021	20	1/2	50	45	.65

Porcelain Covers with Nipples

With brass female nipple. For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.



Porcelain, black enameled, and galvanized covers of the same size may be assorted to make a standard package, regardless of style of cover. Any assortment of 250 of these covers will be considered a standard package.

Cat. No.	For Form	Size, Nipple Inches	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
51010	5 or 10	1/8	100	45	\$.25
51020	5 " 10	1/4	100	45	.30
51012	5 " 10	3/8	100	45	.35
51022	5 " 10	1/2	100	45	.40
2010	20	1/8	50	45	.45
2020	20	1/4	50	45	.50
2012	20	3/8	50	45	.60
2022	20	1/2	50	45	.65

Metal Covers with Nipples



Sheet steel with brass nipple. For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.

Black enameled, galvanized, and porcelain covers of the same size may be assorted to make a standard package, regardless of style of cover. Any assortment of 250 of these covers will be considered a standard package.

For Form 5 and Form 10 Bodies

Cat. No.	Size Nipple	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
5105	1/8-inch Male	100	30	\$.20
51013	1/4 " "	100	30	.25
5107	3/8 " "	100	30	.30
51015	1/2 " "	100	30	.35
5106	1/8 " Female	100	30	.20
51014	1/4 " "	100	30	.25
5108	3/8 " "	100	30	.30
51016	1/2 " "	100	30	.35

For Form 20 Bodies

Cat. No.	Size Nipple	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
205	1/8-inch Male	50	35	\$.30
2013	1/4 " "	50	35	.35
207	3/8 " "	50	35	.40
2015	1/2 " "	50	35	.45
206	1/8 " Female	50	35	.30
2014	1/4 " "	50	35	.35
208	3/8 " "	50	35	.40
2016	1/2 " "	50	35	.45

Blank Metal Covers

For Condulet bodies of the G-H series with adjustable bar, Z series, and types FH and FHF. Furnished with screws.

Sheet Steel

Cat. No.	For Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
51000	5 or 10	100	20	\$.10
2000	20	50	20	.25

Cast Iron

Cat. No.	For Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
51000g	5 or 10	100	30	\$.20
2000g	20	50	30	.35



G-H Series Condulet Bodies

Without Adjustable Bar

The bodies of the G-II series without adjustable bar differ from those with the adjustable bar in the following particulars: First, the adjustable bar is omitted; second, the flange of the body is drilled and tapped for four screws.

This series does not have so wide a range of application as the series with the adjustable bar: the variety of wiring devices which can be mounted is limited to those whose fastening screw hole centers are the same as those of the Condulet bodies to which they are to be attached.

A complete series of covers, connection blocks, and Conduletts is made for use with the Condulet bodies of this series.

The fastening screws are furnished with, and so retained in the covers, connection blocks and Conduletts that they cannot fall out.

Wiring devices, page 418, Condulet catalogue No. 2000.

Type G Condulet Bodies

Without Adjustable Bar



Galvanized or black enamel finish. Take covers, Conduletts or other wiring devices, see page 418, Condulet catalogue No. 2000.

250 assorted bodies of the G-II series without adjustable bar will be considered a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
G157	5	1/2	100	115	\$.40
G257	5	3/4	50	75	.50
G357	5	1	25	40	.75
G117	10	1/2	50	55	.50
G217	10	3/4	25	50	.65
G317	10	1	25	50	.85
G127	20	1/2	50	75	.70
G227	20	3/4	25	55	.75
G327	20	1	25	65	1.00

Type GL Condulet Bodies

Without Adjustable Bar



Galvanized or black enamel finish. Take covers and Conduletts. Also other wiring devices, see page 418, Condulet catalogue No. 2000.

250 assorted bodies of the G-II series without adjustable bar will be considered a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GL157	5	1/2	100	115	\$.45
GL257	5	3/4	50	75	.55
GL357	5	1	25	40	.80
GL117	10	1/2	50	55	.55
GL217	10	3/4	25	50	.70
GL317	10	1	25	50	.90
GL127	20	1/2	50	75	.75
GL227	20	3/4	25	55	.85
GL327	20	1	25	65	1.15

Type GT Condulet Bodies

Without Adjustable Bar



Galvanized or black enamel finish. Take covers and Conduletts. Also other wiring devices, see page 418, Condulet catalogue No. 2000.

250 assorted bodies of the G-II series without adjustable bar will be considered a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GT157	5	1/2	100	120	\$.60
GT257	5	3/4	50	90	.70
GT357	5	1	25	55	.95
GT117	10	1/2	50	70	.70
GT217	10	3/4	25	55	.85
GT317	10	1	25	60	1.05
GT127	20	1/2	50	75	.90
GT227	20	3/4	25	65	1.00
GT327	20	1	25	70	1.30

Type H Condulet Bodies

Without Adjustable Bar



Galvanized or enamel. Take covers and Conduletts. Also other wiring devices, see Page 418, Condulet catalogue No. 2000. 250 assorted bodies of the G-II series without adjustable bar

will be considered a standard package.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
II157	5	1/2	100	110	\$.30
II257	5	3/4	50	70	.40
II357	5	1	25	45	.65
II117	10	1/2	50	55	.40
II217	10	3/4	25	45	.55
II317	10	1	25	50	.75
II127	20	1/2	50	70	.60
II227	20	3/4	25	50	.65
II327	20	1	25	55	.90

Conduletto Connection Blocks

For form 5 bodies of the G-II series without adjustable bar. Furnished with screws.

Porcelain

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
II535	Complete	100	90	\$.40
II533	Base Only	100	60	.25

Composition

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
II555	Complete	100	95	.50
II545	Base Only	100	65	.30



Conduletto Lamp Receptacles

With connection block, for form 5 bodies of the G-II series without adjustable bar. With screws.

If specified, will be furnished with lamp grip at slight addition to list price.

Standard package, 100; weight, standard package, 100 pounds.

Price, No. II546, with Shade Holder Groove... each \$.50
 " " II547, without Shade Holder Groove... .45



No. H546

Porcelain Conduletto Fixture Rosettes

With Male Nipple

With connection block, for form 5 bodies of the G-II series without adjustable bar.

Furnished with screws.

Cat. No.	Size, Nipple Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
II549	1/8	100	90	\$.55
II551	3/8	100	90	.65



Porcelain Conduletto Fixture Rosettes

With Female Nipple

With connection block, for form 5 bodies of the G-II series without adjustable bar. With screws.

Cat. No.	Size, Nipple Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
II548	1/8	100	90	\$.55
II552	3/8	100	90	.65



Composition Conduletto Fixture Rosettes

With 3/8-inch Male Nipple

With connection block, for form 5 bodies of the G-II series without adjustable bar.

Furnished with screws.

Standard package, 100.

Weight, standard package, 90 pounds.

Price, No. H571... each \$.75



Composition Conduletto Fixture Rosettes

With 3/8-inch Female Nipple

With connection block, for form 5 bodies of the G-II series without adjustable bar.

Furnished with screws.

Standard package, 25.

Weight, standard package, 25 pounds.

Price, No. II572... each \$.75



Conduletto Cord Rosettes



With connection block, for form 5 bodies of the G-H series without adjustable bar.
Furnished with screws.
Standard package, 100.
Weight, standard package, 90 pounds.

Price, No. H553, Porcelain.....each \$.40
" " H554, Composition..... " .50

Conduletto Lamp Receptacles

One piece porcelain. Without connection block. For form 5 bodies of the G-H series without adjustable bar.



Furnished with screws.
A gasket can be used between the body and the lamp receptacle to make the installation weatherproof.
Standard package, 100; weight, standard package, 55 pounds.
Price, No. H556, with Shade Holder Groove.....each \$.25

Receptacle Metal Covers



Galvanized or Enamel
For form 5 bodies of the G-H series without adjustable bar.
Furnished with screws.
Take lamp receptacle No. H557.
Standard package, 50.
Weight, standard package, 60 pounds.

Price, No. H558.....each \$.50

Receptacle Metal Covers

Galvanized or Enamel
For 2 1/4-inch shade holder. For form 5 bodies of the G-H series without adjustable bar.



Furnished with screws.
Takes lamp receptacle No. H557.
Standard package, 50.
Weight, standard package, 70 pounds.
Price, No. H559.....each \$.80

Receptacle Metal Covers



Cast Iron—Galvanized or Enamel
For form 10 bodies of the G-H series without adjustable bar. Furnished with screws.
Takes sign receptacle.
Standard package, 50.
Weight, standard package, 70 pounds.

Price, No. H1032.....each \$.50

Blank Metal Covers

Sheet Steel—Galvanized or Enamel

For forms 5, 10 and 20 bodies of the G-H series without adjustable bar. Furnished with screws.

Cat. No.	For Form	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
H500	5	100	30	\$.15
H1000	10	100	35	.20
H2000	20	50	40	.25



Blank Metal Covers

Cast Iron—Galvanized or Enamel

For forms 5, 10 and 20 bodies of the G-H series without adjustable bar. Furnished with screws.

Cat. No.	For Form	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
H531	5	100	40	\$.25
H1031	10	100	45	.30
H2031	20	50	50	.40



1-wire Porcelain Covers

For forms 5, 10 and 20 bodies of the G-H series without adjustable bar. Furnished with screws.

Cat. No.	For Form	Diam. Wire Hole	Std. Pkg. Assorted	Wt., Lbs. Std. Pkg.	Price Each
H51	5	1 3/32	100	45	\$.20
H101	10	1 9/32	100	50	.25
H201	20	1 3/2	50	65	.40



Midget Guard and Receptacle Holders

Pendent



For bodies of the G-II series without adjustable bar. Furnished with screws.

Standard package, 25.
Weight, standard package, 25 pounds.
Price, No. RMP3 for Nos. HGV3595 and HGV-3597.....each \$.30
Price, No. RMP4 for No. HGV4598..... " .30

Midget Guard and Receptacle Holders

Bracket



For bodies of the G-H series without adjustable bar. Furnished with screws.

Standard package, 25.
Weight, Standard package, 35 pounds.
Price, No. HGH7 for Nos. HGH7591 and HGH7593.....each \$1.00
Price, No. HGH8 for No. HGH8594..... " 1.00

Midget Guards

For G-II and G-S Midget Fixtures.



Cat. No.	Lth. In.	For Fixtures	For Lamps	Price Each
HGV95	5 5/8	RMP3, HGH7, GS111	G18 1/2 or M1 P19	\$1.40
HGV97	7 1/2	RMP3, HGH7, GS111	50-watt Mazda B	1.45
HGV98	7 3/4	RMP1, HGH8,	75 " " C	1.50

Standard package, 25; weight, standard package, 35 pounds.

Midget Fixture Receptacles

For G-H Midget Guard Fixtures.
If so specified, will be furnished with lamp grip at a slight advance in list price.



Standard package, 200.
Weight, standard package, 85 pounds.
Price, No. PE55.....each \$.40

Type HV Guard Fixtures

For form 20 bodies of the G-H series without adjustable bar. Consists of holder, receptacle No. C337, guard, gaskets and screws.



Cat. No.	Length of Guard, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HV294	4 5/8	25	55	\$2.30
HV296	6 1/4	25	60	2.40

Holder Only

For form 20 bodies of the G-II series without adjustable bar.
Furnished with screws.



Standard package, 25.
Weight, standard package, 25 pounds.
Price, No. RMP2.....each \$.50

Type HV Guards

For RMP2 Holder.



Cat. No.	Length of Guard, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
HV94	4 5/8	25	25	\$1.40
HV96	6 1/4	25	30	1.50

Lamp Receptacle Conduletto

For HV guard fixture without shade holder groove.

If specified, will be furnished with lamp grip, at slight addition in price.

Standard package, 200.
Weight, standard package, 90 pounds.
Price, No. C337.....each \$.40





Type GS Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Wiring devices, pages 419 and 420, Condulet catalogue No. 2000. Also furnished with lugs in certain types.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15	5	1/2	25	65	\$.90
GS25	5	3/4	25	70	1.05
GS35	5	1	10	30	1.25
GS110	10	1/2	25	70	1.00
GS210	10	3/4	25	75	1.15
GS310	10	1	10	35	1.35
GS120	20	1/2	25	90	1.50
GS220	20	3/4	25	95	1.65
GS320	20	1	10	45	1.85

Type GSA Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Wiring devices, pages 419 and 420, Condulet catalogue No. 2000.

With fastening strap and screws for wiring devices. Also furnished with lugs in certain types.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSA15	5	1/2	25	65	\$.90
GSA25	5	3/4	25	70	1.05
GSA35	5	1	10	30	1.25
GSA110	10	1/2	25	70	1.00
GSA210	10	3/4	25	75	1.15
GSA310	10	1	10	35	1.35
GSA120	20	1/2	25	90	1.50
GSA220	20	3/4	25	95	1.65
GSA320	20	1	10	45	1.85



Type GSC Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Wiring devices, pages 419 and 420, Condulet catalogue No. 2000.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15	5	1/2	25	70	\$1.00
GSC25	5	3/4	25	75	1.15
GSC35	5	1	10	30	1.35
GSC110	10	1/2	25	75	1.10
GSC210	10	3/4	25	80	1.25
GSC310	10	1	10	35	1.45
GSC120	20	1/2	25	95	1.60
GSC220	20	3/4	25	100	1.75
GSC320	20	1	10	50	1.95

Any assortment of 100 black enameled and galvanized bodies of the GS series except 2 and 3-gang, make std. pkg.

Type GSS Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Wiring devices, pages 419 and 420, Condulet catalogue No. 2000. With fastening strap and screws for wiring devices. Also furnished with lugs in certain types.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSS15	5	1/2	25	70	\$1.00
GSS25	5	3/4	25	75	1.15
GSS35	5	1	10	30	1.35
GSS110	10	1/2	25	75	1.10
GSS210	10	3/4	25	80	1.25
GSS310	10	1	10	35	1.45
GSS120	20	1/2	25	95	1.60
GSS220	20	3/4	25	100	1.75
GSS320	20	1	10	50	1.95



Type GSSC Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks.

With fastening strap and screws for wiring devices. For wiring devices see pages 419 and 420, Condulet catalogue No. 2000. Also furnished with lugs in certain types.

Cat. No.	Form	Size, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSSC15	5	1/2	25	75	\$1.20
GSSC25	5	3/4	25	80	1.35
GSSC35	5	1	10	35	1.55
GSSC110	10	1/2	25	80	1.30
GSSC210	10	3/4	25	85	1.50
GSSC310	10	1	10	40	1.70
GSSC120	20	1/2	25	100	1.80
GSSC220	20	3/4	25	105	2.00

Types GSL Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks.

With fastening strap and screws for wiring devices. For wiring devices see pages 419 and 420, Condulet catalogue No. 2000. Also furnished with lugs in certain types.

Cat. No.	Form	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Ea.
GSL15	5	1/2	25	70	\$1.00
GSL25	5	3/4	25	75	1.15
GSL35	5	1	10	30	1.35
GSL110	10	1/2	25	75	1.10
GSL210	10	3/4	25	80	1.25
GSL310	10	1	10	35	1.45
GSL120	20	1/2	25	95	1.60
GSL220	20	3/4	25	100	1.75
GSL320	20	1	10	50	1.95

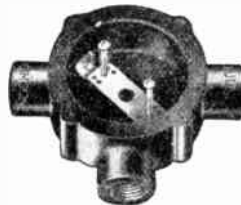


Type GST Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks.

With fastening strap and screws for wiring devices. For wiring devices see pages 419 and 420, Condulet catalogue No. 2000. Also furnished with lugs in certain types.

Cat. No.	Form	Size In.	Std. Pkg.	Wt., Pkg.	Price Each
GST15	5	1/2	25	75	\$1.20
GST25	5	3/4	25	80	1.35
GST35	5	1	10	35	1.55
GST110	10	1/2	25	80	1.30
GST210	10	3/4	25	85	1.50
GST310	10	1	10	40	1.70
GST120	20	1/2	25	100	1.80
GST220	20	3/4	25	105	2.00
GST320	20	1	10	55	2.30

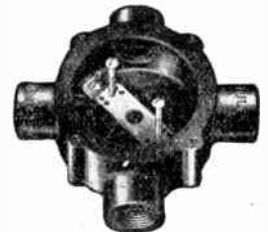


Type GSX Condulet Bodies

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks.

With fastening strap and screws for wiring devices. For wiring devices see pages 419 and 420, Condulet catalogue No. 2000. Also furnished with lugs in certain types.

Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX15	5	1/2	25	80	\$1.35
GSX25	5	3/4	25	85	1.50
GSX35	5	1	10	35	1.80
GSX110	10	1/2	25	85	1.45
GSX210	10	3/4	25	90	1.70
GSX310	10	1	10	40	2.10
GSX120	20	1/2	25	105	1.95
GSX220	20	3/4	25	110	2.20



Type GSB Condulet Bodies

2-gang, with Lugs

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSB1529	5	1/2	25	150	\$2.10
GSB2529	5	3/4	25	160	2.40
GSB3529	5	1	10	70	2.80
GSB1129	10	1/2	25	160	2.30
GSB2129	10	3/4	25	170	2.60
GSB3129	10	1	10	80	3.00
GSB1229	20	1/2	25	200	3.30
GSB2229	20	3/4	25	210	3.60
GSB3229	20	1	10	100	4.00

Type GSD Condulet Bodies

2-gang, with Lugs

Iron, galvanized or enamel. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSD1529	5	1/2	25	160	\$2.30
GSD2529	5	3/4	25	170	2.60
GSD3529	5	1	10	75	3.00
GSD1129	10	1/2	25	170	2.50
GSD2129	10	3/4	25	180	2.80
GSD3129	10	1	10	85	3.20
GSD1229	20	1/2	25	210	3.50
GSD2229	20	3/4	25	220	3.80
GSD3229	20	1	10	110	4.20

Type GSE Condulet Bodies

2-gang, with Lugs

Iron, galvanized or enamel. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSE1529	5	1/2	25	150	\$2.10
GSE2529	5	3/4	25	160	2.40
GSE3529	5	1	10	70	2.80
GSE1129	10	1/2	25	160	2.30
GSE2129	10	3/4	25	170	2.60
GSE3129	10	1	10	80	3.00
GSE1229	20	1/2	25	200	3.30
GSE2229	20	3/4	25	210	3.60
GSE3229	20	1	10	100	4.00

Type GSC Condulet Bodies

2-gang, with Lugs

Iron, galvanized or enamel. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1529	5	1/2	25	160	\$2.30
GSC2529	5	3/4	25	170	2.60
GSC3529	5	1	10	75	3.00
GSC1129	10	1/2	25	170	2.50
GSC2129	10	3/4	25	180	2.80
GSC3129	10	1	10	85	3.20
GSC1229	20	1/2	25	210	3.50
GSC2229	20	3/4	25	220	3.80
GSC3229	20	1	10	110	4.20

Type GSB Condulet Bodies

3-gang, with Lugs

Iron, galvanized or enamel. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSB1539	5	1/2	25	215	\$3.15
GSB2539	5	3/4	25	225	3.60
GSB3539	5	1	10	100	4.20
GSB1139	10	1/2	25	230	3.45
GSB2139	10	3/4	25	240	3.90
GSB3139	10	1	10	115	4.50
GSB1239	20	1/2	25	290	4.95
GSB2239	20	3/4	25	300	5.40
GSB3239	20	1	10	145	6.00

Type GSD Condulet Bodies

3-gang, with Lugs

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSD1539	5	1/2	25	230	\$3.45
GSD2539	5	3/4	25	240	3.90
GSD3539	5	1	10	105	4.50
GSD1139	10	1/2	25	245	3.75
GSD2139	10	3/4	25	255	4.20
GSD3139	10	1	10	120	4.80
GSD1239	20	1/2	25	305	5.25
GSD2239	20	3/4	25	375	5.70
GSD3239	20	1	10	160	6.30

Type GSE Condulet Bodies

3-gang, with Lugs

Iron, galvanized or enamel. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSE1539	5	1/2	25	215	\$3.15
GSE2539	5	3/4	25	225	3.60
GSE3539	5	1	10	100	4.20
GSE1139	10	1/2	24	230	3.45
GSE2139	10	3/4	25	240	3.90
GSE3139	10	1	10	115	4.50
GSE1239	20	1/2	25	290	4.95
GSE2239	20	3/4	25	300	5.40
GSE3239	20	1	10	145	6.00

Type GSC Condulet Bodies

3-gang with Lugs

Iron, galvanized or black enamel finish. Take covers, vaporproof fixtures, plug receptacle housings, connection or fuse blocks. Also wiring devices, pages 419 and 420, Condulet catalogue No. 2000.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1539	5	1/2	25	230	\$3.45
GSC2539	5	3/4	25	240	3.90
GSC3539	5	1	10	105	4.50
GSC1139	10	1/2	25	245	3.75
GSC2139	10	3/4	25	255	4.20
GSC3139	10	1	10	120	4.80
GSC1239	20	1/2	25	305	5.25
GSC2239	20	3/4	25	375	5.70
GSC3239	20	1	10	160	6.30

Vaporproof Iron Switch Covers

For bodies of the GS series. Galvanized or black enamel finish. Furnished with screws and gaskets. 100 assorted GS covers make standard package.



Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS58	5	25	40	\$1.30
GS108	10	25	55	1.40
GS208	20	25	65	2.00

Vaporproof Iron Hub Covers

For bodies of the GS series. Galvanized or black enamel finish. Furnished with screws and gaskets.



Cat. No.	Form	Size of Hub In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS53	5	3/8	25	40	\$.60
GS54	5	1/2	25	40	.60
GS13	10	3/4	25	50	.70
GS14	10	1/2	25	50	.70
GS23	20	3/4	25	65	1.00
GS24	20	1/2	25	65	1.00

Vaporproof Iron Blank Covers

Std. pkg., 100 assorted covers of the GS series.



Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS50	5	25	35	\$.50
GS100	10	25	45	.60
GS200	20	25	60	.90

Midget Guard Fixtures

For form 10 bodies of the GS series. Galvanized or black enamel finish. Furnished with screws. Take 50-watt Mazda B lamps (S 19 bulb) or any lamp not exceeding 2 3/8 x 5 1/4 inches.

Consists of holder, guard No. HGV95, receptacle No. GS126, gaskets and screws. Standard package, 25; weight, standard package, 50 pounds.

Price, No. GS121, each \$2.95



Half Shade Fixtures

For form 10 bodies of the GS series. Galvanized or enamel. Consists of holder, half shade, receptacle No. GS126, gaskets and screws.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS122	Complete	25	60	\$2.40
GS112	Holder Only	25	35	.90

Iron Receptacle Covers

For form 10 bodies of the GS series. Galvanized or black enamel finish, furnished with gasket and screws.

Take composition lamp receptacle.



Cat. No.	Take Receptacle	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS109	Inside of Cover	25	30	\$.60
GS106	Outside of Cover	25	30	.80

Iron Switch Covers

For form 10 bodies of the GS series. Galvanized or black enamel finish. Furnished with screws.

100 assorted GS covers make a standard package.

Cat. No.	Switches Accommodated	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS113	H & H Tumbler	25	35	\$.40
GS114	Hubbell Toggle	25	35	.40

Composition Lamp Receptacles

Furnished with gasket and screws. If so specified, will be furnished with lamp grip at slight addition to price.

Cat. No.	No. Binding Screws	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS59	2	5	25	15	\$.50
GS126	2	10	25	20	.75
GS127	8	10	25	25	1.00



Iron Covers with Screw Cap



Galvanized or black enamel finish. For Condulet bodies of the GS series. Take Hubbell attachment plugs and receptacles. With screws.

Cat. No.	Form	Take Plugs	Take Receptacles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS532	5	5700, 6095, 6638	5624, 5896	25	30	\$.50
GS132	10	5700, 6095, 6638	5624, 5896	25	40	.60
GS533	5	6328	5624	25	30	.50
GS133	10	6328	5624	25	40	.60

Iron Plug Receptacle Covers

For Bryant Marine Plug Receptacles and GS series Condulet bodies.



Plain		Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		GS123	10	25	25	\$.50
With Spring Door		GS124	10	25	35	\$1.10



No. GS123

No. GS124

Main Line Composition Fuse Blocks

2-pole, 30-ampere, 250-volt

For Condulet bodies of the GS series.

Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS34	20	25	20	\$.75



Connection Blocks

For Condulet bodies of the GS series.

Composition

Cat. No.	No. of Wires	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CF209	2	20	25	20	\$.85
CF210	5	10-20	25	20	.65

No. CF210

Porcelain

Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
GS32	2	20	25	15	\$.75

No. GS32

Type GS Vaporproof Fixtures

Pendent



For form 20 Condulet bodies of the GS series. Iron, galvanized or black enamel finish.

Form 75 takes 75-watt Mazda C lamps, 60-watt Mazda B lamps or any lamp not exceeding 1 3/4 x 6 1/8 inches.

Form 200 takes 200-watt Mazda C lamps, 100-watt Mazda B lamps or any lamp not exceeding 3 3/4 x 8 3/8 inches.

Cat. No.	Form	Globe Furnished	Guard Furnished	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS675	75	V75	V759	25	180	\$6.10
GS8200	200	V200	V2009	25	230	6.80

GS Vaporproof Fixtures

Bracket

For form 20 Condulet bodies of the GS series. Iron, galvanized or black enamel finish.

Form 75 takes 75-watt Mazda C lamps, 60-watt Mazda B lamps or any lamp not exceeding 2 3/4 x 6 1/8 inches.

Form 200 takes 200-watt Mazda C lamps, 100-watt Mazda B lamps or any lamp not exceeding 3 3/4 x 8 3/8 inches.

Cat. No.	Form	Guard Furnished	Guard Furnished	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS775†	75	V75	V759	25	180	\$6.10
GS9200†	200	V200	V2009	25	230	6.80

†Scaling plates are required and furnished.



Type BRG Plug Receptacle Housings
For Condulet Bodies of the GS Series

2-pole housings are furnished with 30-ampere, 250-volt receptacles BR1302, or BR302, which take 2-pole type BP plugs. 3-pole housings are furnished with 30-ampere, 250-volt receptacles BR1303 or BR303, which take 3-pole type BP plugs.

Plugs, see after type BRM.

Type BRG plug receptacle housings with their Condulet bodies make desirable Condulet receptacles for portable devices, especially in marine or similar installations. They make desirable Condulet receptacles for plugs in cold storage plants, boiler rooms, bakeries, flour mills, oil houses, or any place where dust, moisture, or gasproof plug receptacle Condulets are required.

Type BRG Plug Receptacle Housings
Plain

For GS series bodies. Galvanized or black enamel finish. Capacity, 30 amperes, 250 volts A. C. Same rating on D. C. if circuit is broken before plug is withdrawn.



Furnished with receptacles and screws. Any assortment of 25 black enameled and galvanized type BRG plug receptacle housings will be considered a standard package.

2-pole

Cat. No.	Form	Receptacle Furnished	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRG5302	5	BR1302	25	45	\$2.50
HRG1302	10	BR302	25	50	2.60
BRG2302	20	BR302	25	80	3.10

3-pole

BRG1303	10	BR1303	25	60	\$3.25
BRG2303	20	BR303	25	85	3.75

Type BRG Plug Receptacle Housings
Threaded, with Brass Cap

For GS series bodies. Galvanized or black enamel finish. Capacity, 30 amperes, 250 volts A. C. Same rating on D. C. if circuit is broken before plug is withdrawn.

Furnished with receptacle, gasket and screws.



Any assortment of 25 black enameled and galvanized type BRG plug receptacle housings will be considered a standard package.

2-pole

Cat. No.	Form	Receptacle Furnished	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRG58302	5	BR1302	25	65	\$3.65
BRG18302	10	BR302	25	70	3.75
BRG28302	20	BR302	25	100	4.25

3-pole

BRG18303	10	BR1303	25	85	\$4.85
BRG28303	20	BR303	25	115	5.35

Type BGR Plug Receptacle Housings
Spring Door

Spring Door

For GS series bodies. Galvanized or black enamel finish. Capacity, 30 amperes, 250 volts A. C. Same rating on D. C. if circuit is broken before plug is withdrawn. Furnished with receptacle and screws.

Any assortment of 25 black enameled and galvanized type BRG plug receptacle housings will be considered a standard package.

2-pole

Cat. No.	Form	Receptacle Furnished	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRG156302	5	BR1302	25	80	\$5.10
BRG116302	10	BR302	25	85	4.20
BRG126302	20	BR302	25	115	4.70

3-pole

BRG16303	10	BR1303	25	95	\$5.05
BRG26303	20	BR303	25	125	5.55



FD Series Condulet Bodies
Deep—Black Enamel or Galvanized Finish

Condulets of the FD series, with their variety of covers, permit flush rectangular wiring devices to be mounted either on the surface of, or flush with the wall.

There is ample room around the wiring device for the passage of extra wires. The hubs are cast solid with the body and have an integral bushing and tapered thread.

Over All dimensions, not including hubs, 4 3/8 x 2 3/4 x 2 1/8 inches.

Special Assortment

Any assortment of 200 black enameled and galvanized bodies of the FD series will be considered a standard package.

Type FD Condulet Bodies

Deep type, galvanized or enamel. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FD1	1/2	50	125	\$.75
FD2	3/4	50	135	.85
FD3	1	25	80	1.00

Type FDC Condulet Bodies

Deep type, galvanized or enamel. With screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDC1	1/2	50	130	\$.85
FDC2	3/4	50	140	1.05
FDC3	1	25	90	1.25

Type FDL Condulet Bodies

Deep type, galvanized or enamel. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDL1	1/2	50	130	\$.85
FDL2	3/4	50	140	1.05
FDL3	1	25	90	1.25

Type FDR Condulet Bodies

Deep type, galvanized or enamel. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDR1	1/2	50	130	\$.85
FDR2	3/4	50	140	1.05
FDR3	1	25	90	1.25

Type FDCT Condulet Bodies

Deep type, galvanized or enamel. With screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDCT1	1/2	50	140	\$1.10
FDCT2	3/4	50	150	1.35
FDCT3	1	25	100	1.55

Type FDT Condulet Bodies

Deep type, galvanized or enamel. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDT1	1/2	50	140	\$1.10
FDT2	3/4	50	150	1.35
FDT3	1	25	100	1.55

Type FDX Condulet Bodies

Deep type, galvanized or enamel. With screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FDX1	1/2	50	145	\$1.30
FDX2	3/4	50	155	1.60
FDX3	1	25	105	1.80

FS Series Condulet Bodies

Shallow—Galvanized or Black Enamel Finish

Condulets of the FS series, with their variety of covers, permit flush rectangular wiring devices to be mounted either on the surface of, or flush with the wall.

There is ample room around the wiring device for the passage of extra wires. The hubs are cast solid with the body and have an integral bushing and tapered thread.

Over all dimensions, not including hubs, $4\frac{9}{32} \times 2\frac{3}{4} \times 1\frac{1}{8}$ inches.

Special Assortment—Single

Any assortment of 200 black enameled and galvanized bodies of the F series, except two-gang, two-gang tandem, and two, three, and four-gang, will be considered a standard package.

Type FS Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FS1	$\frac{1}{2}$	50	100	\$.65
FS2	$\frac{3}{4}$	50	105	.75
FS3	1	25	60	.85



Type FSA Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSA1	$\frac{1}{2}$	50	100	\$.65
FSA2	$\frac{3}{4}$	50	105	.75
FSA3	1	25	60	.85



Type FSC Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSC1	$\frac{1}{2}$	50	110	\$.75
FSC2	$\frac{3}{4}$	50	115	.90
FSC3	1	25	65	1.10



Type FSL Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

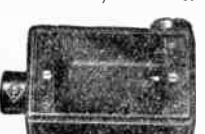
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSL1	$\frac{1}{2}$	50	110	\$.75
FSL2	$\frac{3}{4}$	50	115	.90
FSL3	1	25	65	1.10



Type FSR Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSR1	$\frac{1}{2}$	50	110	\$.75
FSR2	$\frac{3}{4}$	50	115	.90
FSR3	1	25	65	1.10



Type FSS Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSS1	$\frac{1}{2}$	50	110	\$.75
FSS2	$\frac{3}{4}$	50	115	.90
FSS3	1	25	65	1.10



Type FSCC Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. Over all dimensions, not including hubs, $4\frac{9}{32} \times 2\frac{3}{4} \times 1\frac{1}{8}$ inches.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSCC1	$\frac{1}{2}$	50	115	\$1.00
FSCC21	$\frac{3}{4}$ - $\frac{1}{2}$	50	120	1.25
FSCC31	1- $\frac{1}{2}$	25	70	1.45



Type FSCT Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSCT1	$\frac{1}{2}$	50	115	\$1.00
FSCT2	$\frac{3}{4}$	50	120	1.25
FSCT3	1	25	70	1.45



Type FST Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Nat. Co.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FST1	$\frac{1}{2}$	50	115	\$1.00
FST2	$\frac{3}{4}$	50	120	1.25
FST3	1	25	70	1.45



Type FSX Condulet Bodies

Shallow type, galvanized or black enamel finish. Furnished with screws for wiring devices. For wiring devices see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSX1	$\frac{1}{2}$	50	120	\$1.20
FSX2	$\frac{3}{4}$	50	125	1.50
FSX3	1	25	80	1.70



Type FS 2-gang Tandem Bodies

Take the same wiring devices, plug receptacle housings and covers as FS series. Any assortment of 75 black enameled and galvanized Condulet bodies of FS series, two-gang tandem, make standard package.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FS17	$\frac{1}{2}$	50	220	\$1.65
FS27	$\frac{3}{4}$	25	120	1.75
FS37	1	10	60	1.85



Type FSC 2-gang Tandem Bodies

Take same wiring devices, plug receptacle housings and covers as the FS series. Any assortment of 75 black enameled and galvanized bodies of FS series, two-gang tandem, make standard package.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSC17	$\frac{1}{2}$	50	230	\$1.75
FSC27	$\frac{3}{4}$	25	130	1.85
FSC371	1	10	70	1.95



Covers

For Condulet Bodies of the FS Series Two-gang Tandem, and Type FH

Made of sheet steel, galvanized or black enamel finish. Will fit rectangular base wiring devices as designated.

Any assortment of 200 black enameled, galvanized and vaporproof covers will be considered a standard package.

Numerous styles of covers are made in two, three and four-gang.

Metal Condulet Covers

For Single Push Button Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50.

Weight, standard package, 25 pounds.



Price, No. DS7.....each \$1.15

Metal Condulet Covers

For Double Push Button, Double Push Button Momentary Contact and Double Push Lock Switches; Also Flush Receptacles



Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.

Price, No. DS8, Surface.....each \$.15
" " DSS8, Flush....." .15

Metal Condulet Covers

For Rotary Flush Switches

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS9, Surface.....each \$.15
" " DSS9, Flush....." .15

Metal Condulet Covers

For Round Flush Receptacles

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS10, Surface.....each \$.60
" " DSS10, Flush....." .60

Metal Condulet Covers

For Hubbell 20-ampere Polarity Flush Receptacles

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS12.....each \$.20

Metal Condulet Covers

For Round Flush Receptacles

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50 pounds.
Weight, standard package, 25 pounds.



Price, No. DS21.....each \$.25

Metal Condulet Covers

For Hubbell 6-ampere Polarity Flush Receptacles

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS22.....each \$.25

Metal Condulet Covers

For Standard Duplex Flush Receptacles

Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS23.....each \$.30

Metal Condulet Covers

For G-E Tumbler Flush Switches

Furnished with escutcheon plate and spring.
Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.



Price, No. DS32.....each \$.15

Metal Condulet Covers

For Bryant Toggle Flush Switches



Sheet steel, galvanized or enamel. Furnished with screws.
Standard package, 50.
Weight, standard package, 25 pounds.

Price, No. DS33, Surface.....each \$.15
" " DSS33, Flush....." .15

Metal Condulet Covers

For H. & H. Tumbler Flush Switches

Sheet steel, galvanized or enamel. Furnished with screws.

Standard package, 50.

Weight, standard package, 25 pounds.



Price, No. DS27, Surface.....each \$.15
" " DSS27, Flush....." .15

Metal Condulet Covers

Blank

Galvanized or enamel, furnished with screws.

Sheet Steel

Std. Pkg., 50. Wt., Std. Pkg., 25 lbs.

Price, No. DS100.....each \$.10

Cast Iron

Furnished with gasket.

Std. Pkg., 50. Wt., Std. Pkg., 40 lbs.

Price, No. DS100, Surface.....each \$.25
" " DSS100, Flush....." .25



Metal Condulet Covers

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches

With guard, cast iron, galvanized or enamel. Furnished with screws.

Standard package, 50; weight, standard package, 40 pounds.



Price, No. DS8g.....each \$.35

Metal Condulet Covers

For Round Flush Receptacles

With spring door. Cast iron, galvanized or enamel. Furnished with screws.

Standard package, 50.

Weight, standard package, 45 pounds.

Price, No. DS10g.....each \$1.25



Metal Condulet Covers—Vaporproof

With Switch Operating Mechanism

For double push button switches.

Cast iron, galvanized or enamel. Furnished with gasket and screws.

Standard package, 25.

Weight, standard package, 40 pounds.

Price, No. DS108.....each \$1.75



Metal Condulet Covers—Vaporproof

With Switch Operating Mechanism

For momentary contact switches.

Cast iron, galvanized or enamel. Furnished with gasket and screws.

Standard package, 25.

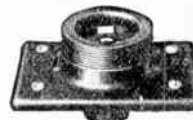
Weight, standard package, 40 pounds.

Price, No. DS107.....each \$1.75

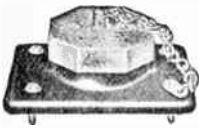


Type BRD Housings

Threaded, furnished with receptacle, gasket and screws. Capacity: 30 amperes, 250 volts, A. C. Same capacity D. C. if circuit is broken before plug is withdrawn.



CAT. No.	WT. LBS.		PRC, EACH	
	2-pole	3-pole	2-pole	3-pole
BRD7302	25	70	\$2.80	\$3.35



Type BRD Housings

Threaded, with brass cap. Furnished with receptacle, gaskets and screws. Capacity: 30 amperes, 250 volts A. C. Same capacity D. C. if circuit is broken before plug is withdrawn.

CATALOGUE NUMBER		Std. Pkg.	Wt., Lbs.		PRICE, EACH	
2-pole	3-pole		2-pole	3-pole	2-pole	3-pole
BRD8302	BRD8303	25	90	105	\$3.75	\$4.70

Type BRD Housings

Spring door, furnished with receptacles and screws. Capacity: 30 amperes, 250 volts A. C. Same capacity D. C. if circuit is broken before plug is withdrawn.



CATALOGUE NUMBER		Std. Pkg.	Wt., Lbs.		PRICE, EACH	
2-pole	3-pole		2-pole	3-pole	2-pole	3-pole
BRD6302	BRD6303	25	100	110	\$4.20	\$4.90

Type FS Two-gang Condulet Bodies

Shallow Type—Black Enamel Finish

Take covers and flush rectangular wiring devices. Overall dimensions of body, not including hubs, length, 4 3/8 inches; width, 4 5/8 inches; depth, 1 7/8 inches. Furnished with screws for wiring devices. Any assortment of 100 black enameled and galvanized FS series two-gang bodies makes a standard package.

Type FS Two-gang Bodies

Take covers. Also flush rectangular wiring devices, see pages 412 to 414 Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FS12	1/2	50	140	\$1.20
FS22	3/4	25	75	1.30
FS32	1	10	35	1.40

Type FSA Two-gang Bodies

Take covers. Also flush rectangular wiring devices. See pages 412 to 414 Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSA12	1/2	50	145	\$1.20
FSA22	3/4	25	80	1.30
FSA32	1	10	40	1.40



Type FSC Two-gang Bodies

Take covers. Also flush rectangular wiring devices, see pages 412 to 414 Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSC12	1/2	50	150	\$1.30
FSC222	3/4	25	85	1.40
FSC32	1	10	45	1.55

Type FSD Two-gang Bodies

Take covers. Also flush rectangular wiring devices. See pages 412 to 414 Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSD12	1/2	50	160	\$1.45
FSD212	3/4-1/2	25	90	1.55
FSD312	1-1/2	10	50	1.65



Type FSS Two-gang Bodies

Take covers. Also flush rectangular wiring devices. See pages 412 to 414 Condulet catalogue No. 2000.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSS222	3/4	25	85	\$1.40

FS Series 2-gang Metal Covers

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches
Cast iron with guard. Galvanized or black enamel finish. Furnished with screws. Standard package, 50. Weight, standard package, 50 pounds.

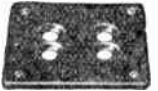


Price, No. S82g.....each \$.65

FS Series 2-gang Metal Covers

For Double Push Button, Double Push Button Momentary Contact, and Double Push Lock Switches; and Flush Receptacles

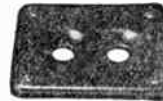
Sheet steel, galvanized or black enamel finish. Furnished with screws. Standard package, 50. Weight, standard package, 30 pounds.



Price, No. S82.....each \$.30

FS Series 2-gang Metal Covers

For Rotary Flush Switches



Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 30 pounds.

Price, No. S92.....each \$.30

FS Series 2-gang Metal Covers

For General Electric Tumbler Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with escutcheon plate, spring and screws.



Standard package, 50. Weight, standard package, 30 pounds.

Price, No. S322.....each \$.30

FS Series 2-gang Metal Covers

For Bryant Toggle Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 30 pounds.

Price, No. S332.....each \$.30

FS Series 2-gang Metal Covers

For Hart & Hegeman Tumbler Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 30 pounds.

Price, No. S272.....each \$.30



FS Series 2-gang Metal Covers

Blank

Galvanized or black enamel finish. Furnished with screws.

Sheet Steel

Standard package, 50. Weight, standard package, 30 pounds.

Price, No. S1002.....each \$.20

Cast Iron with Gasket

Standard package, 50. Weight, standard package, 55 pounds.

Price, No. S1002g.....each \$.50

FS Series 2-gang Metal Covers

Vaporproof—For Double Push Button Switches

Cast iron with switch operating mechanism. Furnished with gasket and screws. Switches, Page 414, Condulet catalogue No. 2000.

Standard package, 25. Weight, standard package, 75 lbs.

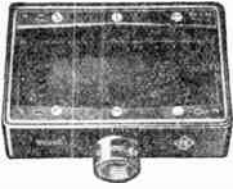
Price, No. DS1082.....each \$3.00



**Type FS 3-gang
Condulet Bodies**

Take covers. Also flush rectangular wiring devices, see pages 412 to 414, Condulet catalogue No. 2000.

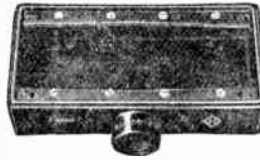
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FS23	3/4	25	100	\$1.80
FS33	1	10	40	1.95



Type FS 4-gang Condulet Bodies

Take covers. Also flush rectangular wiring devices, see pages 412 to 414, Condulet catalogue No. 2000.

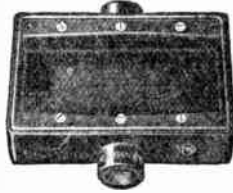
Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FS24	3/4	25	115	\$2.20
FS34	1	10	60	2.40



**Type FSC 3-gang
Condulet Bodies**

Take covers. Also flush rectangular wiring devices, see pages 412 to 414, Condulet catalogue No. 2000.

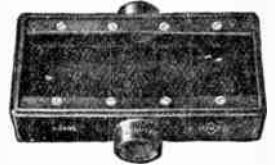
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSC23	3/4	25	105	\$1.90
FSC33	1	10	45	2.05



Type FSC 4-gang Condulet Bodies

Take covers. Also flush rectangular wiring devices, see pages 412 to 414, Condulet catalogue No. 2000.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSC24	3/4	25	125	\$2.35
FSC34	1	10	65	2.50



**FS Series 3-gang Metal Covers
For Double Push Button Switches**

Galvanized or black enamel finish. Furnished with screws.

Sheet Steel

Standard package, 25. Weight, standard package, 25 pounds.



Price, No. S83.....each \$.45

Cast Iron with Guard

Standard package, 25. Weight, standard package, 50 pounds.

Price, No. S83g.....each \$1.00

FS Series 3-gang Metal Covers

For Single Push Button Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 25. Weight, standard package, 25 pounds.

Price, No. S73.....each \$.45



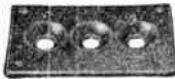
FS Series 3-gang Metal Covers

For Rotary Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 25. Weight, standard package, 25 pounds.

Price, No. S93.....each \$.45



FS Series 3-gang Metal Covers

For General Electric Tumbler Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 25 pounds.

Price, No. S323.....each \$.45



FS Series 3-gang Metal Covers

For Bryant Toggle Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 25 pounds.

Price, No. S333.....each \$.45



FS Series 3-gang Metal Cover Blanks

Galvanized or black enamel finish. Furnished with screws.

Sheet Steel

Standard package, 25. Weight, standard package, 25 pounds.

Price, No. S1003.....each \$.40

Cast Iron with Gasket

Standard package, 25. Weight, standard package, 50 pounds.

Price, No. S1003g.....each \$.75

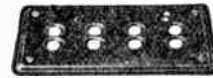


**FS Series 4-gang Metal Covers
For Double Push Button Switches**

Galvanized or black enamel finish. Furnished with screws.

Sheet Steel

Standard package, 25. Weight, standard package, 25 pounds.



Price, No. S34.....each \$.60

Cast Iron with Guard

Standard package, 25. Weight, standard package, 55 pounds.

Price, No. S84g.....each \$1.40

FS Series 4-gang Metal Covers

For Single Push Button Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 25. Weight, standard package, 25 pounds.

Price, No. S74.....each \$.60



FS Series 4-gang Metal Covers

For Rotary Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 25. Weight, standard package, 25 pounds.

Price, No. S94.....each \$.60



FS Series 4-gang Metal Covers

For General Electric Tumbler Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 25 pounds.

Price, No. S324.....each \$.60



FS Series 4-gang Metal Covers

For Bryant Toggle Flush Switches

Sheet steel, galvanized or black enamel finish. Furnished with screws.

Standard package, 50. Weight, standard package, 25 pounds.

Price, No. S334.....each \$.60



FS Series 4-gang Metal Covers

Blank

Galvanized or black enamel finish. Furnished with screws.

Sheet Steel

Standard package, 25. Weight, standard package, 30 pounds.

Price, No. S1004.....each \$.60



Cast Iron with Gasket

Standard package, 25. Weight, standard package, 55 pounds.

Price, No. S1004g.....each \$1.00

J-K Series Condulet Bodies

Condulets of the J-K series prevent rain, ice, sleet, and snow from coming in contact with current carrying parts.

The cap of the receptacle or rosette is secured to its base by two screws, which also complete the electrical connections.

The fastening screws furnished are so retained that they cannot fall out.

Any assortment of 250 black enameled and galvanized bodies of the J-K series will be considered a standard package.



Type J Condulet Bodies

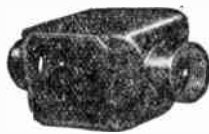
Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
J1	1/2	100	130	\$.60
J2	3/4	50	75	.75
J3	1	25	40	1.05

Type JA Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JA1	1/2	100	30	\$.70
JA2	3/4	50	75	.85
JA3	1	25	40	1.15



Type JB Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JB1	1/2	100	140	\$.70
JB2	3/4	50	80	.85
JB3	1	25	50	1.15

Type JT Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JT1	1/2	100	170	\$.95
JT2	3/4	50	90	1.05
JT3	1	25	55	1.15



Type K Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
K1	1/2	100	100	\$.50
K2	3/4	50	60	.65
K3	1	25	40	.95



Type KC Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KC1	1/2	100	135	\$.60
KC2	3/4	50	75	.75
KC3	1	25	45	1.05



Type KD Condulet Bodies

Galvanized or black enamel finish. Take Norbitt Condulettos or blank cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KD1	1/2	100	135	\$.60
KD2	3/4	50	75	.75
KD3	1	25	45	1.05

Norbitt Condulettos

For Condulet Bodies of the J-K Series

These fittings are weatherproof, and can be installed either in or out of doors. Made in two parts—base and cap. The base is secured to the Condulet body by a single center screw. The cap is secured to the base by two screws which also complete the electrical connection.

Furnished with gasket and fastening screw.

Conduletto Lamp Receptacles

With Shade Holder Groove

If specified, will be furnished with lamp grip, at slight addition to list price. Furnished with gasket and fastening screw.

Standard package, 200.

Weight, standard package, 130 pounds.

Price, No. CC227g.....each \$.45



Conduletto Lamp Receptacles

Without Shade Holder Groove

If specified will be furnished with lamp grip, at slight addition to list price. Furnished with gasket and fastening screw.

Standard package, 200.

Weight, standard package, 130 pounds.

Price, No. CC227.....each \$.40



Conduletto Plug Receptacles

Hubbell Attachment

6 Amperes

Furnished with gasket and fastening screw.

Standard package, 100.

Weight, standard package, 60 pounds.

Price, No. CC5.....each \$.50



Conduletto Plug Receptacles

Hubbell Polarity

Furnished with gasket and fastening screw.

Standard package, 100.

Weight, standard package, 60 pounds.

Price, No. CC20.....each \$.65



Conduletto Cord Rosettes

For use where it is desired to install a drop cord light or other similar extension or connection.

Furnished with gasket and fastening screw.

Standard package, 200.

Weight, standard package, 140 pounds.

Price, No. CC332.....each \$.35



Conduletto Fixture Rosettes

With 1/8-inch Male Nipple

For use where it is desired to attach socket or other fitting having 1/8-inch threaded opening, direct to the Conduletto.

Standard package, 100.

Weight, standard package, 60 pounds.

Price, No. CC339.....each \$.40



Conduletto Fixture Rosettes

With 1/8-inch Female Nipple

For use where it is desired to attach socket or other fitting having 1/8-inch threaded opening, direct to the Conduletto.

Standard package, 100.

Weight, standard package, 60 pounds.

Price, No. CC338.....each \$.40



RJ—RK Series Condulet Bodies

For installations requiring wiring devices that are water-shedding but not watertight, or where space is limited, these bodies will meet most conditions. Ample space is provided for the unobstructed passage of extra wires.

Any assortment of 250 black enameled and galvanized Condulet bodies of the RJ—RK series will be considered a standard package.



Type RJ Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2 pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RJ1	1/2	100	100	\$.50
RJ2	3/4	50	60	.60
RJ3	1	25	40	.90

Type RK Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2-pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RK1	1/2	100	8	\$.40
RK2	3/4	50	50	.55
RK3	1	25	35	.80



Type RJB Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2-pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RJB1	1/2	100	100	\$.70
RJB2	3/4	50	60	.80
RJB3	1	25	40	.90



Type RJL Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2-pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RJL1	1/2	100	100	\$.70
RJL2	3/4	50	60	.80
RJL3	1	25	40	.90



Type RJR Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2-pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RJR1	1/2	100	100	\$.70
RJR2	3/4	50	60	.80
RJR3	1	25	40	.90



Type RJT Condulet Bodies

Elliptical opening. Galvanized or black enamel finish. Take elliptical covers and Conduletts or 2-pole plug receptacle housings.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RJT1	1/2	100	130	\$.80
RJT2	3/4	50	80	.90
RJT3	1	25	50	1.00



Conduletto Lamp Receptacles



Without Shade Holder Groove

Elliptical, for bodies of the RJ-RK series. If specified, will be furnished with lamp grip at slight addition to list price. Furnished with gasket and screws.

Standard package, 200. Weight, standard package, 100 lbs. Price, No. RK527.....each \$.40

Conduletto Plug Receptacles

Hubbell Attachment

6 Amperes

Elliptical, for bodies of the RJ-RK series. Will accommodate regular 6-ampere Hubbell cap.

Furnished with gasket and screws. Standard package, 100. Weight, standard package, 60 pounds. Price, No. RK5.....each \$.50



Conduletto Plug Receptacles

Hubbell Polarity

20 Amperes

Elliptical, for bodies of the RJ-RK series. Will accommodate 20-ampere Hubbell polarity cap.

Furnished with gasket and screws. Standard package, 100. Weight, std. pkg., 60 lbs. Price, No. RK20.....each \$.65



Conduletto Cord Rosettes

Elliptical, for bodies of the RJ-RK series.

For use where it is desired to install a drop cord light or other similar extension.

Furnished with gasket and screws. Standard package, 200. Weight, standard package, 110 pounds. Price, No. RK532.....each \$.35



Type PG Condulet Bodies

Galvanized or enamel. Take Bryant-Perkins 2597 or G. E. 151394, 3 pole snap switch with cast iron protective cover.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PG1	1/2	25	60	\$1.10
PG2	3/4	25	70	1.25
PG3	1	10	30	1.40



Type PGC Condulet Bodies

Galvanized or enamel. With screws. Any assortment of 100 black enameled and galvanized bodies of PG series make a std. pkg.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PGC1	1/2	25	80	\$1.25
PGC2	3/4	25	90	1.40
PGC3	1	10	50	1.55



Type PGT Condulet Bodies

Galvanized or enamel. Take Bryant-Perkins 2597 or G. E. 151394, 3-pole snap switch with cast iron protective cover.

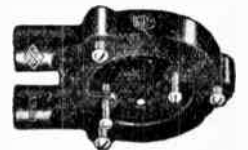
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PGT1	1/2	25	85	\$1.45
PGT2	3/4	25	95	1.60
PGT3	1	10	55	1.75



Type PGG Condulet Bodies

Galvanized or enamel. With screws. Any assortment of 100 black enameled and galvanized bodies of PG series make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PGG1	1/2	25	80	\$1.25
PGG2	3/4	25	90	1.40
PGG3	1	10	50	1.55



With Shade Holder Groove

Elliptical, for the RJ-RK series bodies. If specified, will be furnished with lamp grip, at slight addition to list price

Furnished with gasket and screws.

Standard package, 200

Weight, standard package, 100 pounds.

Price, No. RK527g.....each \$.45

SK Series Condulets

Condulets of the SK series are for use in concealed conduit installations, particularly in concrete construction. They will take blank covers, or covers with hubs, and are drilled and tapped to take fixture studs or wiring devices. If specifically ordered, drilling for fixture studs will be omitted.

The bodies are provided with two lugs on the outside for nailing to the wooden forms, holding them in place while the concrete is being poured.

There are two blank covers, one of which has countersunk fastening screw holes for flat head screws. This cover is particularly adapted for installations in floors or sidewalks, as the heads of the screws will be flush with the face of the cover. The other cover is furnished with round head screws.

A gasket is made for use with blank covers so that when used with any Condulet of the SK series, an excellent watertight junction box is provided.

Assortments

ASSORTMENTS.—Black enameled and galvanized Condulets of the same type and size may be assorted to make a standard package.

Black enameled and galvanized covers of the same style may be assorted to make a standard package.

SPECIAL ASSORTMENTS.—Any assortment of 100 black enameled and galvanized Condulets of the SK series will be considered a standard package.

Any assortment of 100 black enameled and galvanized covers of the SK series will be considered a standard package.

Type SK Condulet Bodies



Galvanized or black enamel finish.

Take covers, fixture studs, or 3 1/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.

Cat. No.	Size In.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SK12	1/2	2	50	100	\$1.20
SK22	3/4	2	25	55	1.30
SK32	1	2	10	35	1.40
SK13	1/2	3	50	110	1.30
SK23	3/4	3	25	60	1.40
SK33	1	3	10	40	1.50

Type SKC Condulet Bodies

Galvanized or black enamel finish.

Take covers, fixture studs, or 3 1/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.



Cat. No.	Size In.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SKC12	1/2	2	50	105	\$1.30
SKC22	3/4	2	25	60	1.40
SKC32	1	2	10	40	1.50
SKC13	1/2	3	50	115	1.40
SKC23	3/4	3	25	65	1.50
SKC33	1	3	10	40	1.60

Type SKL Condulet Bodies



Galvanized or black enamel finish.

Take covers, fixture studs, or 3 1/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.

Cat. No.	Size In.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SKL12	1/2	2	50	110	\$1.30
SKL22	3/4	2	25	65	1.40
SKL32	1	2	10	45	1.50
SKL13	1/2	3	50	120	1.40
SKL23	3/4	3	25	70	1.50
SKL33	1	3	10	50	1.60

Type SKT Condulet Bodies

Galvanized or black enamel finish.

Take covers, fixture studs, or 3 1/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.



Cat. No.	Size In.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SKT12	1/2	2	50	115	\$1.40
SKT22	3/4	2	25	65	1.50
SKT32	1	2	10	45	1.60
SKT13	1/2	3	50	125	1.50
SKT23	3/4	3	25	70	1.60
SKT33	1	3	10	50	1.70

Type SKX Condulet Bodies

Galvanized or black enamel finish.

Take covers, fixture studs, or 3 1/4-inch outlet box round base wiring devices with 2 3/4-inch screw centers.



Cat. No.	Size In.	Depth In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SKX12	1/2	2	50	120	\$1.50
SKX22	3/4	2	25	70	1.60
SKX32	1	2	10	50	1.70
SKX13	1/2	3	50	130	1.60
SKX23	3/4	3	25	75	1.70
SKX33	1	3	10	55	1.80

Hub Covers

For Condulets of the SK Series

Galvanized or black enamel finish.

Furnished with fastening screws.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SK83	3/8	50	30	\$.65
SK84	1/2	50	30	.65
SK86	3/4	50	35	.75

Blank Covers

For Condulets of the SK Series

Galvanized or black enamel finish.

Furnished with fastening screws.

Cat. No.	Style of Fastening Screw	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SK80	Round Head	50	40	\$.30
SK809	Flat " Countersunk	50	40	.30

Gaskets

For Condulets of the SK Series

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GASK208	50	10	\$.25



S Series Condulet Bodies
Black Enamel Finish

Take covers, Norbitt Clamp Condulettos, or other wiring devices.

Furnished with fastening strap and screws.

Any assortment of 200 black enameled and galvanized Condulet bodies of the S series will be considered a standard package.

Type S Condulet Bodies



Galvanized or black enamel finish. Take covers, Norbitt clamp Condulettos or other wiring devices, see pages 428 to 430, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
S1	1/2	100	140	\$.70
S2	3/4	50	75	.75
S3	1	25	40	.90

Type SA Condulet Bodies

Galvanized or black enamel finish. Take covers, Norbitt clamp Condulettos or other wiring devices, see pages 428 to 430, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SA1	1/2	100	140	\$.70
SA2	3/4	50	75	.75
SA3	1	25	40	.90

Type SC Condulet Bodies



Galvanized or enamel. Take covers, Norbitt clamp Condulettos or other wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SC1	1/2	100	155	\$.80
SC2	3/4	50	80	.85
SC3	1	25	45	1.05

Type SL Condulet Bodies

Galvanized or enamel. Take covers, Norbitt clamp Condulettos or other wiring devices, see pages 428 to 430, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SL1	1/2	100	155	\$.80
SL2	3/4	50	80	.85
SL3	1	25	45	1.05

Type ST Condulet Bodies



Galvanized or enamel. Take covers, Norbitt clamp Condulettos or other wiring devices, see pages 428 to 430, catalogue 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ST1	1/2	100	175	\$.90
ST2	3/4	50	90	1.00
ST3	1	25	50	1.20

Type SX Condulet Bodies

Galvanized or enamel. Take covers, Norbitt clamp Condulettos or other wiring devices, see pages 428 to 430, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SX1	1/2	100	200	\$1.00
SX2	3/4	50	110	1.10
SX3	1	25	80	1.35



Covers for Wiring Devices

For bodies of the S series. Galvanized or black enamel finish. Furnished with screws.

Cat. No.	Kind of Metal	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
00	Sheet Steel	100	50	\$.12
00g	Cast Iron	100	70	.35
00k	Sheet Steel	100	50	.12
00kg	Cast Iron	100	70	.35



Blank Covers



For bodies of the S series. Galvanized or black enamel finish. Furnished with screws.

Cat. No.	Kind of Metal	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
00b	Sheet Metal	100	50	\$.12
00lg	Cast Iron	100	70	.35

Lamp Receptacle Condulettos

For bodies of the S series and type FH, and SRH holders. If specified, will be furnished with lamp grip, at slight addition to list price.



Standard package, 200; weight, standard package, 90 pounds.

Price, No. C337g, with Shade Holder Groove	each	\$.45
" " C337, without Shade Holder Groove	" "	.40

Cord Rosette Condulettos



For S series type and FH bodies, HV guard fixtures, and SRH holders.

For use where it is desired to install a drop cord light or other similar extension.

Standard package 200; weight, standard package, 90 pounds.

Price, No. C442	each	\$.35
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FA Series Condulets

Condulets of the FA series with 2-pole, 30-ampere, 250-volt, tumbler switch are for use on branch circuits, where such switches would be subjected to unusually severe service conditions. The switch handle operates through a slot in the cast cover, and is surrounded and protected by a guard rim. The handle is self indicating and can also be furnished with luminous finder at 50 cents extra.

Type FA

With 2-pole Tumbler Switch and Guarded Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FA129	1/2	25	150	\$6.25
FA229	3/4	25	155	6.35
FA329	1	10	65	6.45



Type FA

With 2-pole Tumbler Switch and Water-tight Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FA128	1/2	25	170	\$8.90
FA228	3/4	25	175	9.00
FA328	1	10	75	9.10



Type FAC

With 2-pole Tumbler Switch and Guarded Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FAC129	1/2	25	155	\$6.35
FAC229	3/4	25	160	6.45
FAC329	1	10	70	6.55



Type FAC

With 2-pole Tumbler Switch and Watertight Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FAC128	1/2	25	175	\$9.00
FAC228	3/4	25	180	9.10
FAC328	1	10	80	9.20



Type SJ Condulet Bodies

Galvanized or black enamel finish. Take covers and tumbler or toggle switches. For switches see page 431, Condulet Catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJ1	1/2	50	80	\$.65
SJ2	3/4	25	40	.75
SJ3	1	25	45	1.00

Type SJA Condulet Bodies

Galvanized or black enamel. Take covers and tumbler or toggle switches. 200 assorted black enameled and galvanized SJ series bodies make standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJA1	1/2	50	80	\$.65
SJA2	3/4	25	40	.75
SJA3	1	25	45	1.00

Type SJC Condulet Bodies

Galvanized or black enamel. Take covers and tumbler or toggle switches. For switches see page 431, Condulet catalogue No 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJC1	1/2	50	85	\$.75
SJC2	3/4	25	45	.85
SJC3	1	25	50	1.10

Type SJL Condulet Bodies

Galvanized or black enamel finish. Take covers and tumbler or toggle switches. 200 assorted black enameled and galvanized SJ series bodies make standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJL1	1/2	50	85	\$.75
SJL2	3/4	25	45	.85
SJL3	1	25	50	1.10

Type SJT Condulet Bodies

Galvanized or black enamel finish. Take covers and tumbler or toggle switches. For switches see page 431, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJT1	1/2	50	85	\$.85
SJT2	3/4	25	50	.95
SJT3	1	25	55	1.20

Type SJX Condulet Bodies

Galvanized or black enamel. Take covers and tumbler or toggle switches. 200 assorted black enameled and galvanized SJ series bodies make standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SJX1	1/2	50	90	\$.95
SJX2	3/4	25	55	1.05
SJX3	1	25	60	1.30

Cast Iron Covers

For bodies of the SJ series. Galvanized or black enamel finish. Standard package, 50. Weight, 20 pounds.



Price, No. SJ28 with Guard for Tumbler Switches. . . . \$.30
 " " " " " Toggle " " " " " " \$.30

Cast Iron Covers

For bodies of the SJ series. Galvanized or black enamel finish. Standard package, 50. Weight, 15 pounds.



Price, No. SJ27 without Guard for Tumbler Switches. . \$.25
 " " " " " Toggle " " " " " " . . . \$.25

Type SE Condulet Bodies

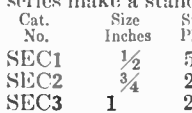
Galvanized or black enamel. Take 3/4-inch outlet box round base wiring devices. For wiring devices see pages 430 and 431, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SE1	1/2	50	100	\$.80
SF2	3/4	25	50	.90
SE3	1	25	55	1.10

Type SEC Condulet Bodies

Galvanized or enamel. Take 3/4-inch outlet box round base wiring devices. With screws. 200 assorted bodies of SE series make a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SEC1	1/2	50	105	\$.95
SEC2	3/4	25	55	1.05
SEC3	1	25	60	1.25



Type SEL Condulet Bodies

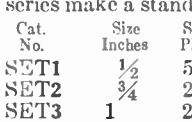
Galvanized or enamel. Take 3/4-inch outlet box round base wiring devices. For wiring devices see pages 430 and 431, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SEL1	1/2	50	105	\$.95
SEL2	3/4	25	55	1.05
SEL3	1	25	60	1.25

Type SET Condulet Bodies

Galvanized or enamel. Take 3/4-inch outlet box round base wiring devices. With screws. 200 assorted bodies of SE series make a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SET1	1/2	50	110	\$.1.05
SET2	3/4	25	60	1.15
SET3	1	25	65	1.35



Type SEX Condulet Bodies

Galvanized or black enamel finish. Take 3/4-inch outlet box round base wiring devices. For wiring devices see pages 430 and 431, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SEX1	1/2	50	115	\$.1.15
SEX2	3/4	25	65	1.25
SEX3	1	25	70	1.45

N Series Condulet Bodies

Condulets for concealed conduit. Galvanized or black enamel finish. Take Crouse-Hinds or other flush pocket lamp receptacles or attachment plug receptacles. Furnished with telescopic cover, temporary cap, and screws.

Any assortment of 200 black enameled and galvanized Condulets of the N series will be considered a standard package.

Type N Condulet Bodies

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
N1000	1/2	100	120	\$.90
N2000	3/4	50	65	.95
N3000	1	25	40	1.05



Type NC Condulet Bodies

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
NC1000	1/2	100	130	\$.95
NC2000	3/4	50	70	1.05
NC3000	1	25	45	1.15



Lamp Receptacles

For Condulet bodies of the N series, and type VS. Furnished with screws. Receptacles, page 422, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Wt., Lbs. Std. Pkg.	Price Each
C9514	100	40	\$.30



W Series Condulets

These Condulets completely house attachment plug receptacles in such a manner that it is practically impossible to injure them.

Hubs are cast solid with the body and have an integral bushing and tapered thread. Blank sheet steel or cast iron covers are provided for Condulet bodies of this series, permitting them to be used as pull or junction boxes.

Type W Condulet Bodies



Galvanized or black enamel finish. Take covers and attachment plug receptacles. Wiring devices, page 432, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
W1	1/2	100	90	\$.50
W2	3/4	50	70	.60
W3	1	25	40	.70

Type WC Condulet Bodies

Galvanized or black enamel finish. Take covers and attachment plug receptacles. 200 assorted bodies of W series make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WC1	1/2	100	115	\$.60
WC2	3/4	50	75	.65
WC3	1	25	55	.80



Type WL Condulet Bodies

Galvanized or black enamel finish. Take covers and attachment plug receptacles. Wiring devices, page 432, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WL1	1/2	100	155	\$.60
WL2	3/4	50	75	.65
WL3	1	25	55	.80



Type WT Condulet Bodies

Galvanized or black enamel finish. Take covers and attachment plug receptacles. 200 assorted bodies of W series make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WT1	1/2	100	125	\$.70
WT2	3/4	50	80	.80
WT3	1	25	60	1.00



Type WX Condulet Bodies

Take covers and attachment plug receptacles. Wiring devices, page 432, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WX1	1/2	100	135	\$.80
WX2	3/4	50	85	.90
WX3	1	25	65	1.15



Metal Covers

For Attachment Plug Receptacles

For bodies of W series. Galvanized or enamel. Furnished with screws. 200 assorted covers for this series make a standard package.



Catalogue No.	Sheet Steel	Cast Iron
Standard Package	100	100
Weight, Standard Package	30	40
Price	\$.10	.20

Metal Covers

Blank

For bodies of W series. Galvanized or enamel. Furnished with screws. 200 assorted covers for this series make a standard package.



Catalogue No.	Sheet Steel	Cast Iron
Standard package	100	100
Weight, Standard Package	30	45
Price	\$.10	.20

Type WD Condulet Bodies



Galvanized or black enamel finish. Take covers and receptacles or connection blocks. Wiring devices, pages 432 and 433, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WD1	1/2	100	120	\$.60
WD2	3/4	50	65	.70
WD3	1	25	35	.80

Type WDC Condulet Bodies

Galvanized or black enamel finish. Take covers and receptacles or connection blocks.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WDC1	1/2	100	130	\$.70
WDC2	3/4	50	70	.75
WDC3	1	25	35	.90



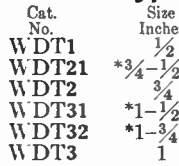
Type WDL Condulet Bodies



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WDL1	1/2	100	130	\$.70
WDL21	*3/4-1/2	50	70	.75
WDL2	3/4	50	70	.75
WDL31	*1-1/2	25	35	.90
WDL32	*1-3/4	25	35	.90
WDL3	1	25	35	.90

*Larger hub is at top in illustration.

Types WDT Condulet Bodies



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WDT1	1/2	100	140	\$.80
WDT21	*3/4-1/2-3/4	50	75	.90
WDT2	3/4	50	75	.90
WDT31	*1-1/2-1	25	40	1.10
WDT32	*1-3/4-1	25	40	1.10
WDT3	1	25	40	1.10

*Smaller hub is at top in illustration.



Type WDX Condulet Bodies

Any assortment of 200 WD series bodies or 200 covers will be considered a standard package. Take covers and receptacles or connection blocks.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WDX1	1/2	100	150	\$.90
WDX2	3/4	50	80	1.00
WDX3	1	25	45	1.25



Metal Covers for WD Series

For Sign Receptacles, Cast Iron

Standard package, 100. Weight, 50 pounds.

Price, No. WD001..... each \$.40

For Clamp Receptacles

Cat. No.	Opening	Kind of Metal	Std. Pkg.	Wt. Pkg.	Price Each
WD054	1 1/8	Sheet Steel	100	25	\$.15
WD0054	1 1/8	Cast Iron	100	40	.30
WD048	1 1/2	Sheet Steel	100	25	.15
WD0048	1 1/2	Cast Iron	100	40	.30



Metal Covers

Blank

Galvanized or black enamel finish. Furnished with screws so retained that they cannot fall out.



Cat. No.	Kind of Metal	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
WD00	Sheet Steel	100	25	\$.15
WD000	Cast Iron	100	45	.30

For Condulet bodies of the WD series and form 5 bodies of the GS series. Furnished with screws.

Connection Blocks

For Condulet bodies of the WD series and form 5 bodies of the GS series. Furnished with screws.

Standard Package	100
Weight, Standard Package	30
Price, No. PE72, Porcelain	each \$.25
Standard Package	50
Weight, Standard Package	15
Price, No. CF101, Composition	each \$.50



P Series Condulets

Used in exposed conduit systems, and take standard canopies and standard canopy insulating rings from four to six inches in diameter.

Take electroliers or combination gas and electric fixtures. Any assortment of 100 black enameled and galvanized Condulets of the P series will be considered a standard package.

Type P Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.



Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
P1	1/2	25	90		\$1.40
P2	3/4	25	95		1.55
P3	1	10	55		1.70
P4	1 1/4	10	65		1.85
P5	1 1/2	10	80		2.00

Type PC Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
PC1	1/2	25	100		\$1.50
PC2	3/4	25	110		1.65
PC3	1	10	60		1.80
PC4	1 1/4	10	70		1.95
PC5	1 1/2	10	85		2.10



Type PL Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.



Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
PL1	1/2	25	100		\$1.50
PL2	3/4	25	110		1.65
PL3	1	10	60		1.80
PL4	1 1/4	10	70		1.95
PL5	1 1/2	10	85		2.10

PM Series of Condulets

Used in exposed conduit systems, and take standard canopies and standard canopy insulating rings from three to four inches in diameter.

Take electroliers or combination gas and electric fixtures. Any assortment of 100 black enameled and galvanized Condulets of the PM series will be considered a standard package.

Type PM Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
PM1	1/2	25	60		\$0.90
PM2	3/4	25	65		1.05
PM3	1	10	45		1.20
PM4	1 1/4	10	50		1.35
PM5	1 1/2	10	55		1.50



Type PMC Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.



Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
PMC1	1/2	25	80		\$1.05
PMC2	3/4	25	85		1.20
PMC3	1	10	45		1.35
PMC4	1 1/4	10	50		1.50
PMC5	1 1/2	10	55		1.65

Type PML Condulets

Galvanized or black enamel finish. Furnished with screws for fixture stud.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
PML1	1/2	25	80		\$1.05
PML2	3/4	25	85		1.20
PML3	1	10	45		1.35
PML4	1 1/4	10	50		1.50
PML5	1 1/2	10	55		1.65



V Series Condulets

Screw Guard

Vaporproof, galvanized or black enamel finish. Form 75 takes 75-watt Mazda C lamps, 60-watt Mazda B lamps, or any lamp not exceeding 2 3/4 x 6 1/8 inches. Form 200 takes 200-watt Mazda C lamps, 100-watt Mazda B lamps, or any lamp not exceeding 3 3/4 x 8 3/8 inches.

Furnished with receptacle, sealing plate, gaskets, globe and guard.

If specified on order, lamp receptacle with lamp grip will be furnished at a slight advance in list price. For key receptacle, add \$1.00 to list price.

Blue, green, opal, orange and ruby globes can be furnished for Condulet bodies of this series at an advance in list prices.

For reflectors see page 432, Condulet catalogue No. 2000. Any assortment of 100 black enameled and galvanized iron Condulets of the V series, screw guard, will be considered a standard package.

Type V Condulets

Screw Guard

Iron, galvanized or black enamel finish. Furnished with receptacle, sealing plate, gaskets, globe and guard.

Form 75

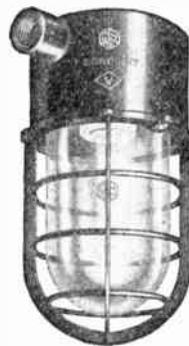
Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
V1759	1/2	25	140		\$4.50
V2759	3/4	25	150		4.55
V3759	1	10	75		4.60

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
V12009	1/2	25	180		\$5.40
V22009	3/4	25	190		5.45
V32009	1	10	100		5.50



Type VA Condulets

Screw Guard

For reflectors see page 432, Condulet catalogue No. 2000.

Form V75

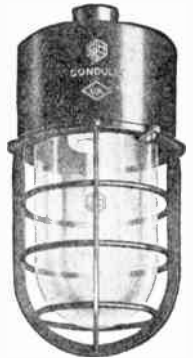
Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
VA1759	1/2	25	140		\$4.50
VA2759	3/4	25	150		4.55
VA3759	1	10	75		4.60

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
VA12009	1/2	25	180		\$5.40
VA22009	3/4	25	190		5.45
VA32009	1	10	100		5.50



Type VC Condulets

Screw Guard

Iron, galvanized or black enamel finish. Furnished with receptacle, sealing plate, gaskets, globe and guard.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
VC1759	1/2	25	145		\$4.60
VC2759	3/4	25	155		4.70
VC3759	1	10	80		4.80

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
VC12009	1/2	25	185		\$5.50
VC22009	3/4	25	195		5.60
VC32009	1	10	100		5.65



Type VL Condulets

Screw Guard

Iron, galvanized or black enamel finish. For reflectors see page 432, Condulet catalogue No. 2000.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VL1759	1/2	25	145	\$4.60
VL2759	3/4	25	155	4.70
VL3759	1	10	80	4.80

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VL12009	1/2	25	185	\$5.50
VL22009	3/4	25	195	5.60
VL32009	1	10	100	5.65



Type VF Condulets

Screw Guard

Furnished with receptacle, sealing plate, gaskets, globe and guard. For reflectors see page 432, Condulet catalogue No. 2000.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VF1759	1/2	25	180	\$4.90
VF2759	3/4	25	190	5.00
VF3759	1	10	95	5.10

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VF12009	1/2	25	210	\$5.75
VF22009	3/4	25	220	5.85
VF32009	1	10	110	5.95



Type VT Condulets

Screw Guard

Iron, galvanized or black enamel finish. Furnished with receptacle, sealing plate, gaskets, globe and guard.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VT1759	1/2	25	150	\$4.75
VT2759	3/4	25	160	4.85
VT3759	1	10	85	5.05

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VT12009	1/2	25	100	\$5.60
VT22009	3/4	25	200	5.75
VT32009	1	10	105	5.85



Type VJ Condulets

Screw Guard

Furnished with receptacle, sealing plate, gaskets, globe and guard. For reflectors see page 432, Condulet catalogue No. 2000.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VJ1759	1/2	25	220	\$5.15
VJ2759	3/4	25	230	5.25
VJ3759	1	10	120	5.35

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VJ12009	1/2	25	250	\$5.90
VJ22009	3/4	25	260	6.00
VJ32009	1	10	130	6.10



Type VX Condulets

Screw Guard

Iron, galvanized or black enamel finish. For reflectors see page 432, Condulet catalogue No. 2000.

Form 75

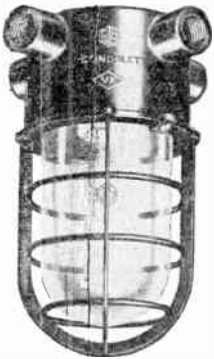
Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VX1759	1/2	25	155	\$4.85
VX2759	3/4	25	165	5.05
VX3759	1	10	85	5.20

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VX12009	1/2	25	195	\$5.70
VX22009	3/4	25	205	5.90
VX32009	1	10	105	6.05



Type VG Condulets

Screw Guard

Iron, galvanized or black enamel finish. Furnished with receptacle, sealing plate, gaskets, globe and guard.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VG1759	1/2	25	175	\$4.75
VG2759	3/4	25	190	4.85
VG3759	1	10	100	4.95

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VG12009	1/2	25	245	\$5.50
VG22009	3/4	25	260	5.60
VG32009	1	10	130	5.70



Type VE Condulets

Screw Guard

Iron, galvanized or black enamel finish. Furnished with receptacle, sealing plate, gaskets, globe and guard.

Form 75

Complete with No. V75 Globe, and No. V759 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VE1759	1/2	25	170	\$4.75
VE2759	3/4	25	180	4.85
VE3759	1	10	90	4.95

Form 200

Complete with No. V200 Globe, and No. V2009 Guard

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VE12009	1/2	25	200	\$5.50
VE22009	3/4	25	210	5.60
VE32009	1	10	105	5.70



Globes for V Series Condulets

For V series, screw guard, Condulets and GS vaporproof fixtures. Clear glass.

Form 75

Cat. No.	Length Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
V75	6 3/4	25	30	\$8.80

Form 200

V200	9 1/4	25	60	\$8.80
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Guards for V Series Condulets

For V series screw guard Condulets, and GS vaporproof fixtures. Brass, marine finish.

Form 75

Cat. No.	For Globe Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
V759	6 3/4	25	35	\$1.80

Form 200

V2009	9 1/4	25	45	\$2.25
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Vaporproof Condulets with Reflectors
V Series, Screw Guard

Type V



Iron, galvanized or black enamel finish.

Form 75 with Globe V75
With Reflector SH21 for 50-watt Lamps

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
V1821	1/2	25	215	\$5.70
V2821	3/4	25	220	5.75
V3821	1	10	80	5.80

With Reflector SH22 for 75-watt Lamps

V1822	1/2	25	225	\$6.20
V2822	3/4	25	230	6.25
V3822	1	10	85	6.30

Form 200 with Globe V200

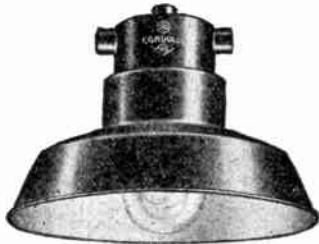
With Reflector SH23 for 100 and 150-watt Lamps

V1823	1/2	25	305	\$7.15
V2823	3/4	25	315	7.20
V3823	1	10	140	7.25

With Reflector SH24 for 200-watt Lamps

V1824	1/2	25	340	\$7.65
V2824	3/4	25	350	7.70
V3824	1	10	155	7.75

Type VCA



Iron, galvanized or black enamel finish.

Form 75 with Globe V75
With Reflector SH21 for 50-watt Lamps

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
VCA1821	1/2	25	230	\$5.95
VCA2821	3/4	25	235	6.05
VCA3821	1	10	90	6.25

With Reflector SH22 for 75-watt Lamps

VCA1822	1/2	25	240	\$6.45
VCA2822	3/4	25	245	6.55
VCA3822	1	10	95	6.75

Form 200 with Globe V200

With Reflector SH23 for 100 and 150-watt Lamps

VCA1823	1/2	25	320	\$7.35
VCA2823	3/4	25	330	7.50
VCA3823	1	10	150	7.60

With Reflector SH24 for 200-watt Lamps

VCA1824	1/2	25	355	\$7.85
VCA2824	3/4	25	365	8.00
VCA3824	1	10	165	8.10

SPECIAL ASSORTMENT.—Any assortment of 100 black enameled and galvanized Condulets of the V series, screw guard, with reflectors, will be considered a standard package.

Vaporproof Condulets with Reflectors
V Series, Screw Guard

Type VDA



Iron, galvanized or black enamel finish.

Form 75 with Globe V75

With Reflector SH21 for 50-watt Lamps

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
VDA1821	1/2	25	215	\$5.70
VDA2821	3/4	25	220	5.75
VDA3821	1	10	80	5.80

With Reflector SH22 for 75-watt Lamps

VDA1822	1/2	25	225	\$6.20
VDA2822	3/4	25	230	6.25
VDA3822	1	10	85	6.30

Form 200 with Globe V200

With Reflector SH23 for 100 and 150-watt Lamps

VDA1823	1/2	25	305	\$7.15
VDA2823	3/4	25	315	7.20
VDA3823	1	10	140	7.25

With Reflector SH24 for 200-watt Lamps

VDA1824	1/2	25	340	\$7.65
VDA2824	3/4	25	350	7.70
VDA3824	1	10	155	7.75

Type VA



Iron, galvanized or black enamel finish.

Form 75 with Globe V75

With Reflector SH21 for 50-watt Lamps

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
VA1821	1/2	25	215	\$5.70
VA2821	3/4	25	220	5.75
VA3821	1	10	80	5.80

With Reflector SH22 for 75-watt Lamps

VA1822	1/2	25	225	\$6.20
VA2822	3/4	25	230	6.25
VA3822	1	10	85	6.30

Form 200 with Globe V200

With Reflector SH23 for 100 and 150-watt Lamps

VA1823	1/2	25	305	\$7.15
VA2823	3/4	25	315	7.20
VA3823	1	10	140	7.25

With Reflector SH24 for 200-watt Lamps

VA1824	1/2	25	340	\$7.65
VA2824	3/4	25	350	7.70
VA3824	1	10	155	7.75

SPECIAL ASSORTMENT.—Any assortment of 100 black enameled and galvanized Condulets of the V series, screw guard, with reflectors, will be considered a standard package.

Type VC Vaporproof Condulets with Reflectors—V Series, Screw Guard



Form 75 with Globe V75

With Reflector SH21 for 50-watt Lamps

Iron, galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VC1821	1/2	25	225	\$5.80
VC2821	3/4	25	230	5.90
VC3821	1	10	85	6.00

With Reflector SH22 for 75-watt Lamps

VC1822	1/2	25	235	\$6.30
VC2822	3/4	25	240	6.40
VC3822	1	10	90	6.50

Form 200 with Globe V200

With Reflector SH23 for 100 and 150-watt Lamps

VC1823	1/2	25	315	\$7.25
VC2823	3/4	25	325	7.35
VC3823	1	10	145	7.40

With Reflector SH24 for 200-watt Lamps

VC1824	1/2	25	350	\$7.75
VC2824	3/4	25	360	7.85
VC3824	1	10	160	7.90

Type VSB Portable Protected Vaporproof Lanterns



Takes 75-watt Mazda C lamps, 60-watt Mazda B lamps or any lamp not exceeding 2 3/4 x 6 1/8 inches. Furnished with bail, key receptacle with lamp grip, gaskets, globe, and guard.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
VS075	10	75	\$10.00

Type LM Portable Protected Lanterns



Takes 15 and 25-watt Mazda G18 1/2 lamps, 25 and 50-watt Mazda P19 lamps, or any lamp not exceeding 3 3/4 inches in length. Furnished with receptacle with lamp grip, cord clamp, plain wire glass front, and gasket.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LM50	5	50	\$10.00

Type VS Vaporproof Portable Hand Lamps

Type VS hand lamps for extension cords are well suited for use in garages, refineries, bakeries, flour mills, grain elevators, marine work, or wherever inflammable vapor, dust, or moisture is present.

The globe screws into the body and is protected by a guard. If armored cord or flexible conduit is to be used with these hand lamps, CGU or CGV connectors of the proper size should be ordered.



Type VS Portable Hand Lamps Screw Guard

Vaporproof, with 5 3/8-inch globe. Takes 60-watt Mazda B lamps or any lamp, not exceeding 2 3/4 x 5 5/8 inches.

Aluminum, scratch brush finish. Furnished with receptacle, gaskets, globe, guard, cord guard spring, and water-tight stuffing box in handle.

If specified on order, lamp receptacle with lamp grip will be furnished at slight addition to list price.

Standard package, 25. Weight, standard package, 70 pounds. Price, No. VS060.....each \$6.15

Guard for Type VS Portable Hand Lamps

Screw Guard

Galvanized iron. Will accommodate globe 5 3/8 inches long.

Standard package, 25.

Weight, standard package, 30 pounds. Price, No. VS0955.....each \$2.00



Clear Glass

For use with type VS portable hand lamps.



Cat. No.	Length In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
V85	5	25	30	\$.80
V15	5 3/8	25	30	.80

Type LPG Safety Hand Lamps

Consists of guard, sock-et, handle, and strain relief cord clamp.



For 25-watt G18 1/2 or 25 or 50-watt P19 Lamps

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LPG119	10	20	\$3.00

For 25-watt S17 Lamps

LPG125	10	20	\$3.00
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For 40-watt S19 or 60-watt S21 Lamps

LPG160	10	25	\$3.25
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Type LPH Safety Hand Lamps



Consists of guard with half shade, socket, handle and strain relief cord clamp.

For 25-watt G18 1/2 or 25 or 50-watt P19 Lamps

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LPH119	10	20	\$3.15

For 25-watt S17 Lamps

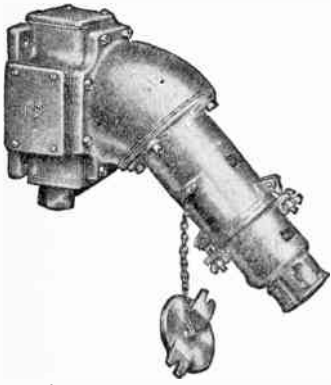
LPH125	10	20	\$3.15
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For 40-watt S19 or 60-watt S21 Lamps

LPH160	10	25	\$3.50
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Any assortment of 25 Types LPG and LPH Safety Hand Lamps will be considered a standard package.

Arktite Circuit-breaking Plugs and Receptacles



Type AJX Plug Receptacle Condulet; Plug Inserted

Arktite Plugs and Receptacles embody an entirely new principle in plug and receptacle construction, which meets the demand for circuit-breaking plugs and receptacles in capacities heretofore considered impractical.

The arc formed by pulling the plug is so completely confined in a chamber of insulating material that it is impossible to form a short circuit or ground. The air and gases confined in the chamber expand rapidly and smother the arc.

The Arktite series of plugs and receptacles protect the current carrying parts; enclose the contact parts in separate chambers of insulating material; break the circuit in separate chambers, and provide a means for effectively grounding portable apparatus.

The Arktite series is made in 2, 3 and 4-pole; for 10, 30, 60, 100 and 200-ampere; 250-volt A.C. or D.C. or 600-volt A.C. The 10-ampere receptacle housings are mounted on Form 10 Condulets of the QE series. The 30 and 60-ampere receptacle housings are mounted on Form 20 Condulets of the QE series. The 100 and 200-ampere receptacles are mounted on Types AJ and AJX Condulets.

Information on Rating

The Underwriters limit the use of plugs and receptacles as circuit-breaking devices to 100 amperes, 125 volts, and 75 amperes, 250 volts. For higher amperages and voltages, they require a switch in series with the plug and receptacle. They also will permit the use of all approved plugs and receptacles as disconnecting devices on all voltages up to and including 600 volts A.C.

However, exhaustive tests prove that all Arktite plugs and receptacles can be safely used as circuit-breaking devices at the listed ampere ratings on 250-volt A.C. or D.C., or 600-volt A.C. circuits.

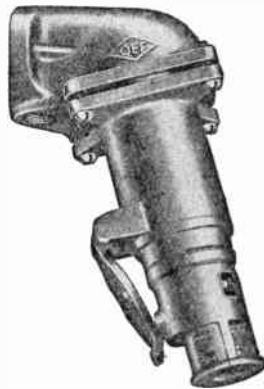
For quick reference the above information is given in the following schedule:

Rating	CIRCUIT-BREAKING DEVICES			Disconnecting Devices All Voltages up to 600 A.C. Amperes
	VOLTS A.C. OR D.C.			
	125 Amperes	250 Amperes	600 Amperes	
Crouse-Hinds'	10 to 200	10 to 200	10 to 200	10 to 200
Underwriters'	10 " 100	10 " 75	.....	10 " 200

Unless otherwise specified, Arktite plugs and receptacles will be marked with the Underwriters' rating for circuit-breaking devices. The 200-ampere Arktite plug will be marked with the Underwriters' maximum rating for a disconnecting device. If Arktite plugs and receptacles are to be used at Crouse-Hinds' ratings; order by catalogue number, and add, Crouse-Hinds' Rating.

These devices are marked by their simplicity of construction. Contact members in the receptacle are fingers and those of the plug are tubes, each of a single piece of alloy brass machined to an accurate fit. Receptacles have two phosphor bronze detent springs which hold the plug in the receptacle housing against the weight of the cable.

The retaining ring, which holds the interior parts in position, can be removed or replaced in a few seconds, so that the plug and receptacle can be taken apart and reassembled quickly and easily, making these devices easy to wire.



Type QEF with Spring Door Plug Receptacle Housing Plug Inserted

Type CP Arktite Circuit-breaking Non-watertight Plugs

250-volt A. C. or D. C.; 600-volt A. C.

For round flexible cord or cable and flexible conduit or armored conductor.

Aluminum handles with strain relief clamp.

Scratch brush finish.

Any assortment of Arktite circuit-breaking plugs and receptacles aggregating \$100.00 list value or more will be considered an assorted standard package.

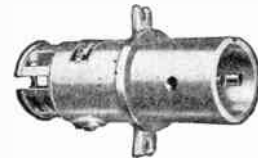
Type CP Plain Plugs



Two-pole, 10-ampere plug is furnished with cord reinforcement.

Cat. No.	DIAMETER OF CLAMP OPENING, INCHES		Standard Package	Wt., Lbs. Std. Pkg.	Price Each
	Minimum	Maximum			
10-ampere					
2-pole					
CP112	.313	.5	10	10	\$3.70
CP312	.5	.75	10	10	3.70
3-pole					
CP113	.438	.75	10	10	\$4.40
CP313	.688	.938	10	10	4.40
4-pole					
CP114	.438	.75	10	10	\$4.70
CP314	.688	.938	10	10	4.70
CP714	.875	1.188	10	10	4.70
30-ampere					
2-pole					
CP132	.5	.875	5	10	\$6.50
CP332	.75	1.188	5	10	6.50
3-pole					
CP133	.5	.875	5	10	\$6.90
CP333	.75	1.188	5	10	6.90
4-pole					
CP134	.688	1.0	5	15	\$7.80
CP334	.938	1.469	5	15	7.80
60-ampere					
2-pole					
CP162	.75	1.188	5	20	\$8.35
CP362	1.188	1.813	5	20	8.35
3-pole					
CP163	.75	1.188	5	20	\$8.90
CP363	1.188	1.813	5	20	8.90
4-pole					
CP164	.938	1.313	5	25	\$10.00
CP364	2.063	2.063	5	25	10.00

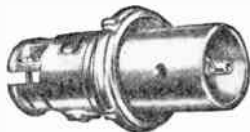
Type CP Plugs with Retaining Ears



Cat. No.	DIAMETER OF CLAMP OPENING, INCHES		Standard Package	Wt., Lbs. Std. Pkg.	Price Each
	Minimum	Maximum			
100-ampere					
2-pole					
CP1102	.938	1.469	1	10	\$22.00
CP3102	1.313	2.063	1	10	22.00
3-pole					
CP1103	.938	1.469	1	10	\$25.00
CP3103	1.313	2.063	1	10	25.00
4-pole					
CP1104	1.188	1.813	1	15	\$30.00
CP3104	1.75	2.563	1	15	30.00
200-ampere					
2-pole					
CP1202	1.188	1.813	1	20	\$53.00
CP3202	1.75	2.563	1	20	53.00
3-pole					
CP1203	1.188	1.813	1	20	\$58.00
CP3203	1.75	2.563	1	20	58.00
4-pole					
CP1204	1.313	2.063	1	25	\$65.00
CP3204	2.0	3.25	1	25	65.00

Type CP Arktite Circuit-breaking Non-watertight Plugs

Continued
250-volt A. C. or D. C.; 600-volt A. C.
Type CP Plugs with Threaded Retaining Ring



Cat. No.	DIAMETER OF CLAMP OPENING, INCHES		Standard Package	Wt., Lbs. Std. Pkg.	Price Each
	Minimum	Maximum			
	2-pole				
CP412	.5	.75	10	15	\$4.20
	3-pole				
CP213	.438	.75	10	15	\$4.90
CP413	.688	.938	10	15	4.90
	4-pole				
CP214	.438	.75	10	15	\$5.20
CP414	.688	.938	10	15	5.20
CP814	.875	1.188	10	15	5.20
	30-ampere				
	2-pole				
CP232	.5	.875	5	20	\$7.25
CP432	.75	1.188	5	20	7.25
	3-pole				
CP233	.5	.875	5	20	\$7.65
CP433	.75	1.188	5	20	7.65
	4-pole				
CP234	.688	1.0	5	25	\$8.65
CP434	.938	1.469	5	25	8.65
	60-ampere				
	2-pole				
CP262	.75	1.188	5	25	\$9.20
CP462	1.188	1.813	5	25	9.20
	3-pole				
CP263	.75	1.188	5	25	\$9.75
CP463	1.188	1.813	5	25	9.75
	4-pole				
CP264	.938	1.313	5	30	\$11.00
CP464	1.313	2.063	5	30	11.00

Type CP Arktite Circuit-breaking Watertight Plugs

250-volt A. C. or D. C.; 600-volt A. C.



For flexible cord or cable. Aluminum handles with tapered rubber bushing, gland nut, and threaded retaining ring. Scratch brush finish.

Two-pole, 10-ampere plug is furnished with cord reinforcement.

Any assortment of Arktite circuit-breaking plugs and receptacles aggregating \$100.00 list value or more will be considered an assorted standard package.

Cat. No.	Diam. of Hole Through Rubber Bushing, In.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
	10-ampere			
	2-pole			
CP512	.406	10	20	\$5.50
	3-pole			
CP513	.625	10	20	\$6.75
	4-pole			
CP514	.625	10	20	\$7.05
	30-ampere			
	2-pole			
CP532	.781	5	20	\$9.40
	3-pole			
CP533	.781	5	20	\$9.80
	4-pole			
CP534	.969	5	25	\$11.50
	60-ampere			
	2-pole			
CP562	1.078	5	25	\$12.00
	3-pole			
CP563	1.078	5	25	\$12.55
	4-pole			
CP564	1.172	5	30	\$13.85

Type QE Arktite Circuit-breaking Receptacles with Housings

250-volt A. C. or D. C.; 600-volt A. C.

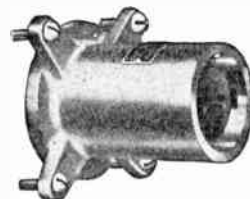
For use on condulets of the QE series. Take Arktite circuit-breaking plugs.

Galvanized finish.

Any assortment of Arktite circuit-breaking plugs and receptacles aggregating \$100.00 list value or more will be considered an assorted standard package.

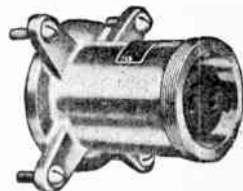
Type QE Receptacles with Plain Housings For QE Series Form 10

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	10-ampere			
QE312	2	10	30	\$3.00
QE313	3	10	30	4.00
QE314	4	10	30	4.25
	For QE Series Form 20			
	30-ampere			
QE332	2	5	35	\$5.75
QE333	3	5	35	6.25
QE334	4	5	35	7.25
	60-ampere			
QE362	2	5	40	\$7.50
QE363	3	5	40	8.25
QE364	4	5	40	9.00



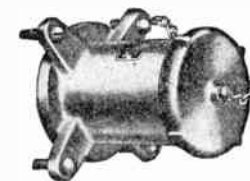
Type QE Receptacles with Threaded Housing For QE Series Form 10

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	10-ampere			
QE712	2	10	30	\$3.25
QE713	3	10	30	4.25
QE714	4	10	30	4.50
	For QE Series Form 20			
	30-ampere			
QE732	2	5	35	\$6.25
QE733	3	5	35	6.75
QE734	4	5	35	7.75
	60-ampere			
QE762	2	5	40	\$8.25
QE763	3	5	40	9.00
QE764	4	5	40	9.75



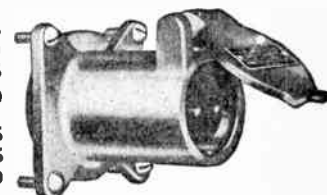
Type QE Receptacles with Threaded Housing and Brass Cap

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	For QE Series Form 10			
	10-ampere			
QE812	2	10	35	\$4.15
QE813	3	10	35	5.35
QE814	4	10	35	5.60
	For QE Series Form 20			
	30-ampere			
QE832	2	5	40	\$7.50
QE833	3	5	40	8.00
QE834	4	5	40	9.25
	60-ampere			
QE862	2	5	45	\$9.50
QE863	3	5	45	10.25
QE864	4	5	45	11.25



Type QE Receptacles with Spring Door Housing For QE Series Form 10

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	10-ampere			
QE612	2	10	35	\$3.85
QE613	3	10	35	5.00
QE614	4	10	35	5.25
	For QE Series Form 20			
	30-ampere			
QE632	2	5	40	\$6.75
QE633	3	5	40	7.25
QE634	4	5	40	8.50
	60-ampere			
QE662	2	5	45	\$8.75
QE663	3	5	45	9.50
QE664	4	5	45	10.50



QE Series Condulets

Forms 10 and 20
For Arkrite Receptacle Housings

Galvanized finish.

Any assortment of 50 galvanized condulets of the QE series will be considered an assorted standard package.

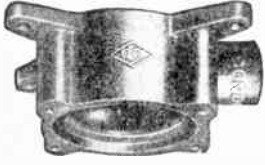
Type QE Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QE119	1/2	25	40		\$.90
QE219	3/4	25	45		1.00
QE319	1	25	50		1.10

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QE129	1/2	25	80		\$1.30
QE229	3/4	25	85		1.40
QE329	1	25	90		1.50
QE429	1 1/4	25	100		1.60
QE529	1 1/2	25	105		1.70



QE Series Condulets

Forms 10 and 20
For Arkrite Receptacle Housings

Galvanized finish.

Any assortment of 50 galvanized condulets of the QE series will be considered an assorted standard package.

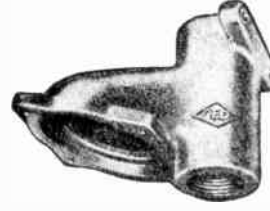
Type QED Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QED119	1/2	25	50		\$1.45
QED219	3/4	25	55		1.55
QED319	1	25	65		1.65

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QED129	1/2	25	80		\$1.90
QED229	3/4	25	90		2.00
QED329	1	25	100		2.10
QED429	1 1/4	25	115		2.20
QED529	1 1/2	25	130		2.30



Type QEC Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEC119	1/2	25	45		\$1.00
QEC219	3/4	25	50		1.10
QEC319	1	25	55		1.20

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEC129	1/2	25	85		\$1.40
QEC229	3/4	25	90		1.50
QEC329	1	25	95		1.60
QEC429	1 1/4	25	105		1.70
QEC529	1 1/2	25	110		1.80



Type QEG Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEG119	1/2	25	70		\$1.20
QEG219	3/4	25	75		1.30
QEG319	1	25	80		1.40

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEG129	1/2	25	120		\$1.70
QEG229	3/4	25	125		1.80
QEG329	1	25	130		1.90
QEG429	1 1/4	25	140		2.00
QEG529	1 1/2	25	150		2.10



Type QEE Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEE119	1/2	25	35		\$1.00
QEE219	3/4	25	40		1.10
QEE319	1	25	50		1.20

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEE129	1/2	25	70		\$1.45
QEE229	3/4	25	80		1.55
QEE329	1	25	90		1.65
QEE429	1 1/4	25	105		1.75
QEE529	1 1/2	25	120		1.85

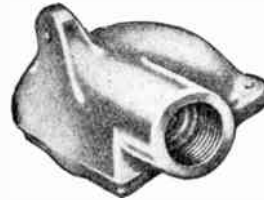


Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEK119	1/2	25	45		\$1.00
QEK219	3/4	25	50		1.10
QEK319	1	25	60		1.20

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEK129	1/2	25	75		\$1.45
QEK229	3/4	25	85		1.55
QEK329	1	25	95		1.65
QEK429	1 1/4	25	110		1.75
QEK529	1 1/2	25	125		1.85



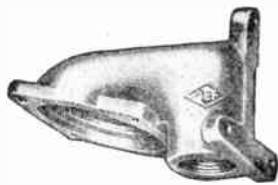
Type QEF Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEF119	1/2	25	45		\$1.15
QEF219	3/4	25	50		1.25
QEF319	1	25	60		1.35

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEF129	1/2	25	75		\$1.60
QEF229	3/4	25	85		1.70
QEF329	1	25	95		1.80
QEF429	1 1/4	25	110		1.90
QEF529	1 1/2	25	125		2.00



Type QEP Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEP119	1/2	25	45		\$1.00
QEP219	3/4	25	50		1.10
QEP319	1	25	60		1.20

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEP129	1/2	25	75		\$1.45
QEP229	3/4	25	85		1.55
QEP329	1	25	95		1.65
QEP429	1 1/4	25	110		1.75
QEP529	1 1/2	25	125		1.85



Type QEJ Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEJ119	1/2	25	55		\$1.30
QEJ219	3/4	25	60		1.40
QEJ319	1	25	70		1.50

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEJ129	1/2	25	80		\$1.75
QEJ229	3/4	25	90		1.85
QEJ329	1	25	100		1.95
QEJ429	1 1/4	25	115		2.05
QEJ529	1 1/2	25	130		2.15



Type QEA Condulets

Form 10 for 10-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEA119	1/2	25	40		\$.90
QEA219	3/4	25	45		1.00
QEA319	1	25	50		1.10

Form 20 for 30 or 60-ampere Housings, 2, 3 or 4-pole

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Each	Price Each
QEA129	1/2	25	80		\$1.30
QEA229	3/4	25	85		1.40
QEA329	1	25	90		1.50
QEA429	1 1/4	25	100		1.60
QEA529	1 1/2	25	105		1.70



Arktite Circuit-breaking Receptacles and Condulets

250-volt A. C. or D C.; 600-volt A. C.

Take Arktite circuit-breaking plugs. Galvanized finish.

Any assortment of Arktite circuit-breaking plugs and receptacles aggregating \$1.00 list value or more will be considered an assorted standard package.

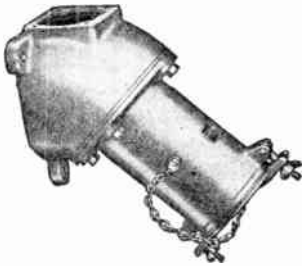
Type AJ without Hub Plates
45 Degree Angle

Consists of receptacle, housing, conduit, and gaskets.

100-ampere

Take YYP8 Series Hub Plate

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
2-pole			
AJ88102	1	30	\$27.00
3-pole			
AJ88103	1	35	\$30.00
4-pole			
AJ88104	1	40	\$35.00
200-ampere			
Take YYP9 Series Hub Plate			
2-pole			
AJ99202	1	55	\$68.00
3-pole			
AJ99203	1	55	\$78.00
4-pole			
AJ99204	1	60	\$88.00

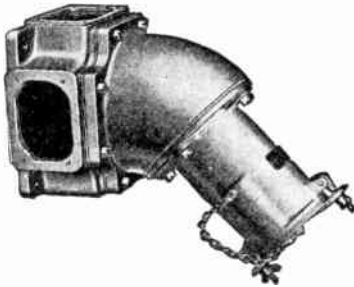


Type AJX without Hub Plates

Consists of receptacle, housing, angle plate, conduit, and gaskets.

100-ampere
Take YYP8 Series Hub Plate
2-pole

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AJX88102	1	45	\$35.50
3-pole			
AJX88103	1	50	\$38.50
4-pole			
AJX88104	1	55	\$43.50
200-ampere			
Take YYP9 Series Hub Plate			
2-pole			
AJX99202	1	80	\$87.00
3-pole			
AJX99203	1	85	\$97.00
4-pole			
AJX99204	1	90	\$107.00



Grounding Rings

For 3 or 4-pole Receptacles



Where it is required to use a ground wire having a current capacity equal to that of the circuit wires in ground-portable devices through Arktite receptacles, it is necessary to use a grounding ring which must be ordered separately.

To complete the grounding connection on the 10, 30 and 60-ampere receptacle, a grounding ring is clamped between the receptacle housing and the conduit. The flexible lead on the grounding ring is connected to the extra contact finger in the receptacle.

On the 100 and 200-ampere receptacle the extra contact finger must be permanently grounded by means of a flexible cable connected to the soldering lug on the inside of the conduit. No ring is used between housing and conduit.

10-ampere

Cat. No.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
CR106	25	5	\$.50

30 or 60-ampere

Cat. No.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
CR606	25	10	\$.65

Conduit Hub Plates

For Types AJ and AJX Condulets

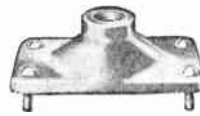
Cast iron, galvanized finish. Furnished with screws.

Any assortment of 25 galvanized conduit hub plates for Types AJ and AJX Condulets will be considered an assorted standard package.

YYP8 Series Conduit Hub Plates

With One Hub Straight

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYP849	1 1/4	15	30	\$.85
YYP859	1 1/2	15	35	.95
YYP869	2	15	40	1.05
YYP879	2 1/2	15	45	1.15



With Two Hubs Straight

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYP8449	1 1/4	15	35	\$1.00



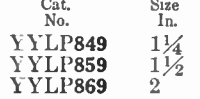
With One Hub, 90 Degrees Back or Front

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYAP849	1 1/4	15	35	\$.95
YYAP859	1 1/2	15	40	1.05
YYAP869	2	15	45	1.15



With One Hub, 90 Degrees Left or Right

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYLP849	1 1/4	15	35	\$.95
YYLP859	1 1/2	15	40	1.05
YYLP869	2	15	45	1.15



With Two Hubs, 90 Degrees Left and Right

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYSP849	1 1/4	15	35	\$1.00
YYSP859	1 1/2	15	45	1.10
YYSP869	2	15	50	1.20



Blank

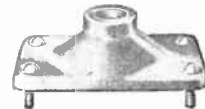
Cat. No.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
YYP8009	15	25	\$.40



YYP9 Series Conduit Hub Plates

With One Hub, Straight

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYP959	1 1/2	10	95	\$3.25
YYP969	2	10	100	3.50
YYP979	2 1/2	10	110	3.75
YYP989	3	10	115	4.00
YYP999	3 1/2	10	125	4.25
YYP9109	4	10	130	4.50



Blank

Cat. No.	Standard Package	Wt., Lbs. Std. Pkg.	Price Each
YYP9009	10	75	\$2.75



QE Series Condulets

Form 108

Weatherproof, galvanized or black enamel finish. Take round base lock snap switches. Furnished with adjustable bar and screws.

These Condulets are for installations exposed to the weather or where it is desired to protect the switch from mechanical injury.

They are made in two parts: body and housing. The body is furnished with an adjustable bar for mounting the switch. The hubs are cast solid with the body and have an integral bushing and tapered thread. The housing is fastened to the body by four screws and is provided with a hole for inserting the key that operates the switch.

The QE series, form 108, does not give the same degree of protection from meddling that is obtained when a padlock is used with the QE series, form 1096.

Any assortment of 100 black enameled and galvanized Condulets of the QE series, form 108, will be considered a standard package.

Type QEE Condulets

Take round base lock snap switches. Furnished with adjustable bar and screws.

Wiring devices, page 426, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEE1108	1/2	25	80	\$1.85
QEE2108	3/4	25	90	1.95
QEE3108	1	10	45	2.05

Type QEF Condulets

Take round base lock snap switches. Furnished with adjustable bar and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEF1108	1/2	25	90	\$2.00
QEF2108	3/4	25	100	2.10
QEF3108	1	10	50	2.20



Type QED Condulets

Take round base lock snap switches. Furnished with adjustable bar and screws. Wiring devices, page 426, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QED1108	1/2	25	100	\$2.30
QED2108	3/4	25	110	2.40
QED3108	1	10	55	2.50

Type QEG Condulets

Weatherproof, galvanized or enamel. Take round base lock snap switches. Furnished with adjustable bar and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEG1108	1/2	25	115	\$2.05
QEG2108	3/4	25	125	2.15
QEG3108	1	10	65	2.25



Type QEK Condulets

Take round base lock snap switches. Furnished with adjustable bar and screws.

Wiring devices, page 426, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEK1108	1/2	25	90	\$1.85
QEK2108	3/4	25	100	1.95
QEK3108	1	10	50	2.05

Type QEJ Condulets

Weatherproof, galvanized or enamel. Take round base lock snap switches. Furnished with adjustable bar and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEJ1108	1/2	25	100	\$2.15
QEJ2108	3/4	25	110	2.25
QEJ3108	1	10	55	2.35



QE Series Condulets

Form 1096

These Condulets are for installation exposed to the weather or where it is desired to protect the switch or receptacle from mechanical injury.

They are made in two parts: body and housing. The body is furnished with an adjustable bar for mounting the switch or attachment plug receptacle. The hubs are cast solid with the body and have an integral bushing and tapered thread. The housing is fastened to the body by four screws and is provided with a self-closing spring door.

The door can be locked with a padlock to prevent unauthorized persons operating the switch.

The housing can be mounted so that the door will be hinged at 90, 180 or 270 degrees from the position shown in the illustrations.

Any assortment of 100 black enameled and galvanized Condulets of the QE series form 1096, will be considered a standard package.

Type QEE Condulets

Take round base thumb knob snap switches or attachment plug receptacles. Furnished with adjustable bar and screws. Wiring devices, pages 426 and 427, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEE11096	1/2	25	100	\$2.65
QEE21096	3/4	25	110	2.75
QEE31096	1	10	55	2.85

Type QEF Condulets

Weatherproof, galvanized or enamel. Take round base thumb knob snap switches or attachment plug receptacles. With adjustable bar and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEF11096	1/2	25	110	\$2.80
QEF21096	3/4	25	120	2.90
QEF31096	1	10	60	3.00



Type QED Condulets

Weatherproof, galvanized or enamel. Take round base thumb knob snap switches or attachment plug receptacles. Furnished with adjustable bar and screws.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QED11096	1/2	25	120	\$3.10
QED21096	3/4	25	130	3.20
QED31096	1	10	65	3.30

Type QEG Condulets

Take round base thumb knob snap switches or attachment plug receptacles. Furnished with adjustable bar and screws. Wiring devices, pages 426 and 427, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEG11096	1/2	25	130	\$2.85
QEG21096	3/4	25	140	2.95
QEG31096	1	10	70	3.05



Type QEK Condulets

Take round base thumb knob snap switches or attachment plug receptacles. Furnished with adjustable bar and screws. Wiring devices, pages 426 and 427, Condulet catalogue No. 2000.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEK11096	1/2	25	110	\$2.65
QEK21096	3/4	25	120	2.75
QEK31096	1	10	60	2.85

Type QEJ Condulets

Take round base thumb knob snap switches or attachment plug receptacles. Furnished with adjustable bar and screws. Wiring devices, pages 426 and 427, Condulet catalogue No. 2000.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEJ11096	1/2	25	120	\$2.95
QEJ21096	3/4	25	130	3.05
QEJ31096	1	10	65	3.15



QE Series Condulets

Forms 106 and 206

Two-pole Condulets are furnished with 30-ampere, 250-volt receptacle RQH302, which takes plug RQ302. Three-pole Condulets are furnished with 30-ampere, 250-volt receptacle RQI1303, which takes plug RQ303. Plugs, see end of QE series, forms 1066 and 2066.

Consists of two parts: body and receptacle housing.

They are weatherproof and easy to wire. The wires can be drawn out of the body and the connections with the receptacle made in the open. After this is done, the wires are pushed back into the body and the receptacle housing is fastened to the body by four heavy screws. This operation also securely clamps the receptacle in place.

There is no danger of the operator injuring his knuckles when inserting or removing the plug. Receptacle is protected from damage as it sets back in the housing.

Any assortment of 25 black enameled and galvanized Condulets of the QE series, forms 106 and 206, will be considered a standard package.

Type QEE Condulets

Weatherproof; galvanized or enamel.



Cat. No.	No. of Poles	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEE1106	2	1/2	25	90	\$3.80
QEE2106	2	3/4	25	95	3.90
QEE2206	3	3/4	25	165	5.65
QEE3206	3	1	25	175	5.75

Type QEF Condulets

Weatherproof; galvanized or enamel.

Cat. No.	No. of Poles	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEF1106	2	1/2	25	100	\$3.95
QEF2106	2	3/4	25	105	4.05
QEF2206	3	3/4	25	195	5.80
QEF3206	3	1	25	205	5.90



Type QED Condulets

Weatherproof; galvanized or enamel.



Cat. No.	No. of Poles	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QED1106	2	1/2	25	105	\$4.25
QED2106	2	3/4	25	110	4.35
QED2206	3	3/4	25	200	6.10
QED3206	3	1	25	210	6.20

Type QEG Condulets

Weatherproof; galvanized or black enamel finish.

Cat. No.	No. of Poles	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEG1106	2	1/2	25	110	\$4.00
QEG2106	2	3/4	25	115	4.10
QEG2206	3	3/4	25	205	5.90
QEG3206	3	1	25	215	6.00



Type QEK Condulets

Weatherproof; galvanized or enamel.



Cat. No.	No. of Poles	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEK1106	2	1/2	25	100	\$3.80
QEK2106	2	3/4	25	105	3.90
QEK2206	3	3/4	25	195	5.65
QEK3206	3	1	25	205	5.75

Type QEJ Condulets

Weatherproof; galvanized or enamel.

Cat. No.	No. of Poles	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEJ1106	2	1/2	25	110	\$4.10
QEJ2106	2	3/4	25	115	4.20
QEJ2206	3	3/4	25	205	5.95
QEJ3206	3	1	25	215	6.05



QE Series Condulets

Forms 1066 and 2066

Plug receptacle Condulets with spring door. Black enamel finish. Two-pole Condulets are furnished with 30-ampere, 250-volt receptacle No. RQI1302, which takes plug No. RQ302. Three-pole Condulets are furnished with 30-ampere, 250-volt receptacle No. RQI1303, which takes plug No. RQ303.

These Condulets are weatherproof and exceptionally easy to wire. The wires can be drawn out of the body and the connections with the receptacle made in the open. After this is done, the wires are pushed back into the body and the receptacle housing is fastened to the body by 4 heavy screws. This operation also securely clamps the receptacle in place.

Any assortment of 25 black enameled and galvanized Condulets of the QE series, forms 1066 and 2066, will be considered a standard package.

Type QEE Condulets

Galvanized or enamel. Cap., 30 amps., 250 volts.



Cat. No.	Size Inches	2-pole		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt., Lbs.		
QEE11066	1/2	25	115	115	\$4.60
QEE21066	3/4	25	125	125	4.70
QEE22066	3/4	3-pole		195	\$6.65
		Std. Pkg.	Wt., Lbs.		
QEE32066	1	25	205	205	6.75

Type QEF Condulets

Galvanized or enamel. Cap., 30 amps., 250 volts.

Cat. No.	Size Inches	2-pole		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt., Lbs.		
QEF11066	1/2	25	125	125	\$4.75
QEF21066	3/4	25	135	135	4.85
QEF22066	3/4	3-pole		225	\$6.80
		Std. Pkg.	Wt., Lbs.		
QEF32066	1	25	235	235	6.90



Type QED Condulets

Galvanized or enamel. Cap., 30 amps., 250 volts.



Cat. No.	Size Inches	2-pole		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt., Lbs.		
QED11066	1/2	25	130	130	\$5.05
QED21066	3/4	25	140	140	5.15
QED22066	3/4	3-pole		230	\$7.10
		Std. Pkg.	Wt., Lbs.		
QED32066	1	25	240	240	7.20

Type QEG Condulets

Galvanized or enamel. Cap., 30 amps., 250 volts.

Cat. No.	Size Inches	2-pole		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt., Lbs.		
QEG11066	1/2	25	135	135	\$4.80
QEG21066	3/4	25	145	145	4.90
QEG22066	3/4	3-pole		235	\$6.90
		Std. Pkg.	Wt., Lbs.		
QEG32066	1	25	245	245	7.00



Type QEJ Condulets

Galvanized or enamel. Cap., 30 amps., 250 volts.



Cat. No.	Size Inches	2-pole		Wt., Lbs. Std. Pkg.	Price Each
		Std. Pkg.	Wt., Lbs.		
QEJ11066	1/2	25	135	135	\$4.90
QEJ21066	3/4	25	145	145	5.00
QEJ22066	3/4	3-pole		235	\$6.95
		Std. Pkg.	Wt., Lbs.		
QEJ32066	1	25	245	245	7.05

Type RQ Plugs

Aluminum handles for QRH, RQJ and RYQ receptacles. Capacity, 30 amperes, 250 volts, A. C.



Standard package, 25; weight, standard package, No. RQ-302, 30 pounds, No. RQ303, 40 pounds.

Price, No. RQ302, 2-pole..... each \$3.50
 " " RQ303, 3 " " 5.00

QE Series Condulets

Form 6036

Plug receptacle Condulets of the QE series, Form 6036, consist of 2 parts: Body and receptacle housing.

Furnished with 3-pole, 60-ampere, 600-volt receptacle No. BR6036, which takes plug BP46036.

Galvanized or black enamel finish.

Any assortment of 25 black enameled and galvanized Condulets of the QE series, Form 6036, will be considered a standard package.

Type QE Condulets

Galvanized or black enamel finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QE26036	3/4	10	70		\$7.85
QE36036	1	10	75		7.95
QE46036	1 1/4	10	80		8.05
QE56036	1 1/2	10	85		8.15

Type QEC Condulets

Galvanized or black enamel finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEC26036	3/4	10	75		\$7.95
QEC36036	1	10	80		8.05
QEC46036	1 1/4	10	85		8.15
QEC56036	1 1/2	10	90		8.25

Type QEE Condulets

Galvanized or black enamel finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEE26036	3/4	10	70		\$8.00
QEE36036	1	10	75		8.10
QEE46036	1 1/4	10	80		8.20
QEE56036	1 1/2	10	85		8.30

Type QEF Condulets

Galvanized or black enameled finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEF26036	3/4	10	85		\$8.15
QEF36036	1	10	90		8.25
QEF46036	1 1/4	10	95		8.35
QEF56036	1 1/2	10	100		8.45

Type QED Condulets

Galvanized or black enamel finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QED26036	3/4	10	90		\$8.45
QED36036	1	10	95		8.55
QED46036	1 1/4	10	100		8.65
QED56036	1 1/2	10	105		8.75

Type QEJ Condulets

Galvanized or black enamel finish. Capacity, 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEJ26036	3/4	10	90		\$8.30
QEJ36036	1	10	95		8.40
QEJ46036	1 1/4	10	100		8.50
QEJ56036	1 1/2	10	105		8.60

QE Series Condulets

Form 66036

Plug receptacle Condulets of the QE series, Form 66036, consist of 2 parts: Body and receptacle housing. Provided with spring door. Furnished with 3-pole, 60-ampere, 600-volt receptacle No. BR6036, which takes plug No. BP46036.

Galvanized or black enamel finish.

Any assortment of 25 black enameled and galvanized Condulets of the QE series, Form 66036, will be considered a standard package.

Type QE Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QE266036	3/4	10	90		\$9.35
QE366036	1	10	95		9.45
QE466036	1 1/4	10	100		9.55
QE566036	1 1/2	10	105		9.65

Type QEC Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEC266036	3/4	10	95		\$9.45
QEC366036	1	10	100		9.55
QEC466036	1 1/4	10	105		9.65
QEC566036	1 1/2	10	110		9.75

Type QEE Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEE266036	3/4	10	90		\$9.50
QEE366036	1	10	95		9.60
QEE466036	1 1/4	10	100		9.70
QEE566036	1 1/2	10	105		9.80

Type QEF Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEF266036	3/4	10	105		\$9.65
QEF366036	1	10	110		9.75
QEF466036	1 1/4	10	115		9.85
QEF566036	1 1/2	10	120		9.95

Type QED Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QED266036	3/4	10	110		\$9.95
QED366036	1	10	115		10.05
QED466036	1 1/4	10	120		10.15
QED566036	1 1/2	10	125		10.25

Type QEJ Condulets

Galvanized or black enamel finish. Cap., 3-pole, 60 amperes, 600 volts.



Cat. No.	Size In.	Std. Pkg.	Wt. Std.	Lbs. Pkg.	Price Each
QEJ266036	3/4	10	110		\$9.80
QEJ366036	1	10	115		9.90
QEJ466036	1 1/4	10	120		10.00
QEJ566036	1 1/2	10	125		10.10

Type BP Plugs

For QE series of Condulets. Cap., 3-pole, 60 amperes, 600 volts. For use with No. 4 deck or armored cable.



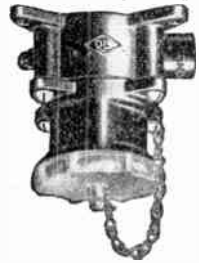
Standard package, 10.

Weight, standard package, 45 pounds.

Price, No. BP46036each \$7.75

QE Series Condulets
Form 86036

Plug receptacle Condulets of the QE series, Form 86036, consists of 2 parts: body and receptacle housing. Furnished with 3-pole, 60-ampere, 600-volt receptacle No. BR6036; brass cap; and gasket. Receptacle No. BR6036 takes plugs Nos. BP846036, BP866036, and BP886036. Any assortment of 25 black enameled and galvanized Condulets of the QE series, Form 86036, will be considered a standard package.



Type QE Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QE286036	3/4	10	90		\$10.35
QE386036	1	10	95		10.45
QE486036	1 1/4	10	100		10.55
QE586036	1 1/2	10	105		10.65



Type QEC Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QEC286036	3/4	10	95		\$10.45
QEC386036	1	10	100		10.55
QEC486036	1 1/4	10	105		10.65
QEC586036	1 1/2	10	110		10.75



Type QEE Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QEE286036	3/4	10	90		\$10.50
QEE386036	1	10	95		10.60
QEE486036	1 1/4	10	100		10.70
QEE586036	1 1/2	10	105		10.80

Type QEF Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QEF286036	3/4	10	105		\$10.65
QEF386036	1	10	110		10.75
QEF486036	1 1/4	10	115		10.85
QEF586036	1 1/2	10	120		10.95



Type QED Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QED286036	3/4	10	110		\$10.95
QED386036	1	10	115		11.05
QED486036	1 1/4	10	120		11.15
QED586036	1 1/2	10	125		11.25



Type QEJ Condulets

Galvanized or black enamel finish.
Cap., 3-pole, 60 amperes, 600 volts.

Cat. No.	Size In.	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
QEJ286036	3/4	10	110		\$10.80
QEJ386036	1	10	115		10.90
QEJ486036	1 1/4	10	120		11.00
QEJ586036	1 1/2	10	125		11.10



Type BP Plugs

For QE series of Condulets, Form 86036. Capacity, 3-pole, 60 amperes, 600 volts. Take deck or armored cable. With clamping nut and gland watertight.

Cat. No.	Size Cable	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
BP846036	No. 4	10	60		\$9.50
BP866036	" 6	10	60		9.50
BP886036	" 8	10	60		9.50



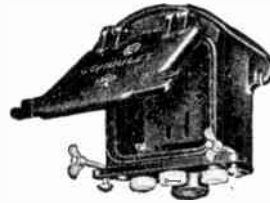
Type FF Condulets
2 or 3-wire, 250 Volts

These are service entrance Condulets, fusible and weather-proof. Wiring devices, pages 436 to 438, Condulet catalogue No. 2000. Take main line fuse cutouts.

The service wire enters the bottom of the fuse cutout compartment through a porcelain bushing, thus preventing grounding, even though the insulation becomes damaged.

Furnished with removable conduit hub plate, cutout fastening plate, porcelain bushings, screws and bolts, but without cutouts.

Any assortment of 50 black enameled and galvanized Condulets of the FF series will be considered a standard package.

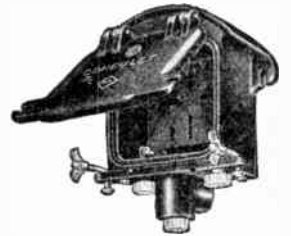


Cat. No.	Size In.	30 Amperes		Price Each
		Std. Pkg.	Wt. Lbs.	
FF1302	1/2	20	260	\$7.80
FF2302	3/4	20	270	7.90
FF3302	1	10	140	8.00
60 Amperes				
FF3602	1	10	150	\$10.00
FF4602	1 1/4	10	155	10.10
100 Amperes				
FF31002	1	10	225	\$19.00
FF51002	1 1/2	5	115	19.20
FF61002	2	5	120	19.30

Type FFA Condulets
2 or 3-wire, 250 Volts

Service entrance Condulets. Take main line fuse cutouts. Wiring devices, pages 436 to 438, Condulet catalogue No. 2000. Threaded hub for Condulet enters from rear.

Furnished with removable conduit hub plate, cutout fastening plate, porcelain bushings, screws and bolts, but without cutout.



Cat. No.	Size In.	30 Amperes		Price Each
		Std. Pkg.	Wt. Lbs.	
FFA1302	1/2	20	270	\$7.80
FFA2302	3/4	20	280	7.90
FFA3302	1	10	145	8.00
60 Amperes				
FFA3602	1	10	155	\$10.00
FFA4602	1 1/4	10	165	10.10

LA Series Aisle Light Condulets

Take 10-watt S-14 Mazda B lamps or any lamp not exceeding 1 3/4 x 4 1/4 inches. Furnished with lamp receptacle.

These Condulets are shallow and when installed at the end of a row of seats do not obstruct the aisle. The front of the Condulet is easily removed, facilitating the renewal of lamps. No glass is used. If a more subdued light is desired colored bulbs (preferably green) can be used.

The light is so shielded that it is not objectionable to spectators or performers.



Type LA—For Orchestra Floors

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
LA1	1/2	25	140	\$2.75
LA2	3/4	25	140	2.85
LA3	1	25	140	2.95

Type LAL—For Balconies

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
LAL1	1/2	25	140	\$2.75
LAL2	3/4	25	140	2.85
LAL3	1	25	140	2.95



Type LAR—For Balconies

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
LAR1	1/2	25	140	\$2.75
LAR2	3/4	25	140	2.85
LAR3	1	25	140	2.95

Y Series Condulets

Galvanized or black enamel finish. Take fuse cutouts. Furnished with cutout fastening plate, screws and bolts. Hubs are cast solid with body.

These Condulets have sheet metal doors with spring catches, except types Y and YC, 30 or 60-ampere, 600-volt, 3-wire, which have cast iron doors with spring catches.

If specifically ordered, the Condulets and covers will be drilled for a seal wire, at a slight advance in the list price.

These Condulets are designed to take wires which will enter the grooves or terminals of the fuse cutout of the same rating as the Condulet. The additional space in the hubs is for the passage of extra wires.

Any assortment of 50 black enameled and galvanized Condulets of the Y series will be considered a standard package.

Type Y Condulets



Galvanized or black enamel finish.

Take main line fuse cutouts.

Furnished with cutout fastening plate, screws and bolts, but without cutouts.

Wiring devices, pages 436 to 438, Condulet catalogue No. 2000.

2-wire, 30-ampere, 250-volt

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Y1302	1/2	15	90	\$2.35
Y2302	3/4	15	100	2.45
Y3302	1	10	70	2.55

3-wire, 30-ampere, 250-volt

Y1303	1/2	15	125	\$2.85
Y2303	3/4	15	135	2.95

2-wire, 60-ampere, 250-volt

Y2602	3/4	15	150	\$3.65
Y3602	1	10	100	3.75
Y4602	1 1/4	10	110	3.85

Type YC Condulets

Galvanized or black enamel finish.

Take main line fuse cutouts.

Furnished with cutout fastening plate, screws and bolts, but without cutouts.

Wiring devices, pages 436 to 438, Condulet catalogue No. 2000.



2-wire, 30-ampere, 250-volt

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YC1302	1/2	15	95	\$2.50
YC2302	3/4	15	105	2.60
YC3302	1	10	75	2.70
YC4302	1 1/4	10	80	2.80

3-wire, 30-ampere, 250-volt

YC1303	1/2	15	130	\$3.00
YC2303	3/4	15	140	3.10
YC3303	1	10	95	3.20
YC4303	1 1/4	10	100	3.30

2-wire, 60-ampere, 250-volt

YC2602	3/4	15	155	\$3.80
YC3602	1	10	105	3.90
YC5602	1 1/2	5	55	4.00

3-wire, 60-ampere, 250-volt

YC2603	3/4	15	180	\$4.20
YC3603	1	10	120	4.30
YC4603	1 1/4	10	125	4.40
YC5603	1 1/2	5	65	4.50

YY Series Condulets

Take fuse cutouts. Furnished with cast iron door, cast iron hinges, and spring catches, removable conduit hub plates, cutout fastening plate, screws and bolts for cutout fastening plate.

The removable hub plates provide flexibility in installing, especially where the installation will not permit turning the conduit or Condulet.

The hubs are tangent to the back of the Condulet body; but by reversing the conduit hub plate, a projection frequently can be avoided without offsetting the conduit.

Wiring devices, pages 436 to 438, Condulet catalogue No. 2000. Plug receptacle housings, see end of ZP series.

Any assortment of 50 black enameled and galvanized Condulets and Condulet bodies of the YY series will be considered a standard package.

Type YY Condulets

Without Hub Plates



For types YY, YYC and YYQ Condulets. Galvanized or black enamel finish. Take main line fuse cutouts. Furnished with cast iron doors, cutout fastening plate, and screws and bolts for cutout fastening plate.

If specified, a cabinet lock and key, in addition to the spring catch, will be furnished at an advance in list price.

Cat. No.	FOR CUTOUTS Wire	Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YY55302	2	30	YYP5	BRY5	15	150	\$3.50
YY77303	2 or 3	30	YYP7	BRY7	15	195	4.30
YY77602	2	60	YYP7	BRY7	15	210	5.10
YY88603	3	60	YYP8	.....	15	285	6.40
YY881002	2	100	YYP8	.....	10	220	7.40
YY881003	3	100	YYP8	.....	10	290	9.40
YY776016	1	30-60	YYP7	.....	15	240	5.50
YY886036	3	30-60	YYP8	.....	15	420	8.40

Type YYS Condulets

Without Hub Plates

For YYL, YYR and YYS Condulets.

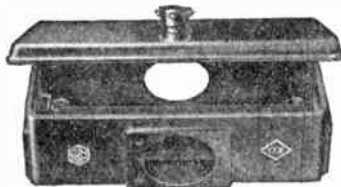
Galvanized or black enamel finish.

Take main line or single branch fuse cutouts.



Cat. No.	FOR CUTOUTS Wire	Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYS55302	2	30	YYP5	BRY5	15	195	\$4.30
YYS77303	2 or 3	30	YYP7	BRY7	15	240	5.00
YYS77602	2	60	YYP7	BRY7	15	240	5.80
YYS88603	3	60	YYP8	.....	15	300	7.00
YYS886036	3	30-60	YYP8	.....	15	430	9.60

Type YYX Condulets



For types YYD and YYX Condulets.

Take double branch fuse cutouts.

Cat. No.	FOR CUTOUTS Wire	Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YYX77302	2 or 3 to 2-wire	30	YYP7	BRY7	15	285	\$5.70
YYX77303	3-wire	30	YYP7	BRY7	15	315	6.80
YYX77602	2 or 3 to 2-wire	60	YYP7	BRY7	15	375	8.70
YYX88603	3-wire	60	YYP8	.....	15	420	9.80

Conduit Hub Plates

For Condulet Bodies of YY, YW and ZP Series

Cast iron, galvanized or black enamel finish. Furnished with screws.

Any assortment of 50 black enameled and galvanized conduit hub plates for Condulet bodies of the YY and YW series, will be considered a standard package.

YYP5 Series Hub Plates

Dimensions, 2 3/4 x 3 3/8 inches

Cast iron, galvanized or black enamel finish.

With One Hub, Straight

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
YYP51	1/2	15	20		\$.40
YYP52	3/4	15	20		.50
YYP53	1	15	25		.60
YYP54	1 1/4	15	25		.70
YYP55	1 1/2	15	30		.80
YYP500	Blank	15	15		.25

With One Hub, 90° Front or Back

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Lbs. Std. Pkg.	Price Each
YYAP51	1/2	15	20		\$.50
YYAP52	3/4	15	20		.60

YYP7 and YYP8 Series Conduit Hub Plates

Cast iron, galvanized or black enamel finish. Standard package quantity, all sizes and types, 15.

With One Hub, Straight

Size In.	YYP7 Series 2 3/4 x 4 1/2 Inches			YYP8 Series 3 1/4 x 4 3/8 Inches		
	Cat. No.	Wt. Lbs. Std. Pkg.	Price Each	Cat. No.	Wt. Lbs. Std. Pkg.	Price Each
1/2	YYP71	20	\$.45	YYP81	25	\$.55
3/4	YYP72	20	.55	YYP82	25	.65
1	YYP73	25	.65	YYP83	30	.75
1 1/4	YYP74	25	.75	YYP84	30	.85
1 1/2	YYP75	30	.85	YYP85	35	.95
2	YYP76	30	.95	YYP86	40	1.05

With Two Hubs, Straight

1/2	YYP711	25	\$.60	YYP811	30	\$.70
3/4	YYP722	25	.70	YYP822	30	.80
1	YYP733	30	.80	YYP833	35	.90
1 1/4	YYP744	30	.90	YYP844	35	1.00

With One Hub, 90° Back or Front

1/2	YYAP71	25	\$.55	YYAP81	30	\$.65
3/4	YYAP72	25	.65	YYAP82	30	.75
1	YYAP73	30	.75	YYAP83	35	.85
1 1/4	YYAP74	30	.85	YYAP84	35	.95
1 1/2	YYAP75	35	.95	YYAP85	40	1.05

With One Hub, 90° Left or Right

1/2	YYLP71	25	\$.55	YYLP81	30	\$.65
3/4	YYLP72	25	.65	YYLP82	30	.75
1	YYLP73	30	.75	YYLP83	35	.85
1 1/4	YYLP74	30	.85	YYLP84	35	.95
1 1/2	YYLP75	35	.95	YYLP85	40	1.05

With Two Hubs, 90° Left or Right

1/2	YYSP71	30	\$.60	YYSP81	35	\$.70
3/4	YYSP72	30	.70	YYSP82	35	.80
1	YYSP73	35	.80	YYSP83	40	.90
1 1/4	YYSP74	35	.90	YYSP84	40	1.00
1 1/2	YYSP75	40	1.00	YYSP85	45	1.10

Blank

Blank	YYP700	20	\$.30	YYP800	25	\$.40
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YW Series Condulets

Take fuse cutouts.

Watertight galvanized or black enamel finish. Furnished with cast iron door, gaskets, cutout fastening plate, screws and bolts.

Have gasketed cast iron doors with adjustable eye-bolt hinges. An eye-bolt with a wing nut clamps the door tight. The wing nut is constructed to permit the insertion of a pad-lock whereby the door can be locked.

Wiring devices, pages 436 to 438, Condulet catalogue No. 2000.

Conduit hub plates, see end of YY series. Plug receptacle housings, see end of ZP series.

These Condulets are designed to take wires which will enter the grooves or terminals of the fuse cutout of the same rating as the Condulet. The additional space in the hubs is for the passage of extra wires.

Any assortment of 25 black enameled and galvanized Condulets and Condulet bodies of the YW series will be considered a standard package.

Type YW Condulets

Without Hub Plates

Galvanized or black enamel finish. For types YW, YWC and YWQ Condulets. Take main line fuse cutouts. 250 and 600 volts.

Furnished with cast iron door, gaskets, cutout fastening plate and bolts for cutout fastening plate.

*YW886036 and 776016 are 600 volts.

Cat. No.	For CUTOUTS Wire Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
YW55302	2 30	YYP5	BRYS	15	165	\$4.50
YW77303	2 or 3 30	YYP7	BRYS	15	210	5.45
YW77602	2 60	YYP7	BRYS	15	220	6.20
YW88603	3 60	YYP8	.....	15	295	7.50
YW881002	2 100	YYP8	.....	10	230	9.40
YW881003	3 100	YYP8	.....	10	300	11.30
YW776016	1 *30-60	YYP7	.....	15	250	7.40
YW886036	3 *30-60	YYP8	.....	15	430	10.40

Type YWS Condulets

Without Hub Plates

Galvanized or enamel. For types YWL, YWR and YWS Condulets. Take main line or single branch fuse cutouts. 250 and 600 volts. Furnished with cast iron door, gaskets, cutout fastening plate, and screws and bolts for cutout fastening plate.

*YWS886036 is 600 volts.

Cat. No.	For CUTOUTS Wire Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
YWS55302	2 30	YYP5	BRYS	15	200	\$5.50
YWS77303	2 or 3 30	YYP7	BRYS	15	245	6.40
YWS77602	2 60	YYP7	BRYS	15	245	7.95
YWS88603	3 60	YYP8	.....	15	305	9.00
YWS886036	3 *30-60	YYP8	.....	15	450	11.10

Type YWX Condulets

Without Hub Plates

Galvanized or enamel, for types YWD and YWX Condulets. Take double branch fuse cutouts. 250 V. Furnished with cast iron door, gaskets, cutout fastening plate, and screws and bolts for cutout fastening plate.

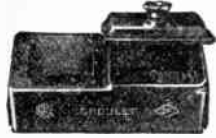
Cat. No.	For CUTOUTS Wire Amp.	Take Hub Plates	Take Housings	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
YWX77302	2 or 3 to 2 30	YYP7	BRYS	15	290	\$7.80
YWX77303	3 30	YYP7	BRYS	15	320	8.95
YWX77602	2 or 3 to 2 60	YYP7	BRYS	15	380	10.85
YWX88603	3 60	YYP8	.....	15	430	12.05

ZP Series Condulets

Galvanized or black enamel finish. Conduit hub plates, see YYP5 and YYP7 series, end of YY series. Plug receptacle housings, see end of this series.

Furnished with cast iron door, cutout fastening plates, screws and bolts.

Any assortment of 50 black enameled and galvanized Condulets and Condulet bodies of the ZP series will be considered a standard package.



Type ZP Condulets Without Hub Plates

For types ZP, ZPC and ZPQ Condulets. Take main line cutouts, covers, round base switches or flush rectangular wiring devices and plug receptacle housing.

2-wire, 30-ampere, 250-volt

Cat. No.	Form	Hub Plates	Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZP55302	302	YYP5	BRY5	15	195	\$4.60

2 or 3-wire, 30-ampere, 250-volt

ZP77303	303	YYP7	BRY7	15	284	\$5.80
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1-wire, 30-ampere, 600-volt

ZP773016	3016	YYP7	BRY7	15	345	\$7.30
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3-wire, 30-ampere, 600-volt

ZP773036	3036	YYP7	BRY7	15	450	\$9.60
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Type ZPS Condulets Without Hub Plates

For types ZPL, ZPR and ZPS Condulets.

Cutouts, pages 436 and 437; other wiring devices, pages 434 to 436, Condulet catalogue No. 2000.

Furnished with cast iron door, cutout fastening plate, and screws and bolts for cutout fastening plate.

2-wire, 30-ampere, 250-volt

Cat. No.	Form	Take Hub Plates	Take Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZPS55302	302	YYP5	BRY5	15	255	\$5.90

2 or 3-wire, 30-ampere, 250-volt

ZPS77303	303	YYP7	BRY7	15	315	\$7.00
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Type ZPX Condulets Without Hub Plates

For types ZPD and ZPX Condulets. Take double branch cutouts, covers, round base switches or flush rectangular wiring devices.

Furnished with cast iron door, cutout fastening plate, and screws and bolts for cutout fastening plate.

2-wire or 3 to 2-wire, 30-ampere, 250-volt

Cat. No.	Form	Take Hub Plates	Take Housings	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZPX77302	302	YYP7	BRY7	15	450	\$9.20

3-wire, 30-ampere, 250-volt

ZPX77303	303	YYP7	BRY7	15	480	\$10.20
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Covers

For Condulets of the ZP series. Cast iron, galvanized or black enamel finish. For round base switches. Furnished with screws.



For Form 302 Bodies

Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZP912	302	15	20	\$5.50

For Forms 303, 3016 and 3036 Bodies

*ZP913	303	15	25	\$6.60
ZP713	303	15	45	.90

*Furnished with adapting ring.



Covers

For Condulets of the ZP series. Cast iron, galvanized or black enamel finish. For double push switches. Furnished with screws.

For Form 302 Bodies

Cat. No.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZP812	302	15	25	\$5.50

For Forms, 303, 3016 and 3036 Bodies

ZP813	303	15	30	\$5.55
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Type BRY Plug Receptacle Housings

For Condulet Bodies of the YW, YY, and ZP Series, and ZF 55302

2-pole housings are furnished with 30-ampere, 250-volt receptacle BR302, which takes type BP 2-pole plugs. 3-pole housings are furnished with 30-ampere, 250-volt receptacle BR303, which takes type BP 3-pole plugs.

Galvanized or black enamel finish.

Plugs, see after type BRM.

Any assortment of 25 black enameled galvanized type BRY plug receptacle housings will be considered a standard package.

Type BRY Plain Housings

30 Amperes, 250 Volts, A.C.

Can be used on D. C. circuits of the same rating if circuit is broken before plug is withdrawn.

Furnished with receptacle and screws.



Cat. No.	Size	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRY5302	BRY5	2	15	40	\$3.50
BRX7302	BRY7	2	15	50	3.60
BRY7303	BRY7	3	15	55	4.50

Type BRY Threaded Housings

Furnished with receptacle, gasket, and screws.

Cat. No.	Size	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRY57302	BRY5	2	15	40	\$3.70
BRY77302	BRY7	2	15	50	3.80
BRY77303	BRY7	3	15	55	4.75



Type BRY Threaded Housings—With Brass Cap

Furnished with receptacle, gasket, and screws.



Cat. No.	Size	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRY58302	BRY5	2	15	55	\$4.65
BRY78302	BRY7	2	15	65	4.75
BRY78303	BRY7	3	15	70	6.10

Type BRY Spring Door Housings

Furnished with receptacle and screws.

Cat. No.	Size	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRY56302	BRY5	2	15	55	\$5.10
BRY76302	BRY7	2	15	65	5.20
BRY76303	BRY7	3	15	70	6.30



Type BRY Clamping Devices

For flexible conduit. Do not take plug or receptacle. Furnished with gasket and screws.



Cat. No.	Size	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BRY791	BRY7	15	60	\$2.30
BRY792	BRY7	15	70	2.50
BRY793	BRY7	15	80	2.80

Type Z Condulets

Take round base wiring devices and main line cutouts.

Cat. No.	Size In.	No. of Wires	Cap. Amps.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Z1302	1/2	2	30	15	100	\$2.50
Z2302	3/4	2	30	15	105	2.65
Z3302	1	2	30	10	75	2.75
Z1303	1/2	3	30	15	130	3.00
Z2303	3/4	3	30	15	135	3.10
Z3303	1	3	30	10	95	3.20



Type ZC Condulets

Wiring devices, pages 414 to 417, Condulet catalogue No. 2000.



Cat. No.	Size In.	No. of Wires	Cap. Amp.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ZC1302	1/2	2	30	15	110	\$2.80
ZC2302	3/4	2	30	15	115	2.90
ZC3302	1	2	30	10	80	3.00
ZC1303	1/2	3	30	15	140	3.25
ZC2303	3/4	3	30	15	145	3.35
ZC3303	1	3	30	10	100	3.45

**Type ZF Condulets—Single
Without Covers and Hub Plates**

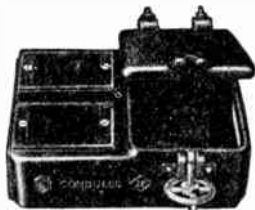
Take waterproof gasketed switch covers, double push button switches, and main line fuse cutouts. Furnished with cast iron door, gaskets, cutout fastening plate, and screws and bolts for switches and cutout fastening plates. Take YYP5 hub plates at end of YY series, or BRY5 housings at end of ZP series, and 30-ampere, 250-volt, 2-wire cutouts.



Standard package, 15. Weight, standard package, 195 pounds.
Price, No. ZF55302, 2-wire.....each \$5.60

**Type ZF Condulets—Two-gang
Without Covers and Hub Plates**

Take vaporproof gasketed switch covers, double push button switches, and main line fuse cutouts. Cutouts, pages 436 and 437; switches, page 414, Condulet catalogue No. 2000. Take MF hub plates and 30-ampere, 250-volt, 3 or 4-wire cutouts.



Std. pkg., 15. Wt., 360 lbs.
Price, No. ZF304.....each \$8.50

MF Series Conduit Hub Plates

For ZF Series 2-gang Bodies

Cast iron, galvanized or black enamel finish. Furnished with screws.

Any assortment of 50 black enameled and galvanized hub plates of the MF series will be considered a standard package.

**ME Series Conduit Hub Plates
With One Hub**

For ZF Series 2-gang Bodies

Dimensions, 2 3/4 x 6 1/8 inches. Furnished with screws.



Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
MF1	1/2	15	35	\$.95
MF2	3/4	15	35	1.05
MF3	1	15	35	1.15
MF4	1 1/4	15	40	1.25
MF5	1 1/2	15	40	1.35

**MF Series Conduit Hub Plates
With Two Hubs**

For ZF Series 2-gang Bodies

Dimensions, 2 3/4 x 6 1/8 inches. Furnished with screws.

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
MF11	1/2	15	35	\$1.10
MF22	3/4	15	35	1.20
MF33	1	15	35	1.30
MF44	1 1/4	15	40	1.40
MF55	1 1/2	15	40	1.50



**MF Series Conduit Hub Plates
With Three Hubs**

For ZF Series 2-gang Bodies

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
MF111	1/2-1/2-1/2	15	35	\$1.25
MF121	1/2-3/4-1/2	15	35	1.35
MF131	1/2-1-1/2	15	40	1.45
MF141	1/2-1 1/4-1/2	15	40	1.55
MF151	1/2-1 1/2-1/2	15	45	1.65

Blank Hub Plates and DS Covers

For ZF Series 2-gang Bodies

Standard package, 15. Weight, standard package, 35 pounds.

Price, No. MF00.....each \$.85
" " DS108 Cover....." 1.75



Type ZG Series Condulets

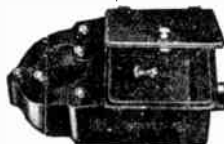
Condulets of the ZG series take mill type snap switches with protective covers, and cartridge or plug fuse cutouts. They are particularly suited for the control of small motors and electrically driven machines.

Take Bryant-Perkins No. 2597 or General Electric No. 151394 three-pole snap switch with cast iron protective cover and fuse cutouts.

25 assorted ZG series Condulets make a standard package.

Type ZG Condulets

Cast iron, with sheet steel door. Galvanized or black enamel finish. Takes 3-wire, 600-volt main line cutouts.



Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
ZG23036	3/4	15	340	\$7.85
ZG33036	1	10	225	8.00
ZG43036	1 1/4	10	230	8.15

TYPE ZGC Condulets

Cutouts, pages 436, 437 and 439, Condulet catalogue No. 2000. Galvanized or black enamel finish. Takes 250 and 600-volt, 3-wire, main line cutouts.

Furnished with cutout fastening plate, screws and bolts.



250-volt

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
ZGC1303	1/2	15	155	\$3.60
ZGC2303	3/4	15	160	3.70
ZGC3303	1	10	110	3.80

600-volt

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
ZGC213036	* 3/4-1/2	15	355	\$8.00
ZGC23036	3/4	15	350	8.00
ZGC33036	1	10	235	8.20
ZGC413036	* 1 1/4-1/2	10	240	8.40

*Large hub is on cutout end of Condulet.

Types FH and FHF Condulets

Covers, see end of FS and G-II series with adjustable bars. Type FH is for use with heating devices requiring not more than 660 watts. Receptacle C337g, which can be used for a pilot lamp, is furnished with the Condulet. Type FHF is for use with heating devices requiring more than 660 watts; therefore provision is made for a cutout.

Type FH Condulets

For control of heating devices. Galvanized or black enamel finish. Take round base wiring devices or covers, and flush rectangular wiring devices with surface style covers. Furnished with receptacle C337g, adjustable bar, and screws. Form 10 is also furnished with form 5 adapting ring.

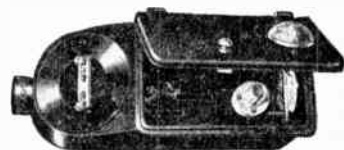


Cat. No.	Form	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
FH110	10	1/2	15	95	\$2.50
FH210	10	3/4	15	100	2.60

Type FHF Condulets

Round base wiring devices, pages 414 to 417; cutouts, page 436; flush rectangular wiring devices, page 412 to 414; pilot lamp receptacle, page 412, Condulet catalogue No. 2000.

Furnished with form 5 and form 10 adapting rings, adjustable bars, cutout fastening plate, pilot lamp receptacle, ruby jewel, screws, and bolts.



Cat. No.	Form	Size Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
FHF120	20	1/2	15	130	\$4.65
FHF220	20	3/4	15	140	4.75

Type MFC Condulets



Motor starting safety switch Condulets. Galvanized or black enamel finish. Furnished with fusible knife switch and removable conduit hub plate, one at top and one at bottom.

The mechanism is so arranged that the switch cannot be thrown from the "off" to the "running" position. After it has been thrown to the "starting" position and the operator has released the handle, a spring automatically and quickly carries the switch to the "running" position. A padlock can be used to lock the switch in

either the "off" or the "running" position, or to lock the door.

If specified, a special gasketed door and gaskets for hub plates, will be furnished at an advance of \$2.50 in list price.

Take hub plates of the MF series with one and two hubs.

3-pole, 30-ampere, 250-volt

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MFC2303	3/4	1	70	\$49.80
MFC3303	1	1	75	50.00
MFC4303	1 1/4	1	80	50.20

3-pole, 30-ampere, 500-volt, A. C.

MFC23035	3/4	1	80	\$52.95
MFC33035	1	1	85	53.15
MFC43035	1 1/4	1	90	53.35

Type MK Condulets

Without Hub Plates

Safety switch Condulets. Furnished with fusible knife switch.

Switch arranged for plug fuses.

30-ampere, 125-volt, for Plug Fuses

Cat. No.	No. Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MK3028†	2	5	140	\$18.20
MK3038†	3	5	155	20.80

Switch Arranged for Cartridge Fuses

2-pole, 250-volt

Cat. No.	Capacity Amps.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MK302†	30	5	140	\$18.20
MK602†	60	1	40	25.80
MK1002†	100	1	80	39.40
MK2002†	200	1	100	53.40

3-pole, 250-volt

MK303†	30	5	155	\$20.80
MK603†	60	1	45	29.00
MK1003†	100	1	85	48.00
MK2003†	200	1	110	69.70

3-pole, 500-volt, A. C.

MK3035†	30	1	65	\$35.00
MK6035†	60	1	70	35.00
MK10035†	100	1	100	51.60
MK20035†	200	1	130	75.20

†Take MF series hub plates, page 360, Condulet catalogue No. 2000.

‡Take MK series hub plates listed below.

MK Series Conduit Hub Plates



Cast iron. Galvanized or enamel. Furnished with screws. Dimensions, 2 5/8 x 5 inches. For 30-ampere, 125 and 250-volt type MK Condulets.

With One Hub

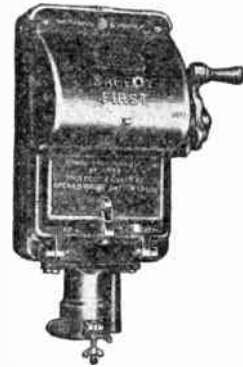
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MK1	1/2	15	25	\$.45
MK2	3/4	15	25	.55
MK3	1	15	30	.65
MK4	1 1/4	15	30	.75
MK5	1 1/2	15	35	.85

With Two Hubs

MK11	1/2	15	25	\$.60
MK22	3/4	15	25	.70
MK33	1	15	30	.80
MK44	1 1/4	15	30	.90
MK55	1 1/2	15	35	1.00
MK00	Blank	15	20	.30

Type MKS Interlocking Safety Switch and Plug Receptacle Condulets

Without Hub Plates



Galvanized or black enamel finish.

Takes conduit hub plates and Type DP interlocking plugs. Furnished with fusible knife switch arranged for cartridge fuses and plug receptacle housing.

60-ampere, 250-volt

Cat. No.	No. of Poles	Takes Plugs	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MKS1662	2	DP162, DP362	1	55	\$43.00
MKS1663	3	DP163, DP363	1	60	47.20

100-ampere, 250-volt

MKS16102	2	DP1102, DP3102	1	95	\$78.00
MKS16103	3	DP1103, DP3103	1	100	89.30

30-ampere, 500-volt, A. C.

MKS16335	3	DP163, DP363	1	80	\$53.20
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60-ampere, 500-volt

MKS16635	3	DP163, DP363	1	80	\$53.20
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100-ampere, 500-volt

MKS161035	3	DP1103, DP3103	1	115	\$92.90
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Type DP Interlocking Plugs



Aluminum handles, scratch brush finish. For use with Type MKS Condulets.

For round flexible cord or cable. Will also take small flexible conduit or armored conductor.

60-ampere, 250-volt and 30 or 60-ampere, 500-volt, A. C.

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
*DP162	2	10	20	\$7.50
*DP163	3	10	20	8.00

100-ampere, 250-volt, and 500-volt, A. C.

-DP1102	2	1	8	\$20.00
-DP1103	3	1	8	22.00

Aluminum handles, scratch brush finish. For use with Type MKS Condulets.

For flexible conduit or armored conductor. Will also take large round flexible cable.



60-ampere, 250-volt and 30 or 60-ampere, 500-volt, A. C.

Cat. No.	No. of Poles	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
‡DP362	2	10	20	\$7.50
‡DP363	3	10	20	8.00

100-ampere, 250-volt, and 500-volt A. C.

‡‡DP3102	2	1	8	\$20.00
‡‡DP3103	3	1	8	22.00

Outside diameter of cable, flexible conduit, or armored conductor.

*3/4 to 1 3/8 inches ‡1 3/8 to 1 5/8 inches.

‡1 5/8 to 1 7/8 inches ‡‡1 5/8 to 2 1/8 inches.

Hub plate, one-hub, page 360. Condulet catalogue No. 2000.

YK Series Condulets

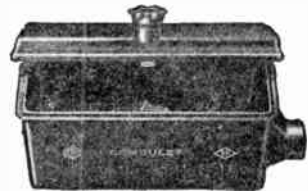
Take fusible knife switches. Furnished with switch fastening plate, screws and bolts.

Removable switch fastening plate permits mounting the switch and making connections before it is installed.

Door is furnished with a spring catch.

Hubs are cast solid with the body and have an integral bushing and tapered thread.

Any assortment of 25 black enameled and galvanized Condulets of the YK series will be considered a standard package.



Type YK Condulets

Galvanized or black enamel finish.

Take fusible knife switches.

Furnished with switch fastening plate, screws and bolts.

Hubs cast solid with body.

2-pole, 30-ampere, 250-volt

Sheet Steel Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YK1302, YK2302, YK3302.

3-pole, 30-ampere, 250-volt

Sheet Steel Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YK2303, YK3303, YK4303.

2-pole, 60-ampere, 250-volt

Cast Iron Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YK2602, YK2306, YK4602.

3-pole, 60-ampere, 250-volt

Cast Iron Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YK3603, YK4603, YK5603.

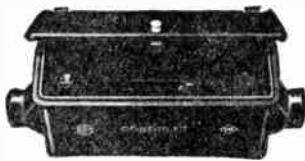
Type YKC Condulets

Galvanized or black enamel finish.

Take fusible knife switches.

Furnished with switch fastening plate, screws and bolts.

Hubs cast solid with body.



2-pole, 30-ampere, 250-volt

Sheet Steel Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKC1302, YKC2302, YKC3302.

3-pole, 30-ampere, 250-volt

Sheet Steel Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKC2303, YKC3303, YKC4303.

2-pole, 60-ampere, 250-volt

Cast Iron Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKC2602, YKC3602, YKC4602.

3-pole, 60-ampere, 250-volt

Cast Iron Door

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKC3603, YKC4603, YKC5603.



Type YKK Knife Switches

For Condulets of the YK and YKW series. Arranged for 250-volt N. E. C. cartridge fuses.

Table with 6 columns: Cat. No., Capacity Amps., No. of Poles, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKK302, YKK602, YKK303, YKK603.

Type YKW Condulets



Watertight, galvanized or black enamel finish. Take fusible knife switches. Furnished with gasketed cast iron door, switch fastening plate, screws and bolts. Hub cast solid with body.

Any assortment of 25 black enameled and galvanized Condulets of the YKW series will be considered a standard package.

2-pole, 30-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKW1302, YKW2302, YKW3302, YKW4302, YKW5302.

3-pole, 30-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKW2303, YKW3303, YKW4303, YKW5303.

2-pole, 60-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKW2602, YKW3602, YKW4602, YKW5602.

3-pole, 60-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKW3603, YKW4603, YKW5603, YKW6603.

Type YKWC Condulets

Watertight, galvanized or enamel. Take fusible knife switches. Furnished with gasketed cast iron door, switch fastening plate, screws and bolts. Hubs cast solid with body.

Any assortment of 25 black enameled and galvanized Condulets of the YKW series will be considered a standard package.



2-pole, 30-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKWC1302, YKWC2302, YKWC3302, YKWC4302, YKWC5302.

3-pole, 30-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKWC2303, YKWC3303, YKWC4303, YKWC5303.

2-pole, 60-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKWC2602, YKWC3602, YKWC4602, YKWC5602.

3-pole, 60-ampere, 250-volt

Table with 5 columns: Cat. No., Size Inches, Std. Pkg., Wt., Lbs. Std. Pkg., Price Each. Rows include YKWC3603, YKWC4603, YKWC5603, YKWC6603.

Type ET Condulets



In concealed conduit installations it is frequently possible to save conduit and labor by using this type, as junctions in the conduit system may be made at concealed or inaccessible points.

Where these Condulets are not used, all conduits must be run to an accessible junction box or outlet.

Single runs of conduit may be made from these junctions to the desired outlets, where the necessary taps and splices in the wires can be made.

The hubs have an integral bushing and tapered thread. Galvanized or black enamel finish.

Any assortment of 100 black enameled and galvanized types ET, EY, and ELB Condulets will be considered a standard package.

Cat. No.	SIZE INCHES			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
ET 1	1/2	1/2	1/2	100	420	\$1.25
ET21	1/2	1/2	3/4	50	210	1.45
ET31	1/2	1/2	1	50	230	1.55
ET32	3/4	3/4	1	25	140	1.90
ET43	1	1	1 1/4	25	160	2.30
ET 4	1 1/4	1 1/4	1 1/4	10	80	2.65
ET54	1 1/4	1 1/4	1 1/2	10	90	2.95
ET64	1 1/4	1 1/4	2	5	50	3.30

Type EY Condulets

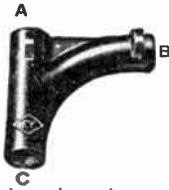
In concealed conduit installations it is frequently possible to save conduit and labor by using this type, as junctions in the conduit system may be made at concealed or inaccessible points.

Where these Condulets are not used, all conduits must be run to an accessible junction box or outlet.

Single runs of conduit may be made from these junctions to the desired outlets, where the necessary taps and splices in the wires can be made.

The hubs have an integral bushing and tapered thread. Galvanized or black enamel finish.

Any assortment of 100 black enameled and galvanized types EY, ET, and ELB Condulets will be considered a standard package.



Cat. No.	SIZE, INCHES			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
EY 1	1/2	1/2	1/2	100	330	\$1.05
EY21	1/2	1/2	3/4	50	170	1.15
EY31	1/2	1/2	1	50	190	1.25
EY32	3/4	3/4	1	25	110	1.45
EY43	1	1	1 1/4	25	130	1.90
EY 4	1 1/4	1 1/4	1 1/4	10	75	2.30
EY54	1 1/4	1 1/4	1 1/2	10	85	2.50
EY64	1 1/4	1 1/4	2	5	50	2.70

Type ELB Condulets



In concealed conduit installations it is frequently possible to save conduit and labor by using this type, as junctions in the conduit system may be made at concealed or inaccessible points.

Where these bodies are not used, all conduits must be run to an accessible junction box or outlet.

Galvanized or black enamel finish.

Any assortment of 100 black enameled and galvanized types ELB, ET, and EY Condulets will be considered a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ELB1	1/2	100	250	\$.70
ELB2	3/4	50	155	1.00
ELB3	1	50	180	1.25
ELB4	1 1/4	25	115	1.60
ELB5	1 1/2	10	60	1.85

Condulet Reducers



Used to reduce Condulets from larger to smaller sizes as shown in listing. Any assortment of 200 reducers will be considered a standard package.

Cat. No.	Size In.	Std. Wt., Lbs. Pkg.	Price Each	Cat. No.	Size In.	Std. Wt., Lbs. Pkg.	Price Each
RE1308	1/2 - 3/8	50 5	\$.15	RE93	3 1/2 - 1	10 20	\$2.00
RE21	3/4 - 1/2	50 5	.15	RE103	4 - 1	10 25	2.75
RE31	1 - 1/2	50 10	.20	RE54	1 1/2 - 1 1/4	50 15	.40
RE41	1 1/4 - 1/2	50 20	.30	RE64	2 - 1 1/4	25 15	.50
RE51	1 1/2 - 1/2	50 25	.40	RE74	2 1/2 - 1 1/4	25 30	1.00
RE61	2 - 1/2	25 20	.50	RE84	3 - 1 1/4	25 40	1.35
RE71	2 1/2 - 1/2	25 20	1.00	RE94	3 1/2 - 1 1/4	10 25	2.00
RE81	3 - 1/2	25 30	1.35	RE104	4 - 1 1/4	10 25	2.75
RE91	3 1/2 - 1/2	10 20	2.00	RE65	2 - 1 1/2	25 10	.50
RE101	4 - 1/2	10 30	2.75	RE75	2 1/2 - 1 1/2	25 25	1.00
RE32	1 - 3/4	50 10	.20	RE85	3 - 1 1/2	25 40	1.35
RE42	1 1/4 - 3/4	50 20	.30	RE95	3 1/2 - 1 1/2	10 25	2.00
RE52	1 1/2 - 3/4	50 25	.40	RE105	4 - 1 1/2	10 30	2.75
RE62	2 - 3/4	25 20	.50	RE76	2 1/2 - 2	25 15	1.00
RE72	2 1/2 - 3/4	25 20	1.00	RE86	3 - 2	25 35	1.35
RE82	3 - 3/4	25 30	1.35	RE96	3 1/2 - 2	10 30	2.00
RE92	3 1/2 - 3/4	10 20	2.00	RE106	4 - 2	10 35	2.75
RE102	4 - 3/4	10 30	2.75	RE87	3 - 2 1/2	25 25	1.35
RE43	1 1/4 - 1	50 15	.30	RE97	3 1/2 - 2 1/2	10 20	2.00
RE53	1 1/2 - 1	50 20	.40	RE107	4 - 2 1/2	10 35	2.75
RE63	2 - 1	25 20	.50	RE98	3 1/2 - 3	10 20	2.00
RE73	2 1/2 - 1	25 30	1.00	RE108	4 - 3	10 25	2.75
RE83	3 - 1	25 30	1.35	RE109	4 - 3 1/2	10 20	2.75

Condulet Unions

Any assortment of 100 Condulet unions will be considered a standard package.



Cat. No.	Size In.	Std. Wt., Lbs. Pkg.	Price Each	Cat. No.	Size In.	Std. Wt., Lbs. Pkg.	Price Each
UN110	1/2	50 45	\$.60	UN5	1 1/2	25 60	\$1.80
UN220	3/4	50 55	.90	UN6	2	10 40	2.75
UN3	1	25 40	.75	UN7	2 1/2	10 50	4.75
UN4	1 1/4	25 50	1.20	UN8	3	5 35	8.00

Condulet Pedestals

Three Inches High

Rigid support for Condulets mounted on conduit that projects through the floor. Furnished with set screws.



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PED13	1/2	35	85	\$.95
PED23	3/4	35	100	1.20
PED33	1	25	85	1.45

45-degree Condulet Elbows

Female

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
EL1	1/2	200	100	\$.22
EL2	3/4	100	80	.30
EL3	1	50	70	.35
EL4	1 1/4	25	65	.65
EL5	1 1/2	10	65	.70
EL6	2	5	65	1.15

90-degree Condulet Elbows

Male

Galvanized or black enamel finish.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
EL195	1/2	200	100	\$.30
EL295	3/4	100	80	.40
EL395	1	50	70	.50
EL495	1 1/4	25	65	.75

Type UNJ Condulet Fixture Joints

For Pendant Fixtures—Always Hang Plumb

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
UNJ1308	* 1/2 — 3/8	50	40	\$.65
UNJ1	1/2 — 1/2	50	40	.65
UNJ2308	* 3/4 — 3/8	50	55	.75
UNJ21	* 3/4 — 1/2	50	55	.75
UNJ2	3/4 — 3/4	50	60	.75
UNJ3308	*1 — 3/8	25	40	.90
UNJ31	*1 — 1/2	25	40	.90
UNJ32	*1 — 3/4	25	40	1.00
UNJ3	1 — 1	25	40	1.00

*Male threads given first.

Any assortment of 100 black enameled and galvanized type UNJ Condulet fixture joints will be considered a standard package.

Cushion Fixture Hangers

For Condulets of the Obround Series

For Fixtures with 3/8-inch Stem

Cat. No.	Total Wt. of Fixture, Lbs.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
18h	2 1/2 to 3 1/2	1/2	200	40	\$.55
28h	2 1/2 " 3 1/2	3/4	100	25	.60
18k	3 1/2 " 5	1/2	200	40	.55
28k	3 1/2 " 5	3/4	100	25	.60



For Fixtures with 1/2-inch Stem

116k	3 1/2 to 5	1/2	200	40	\$.65
218k	3 1/2 " 5	3/4	100	25	.70

Type H Cushion Fixture Hangers

Always Hang Plumb

For Form 10 Condulets of the G-H Series—Without Adjustable Bar

For Fixtures with 3/8-inch Stem

Cat. No.	Total Wt. of Fixture, Lbs.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H1086	2 1/2 to 8	25	35	\$.65
H1087	8 " 16	25	35	.65
H1088	16 " 30	25	40	.65



For Fixtures with 1/2-inch Stem

H1066	2 1/2 to 8	25	35	\$.65
H1067	8 " 16	25	35	.65
H1068	16 " 30	25	40	.65

Type GS Ball Fixture Hangers

For Condulets of the GS Series—Always Hang Plumb

For Form 5 Condulets

For Fixtures with 1/2-inch Stem

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS536	25	30	\$.55



Type GS Cushion Fixture Hangers

For Condulets of the GS Series—

Always Hang Plumb

[For Form 5 Condulets

For Fixtures with 3/8-inch Stem



Cat. No.	Total Wt. of Fixture, Lbs.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS294	30 to 80	25	100	\$ 2.75

Type ARB Ball Fixture Hangers

For 4-inch Outlet Boxes—Always Hang Plumb

For Fixtures with 3/8-inch Stem

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ARB5	25	50	\$ 1.00



For Fixtures with 1/2-inch Stem

ARB6	25	50	\$ 1.00
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Type ARB Cushion Fixture Hangers

For 4-inch Outlet Boxes—Always Hang Plumb

For Fixtures with 3/8-inch Stem

Cat. No.	Total Wt. of Fixture, Lbs.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ARB 7	2 1/2 to 8	25	50	\$ 1.00
ARB 9	8 " 16	25	50	1.00
ARB11	16 " 30	25	60	1.00



For Fixtures with 1/2-inch Stem

ARB8	2 1/2 to 8	25	50	\$ 1.00
ARB10	8 " 16	25	50	1.00
ARB12	16 " 30	25	60	1.00

Type ALC Condulet Fixture Joints

For Pendant Fixtures—Always Hang Plumb
For Fixtures with 1/2-inch Stem



The fixture is suspended from a universal joint which assures that the fixture will hang plumb. It also prevents breaking the fixture stem at the point of suspension, due to strains set up by the wind or by hitting the fixture. Permits fixture to swing through an angle of about 20 degrees in any direction from the perpendicular.

Fixture stem cannot turn or twist in this manner as to injure the wires or connections.

The back of Type ALC conforms to the shape of the conduit.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
ALC1	1/2	25	65	\$.75
ALC2	3/4	25	70	.85

Type AOC Condulet Fixture Joints

Type AOC Condulet Fixture Joint fulfills the same purpose as Type ALC, but the Condulet body is of the Obround shape and is provided with a cover fastened on with a wedge nut.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AOC1	1/2	50	65	\$.75
AOC21	3/4	25	40	.85

Cord Clamps



For 1/2, 3/4, and 1-inch conduit. Galvanized or black enamel finish.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Clamp 1	50	20	\$.25

Covers with Cord Clamps

For Condulets of the Obround Series

Drop cord fixtures, especially in industrial plants, are frequently subject to hard usage. The Condulet cover with cord clamp, acts as a safeguard for the upper end of such drop cords, and prevents putting any strain on the soldered connections of the conductors. The hole through the cover is provided with a bushing.



This cover fits any Condulet of the Obround Series in the sizes listed.

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
19E	1/2	200	80	\$.25
29E	3/4	100	50	.30

Condulet Finishes

Iron Condulets and Covers

Black enamel is the standard finish for Condulets, Condulet bodies and metal covers and will be furnished unless another finish is specified on the order.

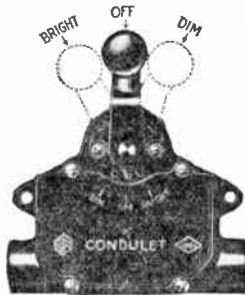
Galvanized finish on the exterior and black enamel finish on the interior of Condulets and Condulet bodies will be furnished at the same price as all black enamel finish, when the order specifies galvanized finish. Galvanized finish for metal covers will be furnished, if specifically ordered, at the same price as black enamel finish.

Assortments

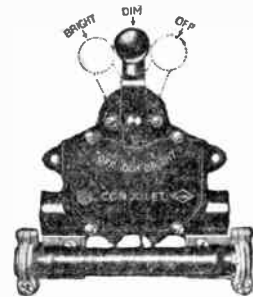
Black enameled and galvanized Condulets and Condulet bodies of the same type and size may be assorted to make a standard package. Black enameled and galvanized covers of the same type and size may be assorted to make a standard package. Black enameled and galvanized Condulet accessories of the same type and size may be assorted to make a standard package.

Locomotive Headlight Switches

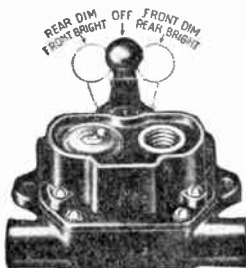
34 Volts, 24 Amperes—125 Volts, 6 Amperes
250 Volts, 3 Amperes



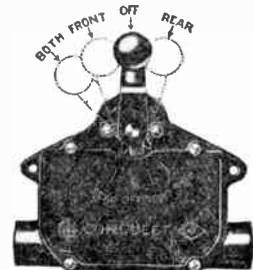
Type LHSJ without Resistance,
Toggle Switch, and Fuse Receptacle
3 Positions: Dim—Off—Bright



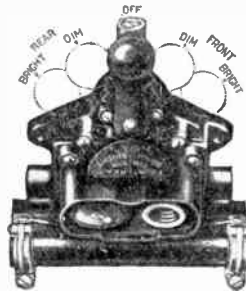
Type LHSJ with Resistance, but
without Toggle Switch and Fuse Receptacle
3 Positions: Off—Dim—Bright



Type LHSJ without Resistance, but
with Toggle Switch and Fuse Receptacle
3 Positions: Front Dim, Rear
Bright—Off—Rear Dim, Front Bright



Type LHSJ without Resistance,
Toggle Switch, and Fuse Receptacle
4 Positions: Rear Bright—Off—
Front Bright—Both Bright



Type LHSJ with Resistance, Toggle Switch, and Fuse Receptacle
5 Positions: Front Bright—Front Dim—Off—Rear Dim—Rear Bright

Locomotive Headlight Switches are furnished in 4 styles: without resistance, toggle switch, and fuse receptacle; without resistance, but with toggle switch and fuse receptacle; with resistance, but without toggle switch, and fuse receptacle; and with resistance, toggle switch, and fuse receptacle.

These switches are of substantial construction. The cover is gasketed, making it dustproof. The body is shallow, not exceeding 2 inches in depth and, therefore, it is especially suitable for mounting in the limited space available in an engine cab.

The switch blade is always in engagement with one of the switch contacts and, therefore, it cannot get out of alignment. The wires are connected to binding screws which make direct connection with the contacts.

The cover is marked to show the condition of the light as indicated by the pointer on the handle. The cover is marked on both sides so that it can be read correctly when the switch is installed with the handle pointing either up or down. The handle is held in position by a spring plunger which engages notches.

All parts are removable without disturbing the body or disconnecting any of the conduit.

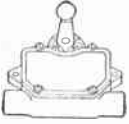
Locomotive Headlight Switches

3 Positions: Front Dim, Rear Bright—Off
Rear Dim, Front Bright

34 V., 24 Amp.—125 V., 6 Amp.—250 V., 3 Amp.
Type LHSJ

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSJ17	1/2	10	65	\$9.00
LHSJ27	3/4	10	70	9.10
LHSJ37	1	10	75	9.20



Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSJ278	3/4	10	80	\$16.30
LHSJ378	1	10	85	16.40

With Resistance, but without Toggle
Switch and Fuse Receptacle

LHSJ177	1/2	10	105	\$16.10
LHSJ277	3/4	10	110	16.20
LHSJ377	1	10	115	16.30

With Resistance, Toggle Switch
and Fuse Receptacle

LHSJ279	3/4	10	135	\$23.40
LHSJ379	1	10	140	23.50

Type LHSA

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSA17	1/2	10	60	\$8.90
LHSA27	3/4	10	65	9.00
LHSA37	1	10	70	9.10

Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSA278	3/4	10	75	\$16.20
LHSA378	1	10	80	16.30

With Resistance, but without Toggle
Switch and Fuse Receptacle

LHSA177	1/2	10	100	\$16.00
LHSA277	3/4	10	105	16.10
LHSA377	1	10	110	16.20

With Resistance, Toggle Switch
and Fuse Receptacle

LHSA279	3/4	10	130	\$23.30
LHSA379	1	10	135	23.40

Type LHSK

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSK17	1/2	10	60	\$8.90
LHSK27	3/4	10	65	9.00
LHSK37	1	10	70	9.10

Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSK278	3/4	10	80	\$16.20
LHSK378	1	10	100	16.30

With Resistance, but without Toggle
Switch and Fuse Receptacle

LHSK177	1/2	10	105	\$16.00
LHSK277	3/4	10	110	16.10
LHSK377	1	10	110	16.20

With Resistance, Toggle Switch
and Fuse Receptacle

LHSK279	3/4	10	130	\$23.30
LHSK379	1	10	135	23.40

Type LHSP

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSP17	1/2	10	60	\$8.90
LHSP27	3/4	10	65	9.00
LHSP37	1	10	70	9.10

Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSP278	3/4	10	75	\$16.20
LHSP378	1	10	80	16.30

With Resistance, but without Toggle
Switch and Fuse Receptacle

LHSP177	1/2	10	100	\$16.00
LHSP277	3/4	10	105	16.10
LHSP377	1	10	110	16.20

With Resistance, Toggle Switch
and Fuse Receptacle

LHSP279	3/4	10	130	\$23.30
LHSP379	1	10	135	23.40

Diagrams indicate position of conduit hub.
Standard finish is galvanized or black enamel.
Any assortment of 25 switches will be considered a standard package.

Locomotive Headlight Switches

4 Positions: Rear Bright—Off—Front Bright—
Both Bright

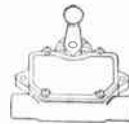
34 V., 24 Amp.—125 V., 6 Amp.—250 V., 3 Amp.

These headlight switches have no dim positions, and are
therefore not listed with resistance.

Type LHSJ

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSJ18	1/2	10	65	\$9.00
LHSJ28	3/4	10	70	9.10
LHSJ38	1	10	75	9.20



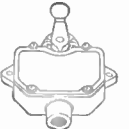
Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSJ288	3/4	10	80	\$16.30
LHSJ388	1	10	85	16.40

Type LHSA

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSA18	1/2	10	60	\$8.90
LHSA28	3/4	10	65	9.00
LHSA38	1	10	70	9.10



Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSA288	3/4	10	75	\$16.20
LHSA388	1	10	80	16.30

Type LHSK

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSK18	1/2	10	60	\$8.90
LHSK28	3/4	10	65	9.00
LHSK38	1	10	70	9.10



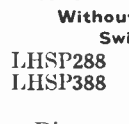
Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSK288	3/4	10	75	\$16.20
LHSK388	1	10	80	16.30

Type LHSP

Without Resistance, Toggle Switch
and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSP18	1/2	10	60	\$8.90
LHSP28	3/4	10	65	9.00
LHSP38	1	10	70	9.10



Without Resistance, but with Toggle
Switch and Fuse Receptacle

LHSP288	3/4	10	75	\$16.20
LHSP388	1	10	80	16.30

Diagrams indicate position of conduit hub.

Standard finish is galvanized or black enamel.

Any assortment of 25 switches will be considered a standard
package.

Locomotive Headlight Switches

5 Positions: Front Bright—Front Dim—Off—Rear Dim—Rear Bright
34 V., 24 Amp.—125 V., 6 Amp.—250 V., 3 Amp.
Type LHSJ

Without Resistance, Toggle Switch and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSJ19	1/2	10	65	\$9.00
LHSJ29	3/4	10	70	9.10
LHSJ39	1	10	75	9.20

Without Resistance, but with Toggle Switch and Fuse Receptacle

LHSJ298	3/4	10	75	\$16.30
LHSJ398	1	10	80	16.40

With Resistance, but without Toggle Switch and Fuse Receptacle

LHSJ197	1/2	10	100	\$16.10
LHSJ297	3/4	10	105	16.20
LHSJ397	1	10	110	16.30

With Resistance, Toggle Switch and Fuse Receptacle

LHSJ299	3/4	10	125	\$23.40
LHSJ399	1	10	130	23.50

Type LHSA

Without Resistance, Toggle Switch and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSA19	1/2	10	60	\$8.90
LHSA29	3/4	10	65	9.00
LHSA39	1	10	70	9.10

Without Resistance, but with Toggle Switch and Fuse Receptacle

LHSA298	3/4	10	75	\$16.20
LHSA398	1	10	80	16.30

With Resistance, but without Toggle Switch and Fuse Receptacle

LHSA197	1/2	10	100	\$16.00
LHSA297	3/4	10	105	16.10
LHSA397	1	10	110	16.20

With Resistance, Toggle Switch and Fuse Receptacle

LHSA299	3/4	10	125	\$23.30
LHSA399	1	10	130	23.40

Type LHSK

Without Resistance, Toggle Switch and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSK19	1/2	10	60	\$8.90
LHSK29	3/4	10	65	9.00
LHSK39	1	10	70	9.10

Without Resistance, but with Toggle Switch and Fuse Receptacle

LHSK298	3/4	10	75	\$16.20
LHSK398	1	10	80	16.30

With Resistance, but without Toggle Switch and Fuse Receptacle

LHSK197	1/2	10	100	\$16.00
LHSK297	3/4	10	105	16.10
LHSK397	1	10	110	16.20

With Resistance, Toggle Switch and Fuse Receptacle

LHSK299	3/4	10	125	\$23.30
LHSK399	1	10	130	23.40

Type LHSP

Without Resistance, Toggle Switch and Fuse Receptacle

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHSP19	1/2	10	60	\$8.90
LHSP29	3/4	10	65	9.00
LHSP39	1	10	70	9.10

Without Resistance, but with Toggle Switch and Fuse Receptacle

LHSP298	3/4	10	75	\$16.20
LHSP398	1	10	80	16.30

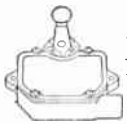
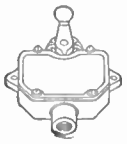
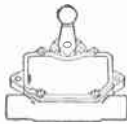
With Resistance, but without Toggle Switch and Fuse Receptacle

LHSP197	1/2	10	100	\$16.00
LHSP297	3/4	10	105	16.10
LHSP397	1	10	110	16.20

With Resistance, Toggle Switch and Fuse Receptacle

LHSP299	3/4	10	125	\$23.30
LHSP399	1	10	130	23.40

Diagrams at left indicate position of conduit hub. Standard finish is galvanized or black enamel. Any assortment of 25 switches will be considered a stand. pkg.



Condulets with Cab Ceiling Rosettes

Bayonet Type, Iron Clad

These cab ceiling rosettes are strong, efficient, and convenient devices for quickly putting up, taking down, or exchanging drop cord equipment.

Both the base and cap are of cast iron, protecting strong composition blocks which carry the contacts.

The cast iron parts interlock in such a manner as to prevent any strain being applied to the contacts.

A slight turn of the cap locks it in position and vibration cannot loosen it. No tools are required to disengage the cap from the base.

Connection blocks cannot be used with these Condulets because of the compact design. If connection blocks are required, see listings on following pages.

Type GS

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15974	1/2	10	40	\$3.35
GS25974	3/4	10	45	3.50
GS35974	1	10	45	3.70



With Rosette GS77 for 1/16 to 23/32-inch Diameter Cable

GS15977	1/2	10	40	\$3.35
GS25977	3/4	10	45	3.50
GS35977	1	10	45	3.70

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS159615	1/2	10	40	\$3.65
GS259615	3/4	10	45	3.80
GS359615	1	10	45	4.00

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GS159616	1/2	10	40	\$3.65
GS259616	3/4	10	45	3.80
GS359616	1	10	45	4.00

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GS159617	1/2	10	45	\$3.90
GS259617	3/4	10	45	4.05
GS359617	1	10	50	4.25

Type GSA

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSA15974	1/2	10	40	\$3.35
GSA25974	3/4	10	45	3.50
GSA35974	1	10	45	3.70

With Rosette GS577 for 1/16 to 23/32-inch Diameter Cable

GSA15977	1/2	10	40	\$3.35
GSA25977	3/4	10	45	3.50
GSA35977	1	10	45	3.70

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSA159615	1/2	10	40	\$3.65
GSA259615	3/4	10	45	3.80
GSA359615	1	10	45	4.00

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GSA159616	1/2	10	40	\$3.65
GSA259616	3/4	10	45	3.80
GSA359616	1	10	45	4.00

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GSA159617	1/2	10	45	\$3.90
GSA259617	3/4	10	45	4.05
GSA359617	1	10	50	4.25

Standard finish is galvanized or black enamel. These Condulets consist of Form 5 GS Series with GS577, GS5615, GS5616, or GS5617 rosette.

Any assortment of 25 Condulets with Cab Ceiling Rosettes will be considered a standard package.



Condulets with Cab Ceiling Rosettes

Bayonet Type, Iron Clad

Continued

Type GSC

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 7/16-inch Diameter Cable



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15974	1/2	10	40	\$3.45
GSC25974	3/4	10	45	3.60
GSC35974	1	10	45	3.80
With Rosette GS577 for 7/16 to 23/32-inch Diameter Cable				
GSC15977	1/2	10	45	\$3.45
GSC25977	3/4	10	45	3.60
GSC35977	1	10	50	3.80

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC159615	1/2	10	45	\$3.75
GSC259615	3/4	10	45	3.90
GSC359615	1	10	50	4.10

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GSC159616	1/2	10	45	\$3.75
GSC259616	3/4	10	45	3.90
GSC359616	1	10	50	4.10

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GSC159617	1/2	10	50	\$4.00
GSC259617	3/4	10	50	4.15
GSC359617	1	10	55	4.35

Type GSL

Furnished with Cord Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL15974	1/2	10	40	\$3.45
GSL25974	3/4	10	45	3.60
GSL35974	1	10	45	3.80



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL15977	1/2	10	45	\$3.45
GSL25977	3/4	10	45	3.60
GSL35977	1	10	50	3.80

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL159615	1/2	10	45	\$3.75
GSL259615	3/4	10	45	3.99
GSL359615	1	10	50	4.10

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GSL159616	1/2	10	45	\$3.75
GSL259616	3/4	10	45	3.90
GSL359616	1	10	50	4.10

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GSL159617	1/2	10	50	\$4.00
GSL259617	3/4	10	50	4.15
GSL359617	1	10	55	4.35

Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with GS577 GS5615, GS5616, or GS5617 rosette.

Any assortment of 25 Condulets with Cab Ceiling Rosettes will be considered a standard package.

Condulets with Cab Ceiling Rosettes

Bayonet Type, Iron Clad

Continued

Type GST

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 7/16-inch Diameter Cable



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST15974	1/2	10	45	\$3.65
GST25974	3/4	10	50	3.80
GST35974	1	10	50	4.00

With Rosette GS577 for 7/16 to 23/32-inch Diameter Cable

GST15977	1/2	10	50	\$3.65
GST25977	3/4	10	50	3.80
GST35977	1	10	55	4.00

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST159615	1/2	10	50	\$3.95
GST259615	3/4	10	50	4.10
GST359615	1	10	55	4.30

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GST159616	1/2	10	50	\$3.95
GST259616	3/4	10	50	4.10
GST359616	1	10	55	4.30

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GST159617	1/2	10	55	\$4.20
GST259617	3/4	10	55	4.35
GST359617	1	10	60	4.55

Type GSX

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS574 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX15974	1/2	10	45	\$3.80
GSX25974	3/4	10	50	3.95
GSX35974	1	10	50	4.25



With Rosette GS577 for 7/16 to 23/32-inch Diameter Cable

GSX15977	1/2	10	55	\$3.80
GSX25977	3/4	10	55	3.95
GSX35977	1	10	60	4.25

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX159615	1/2	10	55	\$4.10
GSX259615	3/4	10	55	4.25
GSX359615	1	10	60	4.55

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

GSX159616	1/2	10	55	\$4.10
GSX259616	3/4	10	55	4.25
GSX359616	1	10	60	4.55

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

GSX159617	1/2	10	60	\$4.35
GSX259617	3/4	10	60	4.50
GSX359617	1	10	65	4.80

Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with GS577, GS5615, GS5616, or GS5617 rosette.

Any assortment of 25 Condulets with Cab Ceiling Rosettes will be considered a standard package.

Condulets with Cab Ceiling Rosettes

Bayonet Type, Iron Clad

Continued

These 2 and 3-gang Condulets are recommended in place of a group of single Condulets, because they effect a saving in space and cost.

Type GSC—2-gang

Furnished with Clamp—For Flexible Cord or Armored Cable



With Rosette GS574 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC152974	1/2	10	100	\$6.90
GSC252974	3/4	10	105	7.20

With Rosette GS577 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC152977	1/2	10	110	\$6.90
GSC252977	3/4	10	110	7.20

Furnished With Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1529615	1/2	10	110	\$7.50
GSC2529615	3/4	10	110	7.80

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1529616	1/2	10	110	\$7.50
GSC2529616	3/4	10	110	7.80

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1529617	1/2	10	115	\$8.00
GSC2529617	3/4	10	115	8.30

Type GSC—3-gang

Furnished with Clamp—For Flexible Cord or Armored Cable



With Rosette GS574 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC153974	1/2	10	135	\$10.35
GSC253974	3/4	10	140	10.80

With Rosette GS577 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC153977	1/2	10	145	\$10.35
GSC253977	3/4	10	145	10.80

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS5615 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1539615	1/2	10	145	\$11.25
GSC2539615	3/4	10	145	11.70

With Rosette GS5616 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1539616	1/2	10	145	\$11.25
GSC2539616	3/4	10	145	11.70

With Rosette GS5617 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1539617	1/2	10	150	\$12.00
GSC2539617	3/4	10	150	12.45

Standard finish is galvanized or black enamel.

The Condulets consist of Form 5 GS Series with GS577, GS5615, GS5616, or GS5617 rosette.

Any assortment of 15 Condulets with Cab Ceiling Rosettes, 2 and 3 gang, will be considered a standard package.

Type GS Condulets with Cab Ceiling Rosette and Connection Block

Bayonet Type, Iron Clad



These cab ceiling rosettes are strong, efficient, and convenient devices for quickly putting up, taking down, or exchanging drop cord equipment.

Both the base and cap are of cast iron, protecting strong composition blocks which carry the contacts.

The cast iron parts interlock in such a manner as to prevent any strain being applied to the contacts.

A slight turn of the cap locks it in position and vibration cannot loosen it. No tools are required to disengage the cap from the base.

These Condulets differ from those listed previously in that they are furnished with connection blocks and are larger. Each plate of the connection block is provided with three 1/4-inch—20 binding screws.

With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS119276	1/2	10	50	\$4.45
GS219276	3/4	10	50	4.60
GS319276	1	10	55	4.80

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS119278	1/2	10	50	\$4.45
GS219278	3/4	10	50	4.60
GS319278	1	10	55	4.80

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1192611	1/2	10	50	\$4.75
GS2192611	3/4	10	50	4.90
GS3192611	1	10	55	5.10

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1192612	1/2	10	50	\$4.75
GS2192612	3/4	10	50	4.90
GS3192612	1	10	55	5.10

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1192613	1/2	10	55	\$5.00
GS2192613	3/4	10	55	5.15
GS3192613	1	10	60	5.35

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS119376	1/2	10	50	\$4.75
GS219376	3/4	10	50	4.90
GS319376	1	10	55	5.10

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS119378	1/2	10	50	\$4.75
GS219378	3/4	10	50	4.90
GS319378	1	10	55	5.10

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1193611	1/2	10	50	\$5.05
GS2193611	3/4	10	50	5.20
GS3193611	1	10	55	5.40

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1193612	1/2	10	50	\$5.05
GS2193612	3/4	10	50	5.20
GS3193612	1	10	55	5.40

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1193613	1/2	10	55	\$5.30
GS2193613	3/4	10	55	5.45
GS3193613	1	10	60	5.65

Standard finish is galvanized or black enamel.

These Condulets consist of Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 25 Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GSC Condulets with Cab Ceiling Rosette and Connection Block Bayonet Type, Iron Clad



With 2-pole Block

(Furnished with Clamp—For Flexible Cord or Armored Cable)

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC119276	1/2	10	55	\$4.55
GSC219276	3/4	10	55	4.70
GSC319276	1	10	60	4.90

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC119278	1/2	10	55	\$4.55
GSC219278	3/4	10	55	4.70
GSC319278	1	10	60	4.90

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1192611	1/2	10	55	\$4.85
GSC2192611	3/4	10	55	5.00
GSC3192611	1	10	60	5.20

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1192612	1/2	10	55	\$4.80
GSC2192612	3/4	10	55	5.00
GSC3192612	1	10	60	5.20

With Rosette GS1613 to 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1192613	1/2	10	60	\$5.10
GSC2192613	3/4	10	60	5.25
GSC3192613	1	10	65	5.45

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC119376	1/2	10	55	\$4.85
GSC219376	3/4	10	55	5.00
GSC319376	1	10	60	5.20

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC119378	1/2	10	55	\$4.85
GSC219378	3/4	10	55	5.00
GSC319378	1	10	60	5.20

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1193611	1/2	10	55	\$5.15
GSC2193611	3/4	10	55	5.30
GSC3193611	1	10	60	5.50

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1193612	1/2	10	55	\$5.15
GSC2193612	3/4	10	55	5.30
GSC3193612	1	10	60	5.50

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1193613	1/2	10	60	\$5.40
GSC2193613	3/4	10	60	5.55
GSC3193613	1	10	65	5.75

Standard finish is galvanized or black enamel.

These Condulets consist of Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 25 Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GSL Condulets with Cab Ceiling Rosette and Connection Block Bayonet Type, Iron Clad

Bayonet Type, Iron Clad



With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL119276	1/2	10	55	\$4.55
GSL219276	3/4	10	55	4.70
GSL319276	1	10	60	4.90

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL119278	1/2	10	55	\$4.55
GSL219278	3/4	10	55	4.70
GSL319278	1	10	60	4.90

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1192611	1/2	10	55	\$4.85
GSL2192611	3/4	10	55	5.00
GSL3192611	1	10	60	5.20

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1192612	1/2	10	55	\$4.85
GSL2192612	3/4	10	55	5.00
GSL3192612	1	10	60	5.20

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1192613	1/2	10	60	\$5.10
GSL2192613	3/4	10	60	5.25
GSL3192613	1	10	65	5.45

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL119376	1/2	10	55	\$4.85
GSL219376	3/4	10	55	5.00
GSL319376	1	10	60	5.20

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL119378	1/2	10	55	\$4.85
GSL219378	3/4	10	55	5.00
GSL319378	1	10	60	5.20

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1193611	1/2	10	55	\$5.15
GSL2193611	3/4	10	55	5.30
GSL3193611	1	10	60	5.50

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1193612	1/2	10	55	\$5.15
GSL2193612	3/4	10	55	5.30
GSL3193612	1	10	60	5.50

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSL1193613	1/2	10	60	\$5.40
GSL2193613	3/4	10	60	5.55
GSL3193613	1	10	65	5.75

Standard finish is galvanized or black enamel.

These Condulets consist of Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 25 Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GST Condulets with Cab Ceiling Rosette and Connection Block

Bayonet Type, Iron Clad



With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST119276	1/2	10	60	\$4.75
GST219276	3/4	10	60	4.95
GST319276	1	10	65	5.15

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST119278	1/2	10	60	\$4.75
GST219278	3/4	10	60	4.95
GST319278	1	10	65	5.15

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1192611	1/2	10	60	\$5.05
GST2192611	3/4	10	60	5.25
GST3192611	1	10	65	5.45

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1192612	1/2	10	60	\$5.05
GST2192612	3/4	10	60	5.25
GST3192612	1	10	65	5.45

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1192613	1/2	10	65	\$5.30
GST2192613	3/4	10	65	5.50
GST3192613	1	10	70	5.70

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., lbs. Std. Pkg.	Price Each
GST119376	1/2	10	60	\$5.05
GST219376	3/4	10	60	5.25
GST319376	1	10	65	5.45

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST119378	1/2	10	60	\$5.05
GST219378	3/4	10	60	5.25
GST319378	1	10	65	5.45

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1193611	1/2	10	60	\$5.35
GST2193611	3/4	10	60	5.55
GST3193611	1	10	65	5.75

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1193612	1/2	10	60	\$5.35
GST2193612	3/4	10	60	5.55
GST3193612	1	10	65	5.75

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GST1193613	1/2	10	65	\$5.60
GST2193613	3/4	10	65	5.80
GST3193613	1	10	70	6.00

Standard finish is galvanized black enamel.

These Condulets consist of Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 25 Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GSX Condulets with Cab Ceiling Rosette and Connection Block

Bayonet Type, Iron Clad



With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX119276	1/2	10	65	\$4.90
GSX219276	3/4	10	65	5.15
GSX319276	1	10	70	5.55

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX119278	1/2	10	65	\$4.90
GSX219278	3/4	10	65	5.15
GSX319278	1	10	70	5.55

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1192611	1/2	10	65	\$5.20
GSX2192611	3/4	10	65	5.45
GSX3192611	1	10	70	5.85

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1192612	1/2	10	65	\$5.20
GSX2192612	3/4	10	65	5.45
GSX3192612	1	10	70	5.85

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1192613	1/2	10	70	\$5.45
GSX2192613	3/4	10	70	5.70
GSX3192613	1	10	75	6.10

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX119376	1/2	10	65	\$5.20
GSX219376	3/4	10	65	5.45
GSX319376	1	10	70	5.85

With Rosette GS178 for 7/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX119378	1/2	10	65	\$5.20
GSX219378	3/4	10	65	5.45
GSX319378	1	10	70	5.85

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1193611	1/2	10	65	\$5.50
GSX2193611	3/4	10	65	5.75
GSX3193611	1	10	70	6.15

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1193612	1/2	10	65	\$5.50
GSX2193612	3/4	10	65	5.75
GSX3193612	1	10	70	6.15

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSX1193613	1/2	10	70	\$5.75
GSX2193613	3/4	10	70	6.00
GSX3193613	1	10	75	6.40

Standard finish is galvanized or black enamel.

These Condulets consist of Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 25 Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GSC 2-gang Condulets with Cab Ceiling Rosette and Connection Block

Bayonet Type, Iron Clad



These 2-gang Condulets are recommended in place of a group of single Condulets, because they effect a saving in space and cost.

With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC112276	1/2	10	115	\$9.10
GSC212276	3/4	10	115	9.40

With Rosette GS178 for 1/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC112278	1/2	10	125	\$9.10
GSC212278	3/4	10	125	9.40

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1122611	1/2	10	125	\$9.70
GSC2122611	3/4	10	125	10.00

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1122612	1/2	10	125	\$9.70
GSC2122612	3/4	10	125	10.00

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1122613	1/2	10	130	\$10.20
GSC2122613	3/4	10	130	10.50

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC112376	1/2	10	115	\$9.70
GSC212376	3/4	10	115	10.00

With Rosette GS178 for 1/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC112378	1/2	10	125	\$9.70
GSC212378	3/4	10	125	10.00

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1123611	1/2	10	125	\$10.30
GSC2123611	3/4	10	125	10.60

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1123612	1/2	10	125	\$10.30
GSC2123612	3/4	10	125	10.60

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1123613	1/2	10	130	\$10.80
GSC2123613	3/4	10	130	11.10

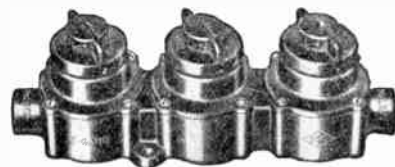
Standard finish is galvanized or black enamel.

These Condulets consist of 2-gang Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 15, 2 and 3-gang Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

Type GSC 3-gang Condulets with Cab Ceiling Rosette and Connection Block

Bayonet Type, Iron Clad



These 3-gang Condulets are recommended in place of a group of single Condulets, because they effect a saving in space and cost.

With 2-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC113276	1/2	10	155	\$13.65
GSC213276	3/4	10	155	14.10

With Rosette GS178 for 1/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC113278	1/2	10	165	\$13.65
GSC213278	3/4	10	165	14.10

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1132611	1/2	10	165	\$14.55
GSC2132611	3/4	10	165	15.00

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1132612	1/2	10	165	\$14.55
GSC2132612	3/4	10	165	15.00

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1132613	1/2	10	175	\$15.30
GSC2132613	3/4	10	175	15.75

With 3-pole Block

Furnished with Clamp—For Flexible Cord or Armored Cable

With Rosette GS176 for 1/4 to 1/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC113376	1/2	10	155	\$14.55
GSC213376	3/4	10	155	15.00

With Rosette GS178 for 1/16 to 23/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC113378	1/2	10	165	\$14.55
GSC213378	3/4	10	165	15.00

Furnished with Gland Nut and Rubber Bushing—For Flexible Cord

With Rosette GS1611 for 1/4 to 11/32-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1133611	1/2	10	165	\$15.45
GSC2133611	3/4	10	165	15.90

With Rosette GS1612 for 11/32 to 7/16-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1133612	1/2	10	165	\$15.45
GSC2133612	3/4	10	165	15.90

With Rosette GS1613 for 7/16 to 5/8-inch Diameter Cable

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC1133613	1/2	10	175	\$16.20
GSC2133613	3/4	10	175	16.65

Standard finish is galvanized or black enamel.

These Condulets consist of 3-gang Form 10 GS Series with GS176, GS178, GS1611, GS1612, or GS1613 rosette, and CB132 or CB133 connection block.

Any assortment of 15, 2 and 3-gang Condulets with Cab Ceiling Rosette and Connection Block will be considered a standard package.

**Cab Ceiling Rosettes
Bayonet Type, Iron Clad**

3-ampere, 250-volt

For Condulets of the GS Series. Furnished with screws.
Standard finish is galvanized or black enamel.

Form 5

Cannot be used with connection block.



With Clamp—For Flexible Cord or Armored Cable					
Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
GS574	1/4 to 7/16	10	20	\$2.45	
GS577	7/16 " 3/4	10	20	2.45	

With Gland Nut and Rubber Bushing For Flexible Cord					
Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	
GS5615	1/4 to 11/32	10	20	\$2.75	
GS5616	11/32 " 7/16	10	20	2.75	
GS5617	7/16 " 5/8	10	20	3.00	

Form 10

Take connection blocks listed on this page.

With Clamp—For Flexible Cord or Armored Cable

Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS176	1/4 to 7/16	10	50	\$2.70
GS178	7/16 " 3/4	10	50	2.70



With Gland Nut and Rubber Bushing For Flexible Cord

Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS1611	1/4 to 11/32	10	50	\$3.00
GS1612	11/32 " 7/16	10	50	3.00
GS1613	7/16 " 5/8	10	50	3.25

Rosette Bases

For Condulets of the GS Series. Take rosette caps listed below. Furnished with screws.

Form 5

For use with GS577, GS5615, GS5616, GS5617 Rosettes.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS534	10	10	\$1.35

Form 10

For use with GS178, GS1611, GS1612, GS1613 Rosettes.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS154	10	15	\$1.60

Rosette Caps

For cab ceiling rosette bases listed above. To be used on Condulets of the GS Series.



With Clamp—For Flexible Cord or Armored Cable

Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS544	1/4 to 7/16	10	10	\$1.10
GS5604	7/16 " 3/4	10	10	1.10

With Gland Nut and Rubber Bushing For Flexible Cord

Cat. No.	Diam. Cable, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS5505	1/4 to 11/32	10	10	\$1.40
GS5606	11/32 " 7/16	10	10	1.40
GS5607	7/16 " 5/8	10	10	1.65

Connection Blocks

2-wire

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB132	25	15	\$.80



3-wire

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB133	25	15	\$1.10



Condulets with Rosettes

These Condulets consist of a body and a cord or fixture rosette. The rosette is attached to the Condulet by screws.

The rosette is made in 2 parts: a base and cap, both of which are of molded composition. The cap, which is either a cord or a fixture rosette cannot be used without the base. The wires are connected to 2 plates placed on the upper side of the base. Three additional screws on each of these plates permit from 1 to 3 taps. The drop cord or fixture wires are connected to terminals in the cap. When the cap is secured to the base, all connections are completed.

Type G

With H554 Cord Rosette and Connection Block



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
G15754	1/2	25	50	\$.90
G25754	3/4	25	55	1.00

With H572 Female Nipple Fixture Rosette (3/8-inch) and Connection Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
G15772	1/2	25	50	\$1.15
G25772	3/4	25	55	1.25



Type H

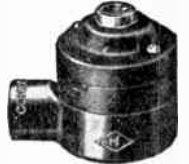
With H554 Cord Rosette and Connection Block



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H15754	1/2	25	45	\$.80
H25754	3/4	25	50	.90

With H572 Female Nipple Fixture Rosette (3/8-inch) and Connection Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H15772	1/2	25	45	\$1.05
H25772	3/4	25	50	1.15



Standard finish is galvanized or black enamel. These Condulets consist of Form 5 G-II Series and fixture rosette H572, or cord rosette H554.

Any assortment of 25 Condulets listed in this column will be considered a standard package.

Rosettes for G and H Condulets

Cord Rosettes



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H554	Complete.....	25	25	\$.50
H544	Cap Only.....	25	15	.20

Fixture Rosettes

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H572	Complete.....	25	25	\$.75
E562	Cap Only.....	25	15	.45



Screw Cover Junction Condulets

These Condulets are of liberal dimensions, providing ample space for taps, and for the passage of additional circuits.

The cover is provided with 2 bosses which permit the use of a wrench, screw driver, or bar for turning the cover. If desired, a gasket can be furnished for use between the cover and body.

The over all dimensions of these bodies exclusive of hubs are: diameter, 1/2-inch size, 2 1/2 inches; 3/4-inch size, 2 1/2 inches; 1-inch size, 3 1/2 inches; depth, 1/2-inch size, 1 3/8 inches; 3/4-inch size, 1 3/8 inches; 1-inch size, 1 7/8 inches.

The cover increases the depth 3/16 inch.

The hubs are tapered.

Type GRC

Cast Iron Body, Cast Brass Cover
Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC14	1/2	25	85	\$.95
GRC24	3/4	25	90	1.00

Cast Aluminum Body and Cover
Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC141	1/2	25	55	\$1.30
GRC241	3/4	25	55	1.40
GRC371	1	10	25	2.25



Type GRCA

Cast Iron Body, Cast Brass Cover
Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRCA14	1/2	25	90	\$1.00
GRCA24	3/4	25	90	1.05

Cast Aluminum Body and Cover
Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRCA141	1/2	25	60	\$1.35
GRCA241	3/4	25	60	1.45
GRCA371	1	10	30	2.30



Type GRL

Cast Iron Body, Cast Brass Cover
Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL14	1/2	25	85	\$.95
GRL24	3/4	25	90	1.00

Cast Aluminum Body and Cover
Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL141	1/2	25	55	\$1.30
GRL241	3/4	25	55	1.40
GRL371	1	10	25	2.25



Type GRT

Cast Iron Body, Cast Brass Cover
Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT14	1/2	25	90	\$1.00
GRT24	3/4	25	90	1.05

Cast Aluminum Body and Cover
Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT141	1/2	25	60	\$1.35
GRT241	3/4	25	60	1.45
GRT371	1	10	30	2.30



The 1/2 and 3/4-inch Condulets will not take connection blocks CB132 and CB133. The 1-inch size, of all types except GRCA, will take these blocks.

Any assortment of 25 Screw Cover Junction Condulets will be considered a standard package.

Screw Cover Junction Condulets

Continued

Type GRU

Cast Iron Body, Cast Brass Cover

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRU14	1/2	25	90	\$1.00
GRU24	3/4	25	90	1.05

Cast Aluminum Body and Cover

Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRU141	1/2	25	60	\$1.35
GRU241	3/4	25	60	1.40
GRU371	1	10	30	2.30



Type GRX

Cast Iron Body, Cast Brass Cover

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX14	1/2	25	95	\$1.05
GRX24	3/4	25	95	1.10

Cast Aluminum Body and Cover

Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX141	1/2	25	65	\$1.40
GRX241	3/4	25	65	1.45
GRX371	1	10	35	2.35



Type GRB

Cast Iron Body, Cast Brass Cover

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRB14	1/2	25	85	\$.95
GRB24	3/4	25	90	1.00

Cast Aluminum Body and Cover

Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRB141	1/2	25	55	\$1.30
GRB241	3/4	25	55	1.40
GRB371	1	10	25	2.25



Type GRLA

Cast Iron Body, Cast Brass Cover

Galvanized or black enamel finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRLA14	1/2	25	90	\$1.00
GRLA24	3/4	25	90	1.05

Cast Aluminum Body and Cover

Aluminum finish.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRLA141	1/2	25	60	\$1.35
GRLA241	3/4	25	60	1.45
GRLA371	1	10	30	2.30



These 1/2 and 3/4-inch Condulets will not take connection blocks CB132 and CB133.

The 1-inch size will take these blocks, except Type GRU.

Any assortment of 25 Screw Cover Junction Condulets will be considered a standard package.

Screw Cover Condulets with Connection Block

Cast Iron Body, Cast Brass Cover

These Condulets are of liberal dimensions, providing ample space for taps, and for the passage of additional circuits.

The cover is provided with 2 bosses which permit the use of a wrench, screw driver, or bar for turning the cover. If desired, a gasket can be furnished between the cover and body.

The overall dimensions of these bodies exclusive of hubs are: diameter, $3\frac{1}{2}$ inches; depth, $1\frac{1}{8}$ inches.

The cover increases the depth $\frac{1}{16}$ inch.

The hubs are tapered.

Type GRC

With 2-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC172	$\frac{1}{2}$	25	120	\$2.25
GRC272	$\frac{3}{4}$	25	125	2.30
GRC372	1	10	60	2.35



With 3-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC173	$\frac{1}{2}$	25	120	\$2.55
GRC273	$\frac{3}{4}$	25	125	2.60
GRC373	1	10	60	2.65

Type GRL

With 2-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL172	$\frac{1}{2}$	25	120	\$2.25
GRL272	$\frac{3}{4}$	25	125	2.30
GRL372	1	10	60	2.35



With 3-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL173	$\frac{1}{2}$	25	120	\$2.55
GRL273	$\frac{3}{4}$	25	125	2.60
GRL373	1	10	60	2.65

Type GRT

With 2-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT172	$\frac{1}{2}$	25	125	\$2.30
GRT272	$\frac{3}{4}$	25	130	2.35
GRT372	1	10	60	2.40



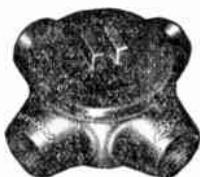
With 3-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT173	$\frac{1}{2}$	25	125	\$2.60
GRT273	$\frac{3}{4}$	25	130	2.65
GRT373	1	10	60	2.70

Type GRX

With 2-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX172	$\frac{1}{2}$	25	130	\$2.35
GRX272	$\frac{3}{4}$	25	135	2.40
GRX372	1	10	65	2.45



With 3-pole Block

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX173	$\frac{1}{2}$	25	130	\$2.65
GRX273	$\frac{3}{4}$	25	135	2.70
GRX373	1	10	65	2.75

Standard finish is galvanized or black enamel.

These Condulets consist of Form 7 GR Series with CB132 or CB133 connection block.

Any assortment of 25 Screw Cover Condulets with Connection Blocks will be considered a standard package.

Screw Cover Condulets with Connection Block

Cast Iron Body, Cast Brass Cover

Continued

Type GRC

With 4-wire Block CB1124

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC174	$\frac{1}{2}$	25	120	\$2.30
GRC274	$\frac{3}{4}$	25	125	2.35
GRC374	1	10	60	2.40



With 4-wire Block CB114

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC1714	$\frac{1}{2}$	25	120	\$2.40
GRC2714	$\frac{3}{4}$	25	125	2.45
GRC3714	1	10	60	2.50

Type GRL

With 4-wire Block CB1124

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL174	$\frac{1}{2}$	25	120	\$2.30
GRL274	$\frac{3}{4}$	25	125	2.35
GRL374	1	10	60	2.40



With 4-wire Block CB114

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL1714	$\frac{1}{2}$	25	120	\$2.40
GRL2714	$\frac{3}{4}$	25	125	2.45
GRL3714	1	10	60	2.50

Type GRT

With 4-wire Block CB1124

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT174	$\frac{1}{2}$	25	125	\$2.35
GRT274	$\frac{3}{4}$	25	130	2.40
GRT374	1	10	60	2.45



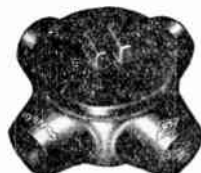
With 4-wire Block CB114

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT1714	$\frac{1}{2}$	25	125	\$2.45
GRT2714	$\frac{3}{4}$	25	130	2.50
GRT3714	1	10	60	2.55

Type GRX

With 4-wire Block CB1124

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX174	$\frac{1}{2}$	25	130	\$2.40
GRX274	$\frac{3}{4}$	25	135	2.45
GRX374	1	10	65	2.50



With 4-wire Block CB114

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX1714	$\frac{1}{2}$	25	130	\$2.50
GRX2714	$\frac{3}{4}$	25	135	2.55
GRX3714	1	10	65	2.60

Standard finish is galvanized or black enamel.

These Condulets consist of Form 7 GR Series with connection block CB114 or CB1124.

Any assortment of 25 Screw Cover Condulets with Connection Blocks will be considered a standard package.

Screw Cover Condulets with Connection Block

Cast Iron Body, Cast Brass Cover

These Condulets are of liberal dimensions, providing ample space for taps and for the passage of additional circuits.

The cover is provided with 2 bosses which permit the use of a wrench, screw driver, or bar for turning the cover. If desired, a gasket can be furnished between the cover and body.

The over all dimensions of these bodies exclusive of hubs are: diameter, 4 inches; depth, 1 7/8 inches.

The cover increases the depth 3/16 inch.

The hubs are tapered.

Type GRC



With 2-wire Block CB132

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC282	3/4	25	150	\$2.65
GRC382	1	25	155	2.70
GRC482	1 1/4	10	75	2.75

With 3-wire Block CB133

GRC283	3/4	25	150	\$2.95
GRC383	1	25	155	3.00
GRC483	1 1/4	10	75	3.05

With 4-wire Block CB1124

Has 4 binding posts.

GRC284	3/4	25	155	\$2.70
GRC384	1	25	160	2.75
GRC484	1 1/4	10	80	2.80

With 4-wire Block CB114

Has 2 binding screws per terminal.

GRC2814	3/4	25	155	\$2.80
GRC3814	1	25	160	2.85
GRC4814	1 1/4	10	80	2.90

Type GRL



With 2-wire Block CB132

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL282	3/4	25	150	\$2.65
GRL382	1	25	155	2.70
GRL482	1 1/4	10	75	2.75

With 3-wire Block CB133

GRL283	3/4	25	150	\$2.95
GRL383	1	25	155	3.00
GRL483	1 1/4	10	75	3.05

With 4-wire Block CB1124

Has 4 binding posts.

GRL284	3/4	25	155	\$2.70
GRL384	1	25	160	2.75
GRL484	1 1/4	10	80	2.80

With 4-wire Block 114

Has 2 binding screws per terminal.

GRL2814	3/4	25	155	\$2.80
GRL3814	1	25	160	2.85
GRL4814	1 1/4	10	80	2.90

Standard finish is galvanized or black enamel.

These Condulets consist of Form 8 GR Series with connection blocks CB132, CB133, CB114, or CB1124.

Any assortment of 25 Screw Cover Condulets with connection blocks will be considered a standard package.

Screw Cover Condulets with Connection Block

Cast Iron Body, Cast Brass Cover

Continued
Type GRT



With 2-wire Block CB132

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT282	3/4	25	155	\$2.70
GRT382	1	25	160	2.75
GRT482	1 1/4	10	80	2.80

With 3-wire Block CB133

GRT283	3/4	25	155	\$3.00
GRT383	1	25	160	3.05
GRT483	1 1/4	10	80	3.10

With 4-wire Block CB1124

GRT284	3/4	25	160	\$2.75
GRT384	1	25	165	2.80
GRT484	1 1/4	10	85	2.85

With 4-wire Block CB114

GRT2814	3/4	25	160	\$2.85
GRT3814	1	25	165	2.90
GRT4814	1 1/4	10	85	2.95

Type GRX



With 2-wire Block CB132

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX282	3/4	25	160	\$2.75
GRX382	1	25	165	2.80
GRX482	1 1/4	10	85	2.85

With 3-wire Block CB133

GRX283	3/4	25	160	\$3.05
GRX383	1	25	165	3.10
GRX483	1 1/4	10	85	3.15

With 4-wire Block CB1124

GRX284	3/4	25	165	\$2.80
GRX384	1	25	170	2.85
GRX484	1 1/4	10	90	2.90

With 4-wire Block CB114

GRX2814	3/4	25	165	\$2.90
GRX3814	1	25	170	2.95
GRX4814	1 1/4	10	90	3.00

Standard finish is galvanized or black enamel.

These Condulets consist of Form 8 GR Series with connection blocks CB132, CB133, CB114, or CB1124.

Any assortment of 25 Screw Cover Condulets with Connection blocks will be considered a standard package.

Connection Blocks

For Forms 7 and 8 GR Series, GT Series, and Form 10 Condulets of the GS Series

No. CB114, 4-wire

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB114	25	15	\$.95

Has 4 binding posts.

No. CB1124, 4-wire

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB1124	25	15	\$.85

Has 2 binding screws per terminal.

Condulets with Wedgnut Cover

These Condulets are of liberal dimensions, providing ample space for taps, and for the passage of additional circuits.

The cover is provided with a wedge nut fastener which securely holds the cover or wiring device in place and it cannot become loosened by vibration. Gasket is furnished between the cover and body.

The overall dimensions of these bodies exclusive of hubs are: Diameter, Form 4, 2 1/2 inches; Form 7, 3 1/2 inches; Depth, Form 4, 1 3/8 inches; Form 7, 2 1/4 inches. The cover increases the depth, 1/2 inch.

Type GRC

Cast Iron



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC146	1/2	2 1/2	4	25	85	\$.75
GRC246	3/4	2 1/2	4	25	90	.80
GRC376	1	3 1/2	7	10	35	1.10

Type GRCA



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRCA146	1/2	2 1/2	4	25	90	\$.80
GRCA246	3/4	2 1/2	4	25	90	.85
GRCA376	1	3 1/2	7	10	40	1.15

Type GRL



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL146	1/2	2 1/2	4	25	85	\$.75
GRL246	3/4	2 1/2	4	25	90	.80
GRL376	1	3 1/2	7	10	35	1.10

Type GRT



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT146	1/2	2 1/2	4	25	90	\$.80
GRT246	3/4	2 1/2	4	25	90	.85
GRT376	1	3 1/2	7	10	40	1.15

Condulets with Wedgnut Cover

Continued

Type GRU



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRU146	1/2	2 1/2	4	25	90	\$.80
GRU246	3/4	2 1/2	4	25	90	.85
GRU376	1	3 1/2	7	10	40	1.15

Type GRX



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX146	1/2	2 1/2	4	25	95	\$.85
GRX246	3/4	2 1/2	4	25	95	.90
GRX376	1	3 1/2	7	10	45	1.20

Type GRB



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRB146	1/2	2 1/2	4	25	85	\$.75
GRB246	3/4	2 1/2	4	25	90	.80
GRB376	1	3 1/2	7	10	35	1.10

Type GRLA



Cat. No.	Size In.	Diam. In.	Form	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRLA146	1/2	2 1/2	4	25	90	\$.80
GRLA246	3/4	2 1/2	4	25	90	.85
GRLA376	1	3 1/2	7	10	40	1.15

Standard finish is black enamel.

Form 4 Condulets listed on this page will not take connection blocks CB114, CB132, CB133 or CB1124. The Form 7 Condulets, of all types except Types GRCA and GRU will take connection blocks.

SPECIAL ASSORTMENT.—Any assortment of 25 black enameled and galvanized condulets listed on this page will be considered a standard package.

Condulets with Connection Blocks and Wedgnut Cover

These Condulets are of liberal dimensions, providing ample space for taps and for the passage of additional circuits.

The cover is provided with a wedge nut fastener which securely holds the cover or wiring device in place and it cannot become loosened by vibration. Gasket is furnished between the cover and body.

The over all dimensions of these bodies exclusive of hubs are: Diameter, 3 1/2 inches; depth, 2 1/4 inches. The cover increases the depth, 1/2 inch.

These Condulets are furnished with connection block CB114, CB132, CB133, or CB1124.

Type GRC



With 2-wire Block CB132

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRC1762	1/2	25	120	\$1.80
GRC2762	3/4	25	125	1.85
GRC3762	1	10	60	1.90

With 3-wire Block CB133

GRC1763	1/2	25	120	\$2.10
GRC2763	3/4	25	125	2.15
GRC3763	1	10	60	2.20

With 4-wire Block CB114

GRC17614	1/2	25	120	\$1.95
GRC27614	3/4	25	125	2.00
GRC37614	1	10	60	2.05

With 4-wire Block CB1124

GRC1764	1/2	25	120	\$1.85
GRC2764	3/4	25	125	1.90
GRC3764	1	10	60	1.95

Type GRL



With 2-wire Block CB132

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRL1762	1/2	25	120	\$1.80
GRL2762	3/4	25	125	1.85
GRL3762	1	10	60	1.90

With 3-wire Block CB133

GRL1763	1/2	25	120	\$2.10
GRL2763	3/4	25	125	2.15
GRL3763	1	10	60	2.20

With 4-wire Block CB114

GRL17614	1/2	25	120	\$1.95
GRL27614	3/4	25	125	2.00
GRL37614	1	10	60	2.05

With 4-wire Block CB1124

GRL1764	1/2	25	120	\$1.85
GRL2764	3/4	25	125	1.90
GRL3764	1	10	60	1.95

Condulets with Connection Blocks and Wedgnut Cover

**Continued
Type GRT**



With 2-wire Block CB132

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRT1762	1/2	25	125	\$1.85
GRT2762	3/4	25	130	1.90
GRT3762	1	10	60	1.95

With 3-wire Block CB133

GRT1763	1/2	25	125	\$2.15
GRT2763	3/4	25	130	2.20
GRT3763	1	10	60	2.25

With 4-wire Block CB114

GRT17614	1/2	25	125	\$2.00
GRT27614	3/4	25	130	2.05
GRT37614	1	10	60	2.10

With 4-wire Block CB1124

GRT1764	1/2	25	125	\$1.90
GRT2764	3/4	25	130	1.95
GRT3764	1	10	60	2.00

Type GRX



With 2-wire Block CB132

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRX1762	1/2	25	130	\$1.90
GRX2762	3/4	25	135	1.95
GRX3762	1	10	65	2.00

With 3-wire Block CB133

GRX1763	1/2	25	130	\$2.20
GRX2763	3/4	25	135	2.25
GRX3763	1	10	65	2.30

With 4-wire Block CB114

GRX17614	1/2	25	130	\$2.05
GRX27614	3/4	25	135	2.10
GRX37614	1	10	65	2.15

With 4-wire Block CB1124

GRX1764	1/2	25	130	\$1.95
GRX2764	3/4	25	135	2.00
GRX3764	1	10	65	2.05

Standard finish is black enamel.

Condulets listed on this page consist of Form 7 GR series with CB132, CB133, CB114 or CB1124 connection blocks.

SPECIAL ASSORTMENT.—Any assortment of 25 black enameled and galvanized Condulets listed on this page will be considered a standard package.

GT Series Screw Cover Junction Condulets

Condulets of the GT Series meet the requirements of a junction box. The Condulet is furnished with a cast brass screw cover which is provided with 2 bosses which permit the use of a wrench, screw driver, or bar for turning the cover. If desired, a gasket can be furnished for use between the cover and Condulet.

The over all dimensions of the Condulet exclusive of hubs are: Diameter: Type GTF, 3 1/2 inches, Types GTT and GTX, 4 5/8 inches; depth: Type GTF, 1 7/8 inches, Types GTT and GTX, 3 1/4 inches.

The male threaded hubs will take 1 1/4-inch conduit couplings or Type GTXS sleeves and Type GTXB bushings.

When used with these sleeves or bushings, the Condulet will take 1/2, 3/4 or 1-inch conduit, and the connection to the Condulet forms a union. This arrangement makes it possible to put up or take down a section of the conduit system without disturbing the rest of the system.

GTXS0 is a blank sleeve to plug one of the hubs of the Condulet without the use of the blank bushing GTXB0.

Types GTT and GTX are arranged to take connection blocks CB114, CB132, CB133, or CB1124 connection blocks and 2 porcelain RSA standard terminal blocks with No. 10561 base.

Type GTF



Has two 1 1/4-inch male threaded hubs, which take 1 1/4-inch couplings; and one 1-inch female threaded hub, which takes rigid conduit only.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GTF37	1 1/4-1-1 1/4	10	85	\$2.60

Type GTT

Takes CB114, CB132, CB133, and CB1124 Connection Blocks, Sleeves and Bushings



Cat. No.	Size, Inches of Threaded Hub	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GTT9	1 1/4	10	80	\$2.50

Type GTX

Takes CB114, CB132, CB133, and CB1124 Connection Blocks, Sleeves and Bushings



Cat. No.	Size, Inches of Threaded Hub	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GTX9	1 1/4	10	85	\$2.60

Standard finish is galvanized or black enamel.

Type GTXS Sleeves



For GT Series

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GTXS4	1 1/4	25	20	\$.50
GTXS0	Blank	25	20	.50

Type GTXB Bushings

For GTXS Sleeves

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GTXB1	1/2	25	20	\$.35
GTXB2	3/4	25	20	.35
GTXB3	1	25	20	.35
GTXB0	Blank	25	20	.35



Type GRN Screw Cover Junction Boxes

Cast Iron Body, Cast Brass Cover

Type GRN, with screw cover, is for use where durable, watertight, junction boxes are required for locomotives, railroad yards and shops. It is provided with a screw cover and the body is provided with 4 bosses, any of which can be tapped for 1/2, 3/4, 1 or 1 1/4-inch conduit. The cover is provided with 2 bosses which permit the use of a wrench, screwdriver, or bar for turning the cover.

Type GRN, with wedge nut cover, has a fastener which securely holds the cover or wiring device in place and it cannot become loosened by vibration. The body is provided with 4 bosses, any of which can be tapped for 1/2, 3/4, 1 or 1 1/4-inch conduit.

Positions of drilling and tapping should be specified according to letters, A, B, C, D, shown on cuts.

To order size by number: 1 is 1/2 inch, 2 is 3/4 inch, 3 is 1 inch, 4 is 1 1/4 inches. For example, GRN82-1234 (GRN82 is the catalogue number of the blank casting with screw cover and 2-wire connection block).

The prices per hole for drilling and tapping are as follows: 1/2 or 3/4 inch, 15 cents; 1 or 1 1/4 inches, 20 cents.

If desired, a gasket can be furnished between the cover and body.

With Connection Block—Form 8

Diameter: Outside, 4 Inches; Inside, 3 5/8 Inches

Cat. No.	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRN82	2	10	85	\$3.40
GRN83	3	10	85	3.70
GRN84	4	10	85	3.55
GRN814	4	10	85	3.45

With Connection Block and Wedg Nut Cover—Form 8

Diameter: Outside, 4 Inches; Inside, 3 5/8 Inches

Cat. No.	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GRN862	2	10	85	\$2.40
GRN863	3	10	85	2.70
GRN864	4	10	85	2.45
GRN8614	4	10	85	2.55

Without Connection Block—Form 9

Diameter: Outside, 4 5/8 Inches; Inside, 4 Inches

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
‡GRN9	10	100	\$3.00

Standard finish galvanized or black enamel. ‡No. GRN9 also takes 2 RSA standard terminal blocks with No. 10561 base.

Condulets with Edison Base Receptacle

These Condulets are of the GS Series, Form 5. The receptacle is of composition and of a construction which prevents entrance of dust into the conduit system. The receptacle is equipped with lamp grip. A composition gasket is furnished between receptacle and Condulet.



Type GS

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15969	1/2	25	80	\$1.50
GS25969	3/4	25	85	1.65
GS35969	1	10	35	1.85

Type GSA

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSA15969	1/2	25	80	\$1.50
GSA25969	3/4	25	85	1.65
GSA35969	1	10	35	1.85



Type GSC



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15969	1/2	25	85	\$1.60
GSC25969	3/4	25	90	1.75
GSC35969	1	10	40	1.95

Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with GS569 lamp receptacle.

Any assortment of 25 Condulets with Edison Base Receptacle will be considered a standard package.

Condulets with Spring Door Cover and Keyless Receptacle

For Edison Base Attachment Plug

Type GS

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS119246	1/2	25	125	\$2.80
GS219246	3/4	25	130	2.95
GS319246	1	10	50	3.15



Type GSC



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC119246	1/2	25	125	\$2.90
GSC219246	3/4	25	130	3.05
GSC319246	1	10	50	3.25

Standard finish is galvanized or black enamel.

These Condulets consist of Form 10 GS Series with GS126 keyless receptacle and GS124 spring door cover.

Any assortment of 25 Condulets with Spring Door Cover and Keyless Receptacle will be considered a standard package.

Condulets with Type BRG Plug Receptacle

*30-ampere, 250-volt, A.C.

Condulets with threaded housings, listed below, are furnished with gaskets. The holes in the bodies for the fastening screws are blind tapped and are outside of gasket bearing surface, therefore, when a watertight plug or brass cap is used, the Condulet is vapor, gas, and dustproof. These Condulets are well adapted for connections to classification, blizzard, and marker lamps.

2-pole equipments are furnished with receptacle BR1302 and take 2-pole plugs. 3-pole equipments are furnished with receptacle BR1303 and take 3-pole plugs.



Type GS With Threaded Housing 2-pole—Form 5

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15972	1/2	10	30	\$3.60
GS25972	3/4	10	35	3.75
GS35972	1	10	40	3.95

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS11973	1/2	10	40	\$4.45
GS21973	3/4	10	45	4.60
GS31973	1	10	50	4.80

With Threaded Housing and Brass Cap 2-pole—Form 5

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15982	1/2	10	40	\$4.55
GS25982	3/4	10	45	4.70
GS35982	1	10	50	4.90



3-pole—Form 10

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS11983	1/2	10	50	\$5.80
GS21983	3/4	10	55	5.95
GS31983	1	10	60	6.15

With Spring Door Housing 2-pole—Form 5

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS15962	1/2	10	45	\$5.00
GS25962	3/4	10	50	5.15
GS35962	1	10	55	5.35



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS11963	1/2	10	55	\$6.00
GS21963	3/4	10	60	6.15
GS31963	1	10	65	6.35

Type GSC With Threaded Housing 2-pole—Form 5

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15972	1/2	10	35	\$3.70
GSC25972	3/4	10	40	3.85
GSC35972	1	10	45	4.05



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC11973	1/2	10	45	\$4.55
GSC21973	3/4	10	50	4.70
GSC31973	1	10	55	4.90

With Threaded Housing and Brass Cap 2-pole—Form 5

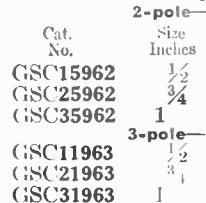
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15982	1/2	10	45	\$4.65
GSC25982	3/4	10	50	4.80
GSC35982	1	10	55	5.00



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC11983	1/2	10	55	\$5.90
GSC21983	3/4	10	60	6.05
GSC31983	1	10	65	6.25

With Spring Door Housing 2-pole—Form 5

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC15962	1/2	10	50	\$5.10
GSC25962	3/4	10	55	5.25
GSC35962	1	10	60	5.45



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSC11963	1/2	10	60	\$6.10
GSC21963	3/4	10	65	6.25
GSC31963	1	10	70	6.45

*Can be used on 25-ampere, 125-volt D.C. circuits. Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with Type BRG 2-pole housings, and Form 10 GS Series with Type BRG 3-pole housings.

Any assortment of 25 Condulets listed in this column will be considered a standard package.

Condulets with Type BRG Plug Receptacle

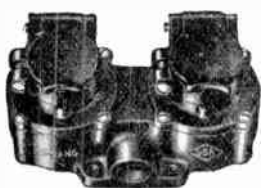
With Spring Door Housing

*30-ampere, 250-volt, A.C.

These Condulets are well adapted for connecting to classification, blizzard, and marker lamps.

2-pole equipments are furnished with receptacle BR1302 and take 2-pole plugs. 3-pole equipments are furnished with receptacle BR1303 and take 3-pole plugs.

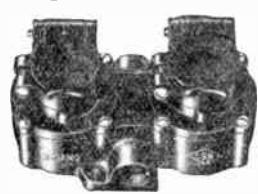
Type GSB, 2-gang



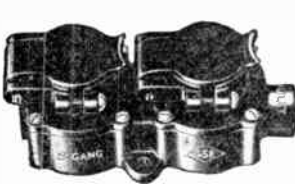
Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size In.	Std. Pkg.					
GSB152962	1/2	10	70		\$10.00		
GSB252962	3/4	10	70		10.30		
GSB352962	1	10	75		10.70		
GSB112963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	10				90	\$12.00
	3/4	10				90	12.30
GSB312963	1	10	95		12.70		

Type GSD, 2-gang

Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size In.	Std. Pkg.					
GSD152962	1/2	10	70		\$10.20		
GSD252962	3/4	10	70		10.50		
GSD352962	1	10	75		10.90		
GSD112963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	10				90	\$12.20
	3/4	10				90	12.50
GSD312963	1	10	95		12.90		



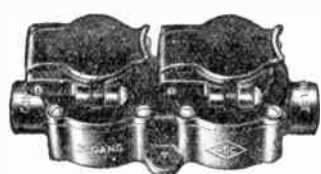
Type GSE, 2-gang



Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size In.	Std. Pkg.					
GSE152962	1/2	10	70		\$10.00		
GSE252962	3/4	10	70		10.30		
GSE352962	1	10	75		10.70		
GSE112963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	10				90	\$12.00
	3/4	10				90	12.30
GSE312963	1	10	95		12.70		

Type GSC, 2-gang

Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size In.	Std. Pkg.					
GSC152962	1/2	10	70		\$10.20		
GSC252962	3/4	10	70		10.50		
GSC352962	1	10	75		10.90		
GSC112963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	10				90	\$12.20
	3/4	10				90	12.50
GSC312963	1	10	95		12.90		



Type GSB, 3-gang



Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size In.	Std. Pkg.					
GSB153962	1/2	5	60		\$15.00		
GSB253962	3/4	5	60		15.45		
GSB353962	1	5	65		16.05		
GSB113963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	5				90	\$18.00
	3/4	5				90	18.45
GSB313963	1	5	95		19.05		

*Can be used on 25-ampere, 125-volt D.C. circuits.

Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with Type BRG 2-pole spring door housing, and Form 10 GS Series with Type BRG 3-pole spring door housing.

Any assortment of fifteen 2-gang Condulets listed in this column will be considered a standard package.

Condulets with Type BRG Plug Receptacle

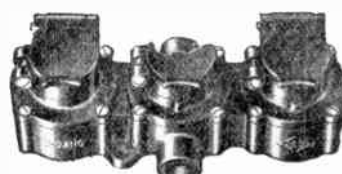
With Spring Door Housing

*30-ampere, 250-volt, A. C.

These Condulets are well adapted for connecting to classification, blizzard, and marker lamps.

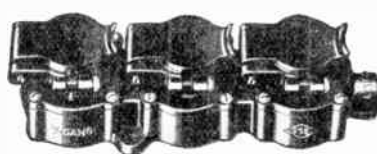
2-pole equipments are furnished with receptacle BR1302 and take 2-pole plugs. 3-pole equipments are furnished with receptacle BR1303 and take 3-pole plugs.

Type GSD, 3-gang



Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size Inches	Std. Pkg.					
GSD153962	1/2	5	60		\$15.30		
GSD253962	3/4	5	60		15.75		
GSD353962	1	5	65		16.35		
GSD113963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	5				90	\$18.30
	3/4	5				90	18.75
GSD313963	1	5	95		19.35		

Type GSE, 3-gang



Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size Inches	Std. Pkg.					
GSE153962	1/2	5	60		\$15.00		
GSE253962	3/4	5	60		15.45		
GSE353962	1	5	65		16.05		
GSE113963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	5				90	\$18.00
	3/4	5				90	18.45
GSE313963	1	5	95		19.05		

Type GSC, 3-gang



Cat. No.	2-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	Size Inches	Std. Pkg.					
GSC153962	1/2	5	60		\$15.30		
GSC253962	3/4	5	60		15.75		
GSC353962	1	5	65		16.35		
GSC113963	3-pole		Std. Pkg.	Wt., Lbs.	Price Each		
	1/2	5				90	\$18.30
	3/4	5				90	18.75
GSC313963	1	5	95		19.35		

*Can be used on 25-ampere, 125-volt D.C. circuits.

Standard finish is galvanized or black enamel.

These Condulets consist of Form 5 GS Series with Type BRG 2-pole spring door housing, and Form 10 GS Series with Type BRG 3-pole spring door housing.

Any assortment of fifteen 3-gang Condulets listed in this column and 3-gang Type GSB in preceding column will be considered a standard package.

Type BRM Condulets with Plug Receptacle

*30-ampere, 250-volt, A.C.

These plug receptacle Condulets furnish a compact, convenient, and rigid receptacle device.

They are especially suitable for semi-permanent or temporary installation either for light or power, as in such installations it is desirable to include a device that will permit the conduit and wiring system to be easily broken and at the same time not sacrifice any of the protective features of rigid or flexible conduit.

These Condulets take plugs for rigid or flexible conduit or armored or other cable.

The threaded Condulets when used with a watertight plug or the brass cap, are vaporproof. These Condulets make excellent devices for installation on locomotives, as they provide means whereby the conduit system can be easily removed or replaced in sections, as is necessary when a locomotive is to receive a thorough overhauling.

2-pole equipments are furnished with receptacle BR2302, which takes 2-pole plugs.

3-pole equipments are furnished with receptacle BR2303, which takes 3-pole plugs.

Plain



Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRM1302	1/2	25	60	\$2.50
BRM2302	3/4	25	65	2.60
BRM3302	1	25	70	2.70
3-pole				
BRM1303	1/2	25	65	\$3.10
BRM2303	3/4	25	70	3.20
BRM3303	1	25	75	3.30

Threaded

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRM71302	1/2	25	60	\$2.70
BRM72302	3/4	25	65	2.80
BRM73302	1	25	70	2.90
3-pole				
BRM71303	1/2	25	65	\$3.35
BRM72303	3/4	25	70	3.45
BRM73303	1	25	75	3.55



Threaded with Brass Cap



Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRM81302	1/2	25	75	\$3.65
BRM82302	3/4	25	80	3.75
BRM83302	1	25	85	3.85
3-pole				
BRM81303	1/2	25	85	\$4.70
BRM82303	3/4	25	90	4.80
BRM83303	1	25	95	4.90

With Spring Door

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRM61302	1/2	25	80	\$3.75
BRM62302	3/4	25	85	3.85
BRM63302	1	25	90	3.95
3-pole				
BRM61303	1/2	25	90	\$4.35
BRM62303	3/4	25	95	4.45
BRM63303	1	25	100	4.55



Type BRME Condulets with Plug Receptacle 45-degree

*30-ampere, 250-volt, A.C.



Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRME1302	1/2	25	60	\$2.50
BRME2302	3/4	25	65	2.60
3-pole				
BRME2303	3/4	25	70	\$3.20
BRME3303	1	25	75	3.30

Threaded

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRME71302	1/2	25	60	\$2.70
BRME72302	3/4	25	65	2.80
3-pole				
BRME72303	3/4	25	70	\$3.45
BRME73303	1	25	75	3.55



Threaded with Brass Cap



Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRME81302	1/2	25	75	\$3.65
BRME82302	3/4	25	80	3.75
3-pole				
BRME82303	3/4	25	90	\$4.80
BRME83303	1	25	95	4.90



With Spring Door

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRME61302	1/2	25	80	\$3.75
BRME62302	3/4	25	85	3.85
3-pole				
BRME62303	3/4	25	95	\$4.45
BRME63303	1	25	100	4.55

Condulets with Plug Receptacles

Bayonet Type

*30-ampere, 250-volt, A.C.

These are plug receptacle Condulets in which the housings are provided with extension skirt and steel pins which engage the bayonet joint sleeve of Type BP bayonet type plugs.

2-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2302, which takes 2-pole, bayonet type plugs. 3-pole Condulets are furnished with 30-ampere, 250-volt receptacle BR2303, which takes 3-pole, bayonet type plugs.

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRM91302	1/2	10	30	\$2.65
BRM92302	3/4	10	35	2.75
BRM93302	1	10	40	2.85
3-pole				
BRM91303	1/2	10	35	\$3.25
BRM92303	3/4	10	40	3.35
BRM93303	1	10	45	3.45



Type BRME

Cat. No.	Size Inches	2-pole		Price Each
		Std. Pkg.	Wt., Lbs. Std. Pkg.	
BRME91302	1/2	10	30	\$2.65
BRME92302	3/4	10	35	2.75
BRME93302	1	10	40	2.85
3-pole				
BRME91303	1/2	10	35	\$3.25
BRME92303	3/4	10	40	3.35
BRME93303	1	10	45	3.45



*Can be used on 25-ampere, 125-volt D. C. circuits.

Standard finish is galvanized or black enamel.

Any assortment of 25 Types BRM and BRME Condulets will be considered a standard package.

*Can be used on 25-ampere, 125-volt D. C. circuits.

Standard finish galvanized or black enamel.

Any assortment of 25 Types BRM and BRME Condulets will be considered a standard package.

Condulets with Plug Receptacle

Bayonet Type
*30-ampere, 250-volt, A.C.

These Condulets consist of Form 5 GS Series with 2-pole Type BRG bayonet type plug receptacle housings and Form 10 GS Series with 3-pole Type BRG bayonet type plug receptacle housings. The housings are provided with extension skirt and steel pins which engage the bayonet joint sleeve of Type BP bayonet plugs, insuring a positive connection. 2-pole equipments are furnished with 30-ampere, 250-volt receptacle BR2302, which take 2-pole bayonet type plugs. 3-pole equipments are furnished with 30-ampere, 250-volt receptacle BR2303, which take 3-pole bayonet type plugs. These Condulets are well adapted for connections to classification, blizzard, and marker lamps.

Type GS

2-pole—Form 5

With receptacle BR1302.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GS1592	1/2	10	45	50	\$3.55
GS2592	3/4	10	45	50	3.70
GS3592	1	10	50	60	3.90

3-pole—Form 10

With receptacle BR1303.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GS1193	1/2	10	50	55	\$4.35
GS2193	3/4	10	55	60	4.50
GS3193	1	10	60	65	4.70

Type GSC

2-pole—Form 5

With receptacle BR1302.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GSC1592	1/2	10	50	55	\$3.65
GSC2592	3/4	10	50	55	3.80
GSC3592	1	10	55	60	4.00

3-pole—Form 10

With receptacle BR1303.

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GSC1193	1/2	10	55	60	\$4.45
GSC2193	3/4	10	60	65	4.60
GSC3193	1	10	65	70	4.80



Condulets with Plug Receptacles

With Self Closing Spring Door

*30-ampere, 250-volt, A.C.

Sometimes when plug receptacle Condulets are to be used with plugs having a clamping nut, it is desirable to have self closing spring door that will keep out dirt and protect the receptacle when the plug is removed. These Condulets meet this requirement. The door is pivoted so that when closed it aligns itself with face of the opening in the receptacle housing. These Condulets are furnished with receptacle BR2302 which takes 2-pole plugs.

Types GS and GSC Condulets consist of Form 5 GS Series with Type BRG, 2-pole threaded plug receptacle housing and spring door attachment GS528.



Type GS

2-pole

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GS15762	1/2	25	65	70	\$4.55
GS25762	3/4	25	70	75	4.70
GS35762	1	10	75	80	4.90

Type GSC

2-pole

Cat. No.	Size Inches	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
GSC15762	1/2	25	70	75	\$4.65
GSC25762	3/4	25	75	80	4.80
GSC35762	1	10	80	85	5.00



*Can be used on 25-ampere, 125-volt D. C. circuits. Standard finish is galvanized or black enamel. Any assortment of 25 Types GS and GSC Condulets with spring door will be considered a standard package.

Type BP Cast Iron Plugs

For BRD, BRG, BRME, and BRY Plug Receptacle Housings

*30-ampere, 250-volt, A.C.

For No. 8 Flexible Cable

Non-watertight



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP4302	2-pole	25	35	40	\$2.85
BP4303	3 "	25	40	45	3.75

For No. 8 Deck Cable

Watertight—With Clamping Nut and Gland



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP8302	2-pole	25	60	65	\$4.50
BP8303	3 "	25	85	90	5.50

For 1/2-inch Flexible Conduit or No. 8 BX Conductor. The 3-pole plugs are for No. 8 BX3 Conductors.

Non-watertight



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP5302	2-pole	25	45	50	\$3.20
BP5303	3 "	25	50	55	4.00

Watertight—With Clamping Nut



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP3302	2-pole	25	50	55	\$3.75
BP7303	3 "	25	70	75	4.75

For 1/2-inch Rigid Conduit

Non-watertight



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP51302	2-pole	25	40	45	\$2.75
BP51303	3 "	25	50	55	4.00

Watertight—With Clamping Nut



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP71302	2-pole	25	50	55	\$3.25
BP71303	3 "	25	65	70	4.75

Type BP Plugs

Bayonet Type—For BRM and BRME Bayonet Type Plug Receptacles

*30-ampere, 250-volt, A.C.

The handle is provided with a bayonet joint locking sleeve. This insures a positive connection to the receptacle when the plug is inserted. The plugs are provided with contacts into which wires are soldered directly.

For No. 8 Flexible Cable



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP9302	2-pole	10	30	35	\$3.75
BP9303	3 "	10	40	45	6.00

For 1/2-inch Flexible Conduit or No. 8 BX3 Conductor

Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP94302	2-pole	10	30	35	\$3.75
BP94303	3 "	10	40	45	6.00

For Rigid Circuit

Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP91302	2-pole	10	30	35	\$3.90
BP91303	3 "	10	40	45	6.25



For 3/4-inch Flexible Conduit or No. 8 BX3 Conductor



Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP95302	2-pole	10	30	35	\$3.75
BP95303	3 "	10	40	45	6.00

For Rigid Conduit

Cat. No.	Description	Std. Pkg.	Wt. Std. Pkg.	Lbs. Std. Pkg.	Price Each
BP92302	2-pole	10	30	35	\$4.00
BP92303	3 "	10	40	45	6.35

*Can be used on 25-ampere, 125-volt D. C. circuits. Handles are black enamel finish.

**Type LG Gauge Lamp Condulets
Cast Aluminum—Aluminum Finish**

Take Incandescent Lamps with S14 or S17 Bulb, Flexible Conduit, and Armored or other Round Cable

Furnished with Gland Nut, Lead Sleeve or Rubber Bushing, or Adapter, and Lamp Receptacle with Lamp Grip

Type LG Gauge Lamp Condulets are for housing the lamps, illuminating steam and air gauges (single and multiple), water glass and lubricators.

They are of simple construction with hinged doors held in place by a spring catch, giving access to the interior. The bottom is tapped for 5/8-inch bolt for attaching to a bracket on the boiler head or in the cab. The top is provided with a gland nut and lead sleeve for flexible conduit or armored cable or rubber bushing for round cord or cable; or an adapter for rigid or flexible conduit, armored or other round cable. The lamp receptacle furnished is of composition and is equipped with a lamp grip.

Single Steam and Air Gauge Lamp—Round Opening

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*LG12	1/4 to 1/32, Round..	10	25		\$3.50
*LG13	11/32 " 7/16, "	10	25		3.50
†LG129	13/32 " 29/64, Flexible.	10	25		3.50
†LG132	29/64 " 1/2, "	10	25		3.50
†LG135	1/2 " 35/64, "	10	25		3.50
LG11	1/2 Rigid Conduit.	10	25		3.50
*LG15	7/16 to 3/8, Round..	10	25		4.15
†LG138	35/64 " 19/32, Flexible..	10	25		4.15
†LG140	37/64 " 5/8, "	10	25		4.15
†LG143	5/8 " 43/64, "	10	25		4.15
†LG146	43/64 " 23/32, "	10	25		4.15



Type LG Gauge Lamp Condulets

Cast Aluminum—Aluminum Finish

Take Incandescent Lamps with S14 or S17 Bulb, Flexible Conduit, and Armored or other Round Cable

Furnished with Gland Nut, Lead Sleeve, or Rubber Bushing, or Adapter and Lamp Receptacle with Lamp Grip

Continued

Water Glass Lamp—Horizontal Slot

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*LG52	1/4 to 1/32, Round.	10	25		\$3.50
*LG53	11/32 " 7/16, "	10	30		3.50
††LG529	13/32 " 29/64, Flexible	10	30		3.50
††LG532	29/64 " 1/2, "	10	30		3.50
††LG535	1/2 " 35/64, "	10	30		3.50
LG51	1/2 Rigid Conduit	10	25		3.50
*LG55	7/16 to 5/8, Round	10	25		4.15
†LG538	35/64 " 19/32, Flexible	10	25		4.15
†LG540	37/64 " 5/8, "	10	25		4.15
†LG543	5/8 " 43/64, "	10	25		4.15
†LG546	43/64 " 23/32, "	10	25		4.15



Water Glass Lamp—Vertical Slot

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*LG22	1/4 to 1/32, Round..	10	25		\$3.50
*LG23	11/32 " 7/16, "	10	25		3.50
†LG229	13/32 " 29/64, Flexible.	10	25		3.50
†LG232	29/64 " 1/2, "	10	25		3.50
†LG235	1/2 " 35/64, "	10	25		3.50
LG21	1/2 Rigid Conduit.	10	25		3.50
*LG25	7/16 to 3/8, Round..	10	25		4.15
†LG238	35/64 " 19/32, Flexible..	10	25		4.15
†LG240	37/64 " 5/8, "	10	25		4.15
†LG243	5/8 " 43/64, "	10	25		4.15
†LG246	43/64 " 23/32, "	10	25		4.15



Multiple Steam and Air Gauge Lamp—Rectangular Opening

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*LG62	1/4 to 1/32, Round	10	25		\$4.25
*LG63	11/32 " 7/16, "	10	30		4.25
*†LG629	13/32 " 29/64, Flexible	10	30		4.25
†LG632	29/64 " 1/2, "	10	30		4.25
†LG635	1/2 " 35/64, "	10	30		4.25
LG61	1/2 Rigid Conduit	10	30		4.25
*LG65	7/16 to 5/8, Round	10	30		4.90
†LG638	35/64 " 19/32, Flexible	10	30		4.90
†LG640	37/64 " 5/8, "	10	30		4.90
†LG643	5/8 " 43/64, "	10	30		4.90
†LG646	43/64 " 23/32, "	10	30		4.90



Lubricator Lamp—13-inch Slot

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*LG32	1/4 to 1/32, Round..	10	25		\$5.00
*LG33	11/32 " 7/16, "	10	35		5.00
†LG329	13/32 " 29/64, Flexible.	10	35		5.00
†LG332	29/64 " 1/2, "	10	35		5.00
†LG335	1/2 " 35/64, "	10	35		5.00
LG31	1/2 Rigid Conduit.	10	35		5.00
*LG35	7/16 to 5/8, Round..	10	35		5.65
†LG338	35/64 " 19/32, Flexible..	10	35		5.65
†LG340	37/64 " 5/8, "	10	35		5.65
†LG343	5/8 " 43/64, "	10	35		5.65
†LG346	43/64 " 23/32, "	10	35		5.65



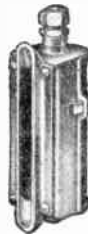
Multiple Steam and Air Gauge Lamp—Rectangular Opening—Hooded

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*†LG72	1/4 to 1/32, Round	10	25		\$4.25
*†LG73	11/32 " 7/16, "	10	30		4.25
††LG729	13/32 " 29/64, Flexible	10	30		4.25
††LG732	29/64 " 1/2, "	10	30		4.25
††LG735	1/2 " 35/64, "	10	30		4.25
LG71	1/2 Rigid Conduit	10	30		4.25
*†LG75	7/16 to 5/8, Round	10	30		4.90
††LG738	35/64 " 19/32, Flexible	10	30		4.90
††LG740	37/64 " 5/8, "	10	30		4.90
††LG743	5/8 " 43/64, "	10	30		4.90
††LG746	43/64 " 23/32, "	10	30		4.90



Lubricator Lamp—3 1/2-inch Slot

Cat. No.	Diameter Cable, Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std.	Pkg.	
*†LG42	1/4 to 1/32, Round..	10	25		\$4.20
*†LG43	11/32 " 7/16, "	10	30		4.20
††LG429	13/32 " 29/64, Flexible.	10	30		4.20
††LG432	29/64 " 1/2, "	10	30		4.20
††LG435	1/2 " 35/64, "	10	30		4.20
LG41	1/2 Rigid Conduit.	10	30		4.20
*†LG45	7/16 to 5/8, Round..	10	30		4.85
††LG438	35/64 " 19/32, Flexible.	10	30		4.85
††LG440	37/64 " 5/8, "	10	30		4.85
††LG443	5/8 " 43/64, "	10	30		4.85
††LG446	43/64 " 23/32, "	10	30		4.85



*Round cord or cable.

†Flexible conduit or armored cable.

††Flexible conduit or armored cable.

If specified on the order, Type LG Gauge Lamp Condulets can be furnished with rubber bushing No. 5, or lead sleeve Nos. 38, 40, 43 or 46, at the same prices as the standard gauge lamps.

Rubber bushing No. 5 takes flexible cord 7/16 to 5/8 inch in outside diameter. Lead sleeve No. 38 takes 35/64 to 19/32 inch; No. 40, 37/64 to 5/8-inch; No. 43, 5/8 to 43/64-inch; No. 46, 43/64 to 23/32-inch armored cord or flexible conduit, outside diameter.

Any assortment of 20 Type LG Gauge Lamp Condulets will be considered a standard package.

Tender Lamps

Take any Medium Screw Base Lamp in S17, S21, G18½, or P19 Bulb

These tender lamps are used as back up lamps on the rear of locomotive tenders. They are weatherproof and the front and side roundels are gasketed.

They are made in 3 styles: with rectangular opening in bottom; with 2 round openings in sides; and with front opening only. The style with 2 round openings in the sides provides ground illumination so that the engineer can see that the lamp is burning. The style with rectangular opening in the bottom not only provides ground illumination, but also throws a light directly downward for coupling.

These tender lamps are furnished with a clear Spreadlite lens, but can be furnished with red lens. The lamp receptacle furnished is provided with a lamp grip.

They are provided with a removable sliding door which is held in position by a cap screw.



Type LDJ

With Rectangular Opening in Bottom
Plain Glass

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDJ17	½	10	170	\$8.40
LDJ27	¾	10	175	8.50

With 2 Round Openings in Sides
Semaphore Lens

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDJ15	½	10	175	\$9.60
LDJ25	¾	10	180	9.70



With Front Opening Only

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDJ12	½	10	155	\$7.40
LDJ22	¾	10	160	7.50

Type LD

With Rectangular Opening in Bottom
Plain Glass

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LD17	½	10	160	\$8.30
LD27	¾	10	165	8.40



With 2 Round Openings in Sides
Semaphore Lens

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LD15	½	10	170	\$9.50
LD25	¾	10	175	9.60

With Front Opening Only

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LD12	½	10	150	\$7.30
LD22	¾	10	155	7.40



Standard finish is galvanized or black enamel. The above tender lamps can be furnished in aluminum at an advance of \$3.50 in the price.

The above tender lamps can be furnished with an externally operated switch at an advance of \$2.00 in the price.

Any assortment of 20 tender lamps listed in this column will be considered a standard package.

Tender Lamps

Take any Medium Screw Base Lamp in S17, S21, G18½, or P19 Bulb

These tender lamps are mounted on a bracket above the top of the locomotive tender in order to illuminate the water hole as well as display a light on the rear of the tender. They are weatherproof and the front, side, and rear roundels are gasketed.

They are similar to Type LD tender lamps but have an opening in the back which will take another lens. They are made in 3 styles: with rectangular opening in bottom; with 2 round openings in sides; and with front and rear openings only. The style with 2 round openings in the sides provides ground illumination so that the engineer can see that the lamp is burning, as well as illuminating the water hole and displaying a light on the rear of the tender. The style with the rectangular opening in the bottom provides ground illumination and throws a light directly downward for coupling, as well as illuminating the water hole and displaying a light on the rear of the tender.

White semaphore lenses are regularly furnished for the front, rear, and side openings of these tender lamps; but a red lens can be furnished in front and a white lens in back at an advance of \$1.25 in the prices, if the catalogue number is followed by RW. The tender lamp then has the red lens showing toward the rear of the locomotive and the white lens illuminating the water hole.

The lamp receptacle furnished is provided with a lamp grip.



Type LDCJ with Through Feed Hubs

With Rectangular Opening in Bottom
Plain Glass

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCJ27	¾	10	210	\$11.90

With 2 Round Openings in Sides
Semaphore Lens

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCJ25	¾	10	215	\$13.10



With Front and Rear Openings Only

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCJ22	¾	10	190	\$10.90

Type LDCF with Hub at Bottom

With Rectangular Opening in Bottom
Plain Glass

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCF27	¾	10	210	\$11.80

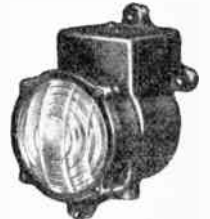


With 2 Round Openings in Sides
Semaphore Lens

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCF25	¾	10	215	\$13.00

With Front and Rear Openings Only

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDCF22	¾	10	190	\$10.80



Standard finish is galvanized or black enamel. Any assortment of tender lamps listed in this column will be considered a standard package.

Tender Lamps

With 8-inch Semaphore Lens

Take 30-34, 110, 115, or 120-volt, 100-watt, Medium Screw Base Lamp in G25 Bulb

These tender lamps are used as back up lamps on the rear of locomotive tenders.

They are furnished with lamp receptacle with lamp grip, and a gasketed weatherproof cover hinged at the top and fastened with a heavy wing nut catch at the bottom.

Type LDBJ with Through Feed Cast Iron



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDBJ1	1/2	5	150	\$12.50
LDBJ2	3/4	5	155	12.60
Cast Aluminum				
LDBJ11	1/2	5	75	\$17.00
LDBJ21	3/4	5	80	17.10

Type LDBF with Hub at Bottom Cast Iron



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LDBF1	1/2	5	150	\$12.40
LDBF2	3/4	5	155	12.50
Cast Aluminum				
LDBF11	1/2	5	75	\$16.90
LDBF21	3/4	5	80	17.00

Type LEA 2-color Tender Lamps

With Rectangular Opening in Bottom—Plain Glass



The door, which is of substantial construction, is hinged at the top and is held closed by a snap catch. The door contains a clear Spreadlite lens. The door is so arranged that it must be opened in order to operate the key receptacle or to operate the color screen.

This tender lamp is made in one style only, with rectangular opening in bottom. This not only provides ground illumination, but also throws a light directly downward for coupling. Furnished with clear Spreadlite lens, lamp

receptacle G131 with lamp grip, and gaskets.

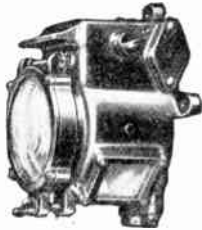
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LEA18	1/2	10	165	\$10.00
LEA28	3/4	10	170	10.10

2-color Tender Lamps

These tender lamps or back up lights are for mounting on rear of locomotive tenders. They are provided with a 5-inch clear Spreadlite semaphore lens, key receptacle with externally operated key, and 2 rectangular plain glass openings in the bottom. They take any medium screw base lamp in S17 bulb. They are weatherproof, as the door, lens, and openings in the bottom are gasketed. A lever on the outside of the case operates a color screen throwing it between the lamp and the lens when a red light is desired.

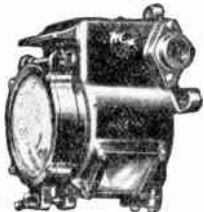
Conduit hub plates can be arranged as desired.

Type LEBF for Vertical Conduit at Bottom Cast Iron



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LEBF18	1/2	5	100	\$14.20
LEBF28	3/4	5	105	14.25
Aluminum				
LEBF181	1/2	5	60	\$18.00
LEBF281	3/4	5	65	18.10

Type LEBJ for Through Feed Horizontal Conduit Cast Iron



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LEBJ18	1/2	5	105	\$14.25
LEBJ28	3/4	5	110	14.35
Aluminum				
LEBJ181	1/2	5	65	\$18.10
LEBJ281	3/4	5	70	18.20

Standard finish is black enamel for cast iron, and aluminum for cast aluminum.

Any assortment of 10 tender lamps of each group listed above will be considered a standard package.

Type LEF Condulets

With Front Opening Only

Tender lamp Condulets. Galvanized or enamel. Furnished with clear Spreadlite lens, externally operated red screen, externally operated switch, Bryant lamp receptacle No. 4131 with lamp grip, and gaskets.

Take any medium screw base lamp in S17, G18 1/2 or P19 bulb.

Any assortment of 25 black enameled and galvanized Condulets of the LE series will be considered a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LEF12	1/2	10	275	\$16.80
LEF22	3/4	10	280	16.90

Type LEJ Condulets

With Front Opening Only

Tender lamp Condulets. Galvanized or enamel. Furnished with clear Spreadlite lens, externally operated red screen, externally operated switch, Bryant lamp receptacle No. 4131 with lamp grip, and gaskets.

Take any medium screw base lamp in S17, G18 1/2 or P19 bulb.

Any assortment of 25 black enameled and galvanized Condulets of the LE series will be considered a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LEJ12	1/2	10	280	\$16.90
LEJ22	3/4	10	285	17.00

Type LD Condulets

With Front Opening Only

Tender lamp Condulets. Galvanized or black enamel finish. Furnished with clear Spreadlite lens, Bryant lamp receptacle No. 4131 with lamp grip, and gaskets. Can be furnished with an externally operated switch at \$2.00 additional.

Take any medium screw base lamp in S17, G18 1/2 or P19 bulb.

Any assortment of 25 black enameled and galvanized type LD Condulets will be considered a standard package.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LD12	1/2	10	150	\$7.30
LD22	3/4	10	155	7.40

Type LGSA Condulets

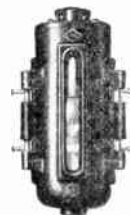
Gauge lamp Condulets. Galvanized or enamel. Take incandescent lamps with S-14, S17, G18 1/2 or P19 bulb. Furnished with Benjamin receptacle No. 4202 with lamp grip. For flexible armored cord.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LGSA0	Cast Iron	10	65	\$5.00
LGSA00	Aluminum	10	25	7.00

Type LGWA Condulets

Gauge lamp Condulets. Galvanized or enamel. Take incandescent lamps with S14 S17, G18 1/2 or P19 bulb. Furnished with Benjamin receptacle No. 4202 with lamp grip. For flexible armored cord.



Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LGWA0	Cast Iron	10	65	\$5.00
LGWA00	Aluminum	10	25	7.00

Locomotive Filler Hole and Stack Lamps

For 1/2-inch Rigid Conduit

Types LGUA and LGUB lamps are of substantial weather-proof construction. Each type consists of a cylindrical housing enclosing the receptacle for an incandescent lamp in S17 bulb, and is tapped for rigid conduit.

The lamps are provided with a 3-inch clear semaphore lens, which directs the light as desired.

Type LGUA is especially intended for oil burning locomotives to furnish light for taking on oil and water. It is provided with lugs for fastening bolts.

Type LGUB is similar to Type LGUA lamp except the hub comes out at an angle of about 30 degrees to the axis. No lugs are provided for fastening, the lamp is supported by the conduit. This is practical as the lamp is made of cast aluminum. The light from the lamp enables the engineer or fireman to see the color of the smoke issuing from the stack at night.



Type LGUA Filler Hole Lamps

Cast Iron				
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LGUA1	1/2	10	50	\$4.25



Type LGUB Stack Lamps

Cast Aluminum				
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LGUB1	1/2	10	35	\$5.50

Standard finish is black enamel for cast iron, and aluminum for cast aluminum.

Any assortment of 10 filler hole and stack lamps will be considered a standard package.

Engineer's Reading Light Condulets

Take Any 25-watt Lamp in S17 Bulb

These Condulets are provided with a shade and guard, in which the lamp bulb and receptacle are fully protected. The shade is cast as part of the Condulet, while the guard is hinged to the Condulet. The composition receptacle furnished, C131, is of the key type and is provided with a lamp grip and metal key.

These Condulets are especially recommended as engineer's reading lamps, and are also suitable for use in railroad shops, roundhouses, and railroad yards. The body and shade are cast iron, and the guard is cast aluminum.

Type LMKB



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMKB225	3/4	10	35	\$3.40



Type LMK A

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMKA225	3/4	10	35	\$3.40



Type LMKJ



Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMKJ225	3/4	10	40	\$3.50

Type LMKL

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMKL225	3/4	10	40	\$3.59



Standard finish is galvanized or black enamel. Any assortment of 10 Engineer's Reading Light Condulets will be considered a standard package.

No. C131 Lamp Receptacles

Furnished with Lamp Grip and Metal Key

For LMKB, LMKA, and LMKJ Condulets



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
C131	25	12	\$0.85

Locomotive Deck Light Condulets

This Condulet is for locomotive gangways, providing illumination for coal passers. It consists of a Condulet for illuminating, and half shade cast in one piece, and a weather-proof composition lamp receptacle with lamp grip. The half shade is the correct length and size so that when used with a 25-watt lamp in an S17 bulb, the filament is not visible from any point over the rear end of the tender. The diameter of the half shade prevents the use of large headlight bulb in these receptacles.

Type LMD

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMD125	1/2	10	25	\$1.80
LMD225	3/4	10	25	1.90



Type LMA



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMA125	1/2	10	20	\$1.80
LMA225	3/4	10	20	1.90

Type LMG

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMG125	1/2	10	20	\$1.80
LMG225	3/4	10	20	1.90



Type LMH



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LMH125	1/2	10	20	\$1.80
LMH225	3/4	10	20	1.90

Standard finish is galvanized or black enamel.

Any assortment of 20 Locomotive Deck Light Condulets will be considered a standard package.

CL, LP and LO Series Condulet Bodies

CL, LP, and LO series are for ceiling outlets. Take covers, fixtures, attachments, plug receptacle housings or wiring devices. Are suitable for baggage car and general industrial installations.

Condulet bodies of the CL series are provided with a flange in which holes for the mounting screws are drilled. Condulet bodies of the LP series are held in place by pipe straps either around the hubs or around the conduit close to the Condulet body. Condulet bodies of the LO series are provided with four lugs or ears in which holes for the mounting screws are drilled. Any assortment of 100 black enameled and galvanized Condulet bodies of CL, LP, or LO series make a standard package.

The CL, LO, and LP series consist of types other than those listed. Wiring devices: CL series, page 411; LO and LP series, page 421, Condulet catalogue No. 2000.

Type CL Condulet Bodies



Galvanized or enamel. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CL1	1/2	50	185	\$1.60
CL2	3/4	25	100	1.70
CL3	1	25	110	1.80

Type CLC Condulet Bodies

Galvanized or enamel. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CLC1	1/2	50	190	\$1.70
CLC2	3/4	25	105	1.80
CLC3	1	25	115	1.90



Type LP Condulet Bodies

Galvanized or enamel. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LP1	1/2	50	100	\$1.15
LP2	3/4	25	55	1.25
LP3	1	25	60	1.35



Type LPC Condulet Bodies

Galvanized or enamel. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LPC1	1/2	50	110	\$1.25
LPC2	3/4	25	60	1.35
LPC3	1	25	65	1.45



Type LO Condulet Bodies

Galvanized or black enamel finish. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LO1	1/2	50	105	\$1.15
LO2	3/4	25	60	1.25
LO3	1	25	65	1.35



Type LOC Condulet Bodies

Galvanized or enamel. For ceiling outlets. Take covers, fixtures, attachments, housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LOC1	1/2	50	110	\$1.25
LOC2	3/4	25	65	1.35
LOC3	1	25	70	1.45



Type BLMC Condulet Bodies

For deck sill outlets. Galvanized or enamel. Take covers, fixtures, attachments, plug receptacle housings, or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BLMC1	1/2	50	150	\$1.45
BLMC2	3/4	25	90	1.60
BLMC3	1	25	100	1.75

DSO and DSP Series Condulet Bodies

For deck sill and side wall outlets.

Furnished with cover and screws.

DSP series also furnished with cover gasket.

Plug receptacle housings for BLM, DSO, DSP, JRM, JRR, series page 251, Condulet catalogue No. 2000.

Any assortment of 100 black enameled and galvanized Condulet bodies of the DSO series, or any assortment of 100 of the DSP series will be considered a standard package.

Type DSOC Condulet Bodies

Wiring devices, page 411, Condulet catalogue No. 2000. Take fixtures, attachments or wiring devices.

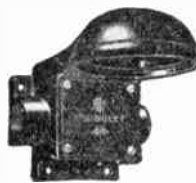
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DSOC1	1/2	50	190	\$2.30
DSOC2	3/4	25	115	2.50
DSOC3	1	25	120	2.70



Type DSPC Condulet Bodies

For deck sill and side wall outlets. Take fixtures, attachments or wiring devices. Galvanized or enamel.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DSPC1	1/2	50	190	\$2.45
DSPC2	3/4	25	115	2.65
DSPC3	1	25	120	2.85



Type JRR Condulets

With Hood for Horizontal Conduit

For side wall fixtures. Take fixtures, attachments or wiring devices. 100 assorted make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRR14	1/2	50	210	\$1.65
JRR24	3/4	25	135	1.75
JRR34	1	25	140	1.90



Type JRR Condulets

With Hood for Vertical Conduit

For side wall fixtures. Take fixtures, attachments or wiring devices. Galvanized or enamel.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRR15	1/2	50	210	\$1.65
JRR25	3/4	25	135	1.75
JRR35	1	25	140	1.90

Type JRM Condulets

With Hood for Horizontal Conduit

Wiring devices, page 421 Condulet catalogue No. 2000. Take fixtures, attachments or wiring devices.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRM14	1/2	50	315	\$2.85
JRM24	3/4	25	185	3.05
JRM34	1	25	200	3.25



Type JRM Condulets

With Hood for Vertical Conduit

For side wall fixtures. Take fixtures, attachments or wiring devices. Galvanized or enamel.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRM15	1/2	50	315	\$2.85
JRM25	3/4	25	185	3.05
JRM35	1	25	200	3.25





Type SOC Condulets
With Hood—For Horizontal Conduit
 For side wall fixtures. Take fixtures, attachments, or wiring devices. 100 assorted make a standard package.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SOC14	1/2	50	240	\$2.70
SOC24	3/4	25	120	3.00
SOC34	1	25	125	3.20

Type SOC Condulets
With Hood—For Vertical Conduit
 Plug receptacle housings for SO series and type MOC, page 251, Condulet Catalogue No. 2000. Other wiring devices, pages 431 and 432.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SOC15	1/2	50	245	\$2.70
SOC25	3/4	25	125	3.00
SOC35	1	25	130	3.20



Type MOC Condulets
With Hood—For 3/4-inch Horizontal Conduit

For deck sill outlets. Take fixtures, attachments or wiring devices. Galvanized or black enamel finish. Standard package, 25. Weight, standard package, 95 pounds. Price, No. MOC24.....each \$2.75

Holders

Bronze, 2 1/4-inch. Take reflectors or shades, furnished with receptacle No. PE57. For Condulets of the BLM, CL, DSO, DSP, JRM, JRR, LO, LP, and SO series and type MOC. Distance of top reflector above center contact of lamp, 3/4 inch.

Standard package, 25. Weight, standard package, 60 pounds. Price, No. CRSE1.....each \$6.00



Holders

Iron, galvanized or enamel. Takes Conduletto receptacle No. C337 and reflector No. SH25. For Condulets of the BLM, CL, DSO, DSP, JRM, JRR, LO, LP, and SO series and type MOC.

Standard package, 50. Weight, standard package, 45 pounds. Price, No. SRH2.....each \$5.50

Deep Type Holders

Iron, galvanized or enamel. Takes Conduletto receptacle No. C337 and reflector No. SH25. For Condulets of the BLM, CL, DSO, DSP, JRM, JRR, LO, LP, and SO series and type MOC.

Standard package, 50. Weight, standard package, 75 pounds. Price, No. SRH4.....each \$8.50



Composition Connection Blocks

Furnished with screws. For Condulets of CL, DSO, DSP, JRM, JRR, JRY, LO, LP, and SO series and type MOC.

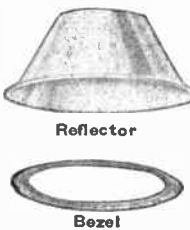
Standard package, 50. Weight, standard package, 15 pounds. Price, No. CF101.....each \$5.50



Reflectors and Bezels

Reflector for holders Nos. SRH2, SRH3, and SRH4. Bezel for reflectors Nos. SH3, SH6, and SH25.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SH25	Reflector, pore. enam.	25	30	\$1.50
BEZ1	Bezel, brass	25	15	1.00



BO Series Condulets for Ceiling Outlets

These Condulets are suitable for baggage car installation. They are provided with a wide lug on each side of the body in which holes for mounting screws are drilled. This lug matches in width and thickness the strip of molding used to cover the joints between adjacent sheets of headlining.

Connection block No. CF101 can be used in these Condulets with either covers or fixtures, eliminating soldered and taped joints.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BO1	1/2	50	105	\$1.50
BO2	3/4	25	60	1.60
BO3	1	25	70	1.70

Type BO

Type BOC

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BOC1	1/2	50	125	\$1.65
BOC2	3/4	25	65	1.75
BOC3	1	25	75	1.85



Covers

For Condulets of the BO, CL, LO, LP, and LQ Series

Blank Cover

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LO1300	100	155	\$5.50
LO13000	100	40	\$3.30

Hub Cover Cast Iron

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LOB83	3/8	100	160	\$6.65
LOB84	1/2	100	160	.65



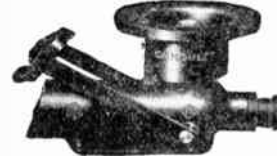
Standard finish is galvanized or black enamel.

Any assortment of 50 Condulets of the BO Series will be considered a standard package. Any assortment of 100 covers listed above will be considered a standard package.

TJ Series Telephone Jack Condulets

These Condulets are designed for telephone jacks. The support for the jack is mounted on the inside of a gasketed metal cover, from which it is properly insulated. When the plug is removed, a lid automatically closes the opening and prevents the entrance of dust, moisture, or insects.

Type TJ



Intended for use under the body of a railway car. It has a swivel base which allows the plug to pull out easily when the car is moved. An insulating bushing is provided, through which the wires pass to the interior of the car.

For Western Electric Jacks Nos. 99 or 152

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TJ99152	25	115	\$4.50
TJ119	25	115	\$4.50

Type TJD

Intended for mounting on poles or buildings along the right-of-way of a railroad, transmission line, or canal. The line wires enter the Condulet through a 1/2-inch Obround, 2-wire, porcelain cover.

For Western Electric Jacks Nos. 99 or 152

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TJD99152	25	105	\$4.00

For Stromberg-Carlson Jack No. 119

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
TJD119	25	105	\$4.00



JRY-KRY Series Condulet Bodies

For Side Wall or Car Vestibule Fixtures

Take connection block CF101 and fixtures.

Wiring devices, page 421, Condulet catalogue No. 2000.

Any assortment of 75 black enameled and galvanized Condulet bodies of the JRY-KRY series will be considered a standard package.

Type JRY Condulet Bodies

For Side Wall or Car Vestibule Fixtures



Galvanized or black enamel finish. Take connection block No. CF101 and fixtures.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRY1	1/2	50	75	\$.70
JRY2	3/4	25	40	.80
JRY3	1	25	45	.90

Type JRYA Condulet Bodies

For Side Wall or Car Vestibule Fixtures

Galvanized or black enamel finish. Take connection block No. CF101 and fixtures.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
JRYA1	1/2	50	80	\$.85
JRYA2	3/4	25	45	.95
JRYA3	1	25	50	1.05



Type KRY Condulet Bodies

For Side Wall or Car Vestibule Fixtures



Galvanized or black enamel finish. Take connection block No. CF101 and fixtures.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KRY1	1/2	50	70	\$.65
KRY2	3/4	25	35	.75
KRY3	1	25	40	.85

Type KRYA Condulet Bodies

For Side Wall or Car Vestibule Fixtures

Galvanized or black enamel finish. Take connection block No. CF101 and fixtures.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
KRYA1	1/2	50	70	\$.65
KRYA2	3/4	25	35	.75
KRYA3	1	25	40	.85



Type SRH Fixtures



Consists of holder SRH3 reflector SH25, receptacle, C227, and bezel. Galvanized or black enamel finish. Furnished with screws.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SRH357	50	140	\$3.50

Type SRH Holder

Galvanized or black enamel finish. Furnished with screws.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SRH3	50	60	\$.75

Type C Receptacle

Furnished with screws.



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
C227	200	120	\$.25

RF Series Car Vestibule Condulets

All the requirements of a car vestibule lamp installation are fully met in the combination of a Condulet body of the RF series, reflector No. SH3, elliptical Conduletto receptacle No. RK527, and a bezel.

When these Condulets are used, either the receptacle or the reflector can easily be removed independently of each other.

The hubs are cast solid with the body and have an integral bushing and tapered thread.

Any G18 1/2 or P19 bulb lamp can be used in reflector No. SH3.



Type RF

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RF154	1/2	25	80	\$3.50
RF254	3/4	25	80	3.60



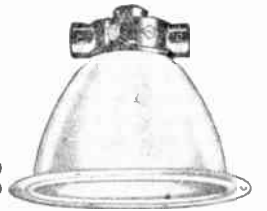
Type RFA

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RFA154	1/2	25	80	\$3.50
RFA254	3/4	25	80	3.60



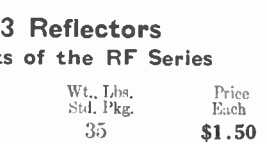
Type RFC

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RFC154	1/2	25	85	\$3.60
RFC254	3/4	25	85	3.70



Type RFCA

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RFCA154	1/2	25	85	\$3.70
RFCA254	3/4	25	90	3.80



No. SH3 Reflectors

For Condulets of the RF Series



Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
SH3	25	35	\$1.50

Brass Bezels

For No. SH3 Reflectors

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Bez. 1	25	15	\$1.00



Standard finish is galvanized or black enamel.

Any assortment of 50 Condulets of the RF Series will be considered a standard package.

Condulets listed above consist of RF Series, elliptical receptacle No. RK527, reflector No. SH3, and bezel Bez. 1.

Type AF Condulets

Signal switch. Galvanized or black enamel finish.

Type AF is a single-pole, double make, nine signal, pull switch. The normal position is open; therefore, operating the switch closes the circuit.

All insulating parts are of high grade material.

The spring is packed in grease and will support a weight of 15 pounds without operating the switch.

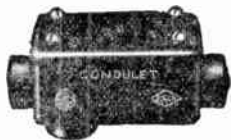
The switch is enclosed in a rugged watershedding housing and is fastened to it by four cap screws.

The wires enter through clearance holes in the flange on the switch mechanism.

Cat. No.	Volts	Amperes	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AF1	250	2	10	130	\$10.00



Type FSCA Cab Connection Condulets



Type FSCA is a connection Condulet for mounting in the roof of a locomotive cab.

It is furnished with cast iron cover No. DS131, No. 12-24 fastening screws, lock washers, and connection block No. CB9323, which has three 1/4-inch-20 binding screws on each outside plate and two 1/4-inch-20 binding screws on the center plate and is mounted on a pedestal.

The Condulet has a special drilling for using this connection block.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FSCA2302S	3/4	10	40	\$2.50

No. CB9323 Connection Blocks

For Type FSCA Condulets

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB9323	25	15	\$1.00



No. DS131 Cast Iron Covers

For Type FSCA Condulets

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DS131	50	45	\$2.25



DA Series Condulets

For mail car and industrial lighting installations. Furnished with lamp receptacle, 2 1/4-inch reflector holder, steel reflector and lead wires. The reflectors supplied are Ivanhoe-Regent No. 18440, No. 18441, No. 18460, No. 18461 or No. 18470.

If specified, No. PE55 lamp receptacle with lamp grip will be furnished at a slight advance.

When ordering for installation in mail cars, data must be given concerning location of Condulet in car, wattage of lamp, style of bulb, distance from floor to ceiling, finish of reflector and curvature of ceiling.

For body and canopy only, deduct \$9.00.



Type DAC

Type DA

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DA1	1/2	5	90	\$16.50
DA2	3/4	5	95	16.75
DA3	1	5	100	17.00

Type DAC

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DAC1	1/2	5	95	\$16.75
DAC2	3/4	5	100	17.00
DAC3	1	5	105	17.25

Type DAL

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DAL1	1/2	5	95	\$16.75
DAL2	3/4	5	100	17.00
DAL3	1	5	105	17.25

Type DAT

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DAT1	1/2	5	100	\$17.00
DAT2	3/4	5	105	17.25
DAT3	1	5	110	17.50

Type DAX

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
DAX1	1/2	5	105	\$17.25
DAX2	3/4	5	110	17.50
DAX3	1	5	115	17.75

Standard finish is galvanized or black enamel.

Toggle Switch Condulets

Condulets of the GJ Series take round base toggle switches. The switch is installed complete with its insulated cover, and is raised from the back of the Condulet to allow wires to enter the switch from the back.

Toggle switch is not included in prices below.



Type GJ

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJ1	1/2	25	60	\$1.10
GJ2	3/4	25	65	1.20
GJ3	1	10	35	1.30

Type GJC

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJC1	1/2	25	65	\$1.20
GJC2	3/4	25	70	1.30
GJC3	1	10	35	1.40



Type GJL

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJL1	1/2	25	65	\$1.20
GJL2	3/4	25	70	1.30
GJL3	1	10	35	1.40



Type GJT

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJT1	1/2	25	70	\$1.40
GJT2	3/4	25	75	1.50
GJT3	1	10	40	1.60



Type GJX

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJX1	1/2	25	75	\$1.50
GJX2	3/4	25	80	1.60
GJX3	1	10	45	1.70



Type GJT, 2-gang

Furnished with cover and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GJT12	1/2	10	70	\$2.40



Standard finish is galvanized or black enamel.

Condulets of the GJ Series take Hubbell toggle switches Nos. 8171, 8181, 8191, 8201, 8241, and 8261.

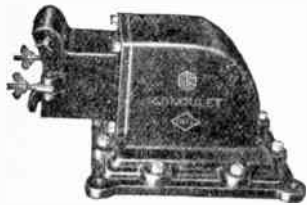
Any assortment of 25 Toggle Switch Condulets will be considered a standard package.

UG Series Condulets

Single receptacle battery charging Condulets, galvanized or black enamel finish.

Especially for storage battery charging outlets in railroad terminals and coach yards.

Furnished with 2-pole round receptacle, spring door, and gaskets. Round receptacle No. BRA100 is rated at 100 amperes, 125 volts, and takes plugs No. BPA100 or BPFA100.



Type UGEL Condulets

Single receptacle battery charging Condulets. Galvanized or black enamel finish.

With round receptacle No. BRA100 and base plate.

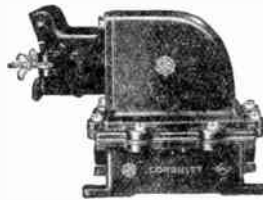
Standard package, 5. Wt., std. pkg., 170 pounds. Price, No. UGEL1020 ea. . \$27.25

Type UGEL Condulets

Surface Style

Galvanized or enamel. For two conduits. With round receptacle No. BRA100.

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGEL422	1 1/4	5	230	\$31.50
UGEL522	1 1/2	5	240	31.90
UGEL622	2	5	250	32.30



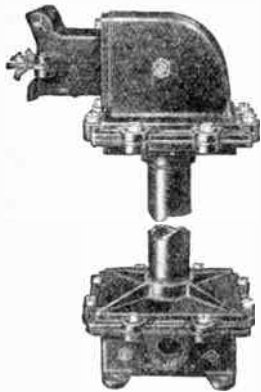
Type UGEL Condulets

Underground Style

Single receptacle battery charging Condulets. Galvanized or black enamel finish. With round receptacle No. BRA100.

For two conduits.

Furnished with hub plate and hub cover for 2-inch conduit stem. Conduit stem not furnished.



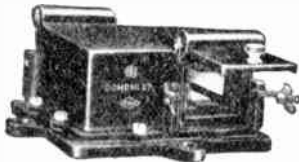
Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGEL4226	1 1/4	5	355	\$39.25
UGEL5226	1 1/2	5	365	39.65
UGEL6226	2	5	375	40.05

Type UGEM Condulets

Double receptacle battery charging Condulets. Galvanized or enamel.

With round receptacle No. BRA100 and base plate.

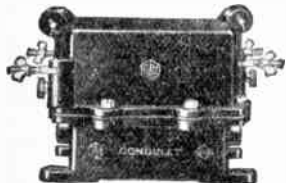
Standard package, 5. Wt., std. pkg., 205 pounds. Price, No. UGEM1020... each \$39.25



Types UGCF and UGXF Condulets

Double receptacle battery charging Condulets. Galvanized or black enamel finish.

With round receptacle No. BRA100.



Type UGCF, Surface Style For Two Conduits

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGCF42	1 1/4	5	305	\$40.50
UGCF52	1 1/2	5	315	40.90
UGCF62	2	5	325	41.30

Type UGXF, Surface Style For Four Conduits

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGXF42	1 1/4	5	315	\$40.70
UGXF52	1 1/2	5	325	41.10
UGXF62	2	5	335	41.50

Type UGCD Condulets

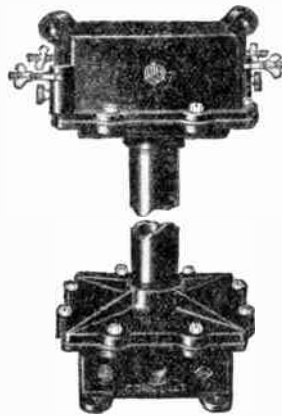
Underground Style

Galvanized or black enamel finish. Double receptacle battery charging Condulets. Furnished with hub plate and hub cover for 2-inch conduit stem. Conduit stem not furnished.

For two conduits.

With round receptacle No. BRA100.

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGCD42	1 1/4	5	405	\$47.50
UGCD52	1 1/2	5	415	47.90
UGCD62	2	5	425	48.30



Type UGEN Condulets

Single receptacle battery charging Condulets. With 2-pole rectangular or round receptacle, spring door and gasket. 200-amp. 65-volt receptacle No. BR200 takes plugs BPD200 or BPDFD 200, and may be substituted at an advance of \$1.25.



With Rectangular Receptacle No. BR100

Cat. No.	Size Inches	Std. Pkg.	Wt. Lbs.	Price Each
UGEN5101	1 1/2	5	145	\$18.75
UGEN6101	2	5	155	19.00

With Round Receptacle No. BRA100

UGEN4102	1 1/4	5	145	\$21.25
UGEN5102	1 1/2	5	150	21.50

Type BPF Plugs

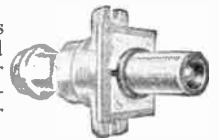
With aluminum handle. For battery charging Condulets of the UG series. Two-pole, rectangular for receptacles Nos. BR100 or BR200.



Cat. No.	Volts	Capacity Amperes	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
BPF 100	80	100	5	30	\$12.00
BPDFD200	65	200	10	60	13.00

Type BPF A Plugs

Aluminum handle. For Condulets of the UG series. Two-pole, for round receptacle No. BRA100. A spanner wrench furnished free with every shipment of plugs. If ordered separately or additionally, 35 cents.



Capacity: 100-ampere, 125-volt. Standard package, 5. Weight, standard package, 35 pounds.

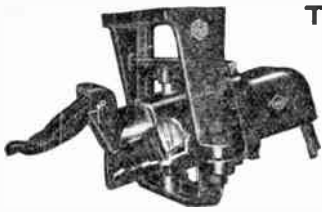
Price, No. BPFA100.....each \$9.50

BRH Series Condulets

Galvanized or black enamel finish. For storage battery charging outlets, particularly on railroad cars and electric vehicles.

They are made for flexible cable and for conduit. They are furnished with rectangular or round receptacles, which are interchangeable in all the Condulets of the BRH series except BRH1E, which takes the round receptacle only. Receptacles and plugs are polarized. The round receptacle and plug have been designed to eliminate the defects existing in similar receptacles and plugs.

Furnished with 2-pole rectangular or round receptacle and spring door. Rectangular receptacle BR100 is rated at 100 amperes, 80 volts, and takes plug BP100. Round receptacle BRA100 is rated at 100 amperes, 125 volts, and takes plug BPA100. Rectangular receptacle BR200 is rated at 200 amperes, 65 volts, and takes plug BPD200.



Type BRHE Condulets

Furnished with improved M.C.B. bracket and 2-pole, 100-ampere, 125-volt round receptacle No. BRA100. Std. pkg., 10. Weight, std. pkg., 260 pounds. Price, No. BRHE102each \$22.50

Type BRHA Condulets

Furnished with improved M.C.B. bracket and 2-pole receptacle.

Cat. No.	Std. Pkg.	Wt., Lbs.	Price Each
*BRHA101	10	240	\$17.50
†BRHA102	10	250	20.25

*Rectangular receptacle.
†Round receptacle.



Type BRHS Condulets

Furnished with swivel pedestal and 2-pole receptacle.

Cat. No.	Std. Pkg.	Wt., Lbs.	Price Each
*BRHS101	10	180	\$14.75
†BRHS102	10	190	17.50

*Rectangular receptacle. †Round receptacle.

Type BRH Condulets

Housing for M.C.B. bracket. With 2-pole receptacle.

Cat. No.	Std. Pkg.	Wt., Lbs.	Price Each
*BRH101	10	130	\$12.50
†BRH102	10	140	15.25

*Rectangular receptacle. †Round receptacle.



Type BP Plugs

With aluminum handle. For battery charging Condulets of BRH and UG series.

2-pole, rectangular, for receptacle No. BR100.



Cat. No.	Volts	Capacity Amperes	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BP100	80	100	5	55	\$11.00
BPD200	65	200	5	56	12.00

Type BPA Plugs

No. BPA100

With aluminum handle. For battery charging Condulets of BRH and UG series.

2-pole, round, for receptacle No. BRA100.

Takes flat duplex cable No. 1 or smaller.



Cat. No.	Volts	Amperes	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BPA100	125	100	10	50	\$8.50

No. BPA105

With aluminum handle. For battery charging Condulets of BRH and UG Series.

2-pole, round, for receptacle No. BRA100.

Takes round duplex cable No. 1 or smaller.



Cat. No.	Volts	Amperes	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
BPA105	125	100	5	30	\$8.50



Type QEEM Condulets

For use on locomotives, either on the front of the cab for making the connections between the cab and handrail or conduit, or on the end of sill for making connections between the locomotive and tender.

The two parts of the connector are polarized by eye bolts which clamp in their respective lugs so that after the connections are once made, it is impossible to incorrectly reconnect the two parts.

Four-pole, 30-ampere, 250-volt; will take either rigid or flexible conduit in the 3/4-inch size. Galvanized or black enamel finish. Furnished with gaskets and screws.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEEM2204	3/4	10	125	\$13.70

Type QEGM Condulets

For use on locomotives, either on the front of the cab for making the connections between the cab and handrail or conduit, or on the end of sill for making connections between the locomotive and tender.

Provided with a back hub which permits the conduit to pass through the wall of the cab directly into the Condulet.

Four-pole, 30-ampere, 250-volt; will take either rigid or flexible conduit in the 3/2-inch size. Galvanized or black enamel finish. Furnished with gaskets and screws.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
QEGM2204	3/4	10	140	\$14.10

Type MD Condulets

Connector Condulets, galvanized or enamel. Three-pole, 200-ampere, 250-volt. Furnished with No. MD03 plug.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MD3	1	10	220	\$25.50
MD4	1 1/4	10	230	25.75
MD5	1 1/2	10	240	26.00

Type MDA Condulets

Connector Condulets, galvanized or black enamel finish. Furnished with connection block, wire hole cover, removable sliding cover, and screws. Three-pole, 100-ampere, 125-volt.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MDA438	1 1/4	10	125	\$8.15
MDA538	1 1/2	10	130	8.35



MDA Attachment for Type MDA Condulets

This attachment provides for the use of flexible conduit with the type MDA Condulets. For three-pole receptacle. Size of flexible conduit, 1 1/4 inches.

Standard package, 10. Weight, standard package, 50 pounds. Price, No. MDA39.....each \$1.50



Type MDH Condulets

Locomotive handrail Condulets, galvanized or black enamel finish. Furnished with gasket, screws, and bolts. Four-pole, 30-ampere, 250-volt.

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
MDH2304	3/4	10	110	\$11.75
MDH3304	1	10	115	12.00



Condulets for Main Line Fuse Cutouts

Condulets listed below furnish a compact housing for cutouts and connection blocks. No cutout fastening plate is used, the wiring device being attached directly to the bottom of the Condulet.

All of these Condulets have cast iron doors and, with the exception of Y.A.J., are gasketed and have adjustable hinges.



Type YAC

Watertight

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAC1302	1/2	15	100	\$4.00
YAC2302	3/4	15	105	4.10
YAC3302	1	10	110	4.20

Type YAN

Watertight—Not Drilled or Tapped for Conduit

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAN302	...	15	90	\$4.00



Type YAS

Watertight

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAS32302	1-3/4-1	15	100	\$4.50



Type YAJ

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAJ1302	1/2	15	100	\$2.75



Type YAL

Watertight

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAL2302	3/4-3/4	15	105	\$4.10

Type YAR

Watertight

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YAR2302	3/4-3/4	15	105	\$4.10



Connection Blocks

For Condulets Listed Above

30-ampere, 65-volt

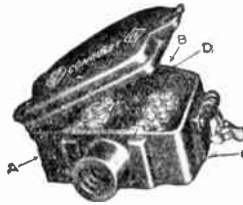
Cat. No.	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YA3	3	15	25	\$1.50
YA4	4	15	30	2.00

Standard finish is galvanized or black enamel. Any assortment of 25 Condulets listed in this column will be considered a standard package.

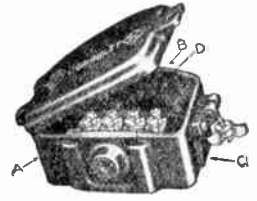
Cutouts, page 436 Condulet Catalogue No. 2000

Type YE Condulets

With Connection Block and Detachable Hub



For Flexible Conduit



For Rigid Conduit

Type YE Condulet is especially intended for use on locomotives. It provides an easy means for connecting the wiring system on the boiler to that on the cab. A detachable hub plate is provided, which slides into grooves in the Condulet and may be quickly removed when door is open. In addition to this removable plate, the Condulet is provided with 4 bosses, any of which can be tapped for 1/2, 3/4 or 1-inch rigid conduit, but there are no hubs cast solid with the body. The connection blocks provided with these Condulets are equipped with 14-24 R.S.A. binding nuts. Removable plates are made in 2 styles: one for rigid conduit and one for flexible conduit.

Positions of drilling and tapping should be specified according to letters, A, B, C, D, shown on cuts. To order size by number: 1 is 1/2 inch, 2 is 3/4 inch, 3 is 1 inch. For example: YE13-1233 (YE13 is the catalogue number of the Condulet with connection block). The prices per hole for drilling and tapping for rigid conduit are as follows: 1/2 or 3/4 inch, 15 cents; 1 inch, 20 cents.

For Rigid Conduit

Cat. No.	Size, Inches Tapped Hole	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YE13	1/2	3	10	175	\$6.20
YE14	1/2	4	10	180	6.80
YE16	1/2	6	10	185	7.50
YE18	1/2	8	10	190	8.60
YE23	3/4	3	10	175	6.25
YE24	3/4	4	10	180	6.85
YE26	3/4	6	10	185	7.55
YE28	3/4	8	10	190	8.65

For Greenfield Double Strip Flexible Conduit

Cat. No.	Size, Inches Tapped Hole	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
YE123	1/2	3	10	175	\$6.35
YE124	1/2	4	10	180	6.95
YE126	1/2	6	10	185	7.65
YE128	1/2	8	10	190	8.75
YE223	3/4	3	10	175	6.40
YE224	3/4	4	10	180	7.00
YE226	3/4	6	10	185	7.70
YE228	3/4	8	10	190	8.80
YE323	1	3	10	180	6.45
YE324	1	4	10	185	7.05
YE326	1	6	10	190	7.75
YE328	1	8	10	195	8.85
YE423	1 1/4	3	10	180	6.50
YE424	1 1/4	4	10	185	7.10
YE426	1 1/4	6	10	190	7.80
YE428	1 1/4	8	10	195	8.90

Connection Blocks

For Type YE Condulets



4-wire



6-wire

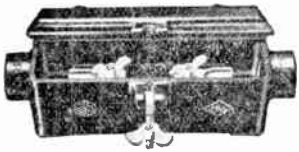
Cat. No.	No. of Wires	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
CB9122	2	25	10	\$1.10
CB923	3	25	15	1.30
CB924	4	25	18	1.90
†CB926	6	25	30	2.60
*CB928	8	25	40	3.70

†Connection block No. CB926 consists of 2 connection blocks No. CB923.

*Connection block No. CB928 consists of 2 connection blocks No. CB923 and one connection block No. CB9122.

Standard finish galvanized or black enamel.

Any assortment of 20 black enameled and galvanized Type YE Condulets will be considered a standard package.



Type FBC Condulets

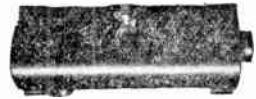
Single-pole battery fuse. With 150-amp., 250-volt link fuse block. Fuse screw centers, 2½ in. Where conduit is not required, composition bushing No. CF208 can be used.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FBC2	¾	15	145	\$8.90

Type FBL Condulets

For single pole battery fuses. Furnished with fuse block, but without fuses. Takes 101 to 200-ampere 250-volt open link fuses.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FBL2n	¾	15	180	\$8.80
FBL3n	1	15	190	9.00



Type FBR Condulets

For single pole battery fuses. Furnished with fuse block, but without fuses. Takes 101 to 200-ampere 250-volt open link fuses.

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FBR2n	¾	15	180	\$8.80
FBR3n	1	15	190	9.00

Type FBX Condulets

Galvanized or enamel. For battery fuses. Furnished with 150-ampere, 250-volt open link fuse blocks.

The wire terminals are of the soldered lug type. Fuse screw centers are 2½ inches.

Cat. No.	2-pole		Price Each
	Std. Pkg.	Wt., Lbs. Std. Pkg.	
FBX4322	5	185	\$23.85
FBX652	5	205	24.40
3-pole			
FBX4323	5	190	\$28.60
FBX653	5	210	29.15



Type GSG Junction Condulets



These Condulets consist of a body and side plates which are listed below. A tight joint is secured between the body, side plates, and cover by use of a composition gasket which is furnished. The hub plate feature makes

it possible to put up a complicated network of conduits without the use of unions or right and left couplings. Hub plates not included in prices of Type GSG below.

This Condulet without cover will take ceiling rosette GS176 and connection block CG132 and CB133, keyless receptacle GS126 and spring door cover GS124, and Form 10, 2 and 3-pole plug receptacle housing.

Cat. No.	With Cover			Without Cover			
	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each	Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	
GSG61903	10	60	\$2.00	GSG619	10	40	\$1.50

Side Plates with Gaskets

For Type GSG Condulets

For Rigid Conduit

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSG61	½	25	20	\$.25
GSG62	¾	25	20	.30
GSG63	1	25	25	.35
GSG600	Blank	25	20	.20



1-hub

**For Flexible Conduit
Greenfield Double Strip**

Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GSG6382	¾	25	20	\$.35
GSG612	½	25	20	.35
GSG622	¾	25	25	.40
GSG632	1	25	25	.45



Blank

Standard finish is black enamel.

SPECIAL ASSORTMENT.—Any assortment of 40 side plates listed above will be considered a standard package.

Type PR Series Condulets

For use where durable, watertight, junction Condulets of medium size are required, as in railroad yards and shops. They are also suitable for underneath or overhead car wiring installations.

Any assortment of 50 black enameled and galvanized Condulets of the PR series will be considered a standard package.

Type PRC Condulets



Galvanized or black enamel finish. Inside dimensions, diameter, 6⅞ inches; depth, varies with sizes.

Furnished with cast iron cover, gasket, and cap screws. Any assortment of 50 black enameled and galvanized Condulets of the PR series will be considered a standard package.

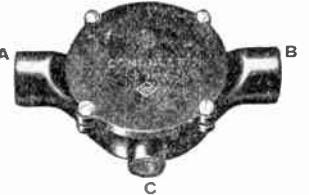
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PRC3	1	15	175	\$4.75
PRC4	1¼	15	180	4.95
PRC5	1½	10	125	5.15
PRC6	2	5	65	5.55

Type PRT Condulets

Galvanized or black enamel finish. Inside dimensions, diameter, 6⅞ inches; depth, varies with sizes.

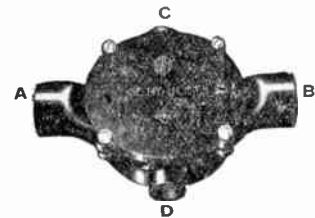
Furnished with cast iron cover, gasket and cap screws.

Any assortment of 50 black enameled and galvanized Condulets of the PR series will be considered a standard package.



Cat. No.	Size, Inches			Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C			
PRT3	1	1	1	15	185	\$4.90
PRT4	1¼	1¼	1¼	15	190	5.10

Type PRX Condulets



Galvanized or black enamel finish. Inside dimensions, diameter, 6⅞ inches; depth, varies with sizes.

Furnished with cast iron cover, gasket, and cap screws.

Any assortment of 50 black enameled and galvanized Condulets of the PR series will be considered a standard package.

Cat. No.	Size, Inches				Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	A	B	C	D			
PRX3	1	1	1	1	15	200	\$5.10
PRX4	1¼	1¼	1¼	1¼	15	215	5.30

Type FJC Condulets

For Floor Outlets

Galvanized or black enamel finish. Over all dimensions of body exclusive of hubs: length, 6⅞ inches; width, 4⅝ inches; depth, 4⅜ inches.

Furnished with cover, gasket, and screws. The cover may be cast brass, or cast iron, as desired.



With Cast Brass Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FJC4000	1¼	10	145	\$9.00
FJC5000	1½	10	150	9.20

With Cast Iron Cover

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
FJC400g	1¼	10	130	\$5.75
FJC500g	1½	10	135	5.95

RS Series Condulets



Galvanized or black enamel finish. Furnished with cast iron cover, gasket, and screws. The use of these Condulets provides an easy method of tapping a conduit system, where a Condulet body of this series has been installed in the line, by removing the blank plates and

substituting plates with the desired sizes of hubs. Cover, hub plates, and blank side plates are gasketed, making the Condulet watertight.

Cat. No.	Type	Inside Dimen. Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RS 1	RS	8½x8½x4	10	190	\$6.00
RSM1	RSM	8½x4½x4	10	120	4.25
RSS 1	RSS	4½x4½x4	10	105	3.75

Conduit Hub Plates

Cast iron, galvanized or black enamel finish. For Condulet bodies of the RS series. Furnished with gaskets and screws. May be assorted to make a standard package, regardless of style of plates.



RSP Series, for 8½x4-inch Sides of Types RS and RSM Condulet Bodies

With One Hub				With Two Hubs			
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Price Each	Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Price Each
RSP1	½	40	120 \$1.85	RSP5	1½	40	140 \$2.05
RSP2	¾	40	125 1.90	RSP6	2	40	145 2.10
RSP3	1	40	130 1.95	RSP7	2½	40	150 2.25
RSP4	1¼	40	135 2.00	RSP8	3	40	165 2.50

With Three Hubs							
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Price Each	Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Price Each
RSP11	½	40	125 \$1.95	RSP54	1½-1¼	40	165 \$2.40
RSP22	¾	40	130 2.05	RSP55	1½	40	170 2.40
RSP31	1-½	40	135 2.15	RSP62	2-¾	40	175 2.60
RSP33	1	40	140 2.15	RSP63	2-1	40	175 2.60
RSP42	1¼-¾	40	145 2.25	RSP64	2-1¼	40	180 2.60
RSP44	1¼	40	150 2.25	RSP65	2-1½	40	180 2.60
RSP52	1½-¾	40	155 2.40	RSP66	2	40	190 2.60
RSP53	1½-1	40	160 2.40	RSP73	2½-1	40	190 2.80

With Three Hubs							
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Price Each	Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Price Each
RSP111	½	40	145 \$2.05	RSP442	1½-1¼-¾	40	160 \$2.50
RSP222	¾	40	150 2.20	RSP444	1¼	40	160 2.50
RSP331	1-1-½	40	155 2.35	RSP553	1½-1½-1	40	180 2.75
RSP333	1	40	155 2.35	RSP555	1½	40	185 2.75

RSP Series, for 4½x4-inch Sides of Types RSM and RSS Condulet Bodies

With One Hub							
Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Price Each	Cat. No.	Size In.	Std. Pkg.	Wt., Lbs. Price Each
RSMP1	½	40	60 \$1.25	RSMP5	1½	40	80 \$1.45
RSMP2	¾	40	65 1.30	RSMP6	2	40	85 1.50
RSMP3	1	40	70 1.35	RSMP7	2½	40	90 1.65
RSMP4	1¼	40	75 1.40				

Cast Iron Blank Side Plates and Covers

RSP series, for types RSM and RSS Condulet bodies.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RSP0	8½x4	40	140	\$1.80
RSMP0	4½x4	40	70	1.20

Cast Covers with Gaskets

Cat. No.	For Bodies	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
RS00	RS	10	70	\$2.00
RSM00	RSM	10	45	1.25
RSS00	RSS	10	30	.90

Types PJCA and PJX Condulets



Type PJCA

Galvanized or enamel. Inside dimensions: length, 5 inches; width, 3½ inches; depth, type PJCA, 2½ inches; depth, type PJX, 3½ inches.



Furnished with cast iron cover, gasket, and screws.

Any assortment of 50 black enameled and galvanized Condulets of the PJ series will be considered a standard package.

Type PJCA			Type PJX		
Cat. No.	Size In.	Std. Pkg.	Cat. No.	Size In.	Std. Pkg.
PJCA1	½	15	PJX1	½	15
PJCA21	¾-½-¾	15	PJX2	¾	15
PJCA3	1	15	PJX42	1¼	15
PJCA41	1¼-½-1¼	15			



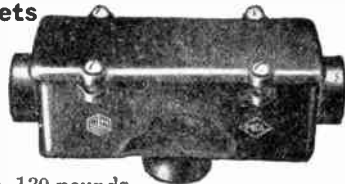
Type PKC Condulets

Galvanized or enamel. Inside dimensions: length, 10 in.; width, 3½ in.; depth, 3½ inches.

Cat. No.	Size, In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
PKC5	1½	15	120	\$5.75
PKC6	2	15	125	6.00

Type PKCA Condulets

Galvanized or enamel. Inside dimensions: length, 10 inches; width, 3½ inches; depth, 3½ inches. Made in 1½-inch only.



Standard package, 15. Weight, standard package, 130 pounds. Price, No. PKCA5.....each \$6.00

Type AD Junction Box Condulets



Plain Cover

Cast iron, galvanized or enamel. Inside dimensions: length, 8 inches; width, 6 inches; depth, 3 inches.

The covers have putty grooves which make possible a water tight joint. The walls of box are blank and are ⅝ inch thick. They can be drilled and tapped to

take at least five threads in sizes of conduit up to and including two-inch.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AD1	10	230	\$8.20

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
AD2	10	250	\$8.50

Prices for Drilling and Tapping Holes

When specified on order, these Condulets will be furnished with holes drilled and tapped according to specification, which in every case should be very clear and accompanied by a diagram showing location and size of holes.

Conduit Size.....inches	½ or ¾	1 or 1¼	1½ or 2
Price	per hole \$.35	.50	.85



Floor Cover

CG Series Connectors



Type CGB with Rubber Bushing (Sectional View)



Type CGK with Rubber Bushing (Sectional View)



Type CGD



Type CGB



Type CGK

Types CGB, CGD and CGE connectors have a male tapered thread for screwing into the hub of a Condulet. Types CGK, CGL and CGM connectors have a female tapered thread for screwing on to rigid conduit. Connectors with a tapered rubber bushing are for use with round flexible cord or cable. Connectors with a tapered split lead sleeve are for use with flexible conduit and armored or other round cable.

Marine is the standard finish for connectors of the CG series and will be furnished unless another finish is specified on the order. Galvanized finish will be furnished at the same price as marine finish, if specifically ordered.

Connectors of the CG series are listed on pages 371 to 377, Condulet catalogue No. 2000.



Type CGL



Type CGM



Type CGE



Type CGB with Split Head Sleeve (Sectional View)



Type CGK with Split Lead Sleeve (Sectional View)

**Type CGB Connectors
With Tapered Split Lead Sleeve**

For Connecting Flexible Conduit or Armored Cable to Condulets

Cat. No.	*A	*B	Std. Pkg.	Price Each
CGB30829	1 3/32 to 2 9/64	3/8	50	\$.65
CGB129	1 3/32 " 2 9/64	1/2	50	.65
CGB30832	2 1/64 " 1/2	3/8	50	.65
CGB30835	1 1/2 " 3 5/64	3/8	50	.65
CGB135	1 1/2 " 3 5/64	1/2	50	.65
CGB140	3 7/64 " 5/8	1/2	50	.95
CGB240	3 7/64 " 5/8	3/4	50	.95
CGB149	2 3/32 " 4 9/64	1/2	50	1.25
CGB252	4 9/64 " 1 5/8	3/4	50	1.25
CGB158	5 5/64 " 2 9/32	1/2	50	1.45
CGB258	5 5/64 " 2 9/32	3/4	50	1.45
CGB261	2 9/32 " 6 1/64	3/4	50	1.45
CGB2106	1 3/64 " 1 3/32	3/4	25	1.45
CGB2109	1 3/32 " 1 9/64	3/4	25	1.45
CGB2112	1 9/64 " 1 3/16	3/4	25	1.45



With Tapered Rubber Bushing

For Connecting Round Flexible Cord or Cable to Condulets

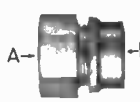
Cat. No.	†A	†B	Std. Pkg.	Price Each
CGB3083	1/4 to 7/16	3/8	50	\$.65
CGB13	1/4 " 7/16	1/2	50	.65
CGB15	7/16 " 5/8	1/2	50	.95
CGB25	7/16 " 5/8	3/4	50	.95
CGB26	1 1/8 " 3/4	3/4	50	1.25
CGB36	5/8 " 3/4	1	50	1.25
CGB37	3/4 " 7/8	1	50	1.45
CGB49	7/8 " 1 1/16	1 1/4	25	1.55
CGB411	1 1/8 " 1 3/8	1 1/4	25	1.95

Type CGK Connectors

With Tapered Split Lead Sleeve

For Connecting Flexible Conduit to Rigid Conduit

Cat. No.	*A	*B	Std. Pkg.	Price Each
CGK30829	1 3/32 to 2 9/64	3/8	50	\$.65
CGK129	1 3/32 " 2 9/64	1/2	50	.65
CGK30832	2 9/64 " 1/2	3/8	50	.65
CGK30835	1 1/2 " 3 5/64	3/8	50	.65
CGK135	1 1/2 " 3 5/64	1/2	50	.65
CGK140	3 7/64 " 5/8	1/2	50	.95
CGK240	3 7/64 " 5/8	3/4	50	.95
CGK149	2 3/32 " 4 9/64	1/2	50	1.25
CGK158	5 5/64 " 2 9/32	1/2	50	1.45
CGK258	5 5/64 " 2 9/32	3/4	50	1.45
CGK2106	1 3/64 " 1 3/32	3/4	25	1.45
CGK2109	1 3/32 " 1 9/64	3/4	25	1.45
CGK2112	1 9/64 " 1 3/16	3/4	25	1.45
CGK4142	1 39/64 " 1 21/32	1 1/4	25	2.05



With Tapered Rubber Bushing

For Connecting Round Flexible Cord or Cable to Condulets

Cat. No.	†A	†B	Std. Pkg.	Price Each
CGK3083	1/4 to 7/16	3/8	50	\$.65
CGK13	1/4 " 7/16	1/2	50	.65
CGK15	7/16 " 5/8	1/2	50	.95
CGK25	7/16 " 5/8	3/4	50	.95
CGK26	5/8 " 3/4	3/4	50	1.25
CGK37	3/4 " 7/8	1	50	1.45
CGK49	7/8 " 1 1/16	1 1/4	25	1.55
CGK411	1 1/8 " 1 3/8	1 1/4	25	1.95

*A—Inside diameter in inches of split lead sleeve which takes flexible conduit or armored cable.

*B—Size in inches of Condulet or rigid Conduit with which connector can be used.

†A—Inside diameter in inches of rubber bushing which takes round flexible cord or cable.

†B—Size in inches of Condulet hub with which connector can be used.

Standard finish is marine.

SPECIAL ASSORTMENT.—Any assortment of 200 connectors of the CG series will be considered a standard package.

Other sizes of Types CGB and CGK connectors, as well as in the 45-degree angle (CGD and CGL), and 90-degree angle (CGE and CGM) types are listed in Condulet Catalogue No. 2000, pages 371 to 376.

CC Series Flexible Conduit Couplings

For requirements not met by these couplings, see CG series connectors.

Male Thread—For Connecting Flexible Conduit to Condulets

A—Size in inches of flexible conduit with which coupling can be used.

B—Size in inches of Condulet hub with which coupling can be used.

Type CCB

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCB138	3/8	1/2	100	\$.30
CCB11	1/2	1/2	100	.30
CCB22	3/4	3/4	50	.40



Type CCD—45-degree

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCD138	3/8	1/2	100	\$.35
CCD11	1/2	1/2	50	.40
CCD22	3/4	3/4	50	.50



Type CCE—90-degree

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCE138	3/8	1/2	100	\$.35
CCE11	1/2	1/2	50	.40
CCE22	3/4	3/4	50	.50



Female Thread—For Connecting Flexible Conduit to Rigid Conduit

A—Size in inches of flexible conduit with which coupling can be used.

B—Size in inches of rigid conduit with which coupling can be used.

Type CCK

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCK138	3/8	1/2	100	\$.30
CCK11	1/2	1/2	100	.30
CCK22	3/4	3/4	50	.30



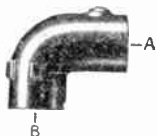
Type CCL—45-degree

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCL138	3/8	1/2	100	\$.35
CCL11	1/2	1/2	50	.40
CCL22	3/4	3/4	50	.50



Type CCM—90-degree

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	A	B		
CCM138	3/8	1/2	100	\$.35
CCM11	1/2	1/2	50	.40
CCM22	3/4	3/4	50	.50



Standard finish is galvanized or black enamel.

Any assortment of 200 couplings of the CC Series will be considered a standard package.

No. GS148 Hinged Covers

For Type GSG and Form 10 Condulets of the GS Series



No. GS148 is a hinged cover to screw on to any Type GSG Condulet or Form 10 Condulet of the GS Series. It is to take the place of a blank cover, so that the cover will not be lost when it is opened. Standard finish is galvanized or black enamel.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
GS148	10	20	\$1.75

Type LHRM Resistances

For Locomotive Headlight Switch Condulets of the LHS Series

150-watt, 6.94-ampere, 3.12-ohm

The resistance is mounted on an insulating base for use with Type LHSJ locomotive headlight switches, for dimming a 30-34-volt, 250-watt headlight lamp.



It is not enclosed or mounted on the Condulet but is to be mounted exposed on the cab ceiling or elsewhere.

Cat. No.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
LHRM312	10	30	\$6.50

Type UN Condulet Unions

Male Nipple—Brass

Male nipples of these unions are cast iron or cast brass.

In either case the body and the female nipple are of malleable iron.



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
UN110	1/2	50	45	\$.60
UN220	3/4	50	55	.90
UN330	1	25	45	1.30
UN440	1 1/4	25	55	1.60

Type UNW Condulet Unions

Brass—Watertight



Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
UNW1	1/2	25	25	\$1.10
UNW2	3/4	25	30	1.35
UNW3	1	10	25	3.00
UNW4	1 1/4	10	25	4.00

Type EL Condulet Elbows

90-degree



Standard finish is galvanized or black enamel.

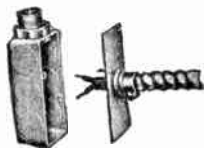
Male

Cat. No.	Size Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
EL195	1/2	200	100	\$.30
EL295	3/4	100	80	.40
EL395	1	50	70	.50
EL495	1 1/4	25	65	.75

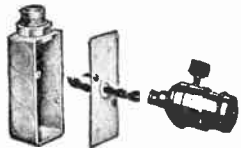
Female

EL19	1/2	200	105	\$.30
EL29	3/4	100	85	.40
EL39	1	50	75	.50
EL49	1 1/4	25	70	.75

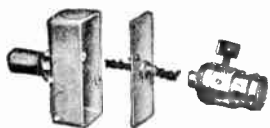
No. 48241 Pratt Branch Conduit Bodies



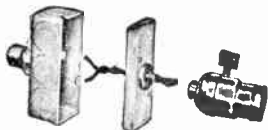
Dead End Assembly
Cover No. 48C6 with
BX Connector



Dead End Assembly
Cover No. 48C11 with Drop
Cord and Key Socket



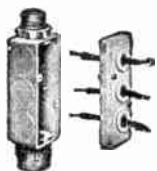
Back Entrance Assembly
Cover No. 48C24
with Key Socket



Back Entrance Assembly
Porcelain Cover No. 48C82
with Key Socket



Back Entrance Assembly
Porcelain Cover No. 48C75
with Drop Cord and Key
Socket

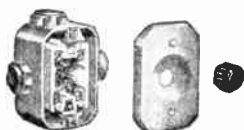


Straight Thru Assembly
Porcelain Cover
No. 48C77 for Three
Wires

No. 34461 Pratt Deep Conduit Bodies



T Assembly—Plate No. 34R14
with G. E. Tumbler Switch



T Assembly—Plate No. 34R4
with Rotary Switch



T Assembly—Plate No. 34R7
with Standard Duplex
Receptacle



T Assembly—Plate No. 34R3
with 2-button P. B.
Switch

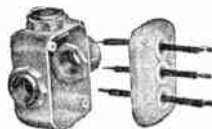


L Assembly—Plate No. 34R13
with G. E. 25-amp.
Receptacle

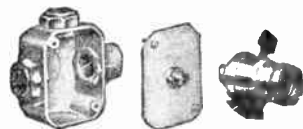


L Assembly—Plate No. 34R5
with Standard
Plug Receptacle

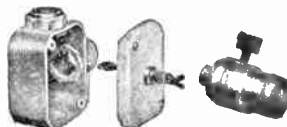
No. 14241 Pratt Shallow Conduit Bodies



T Assembly—Porcelain Cover
No. 14C77 for
Three Wires



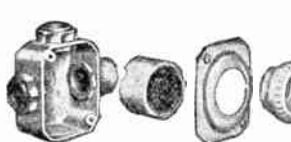
T Assembly—Cover No. 14C24
with Key Socket and
Nipple Outlet



L Assembly—Porcelain Cover
No. 14C84 with Nipple
Outlet



T Assembly—Cover No. 14C34
for Standard A. M. E. S.
2-screw Receptacles



T Assembly—Cover No. 14C35
for Screw Ring Receptacles



T Assembly—Cover No. 14C31
for Federal Receptacles

No. 14241 Pratt Shallow Conduit Bodies



T Assembly—Cover No. 14C28
with Front Mounted
G. E. Tumbler Switch



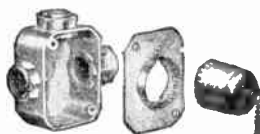
T Assembly—Cover No. 14C28
with Front Mounted
Snap Switch



T Assembly—Cover No. 14C28
with Front Mounted
H. & H. Tumbler Switch



T Assembly—Cover No. 14C39
with Fluted Device
Key Socket

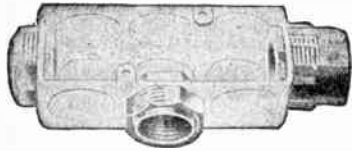


T Assembly—Cover No. 14C39
with Fluted Device
Ceiling Pull Switch



T Assembly—Cover No. 14C39
with Fluted Device
Plug Receptacle

No. 48241 Pratt Branch Conduit Bodies



Designed primarily for junctions, taps, drop cord work, etc. The design does not readily accept a wiring device, except sockets, etc., that can be connected by means of nipples.

OUTLET.—Three in each side and bottom; one in each end.

For "Exposed wiring," for 1/2 in. Conduit use coupling Cat. No. 1410; for 3/4 in. Conduit use coupling Cat. No. 1420.

For "Concealed" wiring, for 1/2 in. Conduit use coupling Cat. No. 1410; for 3/4 in. Conduit use coupling Cat. No. 1420, or 3/4 in. locknut and bushing. Two 1/4 in. diameter security-screw knockouts are furnished, thus affording an independent support in concealed wiring.

FINISH.—Electro-galvanized only.

NOTE.—Screws for cover-security furnished with the covers

The following package quantities cover all branch conduit covers and bodies: Unit package, 10; standard package, 100; cover unit packages may be combined to make a standard package.

Cat. No.	Inside Dimensions Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
48241	3 3/4 x 1 1/4 x 1 3/8	10	100	50	\$23.00

Covers for Pratt Branch Conduit Bodies



No. 48C1



No. 48C6

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C1	Flat, Closed	15	\$9.00
48C6	" with 1/2-inch Knockout	15	9.00

Covers for Pratt Branch Conduit Bodies



No. 48C8



No. 48C11

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C8	Flat, Pendant, 1/8-in. Eyelet	16	\$10.00
48C11	" " 3/8 " " " "	16	14.00

Covers for Pratt Branch Conduit Bodies



No. 48C22



No. 48C23

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C22	Flat, with 1/8-inch Male Nipple	17	\$25.00
48C23	" " 1/8 " Female Nipple	20	25.00

Covers for Pratt Branch Conduit Bodies



No. 48C24



No. 48C25

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C24	Flat, with 3/8-inch Male Nipple	20	\$35.00
48C25	" " 3/8 " Female Nipple	20	35.00

Covers for Pratt Branch Conduit Bodies



No. 48C75



No. 48C76

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C75	Porcelain, with One Wire Hole	24	\$12.00
48C76	" " Two " Holes	24	12.00

No. 48C77 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C77	Porcelain, with Three Wire Holes	24	\$13.00

No. 48C78 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C78	Porcelain, with Four Wire Holes	24	\$13.00

No. 48C82 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C82	Porcelain, with 1/8-inch Male Nipple	30	\$25.00

No. 48C83 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C83	Porcelain, with 1/8-inch Female Nipple	28	\$25.00

No. 48C84 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C84	Porcelain, with 3/8-inch Male Nipple	28	\$35.00

No. 48C85 Pratt Covers for Branch Conduit Bodies



Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price per 100
48C85	Porcelain, with 3/8-inch Female Nipple	30	\$35.00

No. 1410 Pratt Conduit Body Couplings



For 1/2-inch conduit. This coupling is so designed that, when assembled with the above bodies, they constitute a complete Pratt Conduit. Standard package, 100.

Price, No. 1410..... per 100 \$13.50

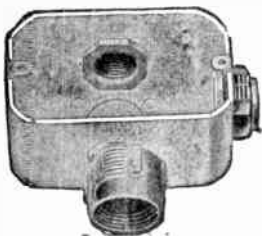
No. 1420 Pratt Conduit Body Couplings

For 3/4-inch Conduit. This coupling is so designed that, when assembled with the above bodies they constitute a complete Pratt Conduit. Standard package, 100.



Price, No. 1420..... per 100 \$20.00

No. 34461 Pratt Deep Conduit Bodies



Designed for the reception of all standard make of flush devices. These flush devices are mounted into this body in the same manner as is now standard practice in switch boxes, or wall cases.

OUTLETS.—One in each side and bottom.

For "Exposed" Wiring, for 1/2 in. Conduit use coupling Cat. No. 1410; for 3/4 in. Conduit use Coupling Cat. No. 1420.

For "Concealed" Wiring, for 1/2-inch conduit use coupling Catalogue No. 1410; for 3/4-inch conduit use Catalogue No. 1420, 3/4-inch locknut and bushing.

FIXTURE STUDS.—Four 1/4 in. diameter knockout holes for standard fixture studs (1 1/2 in centers) are furnished in this Conduit Body. Two of these holes can be used for screw securance to independent support, when used in concealed wiring.

FINISH.—Electro-galvanized only.

NOTE.—Screws for device-securance furnished with the devices.

Package quantities for all deep conduit bodies and covers are as follows: Unit package, 10; standard package, 100; cover unit packages may be combined to make standard packages.

Cat. No.	Inside Dimen. Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
34461	3 1/2 x 2 1/4 x 1 7/8	10	100	52	\$40.00

No. 34R1 Plates for Pratt Deep Conduit Bodies

Blank, for deep conduit body when used without a wiring device.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R1	17	\$12.00

No. 34R2 Plates for Pratt Deep Conduit Bodies

For single push button switches with countersunk hole in center.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R2	17	\$12.00

No. 34R3 Plates for Pratt Deep Conduit Bodies

For double push button switches and 6-ampere polarity plugs of all standard makes.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R3	17	\$12.00

No. 34R5 Plates for Pratt Deep Conduit Bodies

For receptacles, without door (all standard makes) 1 1/8 inches, diameter of hole.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R5	16	\$12.00

No. 34R6 Plates for Pratt Deep Conduit Bodies

For receptacles, with door (all standard makes) 1 1/2-in. hole. Can be used with any standard Edison lamp base scores or plug receptacle.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R6	17	\$65.00

No. 34R7 Plates for Pratt Deep Conduit Bodies



For double plug receptacles (all standard makes).

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R7	15	\$20.00

No. 34R8 Plates for Pratt Deep Conduit Bodies

For Hubbell 6-ampere Polarized Plug Receptacle.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R8	13	\$20.00

No. 34R9 Plates for Pratt Deep Conduit Bodies

For Chapman Type Receptacles, with doors.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R9	17	\$50.00

Plates for Pratt Deep Conduit Bodies

For Hubbell 6-ampere and 20-ampere Polarized Plug Receptacles respectively.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R11	17	\$14.00
34R12	16	14.00

No. 34R13 Plates for Pratt Deep Conduit Bodies

For G. E. 20-ampere Polarized Plug Receptacle; 1 3/4 inches, diameter of opening.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R13	16	\$14.00

No. 34R14 Plates for Pratt Deep Conduit Bodies

For G. E. Tumbler Switch, remote control work, etc.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R14	17	\$20.00

No. 34R15 Plates for Pratt Deep Conduit Bodies

For H. & H. Tumbler Switch; 3/8-inch, diameter of opening.

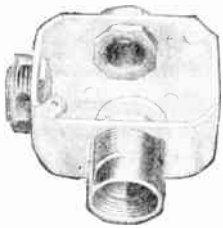
Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R15	17	\$16.00

No. 34R16 Plates for Pratt Deep Conduit Bodies

For Hubbell Tumbler Switch; diameter of opening, 3/8 inch.

Cat. No.	Wt., Lbs. Std. Pkg.	Price per 100
34R16	17	\$16.00

No. 14241 Pratt Shallow Conduit Bodies



OUTLETS.—One in each side and bottom.

For "Exposed" Wiring, for 1/2-inch conduit use coupling Cat. No. 1410; for 3/4-inch conduit use coupling Cat. No. 1420.

For "Concealed" Wiring, for 1/2-inch conduit use coupling Cat. No. 1410; for 3/4-inch conduit use coupling Cat. No. 1420, or 3/4-inch locknut and bushing.

FIXTURE STUDS.—Four 1/4-inch diameter knockout holes for standard fixture studs (1 1/2-inch centers) are furnished in this conduit body. Two of these holes can be used for screw securance to independent support, when used in concealed wiring.

FINISH.—Electro-galvanized only.

NOTE.—Screws for cover-securance furnished with the covers.

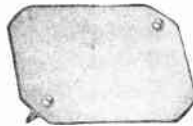
Package quantities on all bodies and covers are as follows: Unit package, 10; standard package, 100; cover unit packages may be combined to make standard packages.

Cat. No.	Inside Dimensions Inches	Unit Pkg.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price per 100
14241	2 7/8 x 2 1/4 x 1 3/8	10	100	45	\$30.00

No. 14C1 Covers for Pratt Shallow Conduit Bodies

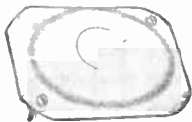
Flat, closed.

Weight standard package, 20 pounds.



Price, No. 14C1 per 100 \$9.00

No. 14C7 Covers for Pratt Shallow Conduit Bodies



Raised, with 1/2-inch knockout, no opening, oval shaped.

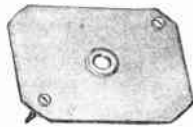
Weight standard package, 20 pounds.

Price, No. 14C7 per 100 \$9.00

No. 14C8 Covers for Pratt Shallow Conduit Bodies

Flat, pendant type, 1/8-inch eyelet bushing, for drop cord work.

Weight standard package, 17 pounds.



Price, No. 14C8 per 100 \$10.00

No. 14C11 Covers for Pratt Shallow Conduit Bodies



Flat, pendant type, 3/8-inch eyelet bushing, for drop cord work.

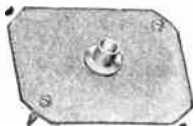
Weight standard package, 17 pounds.

Price, No. 14C11 per 100 \$14.00

No. 14C22 Covers for Pratt Shallow Conduit Bodies

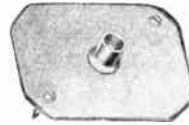
Flat, with 1/8-inch male nipple, swedged into a notch opening.

Weight standard package, 20 pounds.



Price, No. 14C22 per 100 \$25.00

No. 14C23 Covers for Pratt Shallow Conduit Bodies



Flat, with 1/8-inch female nipple, swedged into a notch opening.

Weight standard package, 20 pounds.

Price, No. 14C23 per 100 \$25.00

No. 14C24 Covers for Pratt Shallow Conduit Bodies

Flat, with 3/8-inch male nipple, swedged into a notch opening.

Weight standard package, 24 pounds.



Price, No. 14C24 per 100 \$25.00

No. 14C25 Covers for Pratt Shallow Conduit Bodies



Flat, with 3/8-inch female nipple, swedged into a notch opening.

Weight standard package, 26 pounds.

Price, No. 14C25 per 100 \$25.00

No. 14C28 Covers for Pratt Shallow Conduit Bodies

Flat, for all surface mounted type devices, with screw centers from 7/8 to 1 1/8 inches.

Weight standard package, 13 pounds.



Price, No. 14C28 per 100 \$12.00

No. 14C31 Covers for Pratt Shallow Conduit Bodies



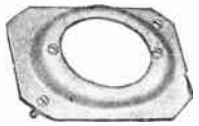
Raised, for Federal Sign Receptacles, intruding tongue, center opening 1 1/2 inches in diameter.

Weight standard package, 16 pounds.

Price, No. 14C31 per 100 \$10.00

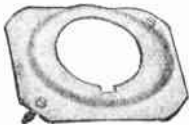
Covers for Pratt Shallow Conduit Bodies

Raised. No. 14C32 is for Benjamin Sign Receptacles, 2-screw center opening 1 1/2 inches in diameter. No. 14C34 is for standard A. M. E. S. Sign Receptacles, 2-screw 1 3/8 inches on centers. Weight standard package, 17 pounds.



Price, No. 14C32 per 100 \$10.00
 " " 14C34 " 100 10.00

Covers for Pratt Shallow Conduit Bodies



Raised for sign receptacles, screw ring type. 3/8-inch deep. No. 14C35 has 1 1/2-inch diam. opening, grooved for single protruding lug on porcelain. No. 14C36 has 1 1/2-inch opening, bent under tongue for 5-notched porcelain. Weight standard package, 17 pounds.

Price, No. 14C35 per 100 \$10.00
 " " 14C36 " 100 10.00

No. 14C39 Covers for Pratt Shallow Conduit Bodies

Flat, for all standard fluted catch devices, only shell and device movement to make up complete lamp receptacle, etc.

Weight standard package, 18 pounds.



Price, No. 14C39 per 100 \$30.00

No. 14C47 Covers for Pratt Shallow Conduit Bodies



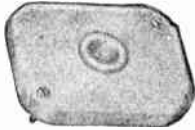
Raised angle adapter, for reception of Nos. 14C35, 14C36, 14C39 covers.

Weight standard package, 25 pounds.

Price, No. 14C47.....per 100 \$22.00

No. 14C75 Covers for Pratt Shallow Conduit Bodies

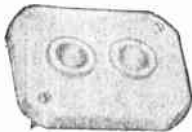
Porcelain, with one wire hole, to be used in drop cord work, or construction requiring one lead.



Weight standard package, 20 pounds.

Price, No. 14C75.....per 100 \$12.00

No. 14C76 Covers for Pratt Shallow Conduit Bodies



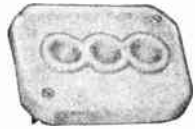
Porcelain, with two wire-holes, for leads coming from conduit system.

Weight standard package, 20 pounds.

Price, No. 14C76.....per 100 \$12.00

Covers for Pratt Shallow Conduit Bodies

No. 14C77 is porcelain, with 3 wire holes, for leads brought out of conduit system to a 3-phase motor. No. 14C78, with 4 wire holes, where 2 sets of leads are brought out of conduit system. Weight standard package, 20 pounds.

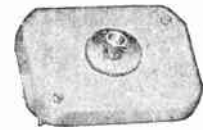


No. 14C77

Price, No. 14C77.....per 100 \$13.00

" " 14C78....." 100 13.00

No. 14C82 Covers for Pratt Shallow Conduit Bodies

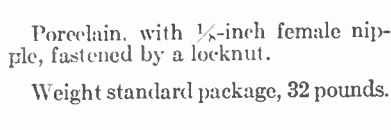


Porcelain, with 1/8-inch male nipple, fastened by a locknut.

Weight standard package, 34 pounds.

Price, No. 14C82.....per 100 \$25.00

No. 14C83 Covers for Pratt Shallow Conduit Bodies

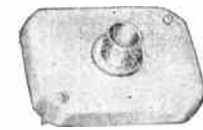


Porcelain, with 1/8-inch female nipple, fastened by a locknut.

Weight standard package, 32 pounds.

Price, No. 14C83.....per 100 \$25.00

No. 14C84 Covers for Pratt Shallow Conduit Bodies

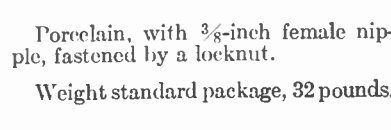


Porcelain, with 3/8-inch male nipple, fastened by a locknut.

Weight standard package, 32 pounds.

Price, No. 14C84.....per 100 \$35.00

No. 14C85 Covers for Pratt Shallow Conduit Bodies

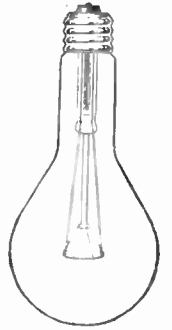


Porcelain, with 3/8-inch female nipple, fastened by a locknut.

Weight standard package, 32 pounds.

Price, No. 14C85.....per 100 \$35.00

Sunbeam Mazda Lamps



General Features of Mazda Lamps

Convenience, reliability, high efficiency and adaptability are some of the features of Mazda lamps which are responsible for their rapid adoption in store, office, factory and public building lighting; in city and suburban homes; in flashlight, hand lantern and automobile service; in street and sign lighting; in mines and many other classes of service. The schedules which follow present the wide variety of sizes in which Mazda lamps are regularly manufactured to meet this widely diversified demand.

Mazda lamps are divided into two general classes: Large style and miniature style.

Notice to Agents and Purchasers

Lamps in the following Standard Price Schedules are separated into two main divisions—the first comprising those for general lighting service—and the second those for special lighting service, such as sign, projection, etc. The relative demand for lamps in each of these divisions is indicated by the classification symbols (I, I-Special, II, II-Special, etc.) appearing on each page under the heading Consignment Classification. This grouping will serve as a guide to agents in determining the stocks of lamps necessary to enable them to supply properly the lamp demand. Lamps not carried in the manufacturer's consigned stock in the custody of the agent, and for which there is only an occasional demand, may be obtained promptly from the serving agent or manufacturer.

The meanings of the classification symbols are as follows:

Classification Symbol I

These are the most popular lamps for general lighting service, and from this group a stock will be maintained in the custody of any agent handling retail, over-the-counter sales.

Classification Symbol I-Special

Lamps so classified are the most important lamps for special lighting service, such as country home, sign, projection, etc., and from this group a stock will be maintained in the custody of any agent having retail demand for any of these lamps.

Classification Symbols II and II-Special

Additional general lighting service lamps (II) and special lighting service lamps (II-Special) available for consignment to agents serving purchase contracts or having other proven demand for such lamps.

Classification Symbols III and III-Special

Further additional general service (III) and special lighting service (III-Special) lamps available for the consigned stocks of Form B agents only, having proven demand for such lamps. These lamps are to be shipped by the Form B agent only on order direct to consumers.

Classification Symbol IV

Lamps of very infrequent demand carried in manufacturers' warehouses for shipment by the manufacturer direct to purchasers at agent's request.

Sunbeam Mazda Lamps

**Extra Charges for Special Features
Frosted Lamps**

The following list additional charges shall be added to the list prices of clear lamps for either white bowl or all-frosting such clear lamps.

Price Clear Lamps Each	List Additional Charge	Price Clear Lamps Each	List Additional Charge
Less than \$1.00	\$.05	\$6.00 to \$6.99	\$.35
\$1.00 to 1.99	.10	7.00 " 7.99	.40
2.00 " 2.99	.15	8.00 " 8.99	.45
3.00 " 3.99	.20	9.00 " 9.99	.50
4.00 " 4.99	.25	10.00 " 10.99	.55
5.00 " 5.99	.30	11.00 " 11.99	.60

Colored and Tinted Lamps (Coated)

With the exception of those lamps specifically listed in these schedules as coated, colored and tinted, and the lamp mentioned in the following paragraph, the prices of lamps in these schedules when furnished in the coated colors and tints listed may be obtained by adding the following list charges to the prices of the clear lamps listed in these schedules or to the prices of the frosted lamps when listed in frosted bulbs only.

In computing the coated, colored and tinted, price of the 25 Watt G18½ bulb lamp for country home lighting service listed herein, add 10 cents to the price shown.

These charges do not apply to lamps other than those listed in these schedules. The colors and tints named are not recommended on any lamps larger than 150 watts.

Price of Clear or Frosted Lamps	Additional Charge for Red, Yellow, Green, Blue or Amber-orange Colors and for Ivory or Flame Tints
Less than \$1.00	\$.15
\$1.00 to 1.99	.25
2.00 " 2.99	.35
3.00 " 3.99	.45
4.00 " 4.99	.55

The extra charges given above apply only to the Manufacturers' standard coated colors and tints.

Natural Colored Lamps

The four lamps in natural colored bulbs listed below cover a large percentage of present demand for natural colored lamps. They will be supplied at additional list charges per lamp over the list prices of clear lamps as indicated.

Watts	Volts	Bulb	LIST ADDITIONAL CHARGE EACH FOR	
			Ruby	Green, Blue and Amber
10	110, 115, 120	S-14	\$.30	\$.20
25	110, 115, 120	S-17	.30	.20
40	110, 115, 120	S-19	.30	.20
60	110, 115, 120	S-21	.35	.25

The extra charges listed above apply only to the four lamps shown above and to the Manufacturers' standard colored glass.

Voltage

As lamps for 110, 115 and 120 volts cover approximately 90 per cent of the demand, lamps for other voltages between 100 and 130 volts are not regularly carried in stock in all places but may be obtained at the same price.

As lamps for 220, 230, 240 and 250 volts cover approximately 90 per cent of the demand, lamps for other voltages between 200 and 260 are not regularly carried in stock in all places but may be obtained at the same prices.

Lamps for 265, 270, 280, 285, 290, 295 and 300 volts may be supplied at the same list prices as those for 275 volts.

Etching

Additional charges for etching letters or designs may be obtained upon application. Style of lettering or design should accompany such application.

Orders for large lamps with customer's etching may be filled either short or in excess, within the limits of 5 per cent; except that on orders for less than 40 lamps the shortage or excess may equal but not exceed 2 lamps.

Etched lamps are not rejectable by the purchaser under the provisions of the standard specifications governing the rejection of clear lamps (see part 1, section 1, clause 3, Standard Specifications for Large Tungsten Filament Incandescent Electric Lamps, April 1, 1923).

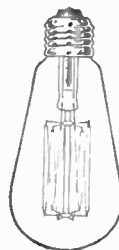
Sunbeam Mazda B Lamps

110, 115 and 120 Volts

These lamps constitute more than 75 per cent of the ordinary lamp demand for residence lighting.

Fitted with medium screw base.
Package quantity, 120.

*Package quantity, 200.



Watts	Style Bulb	Over All Length Inches	Lumens	Consignment Classification	Price Each
*10	S14 Clear	3 1/2	66	III	\$.27
15	S17 "	4 5/8	135	I	.27
25	S17 "	4 5/8	240	I	.27
40	S19 "	5 3/16	410	I	.27
50	S19 "	5 3/16	500	I	.27
60	S21 "	5 1/4	620	I	.32

Sunbeam Mazda B Mill Type Lamps

110, 115 and 120 Volts

These lamps are of special construction to give the ruggedness that will insure satisfactory service under unusual conditions of vibration or repeated mechanical shocks.

Fitted with medium screw base.

Package quantity, 120.



Watts	Style Bulb	Over All Length Inches	Lumens	Consignment Classification	Price Each
25	P19 Clear	3 7/8	220	II	\$.30
50	P19 "	3 7/8	440	II	.30

Sunbeam Inside Frosted Mazda Lamps

110, 115 and 120 Volts



Designed for general lighting service. Made in a diffusing bulb with a smooth exterior surface making them readily cleanable and yet providing a high degree of diffusion with but relatively low absorption. Fitted with a medium screw base.

Watts	Style Bulb	Over All Length Inches	Std. Pkg. Qty.	Consignment Classification	Price Each
25	A19	3 15/16	120	I	\$.30

Sunbeam All Frosted Mazda B Lamps

110, 115 and 120 Volts

Straight Side Bulb

Whenever lamps are not placed in enclosing or suitable diffusing glassware, those in diffusing bulbs are preferable to the clear lamps.

Fitted with medium screw base.

Package quantity, 120.



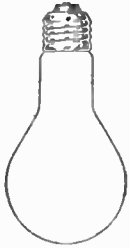
Watts	Style Bulb	Over All Length Inches	Consignment Classification	Price Each
15	S17 Frosted	4 5/8	III	\$.32
25	S17 "	4 5/8	II	.32
40	S19 "	5 3/16	II	.32
25	P19 "	3 7/8	II	.35

Sunbeam White Mazda C Lamps

110, 115 and 120 Volts

Whenever lamps are not placed in enclosing or suitable diffusing glassware, those in diffusing bulbs are preferable to the clear lamps.

Fitted with medium screw base.



Watts	Style Bulb	Over All Length Inches	Std. Pkg.	Consignment Classification	Price Each
50	PS20 White	5 3/16	60	I	\$.40
75	PS22 "	5 7/8	60	II	.50
100	PS25 "	6 15/16	24	II	.55

Sunbeam All Frosted Mazda B Lamps

110, 115 and 120 Volts

Round Bulb

Whenever bulbs are not placed in enclosing or suitable diffusing glassware, those in diffusing bulbs are preferable to the clear lamps.

Fitted with medium screw base.

Package quantity, 120 for G18 1/2 bulb and 60 for G25 bulb.



Watts	Style Bulb	Over All Length Inches	Consignment Classification	Price Each
15	G18 1/2 Frosted	3 9/16	II	\$.40
25	G18 1/2 "	3 3/16	I	.40
25	G25 "	4 7/16	II	.50
40	G25 "	4 1/16	II	.50

Sunbeam Decorative Mazda B Lamps

110, 115 and 120 Volts

This is a D-Bulb.

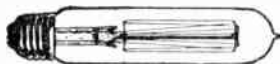
Fitted with candelabra screw base. All frosted. Package quantity, 60.



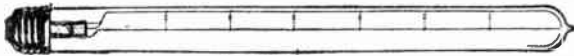
Watts	Style Bulb	Over All Length Inches	Consignment Classification	Price Each
15	D10	3 9/16	III	\$.50

Sunbeam Tubular Clear Bulb Mazda B Lamps

110, 115 and 120 Volts



25-watt Tubular



40-watt Tubular

Designed for show cases, special display sign and cornice lighting or for other service where a line source is necessary to light confined places or to define outlines.

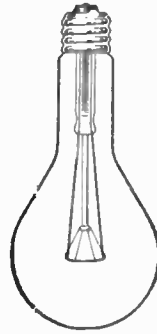
Fitted with medium screw base.

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
25	T10 Clear	5 5/8	60	II-Spl.	\$.45
40	T 8 "	11 7/8	24	IV	1.15

Sunbeam Mazda C Lamps

110, 115 and 120 Volts

These lamps constitute a great percentage of the ordinary lamp demand for store and office lighting. Proper reflector should be provided to protect the eyes from the extremely bright filaments of a Mazda C lamp especially whenever the lamp is hung low in the usual line of vision.



Clear—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
50	PS20 Clear	5 3/16	520	60	II	\$.40
75	PS22 "	5 7/8	920	60	I	.45
100	PS25 "	6 15/16	1350	24	I	.50
150	PS25 "	6 15/16	2200	24	II	.65
200	PS30 "	8 1/8	3200	24	II	.80

Clear—Mogul Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
300	PS35 Clear	9 7/16	5000	24	II	\$1.25
500	PS40 "	9 9/16	9400	12	II	2.00
* 750	PS52 "	13 1/8	14500	8	III	3.50
*1000	PS52 "	13 1/8	20000	8	III	3.75

White Bowl—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
100	PS25 White Bowl	6 15/16	.....	24	II	\$.55
150	PS25 " "	6 15/16	.....	24	II	.70
200	PS30 " "	8 1/8	.....	24	II	.85

White Bowl—Mogul Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
300	PS35 White Bowl	9 7/16	.....	24	II	\$1.35
500	PS40 " "	9 9/16	.....	12	II	2.15
* 750	PS52 " "	13 1/8	.....	8	IV	3.70
*1000	PS52 " "	13 1/8	.....	8	IV	3.95

*If these lamps are for use in other than base up position, order should so state. Prices same as above.

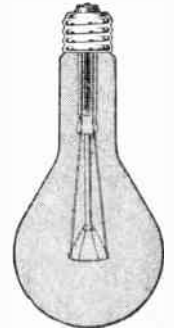
Sunbeam Mazda C Daylight Lamps

110, 115 and 120 Volts

The Mazda C Daylight Lamp has a bulb made of special blue glass, to produce light approximating average daylight quality.

It is recommended for stores, offices, display windows and factories whenever it is desired to show colors more nearly in their true daylight appearance than is possible by means of customary artificial light.

To get this effect no other illuminants should be burned in the same room or enclosure. Not recommended for accurate color matching. Special color matching units are available for this purpose.



Daylight—Medium Screw Base

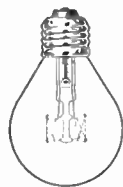
Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
50	PS20 Daylight	5 3/16	60	III	\$.60
75	PS22 "	5 7/8	60	I	.65
100	PS25 "	6 15/16	24	II	.80
150	PS25 "	6 15/16	24	II	1.05
200	PS30 "	8 1/8	24	II	1.30

Daylight—Mogul Screw Base

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
300	PS35 Daylight	9 7/16	24	II	\$1.85
500	PS40 "	9 9/16	12	IV	2.85

Sunbeam Mazda B Lamps

220, 230, 240 and 250 Volts



These lamps are higher in price and less efficient than 110, 115 and 120-volt lamp of same wattage and should not be used where it is possible to change the service from 220, 230, 240 and 250 volts to 110, 115 and 120 volts.

Fitted with medium screw base.

Package quantity, 120.

Watts	Style Bulb	Over All Length Inches	Lumens	Consignment Classification	Price Each
25	P19 Clear	3 7/8	185	I-Special	\$.32

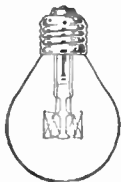
Sunbeam Mazda B Mill Type Lamps

220, 230, 240 and 250 Volts

These lamps are of a construction to give improved service under mechanical shock.

Fitted with medium screw base.

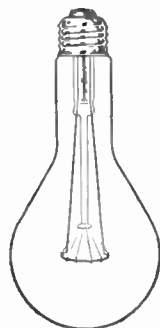
Package quantity, 120.



Watts	Style Bulb	Over All Length Inches	Lumens	Consignment Classification	Price Each
50	P19 Clear	3 7/8	430	I-Special	\$.32

Sunbeam Mazda C Lamps

220, 230, 240 and 250 Volts



These lamps are higher in price and less efficient than 110, 115 and 120-volt lamp of same wattage and should not be used where it is possible to change their service from 220, 230, 240 and 250 volts to 110, 115 and 120 volts.

Clear—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
100	PS25 Clear	6 5/8	1050	24	I-Spec.	\$.60
200	PS30 "	8 1/8	2600	24	II "	1.00

Clear—Mogul Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
300	PS35 Clear	9 7/8	4300	24	II-Spec.	\$ 1.50
*500	PS40 "	9 3/8	8000	12	II "	2.40
*750	PS52 "	13 1/8	12500	8	IV	4.00
*1000	PS52 "	13 3/8	18000	8	IV	4.50

White Bowl—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
100	PS25 White Bowl	6 5/8	.....	24	II-Spec.	\$.65
200	PS30 "	8 1/8	.....	24	II "	1.10

White Bowl—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Package Quantity	Consignment Classification	Price Each
300	PS35 White Bowl	9 7/8	.....	24	II-Spec.	\$ 1.60
*500	PS40 "	9 3/8	.....	12	II "	2.55
*750	PS52 "	13 1/8	.....	8	IV	4.25
*1000	PS52 "	13 3/8	.....	8	IV	4.75

*Designed for base up burning position. Lamps ordered for base down burning position may be supplied at the same price.

Sunbeam Mazda B Lamps

For Sign Lighting Service

110, 115 and 120 Volts



S-Bulb

Fitted with medium screw base. The bulb of the blue sign lamp is of special light blue glass to give a whiter light than the ordinary clear bulb lamp.



P-Bulb

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
10	S14 Clear	3 1/2	200	I-Special	\$.27
15	S14 Blue	3 1/2	200	II "	.37
25	P19 Clear	3 7/8	120	I "	.45
50	P19 "	3 7/8	120	II "	.45

Sunbeam Colored Mazda B Lamps

110, 115 and 120 Volts



G-Bulb



P-Bulb



S-Bulb

These lamps are colored with a weatherproof coating. Fitted with medium screw base.

Flame Tinted Mazda B Lamps

Flame tinted lamps give a soft tinted lighting effect often desirable in homes, hotels, theatres, etc.

The decorative types listed below will supply the general demand.

Watts	Style Bulb	Lgth. Over All, In.	Package Quantity	Consignment Classification	Price Each
25	P19	Medium	120	II	\$.40
25	G18 1/2	3 9/16	120	II	.50
25	G25	4 7/16	60	III	.60
40	G25	4 7/16	60	III	.60
50	P19	Medium	120	III	.40

Red, Blue, Green and Yellow Mazda B Lamps

Substantially all of the color effects required for decorative and display lighting in theatres, restaurants, signs, etc., can be produced by these five colors and the five lamps listed below. In the interest of standardization it is recommended that whenever possible colored lighting be produced by the colors and lamps herein listed.

Watts	Style Bulb	Lgth. Over All, In.	Package Quantity	Consignment Classification	Price Each
10	S14	3 1/2	200	III	\$.37
25	S17	4 5/8	120	III	.37
25	P19	3 7/8	120	III	.40
40	S19	5 3/8	120	III	.37
50	P19	3 7/8	120	III	.40

No. 9 Hylo Mazda Lamps

Pull String

Convenient, safe and economical for the hall, sleeping room, bath-room, den, dining room, porch and other similar locations. Both filaments Mazda bulb is same size as regular Mazda lamps.

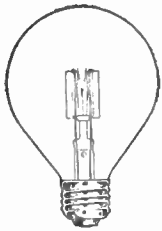
Standard package, 100; 25 and 40-watt lamps can be assorted to make standard package.

Watts	Candle Power	Voltage	Price Each
25-5	23-1.2	110, 115, 120	\$ 1.00
40-5	38-1.2	110, 115, 120	1.00
25-5	26-1.2	28-32	1.00
40-5	44-1.2	28-32	1.00

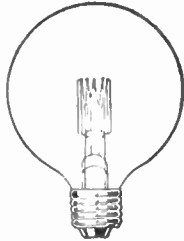


Sunbeam Mazda C Projection Lamps

110, 115 and 120 Volts



P-Bulb



G-Bulb

Orders must specify for projection service. Can be burned in any position within 45 degrees of vertical, tip down. Fitted with medium screw base. Length of light center, three inches.

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
100	P25 Clear	4 ³ / ₈	60	II-Special	\$1.00
†250	G30 "	5 ¹ / ₈	24	III "	1.75
‡400	G30 "	5 ¹ / ₈	24	III "	3.00

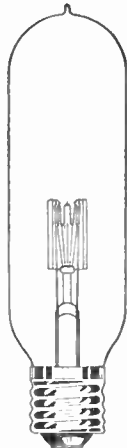
†Mogul screw base can be supplied at same price with light center length of 3³/₈ inches and over all length of 5⁵/₈ inches.

‡Medium screw skirted base can be supplied at the same price with a light center length of 3¹/₄ inches and a maximum over all length of 5⁵/₈ inches.

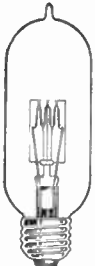
Sunbeam Mazda C Projection Lamps

110, 115 and 120 Volts

The concentrated light source placed in a tubular bulb permits of a more efficient utilization of light as the lens equipment can be placed closer to the light source and therefore should be used wherever possible in preference to a round bulb lamp. Light centers, 250-watt and 400-watt, three inches; 1000-watt, 4³/₄ inches. These lamps must burn base down.



1000 Watts



250 Watts

Watts	Style Bulb	Over All Length Inches	Screw Base	Package Quantity	Consignment Classification	Price Each
250	T14 Clear	5 ¹ / ₂	Medium	24	II-Special	\$1.65
*500	T20 "	5 ¹ / ₂	"	6	II "	3.00
1000	T20 "	9 ¹ / ₁₆	Mogul	6	II "	6.50

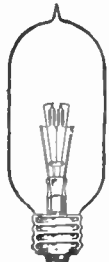
*Medium screw skirted base can be supplied at same price with light center of 3³/₄ inches and over all length 6¹/₄ inches.

Sunbeam Mazda C Projection Lamps

28-32 Volts

For use in small motion picture machines and projection or stereopticon lanterns.

Light centers, three inches. These lamps must burn base down.

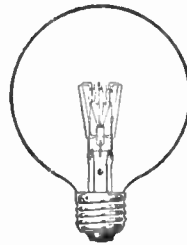


Watts	Style Bulb	Over All Length Inches	Screw Base	Package Quantity	Consignment Classification	Price Each
300	T16 Clear	5 ¹ / ₂	Medium	12	IV	\$2.75

Sunbeam Mazda C Lamps

For Floodlighting

110, 115 and 120 Volts



Orders for this lamp must specify for floodlighting service. It can be burned in any position except within 45 degrees of vertical, base up. Light centers, 250-watt, three inches; 500 watt, 4¹/₄ inches.

Watts	Style Bulb	Over All Length Inches	Screw Base	Package Quantity	Consignment Classification	Price Each
250	G30 Clear	5 ¹ / ₈	*Medium	24	II-Special	\$1.75
500	G40 "	7 ¹ / ₈	Mogul	12	II "	3.25

*Mogul base can be supplied at same price with light center length of 3³/₈ inches and maximum over-all length of 5⁵/₈ inches.

Sunbeam Mazda B Lamps

For Street Railway Lighting Service

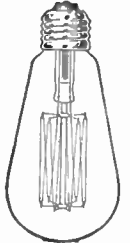
105, 110, 115, 120, 125 and 130 Volts

Selected for amperes and labeled for use five in series on the 525, 550, 575, 600, 625 and 650-volt circuits ordinarily used by electric street railway companies.

As considerable voltage fluctuation is sometimes found in this class of circuits, these lamps are only manufactured for six-voltage groups and care should be taken to see that the voltage group of lamps supplied corresponds closely to the average voltage found on the circuit.

Only the lamps listed below, selected for amperes and for one-fifth the voltage on which they are labeled for use in series, will be supplied at the prices shown.

Fitted with medium screw base.



Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
23	S17 Clear	4 ⁵ / ₈	120	III-Special	\$.27
36	S19 "	5 ³ / ₁₆	120	III "	.27
56	S21 "	5 ¹ / ₄	120	III "	.32
94	S24 ¹ / ₂ "	6 ⁵ / ₁₆	60	III "	.85

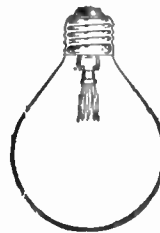
Sunbeam Mazda B Lamps

For Street Railway Headlights

105, 110, 115, 120, 125 and 130 Volts

Selected for amperes and labeled for use five in series on the 525, 550, 575, 600, 625 and 650-volt circuits ordinarily used by electric street railway companies.

As considerable voltage fluctuation is sometimes found in this class of circuits, these lamps are only manufactured for six-voltage groups and care should be taken to see that the voltage group of lamps supplied corresponds closely to the average voltage found on the circuit.

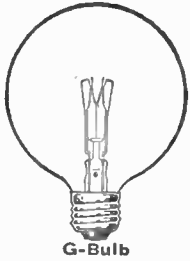


P-Bulb

Only the lamps listed below, selected for amperes and for one-fifth the voltage on which they are labeled for use in series, will be supplied at the prices shown below. Fitted with medium screw base.

Watts	Style Bulb	Over All Length Inches	Light Center Inches	Pkg. Quan.	Consignment Classification	Price Each
23	G18 ¹ / ₂ Clear	3 ⁹ / ₁₆	2 ³ / ₁₆	120	III-Special	\$.75
36	G18 "	3 ¹ / ₁₆	2 ³ / ₁₆	120	III "	.75
56	P25 "	4 ³ / ₄	2 ¹ / ₁₆	60	IV	.90
94	P25 "	4 ³ / ₄	2 ¹ / ₁₆	60	III Special	1.15

Sunbeam Mazda C Lamps



G-Bulb

For Locomotive Headlights

30 to 34 Volts

These lamps can be burned in any position except within 45 degrees of vertically, base up. Light centers, three inches.

Fitted with medium screw base.

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
100	P25 Clear	4 ³ / ₄	60	III-Special	\$1.00
250	G30 "	5 ¹ / ₈	24	III "	1.75

Sunbeam Mazda B Lamps

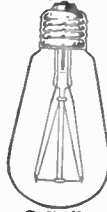
Train Lighting

30 to 34 Volts

This lamp is used for ordinary train lighting service and is generally operated from a locomotive headlight outfit or from a 16-cell storage battery lighting system.

Fitted with medium screw base.

Orders should specify the individual voltage required and be marked Train Lighting.



S-Bulb

Straight-side Bulbs

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
15	S17 Clear	4 ⁵ / ₈	120	III-Special	\$.27
*15	S17 "	4 ⁵ / ₈	120	III "	.27
25	S17 "	4 ⁵ / ₈	120	III "	.27

Round Bulbs

15	G18 ¹ / ₂ Clear	3 ⁹ / ₁₆	120	III-Special	\$.35
25	G18 ¹ / ₂ "	3 ⁹ / ₁₆	120	III "	.35

*For locomotive cab lighting. Orders should specify 33 volts.

Sunbeam Mazda C Lamps

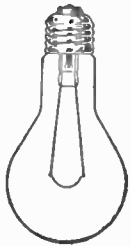
Train Lighting

30 to 34 Volts

Designed for train lighting service and are generally operated from locomotive headlight outfits or from 16-cell storage battery lighting systems.

Fitted with medium screw base.

Orders should specify the individual voltage required and be marked Train Lighting.



Clear

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
50	PS20 Clear	5 ³ / ₁₆	60	III-Special	\$.40
75	PS22 "	5 ⁷ / ₈	60	III "	.50
100	PS25 "	6 ¹ / ₁₆	24	III "	.60

All Frosted

*15	PS16	3 ¹ / ₁₆	120	IV	\$.40
*25	PS16	3 ⁹ / ₁₆	120	III-Special	.40

White Bowl

50	PS20	5 ³ / ₁₆	60	III-Special	\$.45
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*May be obtained clear at same price.

Sunbeam Mazda Lamps

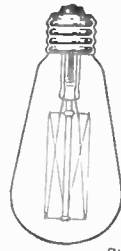
Train Lighting

60 to 65 Volts

For use in general train lighting service when a lower voltage lamp cannot be used.

Fitted with medium screw base.

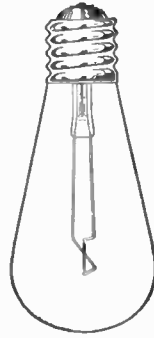
Orders should specify the individual voltage required.



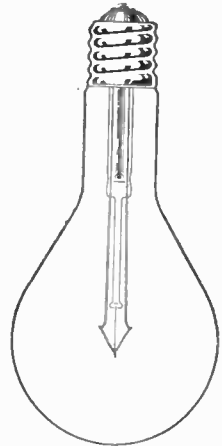
Watts	Style Bulb	Kind	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
15	S-17 Clear	Mazda B	4 ⁵ / ₈	120	III-Special	\$.27
25	S-17 "	"	4 ⁵ / ₈	120	III "	.27
15	G18 ¹ / ₂ "	"	3 ⁹ / ₁₆	120	III "	.35
25	G18 ¹ / ₂ "	"	3 ⁹ / ₁₆	120	III "	.35
50	PS20 "	" C	5 ³ / ₁₆	60	III "	.40
75	PS22 "	"	5 ⁷ / ₈	60	III "	.50
100	PS25 "	"	6 ¹ / ₁₆	24	III "	.60

Sunbeam Street Series

Mazda C Lamps



S-Bulb
6.6 Amperes



P-S Bulb
6.6 Amperes

These lamps are for use on constant current circuits only. The nominal candle-power of these lamps is one-tenth of the lumen rating.

Fitted with mogul screw base.

6.6 Amperes

Lumens	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
600	S24 ¹ / ₂ Clear	7 ¹ / ₈	60	II-Special	\$.85
800	S24 ¹ / ₂ "	7 ¹ / ₈	60	II "	.85
1000	S24 ¹ / ₂ "	7 ¹ / ₈	60	II "	.85
2500	PS35 "	9 ⁷ / ₁₆	24	II "	1.60
4000	PS35 "	9 ⁷ / ₁₆	24	II "	2.30
6000	PS40 "	9 ¹³ / ₁₆	12	II "	2.90

15 and 20 Amperes

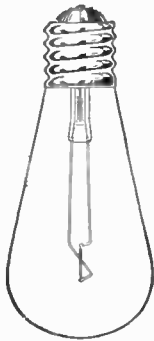
These lamps are ordinarily supplied from a 6.6 ampere circuit with the use of a two-coil or auto-transformer for stepping up the current.

Designed for base up burning position. Lamps ordered for base down burning position supplied at same price.

Lumens	Style Bulb	Over All Length Inches	Amperes	Package Quantity	Consignment Classification	Price Each
4000	PS40 Clear	12 ³ / ₈	15	12	II-Special	\$2.30
6000	PS40 "	12 ³ / ₈	20	12	II "	2.90
10000	PS40 "	12 ³ / ₈	20	12	II "	3.60
15000	PS40 "	12 ³ / ₈	20	12	IV	4.50
25000	PS52 "	13 ¹ / ₈	20	8	IV	7.00

Sunbeam Mazda C Lamps

Street Series



Fitted with mogul screw base. In S24½ bulbs, over all length, 7¼ inches.

The nominal candle-power of these lamps is ¼ of their lumen rating.

Package quantity, 60.

Lumens	Amperes	Consignment Classification	Price Each
600	4, 5.5, 7.5	II-Special	\$.85
800	4, 5.5, 7.5	II "	.85
1000	4, 5.5, 7.5	II "	.85

Sunbeam Mazda C Lamps

Street Series

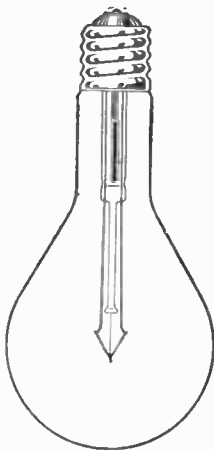
4, 5.5 and 7.5 Amperes

The nominal candle-power of these lamps is one-tenth of their lumen rating.

Fitted with mogul screw base.

Consignment classification, IV.

Clear bulb.



4, 5.5, 7.5 Amperes

Lumens	Style Bulb	Over All Length Inches	Package Quantity	Price Each
2500	PS35	9 7/16	24	\$1.60
4000	PS35	9 7/16	24	2.30
7.5 Amperes				
6000	PS40	9 9/16	12	\$2.90

Sunbeam Mazda B Lamps
For Mine Lighting

For use in lighting mines. Has medium screw base. Volts, 275. Clear bulb.

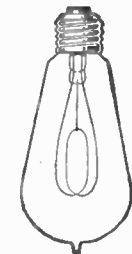
Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
50	P19	3 3/8	120	II-Spec.	\$.47



P-Bulb

Carbon Series Lamps

For Electric Street Railway Service



S19 Bulb
50 and 60 Watts
110-125 Volts
64-Watt
(5 in series)

These lamps are selected for amperes and are labeled for use, five in series on 525, 550, 575, 600, 625 and 650 volts.

Made in S19 bulb, over all length, 5¼ inches.

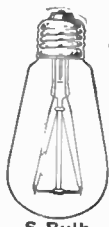
Fitted with medium screw base.

Watts	Efficiency W. P. C.	Package Quantity	PRICE, EACH	
			Clear	Frosted
64	4	250	\$.22	\$.25

Sunbeam Mazda B Lamps

For Country Home Lighting Service

28-32 Volts

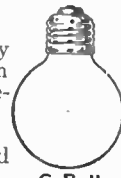


S-Bulb

These lamps are supplied for only one voltage and are adapted for use on circuits the voltage of which varies between 28 and 32 volts.

Fitted with medium screw base.

In ordering specify 28-32 volts and Country Home Lighting.



G-Bulb

Watts	Style Bulb	Over All Length, In.	Package Quantity	Consignment Classification	Price Each
10	S17 Clear	4 5/8	120	I-Special	\$.27
15	S17 "	4 5/8	120	II "	.27
25	G18 1/2 Frosted	3 9/16	120	I "	.40
25	S17 Clear	4 5/8	120	I "	.27
40	S19 "	5 3/16	120	I "	.27

Sunbeam Mazda C Lamps
For Country Home Lighting Service

28-32 Volts

These lamps supplied only for one voltage which varies between 28 and 32 volts. Fitted with medium screw base.

In ordering specify 28-32 volts and Country Home Lighting.



White PS-20 Bulb

White

Watts	Style Bulb	Over All Length Inches	Package Quantity	Consignment Classification	Price Each
15	PS16 White	3 3/8	120	IV	\$.40
25	PS16 "	3 3/8	120	II-Special	.40
50	PS20 "	5 3/16	60	I "	.40

Clear

50	PS20 Clear	5 3/16	60	I-Special	\$.40
75	PS22 "	5 7/8	60	II "	.50
100	PS25 "	6 5/8	24	II "	.60

Carbon Lamps

For Standard Lighting Service



S-14 Bulb
10 Watts
110 Volts



S-17 Bulb
20 and 30 Watts
110 Volts



S-19 Bulb
60 Watts
220 Volts

Carbon lamps are all in straight side bulbs fitted with medium screw base.

110 to 125 Volts

Watts	Efficiency W. P. C.	Style Bulb	Over All Length Inches	Package Quantity	PRICE, EACH	
					Clear	Frosted
10	5	S14	3 1/2	250	\$.22	\$.25
20	4.15	S17	5 1/16	250	.22	.25
30	3.23	S17	5 1/16	250	.22	.25
50	2.97	S19	5 9/16	250	.22	.25
60	2.97	S19	5 9/16	250	.22	.25
120	3	S24 1/2	6	100	.30	.35

220 to 250 Volts

Watts	Efficiency W. P. C.	Style Bulb	Over All Length Inches	Package Quantity	PRICE, EACH	
					Clear	Frosted
35	4.4	S17	5 1/16	250	\$.24	\$.27
60	3.69	S19	5 9/16	250	.24	.27
120	3.7	S24 1/2	6	100	.35	.40

Standard package discounts and allowances on above lamps can be given on orders for not less than a standard package quantity of one type and size of bulb. For any one type and size of bulb, lamps of different voltages, wattages, efficiencies and finish of bulb may be combined in one package.

**Miniature Mazda Lamps
For Flashlight Service**



Mazda-1, 2 Mazda-11 Mazda-13, 14 Mazda-16, 17 Mazda-31

Fitted with miniature screw base.
Unit package quantity, 10 lamps.

Mazda B Lamps for Two-cell Flashlight Batteries

Mazda No.	Bulb	NOMINAL RATING		Price Each
		Volts	Amperes	
1	FE-3¾	2.2	.25	\$.12
11	G-3½	2.33	.27	.12
*14	G-3½	2.4	.31	.15
16	G-4½	2.4	.29	.12

Mazda B Lamps for Three-cell Flashlight Batteries

Mazda No.	Bulb	Volts	Amperes	Price Each
2	FE-3¾	3.3	.25	\$.12
*13	G-3½	3.6	.29	.15
17	G-4½	3.6	.29	.12

Mazda B Lamps for Five-cell Flashlight Batteries

Mazda No.	Bulb	Volts	Amperes	Price Each
31	G-4½	6	.29	\$.12

*Concentrated filament for focusing flashlights only.

**Miniature Mazda Lamps
For Standard Dry Battery Service**



Mazda-19

Mazda-35

Fitted with miniature screw base. Unit package quantity, 10 lamps.

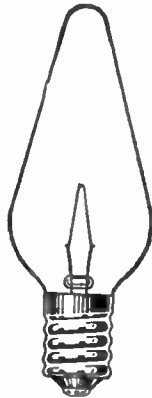
Mazda B Lamps for One-cell Standard Dry Battery

Mazda No.	NOMINAL RATINGS		Bulb	Price Each Clear
	Volts	Amperes		
19	1.25	.60	G-4½	\$.12

Mazda B Lamps for Two Cells of Standard Dry Battery

Mazda No.	Volts	Amperes	Bulb	Price Each
35	2.4	.80	G-5½	\$.12

**Mazda Lamps for Christmas Tree Outfits
Decorations, Etc.**



C-6
4 and 6 Volts

Fitted with miniature screw base.

Unit packages consist of ten lamps of only one voltage, color, finish, shape, and size of bulb.

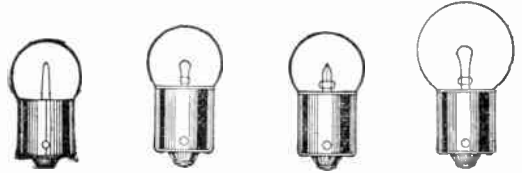
Clear or superficially colored lamps may be supplied in red, blue, green, orange and opal colors.



C-6
15 Volts

Description	Volts	Type Bulb	Price, Each Clear or Superficially Colored
For use on 3 Cells of Dry Batteries	3½	C-6	\$.15
" " 8 in Series on 28-32-volt Circuits	4	C-6	.15
" " on 3 Cells of Storage Battery . . .	6	C-6	.15
" " 8 in Series on 110-125-volt Circuits	15	C-6	.15

**Miniature Mazda Automobile Lamps
Excluding Ford Cars**



Mazda 61 Mazda 63 Mazda 67 Mazda 61

Mazda B Rear and Instrument Lamps

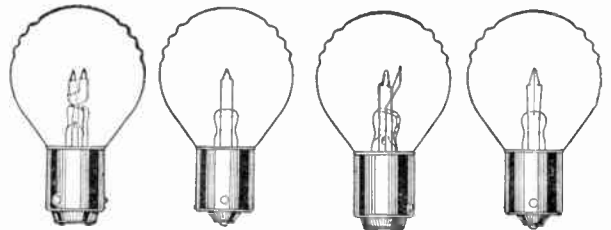
Mazda Lamp No.	Style Bayonet Base	RATINGS ON LAMPS		Style of Bulb	No. in Unit Package	Price Each
		Volts	C.P.			
61	S.C.	3-4	2	G-6	10	\$.20
62	D.C.	3-4	2	G-6	10	.20
71	S.C.	10-24	3	G-6	10	.30
72	D.C.	10-24	3	G-6	10	.30

Mazda B Rear, Instrument, Step Side and Auxiliary Head Lamps

Mazda No.	Style	Volts	C.P.	Style of Bulb	No. in Unit Package	Price Each
63	S.C.	6-8	3	G-6	10	\$.18
64	D.C.	6-8	3	G-6	10	.18
67	S.C.	12-16	3	G-6	10	.22
68	D.C.	12-16	3	G-6	10	.22
87	S.C.	6-8	12	G-8	10	.25
88	D.C.	6-8	12	G-8	10	.25

Mazda B Dome and Panel Lamps

Mazda No.	Style	Volts	C.P.	Style of Bulb	No. in Unit Package	Price Each
81	S.C.	6-8	6	G-8	10	\$.22
82	D.C.	6-8	6	G-8	10	.22
89	S.C.	12-16	6	G-8	10	.30
90	D.C.	12-16	6	G-8	10	.30



Mazda 1110 Mazda 1129 Mazda 1158 Mazda 1141

Mazda C Head and Spot Lamps

Mazda No.	Style	Volts	C.P.	Style of Bulb	No. in Unit Package	Price Each
1110	D.C.	6-8	21	S-11	10	\$.50
1129	S.C.	6-8	21	S-11	10	.35
1130	D.C.	6-8	21	S-11	10	.35
1133	S.C.	6-8	32	S-11	10	.55
1134	D.C.	6-8	32	S-11	10	.55
1141	S.C.	12-16	21	S-11	10	.40
1142	D.C.	12-16	21	S-11	10	.40
1143	S.C.	12-16	32	S-11	10	.60
1144	D.C.	12-16	32	S-11	10	.60

**Miniature Mazda Automobile Lamps
For Ford Cars**

Mazda B Rear, Instrument and Auxiliary Head Lamps

*63	S.C.	6-8	3	G-6	10	\$.18
†72	D.C.	18-24	3	G-6	10	\$.30

Mazda B Rear Lamps

Mazda C Head Lamps

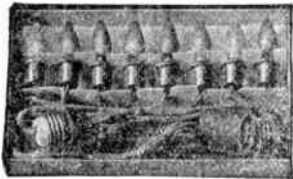
*1129	S.C.	6-8	21	S-11	10	\$.35
†1130	D.C.	6-8	21	S-11	10	.25
‡1138	D.C.	9	27	S-11	10	.40
*1158	D.C.	6-8	21-2	S-11	10	.40
=1158	D.C.	6-8	21-2	S-11	10	.40
‡1160	D.C.	9	21	S-11	10	.35

Mazda C Spot Lamps

†1146	D.C.	18-24	27	S-11	10	\$.60
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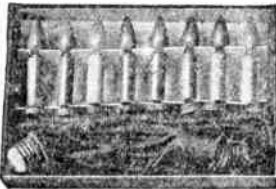
*For cars equipped with 3-cell, lead type, storage battery-generator lighting system. †For use on magneto lighting system. ‡To insure satisfactory service, Mazda 1130 should be operated two in series on magneto lighting system equipped with reactance coil. §To be burned two in series on magneto lighting system not equipped with reactance coil. = For use on Ford and other cars wired for two filament lamps.

Decorative Lighting Outfits



Regular Type

Equipped with a plug on one end and a socket on the other. One eight-light unit may be connected with another as easily as putting a bulb in a socket. As many as ten of these units can be connected in a straight line 130 feet long, consisting of 80 lights. Suitable for decorating lawns, interior and exterior of homes, dance halls, churches, bazaars, etc. There are no junction boxes, clusters, nuts, screws or other accessories. Increased simply by screwing the plug in the end of one outfit into the socket at the end of the other outfit.



Candle Type

Furnished complete with eight assorted color Mazda lamps, green parallel cord, composition green sockets, swivel plug at one end and a fire-resisting socket at the other end.

Price, Regular Type each \$3.75
 " Candle " " 4.50

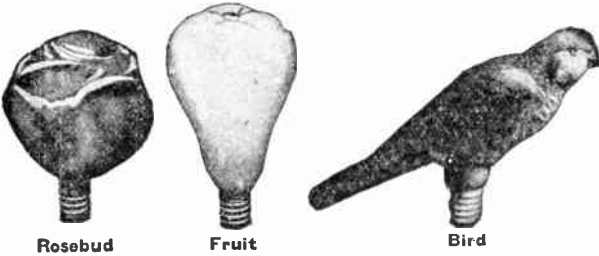
Type C-6 Mazda Lamps for Decorative Outfits



Type C-6 Mazda Lamp

Color	PRICE, EACH			
	For Use 8 in Series 110-125 Volts 15-volt	For Use on 3-cell Dry Battery 3½-volt	For Use on 3-cell Storage Battery 6-volt	For Use 8 in Series 28-32 Volts 4-volt
Clear.....	\$.15	\$.15	\$.15	\$.15
Red.....	.15	.15	.15	.15
Green.....	.15	.15	.15	.15
Blue.....	.15	.15	.15	.15
Orange.....	.15	.15	.15	.15
Frosted (Opal)...	.15	.15	.15	.15

Fancy Lamps for Decorative Outfits



Rosebud

Fruit

Bird

Series type, carbon lamps, 15 volts, to be used eight lamps in series on 110-120 volts.

Description	Price Each
Assorted Rosebuds.....	\$1.00
" Roses.....	1.00
Small Fruits.....	1.00
Large ".....	1.00
Assorted Birds.....	1.00
" Figures.....	1.00



Figure

Etch-O-Lite

Etch-O-Lite is applied by dipping the lamp, or other article to be frosted, in the solution. The coating is allowed to remain on the glass for 1½ or 2 minutes, then it is scraped back into the can and the article washed in water and dried. The gloss is removed from the glass leaving a smooth satin-like frosted surface.



Etch-O-Lite will not harm the hands or clothing. It may be shipped by freight, express or parcel post. Containers are guaranteed against leakage for one year.

If Etch-O-Lite solution becomes too thick, it may be thinned to proper consistency by adding a small quantity of Etch-O-Lite thinner.

The dipping machine is used to secure uniform results when bowl frosting lamps.

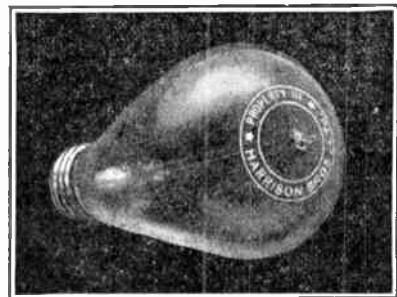
Size Can	Contents Pounds	Price per Can
Small	4	\$6.00
Medium	8	11.60
Large	12	15.60
Price, Thinner, ½-pint Cans		
..... per can		\$1.00
Price, Dipping Machines..... each		3.50

Reed's Etching Outfits



Standard Outfit

The standard rubber stamp outfit for marking lamps will prevent theft by making it impossible to dispose profitably of lamps so marked. It is being successfully used by prominent manufacturers, railroads and office buildings. Full directions with each outfit.



Showing Etched Globe

Special rubber stamp marking outfits for trade marks, patents, dates or other identification of glass articles are made to order. An ordinary ball-pointed steel pen may be used with this ink for writing on glass. Letters are etched into the surface.

One-half pint can Etching Ink makes 10000 to 12000 impressions.

Price, Standard Outfit, including Ink as shown each \$14.00
 " ½-pt. Can Ink..... " 8.50

Cefco Weatherproof Lamp Coloring

For outdoor use. Guaranteed the life of the lamp in any weather or climate. Requires three days to dry after dipping. Has stood a year's test outdoors, without injury. Colors are red, blue, green, amber, canary, and white opal.



Color	SIZE OF CAN		
	7 oz.	15 oz.	30 oz.
Red	\$1.50	\$2.50	\$4.50
Blue	1.50	2.50	4.50
Green	1.50	2.50	4.50
Amber	1.50	2.50	4.50
Canary	1.50	2.50	4.50
White Opal	1.50	2.50	4.50

Permacolor Semi-weatherproof Lamp Coloring

Permacolor is used where a coloring is desired to last for several weeks outdoors, or somewhat longer than Franco coloring indoors. The coloring will stand rough usage without injury and can be removed readily with wood alcohol when desired.

A beautiful semi-opaque effect can be produced by dipping in white opal first. Allow this to dry and then dip into the desired color. Dip with current on. Lamps will dry in 15 minutes.

Permacolor comes in ruby, blue, red, green, moonlight blue, amber, pink, canary, purple, white opal and clear reducer.



Price, 1/2-pint Bottles	each	\$1.00
" 1 " "	"	1.75
" 1 -quart "	"	3.00

Indoor Lamp Coloring



For stage lighting and indoor lamps of all kinds, Franco coloring is satisfactory. Use our clear reducer for toning down the colors if a tint is desired. Moonlight blue, and red are especially fine for stage use. Nothing more exquisite than our white frosting can be secured anywhere. Franco colors are ruby, blue, red, green, amber, moonlight blue, canary, pink, purple, clear reducer and white frosting.

Price, 4-oz. Bottles	each	\$.50
" 1/2-pint "	"	.75
" 1 " "	"	1.35
" 1-quart "	"	2.50

**Mercury Flip-Flop Flashers
For 110-120 Volts A.C. or D.C.**



This flasher is adapted for wall mounting. In this type the arc is broken in a vacuum tube which will last indefinitely under rated load. Size, 4x6 1/4 x 11 inches. Shipping weight, 7 1/2 pounds.

Single-pole

Cat. No.	Watts per Circuit	Action	No. of Wires	Price Each
900	1100	On and Off	2	\$22.00
901	1100	Alternate	2	23.00
Double-pole				
902	2200	On and Off	2	\$28.00
903	2200	" " "	3	29.00
904	2200	Alternate	2	30.00
905	2200	" " "	3	31.00

For 220 volts add \$2.50. Other voltages upon application.

Flash-O-Lite Flashing Plugs

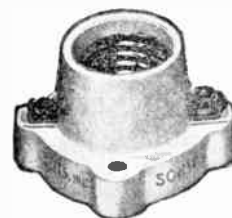


Need no adjustment.

For window displays, store decorations, carnivals, exit signs and burglar alarms.

Cat. No.	Watts	Price Each
1000	60	\$1.50
1001	100	2.00

Flash-O-Lite Sokit Flashers



This is a labor saving flashing socket designed for small window signs, transparencies and similar uses.

Cat. No.	Watts	Price Each
1010	60	\$1.20
1011	100	1.70

No. 1100 Flash-O-Lite Junior Flashers

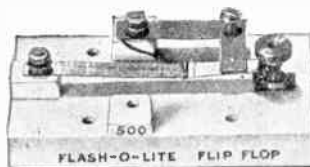
This type operates on the same principle as the Sokit and connects into any circuit like an electric bell.



Cat. No.	Watts	Price Each
1100	60	\$1.00

Flash-O-Lite Flip-Flop Flashers

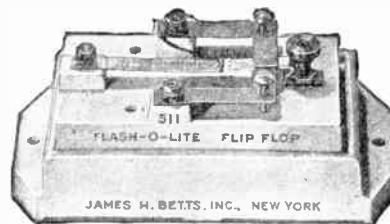
The flasher with the instantaneous Make and Break. Dependable for its rated load.



Cat. No.	Watts	Price Each
500	100	\$2.00
501	200	2.75

Flash-O-Lite Flip-Flop Flashers

Same as No. 500 except that contacts are equipped with extra large platinum-iridium contacts and an arc eliminating condenser in sub-base.



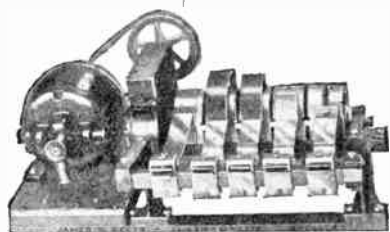
Cat. No.	Watts	Price, Ea.	Cat. No.	Watts	Price, Ea.
502	400	\$6.50	503	600	\$8.90

**Flash-O-Lite Flip-Flop Double Circuit Flashers
110 Volts**

For alternating flashing effects. When contact is broken on one side it flops instantly to opposite contact. Both circuits cannot be on at the same time.

Cat. No.	Watts	Price Each	Cat. No.	Watts	Price Each
510	200	\$4.45	512	600	\$12.25
511	400	8.25	...	...	.....

On-and-off or Spelling Type Sign Flashers



These machines are used to flash one or more circuits such as a whole sign on and off, varied color effects, spelling a word, etc.

Where loads to be broken are in excess of the rated capacity of the switch, the load should be divided among 2 or more switches. Where several switches are used there is an extra charge for feeders, etc.

**Capacity per Switch, D.C., 440 Watts
A.C., 550 Watts**

Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
1-5	1	9¾x13x13	56	\$35.00	\$7.00
2-5	2	9¾x13x13	57	40.00	7.00

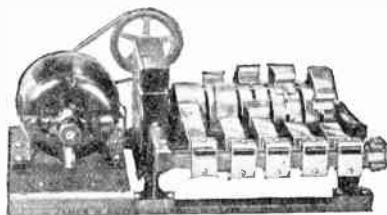
For each additional switch or feeder, add \$3.00 to price.

**Capacity, per Switch, D.C., 880 Watts
A.C., 1100 Watts**

Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
1-10	1	9¾x13x13½	67	\$33.00	\$8.00
2-10	2	9¾x13x15½	69	38.00	10.00

For each additional switch or feeder, add \$5.00 to price.

High-Speed Sign Flashers



This flasher will produce revolving wheels, turning borders, flames, cust, smoke, running water, waving flag, etc. Usually wired in 4 circuits or a multiple of four: 1, 2, 3, 4, etc. All the one's on the first circuit, the two's on the second circuit, etc.

NOTE.—For flags it is preferable to order a special flag flasher at a slight additional cost.

**Capacity, per Switch, D.C., 200 Watts
A.C., 300 Watts**

Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
4-IIS	4	9x13x16	60	\$40.00	\$7.00
8-IIS	8	9x13x22	68	52.00	10.00

For each additional switch or feeder, add \$3.00 to price.

**Capacity, per Switch, D.C., 400 Watts
A.C., 600 Watts**

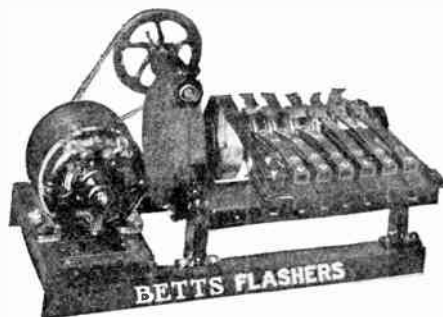
Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
4-IIHS	4	9x13½x19	74	\$48.00	\$8.00
8-IIHS	8	9x13½x28	86	68.00	12.00

For each additional switch or feeder, add \$5.00 to price.

Prices are based on 110-120-volt D.C., or 60-cycle motors.

No. 6C Chaser Sign Flashers

D.C., 200 Watts per Switch—A.C., 300 Watts per Switch



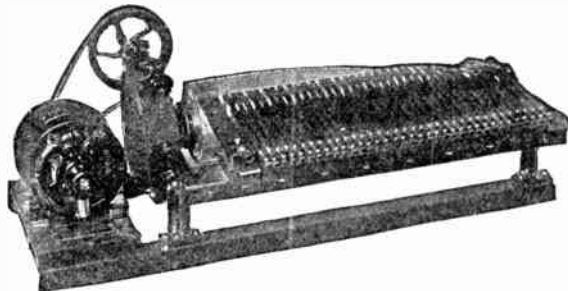
Used for producing crawling snakes, chasing rats, etc. Number of circuits should be a multiple of the number of snakes. For each additional switch or feeder add \$2.50.

Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
6C	6	11x13x16	72	\$46.00	\$9.00

For each additional switch, add \$3.00.

No. 10S Script Sign Flashers

Capacity, 110 Watts per Switch at 110 Volts



Designed for writing on a word one or more lamps at a time, skyrocket, shooting stars, fireworks, etc.

Cat. No.	No. of Switches	Size Inches	Shipping Wt., Lbs.	Price, Each with Motor	Steel Cabinets Extra
10S	10	11x13x15½	66	\$44.00	\$7.00

For each additional switch up to 50, add \$1.25 each; above 50, \$2.00 each.

Instructions for Ordering

Specify number and wattage of lamps to be controlled by each switch. Whether Mazda or carbon lamps. If Mazda whether they are to be used on low voltage transformer. Kind of current, whether direct or alternating. If alternating give number of cycles. Whether two or three-wire system. Voltage.

If design is complicated, give complete description of the sign, and preferably a sketch showing number of lamps per circuit and how they are to be flashed.

NOTE.—Carrying capacity of 220-volt flashers is 50 per cent less.

Prices based on 110-120-volt D.C. or 60-cycle motors.

**Type HS-14 Half Col-O-Cap
For S-14 Bulbs**



Type HS-14 fits standard 1 3/4-inch diameter bulb (4 candlepower), also 2 1/2, 5, 7 1/2 and 10-watt Mazda sign lamps. In ordering specify size of bulb and color of cap.

Color	Price Each	Color	Price Each
Blue.....	\$.20	Purple.....	\$.20
Green.....	.20	Opal.....	.20
Amber.....	.20	Ruby.....	.20
Canary.....	.20		

Type FS Full Col-O-Cap

Type FS-14 Full fits standard 1 3/4-inch diameter bulb (4 candlepower), also 2 1/2, 5, 7 1/2 and 10-watt Mazda sign lamps. Type FP-19 Full fits standard P-19 bulb. Type FS-19 Full fits standard 2 3/4-inch diameter bulb, also 40 and 50-watt Mazda lamps. In ordering specify size of bulb and color of cap.



Color	Price, Each	
	For FS-14	For FS-19
Blue.....	\$.22	\$.45
Green.....	.22	.45
Amber.....	.22	.45
Purple.....	.22	.45
Opal.....	.22	.45
Ruby.....	.22	.45
Canary.....	.22	.45

Betts De Luxe Color Caps



De Luxe Color Cap Disassembled



Betts De Luxe Color Cap Shown on a 100-watt Mazda C Lamp

De Luxe Color Caps are for use in lighting store windows in color, flood lights and spotlights.

They fit all standard reflectors such as X-ray, Holograph and Pittsburgh.

Furnished in five colors, flaming ruby, royal blue, true green, true daylight and golden amber in sizes listed below.

Colors and sizes may be assorted in making up a standard package.

For P-19 Lamps

Type	Std. Pkg.	Price Each
OS-1	5	\$1.85

For 50-150-watt Lamps

S-1	5	\$2.00
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For 200-300-watt Lamps

S-2	5	\$2.50
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For 200-300-watt Spot-flood Lamps

S-3	5	\$2.50
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Matthews Holdfast Lamp Guards



Mill Type for Brass and W. P. Sockets

For Brass Sockets

For W. P. Sockets

The rigid construction of this guard; the fact that it is permanently clamped to the socket; and the spiral spring cushion in the center make it a protection against the breakage of incandescent lamps. The trap which is clamped across the bottom opening prevents the unauthorized removal of lamps. The guard is locked to the socket by bending the set screw.

The hot lamp cannot get closer than one inch to any inflammable material and the guard does not have to be removed from the socket to replace the lamp.

Approved by all insurance companies and underwriters. Guaranteed 10 years. Collars of guards for brass shell sockets are 1 1/4 inches, for weather-proof sockets, 1 1/2 inches.

For New 25 and 50-watt Mill Type Mazda Lamps

For Brass Shell Sockets			For Weather-proof Sockets		
Cat. No.	Size Wire B. W. G.	Price per 100	Cat. No.	Size Wire B. W. G.	Price per 100
MT14B	14	\$84.00	MT14WP	14	\$84.00

For 6, 8, 10, 16 and 32 C. P. Carbon and 15, 25, 40, 50 and 60-watt Mazda Lamps

114B	14	\$80.00	114WP	14	\$80.00
112B	12	100.00	112WP	12	100.00

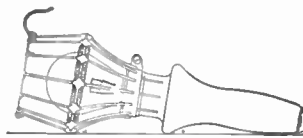
For 50 C. P. Carbon and 75 and 100-watt Type C Pear Shape Mazda Lamps

514B	14	\$110.00	514WP	14	\$110.00
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For 200-watt Type C Pear Shape Mazda Lamps and 100-watt Old Style Straight Side Mazda Lamps

714B	14	\$200.00	714WP	14	\$200.00
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Matthews Handy Holdfast Portables



This device is a combination of a specially designed No. MT14 Holdfast Guard with a hook. It is equipped with an extra strong hardwood handle which completely covers and protects

the socket. All contacts can be reached by loosening the set screw on the collar of the No. MT14 Holdfast Lamp Guard. Note that when Matthews Handy Holdfast Portable is lying on the floor that it touches at three points, and for that reason no excessive strain will be put on the guard or handle if it were accidentally stepped on.

Price, No. 1, Including Lamp Guard, Keyless Socket and Handle Only.....per 100 \$420.00
Price, No. 2, Including Lamp Guard, Push Button Socket and Handle Only.....per 100 480.00

Matthews Holdfast Shades

Metal reflector shade made to fit Nos. 114B, 114WP, 112B and 112WP Holdfast Lamp Guards only.

Holdfast Shades may be included with order for Holdfast Lamp Guards, Holdfast Adjustables to obtain the maximum quantity prices on each specialty.

Price, Holdfast Shades.....per 100 \$90.00



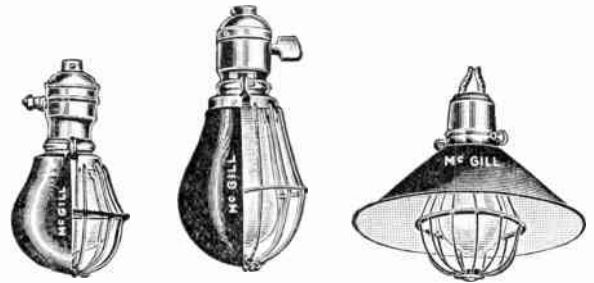


Loxon Lamp Guards

Theft of incandescent lamps is prevented by the use of Loxon lamp guards. These guards enable the lamps to burn their full life.



Reflector Loxon Lamp Guards



No. 1400

No. 1443

No. 1445

The Loxon Lamp Guard reduces the fire hazard from hot or broken lamps.

It is a prevention against theft and makes it possible for the incandescent lamps to burn their full life.

All guards are heavily tinned.

One key furnished with every dozen guards. Extra keys are 19 cents each net.

Loxons are made to fit Condulets, V.V., Unilet or Triplet Receptacles, also aluminum sockets. Sample fitting must accompany order to insure proper fit.

For Mill Type Lamps

Shipping Wt., Lbs. per Car.	Price per Doz.
25	\$6.00
31	6.30
31	6.30

For Regular Mazda Lamps

Cat. No.	SIZE LAMP		Style Socket	Car-ton	Shipping Wt., Lbs. per Car.	Price per Doz.
	Watts	Volts				
1420	25-50	110-220	Brass	144	25	\$6.00
1420 A	25-50	110-220	WP	144	31	6.30
1420 B	25-50	110-220	WP	144	31	6.30
1425	25-60	110	Brass	144	35	\$6.00
1426	40-60	220	"	144	41	6.30
1427 A	25-60	110	WP	144	41	6.00
1427 B	25-60	110	"	144	46	6.00
1428 A	40-60	220	"	144	48	6.30
1428 B	40-60	220	"	144	48	6.30
2443	75	110-220	Brass	144	48	9.00
2444	100	110-220	"	144	56	10.00
2446 A	100	110-220	WP	144	57	10.00
2446 B	100	110-220	"	144	57	10.00
2447	200	110-220	Brass	144	68	12.50
2447 A	200	110-220	WP	144	68	12.50
2447 B	200	110-220	"	144	68	12.50

For Mill Type Lamps

Cat. No.	SIZE LAMP		Style Socket	Car-ton	Shipping Wt., Lbs. per Carton	Price per Doz.
	Watts	Volts				
1400	25-50	110-220	Brass	144	45	\$9.00
1401	25-50	110-220	WP	144	50	9.00

Reflector Loxons for Regular Mazda Lamps

1443	25-40	110	Brass	144	58	\$9.00
1444	25-40	110	WP	144	64	9.00

Cone and Half Shades only for Loxons

Cat. No.	Kind of Shade	Style Socket	Lamp Watts	Car-ton	Wt., Lbs. per Doz.	Price per Doz.
1555	Half Cone	Brass	25-60	144	4	5.50

Gripion Lamp Guards

The Gripion Lamp Guard is fastened to the socket by means of plain screws.

For Regular Mazda Lamps

Cat. No.	SIZE LAMP		Style Sockets	Price, per Dozen
	Watts	Volts		
1500	25-60	110	Brass	\$4.00
*1602 A	25-60	110	W. P.	4.00

For Mill Type Lamps

1608	25-50	110-220	Brass	\$4.00
1608 A	25-50	110-220	W. P.	4.30



No. 1600

*All numbers followed by A fit the following sockets: Bryant, Nos. 9366, 9448 and 9395 porcelain; No. 43310 mica; Paiste, No. 9366 porcelain; General Electric, No. 9366 porcelain; General Electric, No. 60666 composition, new style; Freeman, Nos. 132, 155 and 320 porcelain; P. & S., Nos. 60217 and 116 porcelain; Siemens, No. 43310 composition.

Protector A Lamp Guards

A low priced guard, made of steel wire, heavily tinned, requiring no shade holder and can be quickly put on lamp without tools.

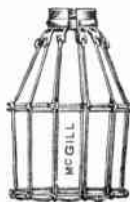
Cat. No.	Size Lamp	Volt	Car-ton	Wt., Lbs. per Gro.	Price per Doz.
1441	25	110	144	25	\$2.80

Protector O Lamp Guards

An open bottom guard enabling quick and easy removal or insertion of lamp and fully protects against breakage.

Heavily tinned.

Cat. No.	Size Lamp	Style Socket	Car-ton	Shp. Wt., Lbs. per Gro.	Price per Doz.	
						1429	40-60	110-220	Brass	144	33	$4.00
1432	40-60	110-220	WP	144	33	4.00



Crescent Wall Guards

Style A fits any standard 3-inch outlet box. Style A1 is same style as A but fits 4-inch outlet box. Style B has removable ring which is attached to wall for 25 and 40 watt lamps only.

Style C wall guard and outlet box cover combined, No. 1439C. No. 1439C is made of bessemer steel wire ribs, stamped rings and plate over cover which will fit a 3-inch or 4-inch outlet box and will take standard outlet box cover receptacles.

Style D wall guard No. 1440 is the same as Style C except that it is fitted with a trap or cover which is equipped with a key locking arrangement. Heavy tinned finish.

Style E wall guard No. 1580 is made for use with Crouse Hinds Company's Types J and K condulets. Heavy tinned finish.

Style F No. 1581, same as No. 1580 except furnished with locking attachment.



No. 1436A

Cat. No.	Style	DIMENS., IN.		Wt., Lbs. per Doz.	Price Each
		Diam.	Depth		
1436	A	2 13/16	5 3/4	9	\$1.20
1438	A1	3 1/8	6 1/2	9	1.40
1437	B	3 1/8	6 1/2	9	1.80
1439	C	3 1/8	5 5/8	12	1.20
1440	D	3 1/8	5 5/8	13	1.60
1580	E	3 1/8	6	9	1.40
1581	F	3 1/8	6	10	1.80
1590	100-150 Watt	3 1/2	6 7/8	10	2.50
1591	200 Watt	4 1/8	8 1/4	12	3.00

Hubbell Non-locking Type Lamp Guards

For Brass Shell Sockets
No. 5573—15 to 60 Watts

Schedule E

Price, per 100	Price, per 100		
	Less Than 10	10 to 49	50 to 99
\$25.00	\$20.75	\$19.40	\$18.00
\$16.60	\$15.90	\$15.25	.....

No. 5578—75 Watts

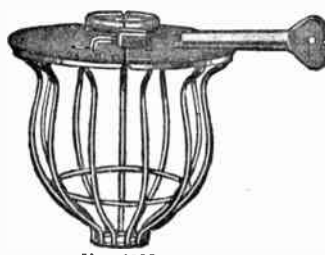
Price, per 100	Price, per 100		
	Less Than 10	10 to 49	50 to 99
\$30.00	\$23.80	\$22.20	\$20.60
\$19.00	\$18.25	\$17.45	.....



Hubbell Lamp Guards

For Mill Type Lamps

Schedule E



No. 6992



No. 6995

Locking Type

Cat. No.	Size Lamp Watts	Style Socket	Cat. No.	Size Lamp Watts	Style Socket
6992	25-50	Brass	6993	25-50	W. P.
PRICE, PER 100					
Cat. No.	Price Each Less Than 10	750 and Over	450 to 749	150 to 449	100 to 99
6992	\$.35	\$20.55	\$21.45	\$22.40	\$24.25
6993	.35	20.35	21.30	22.20	24.05
					25.90
					\$26.10
					\$27.80

No. 5766 Hubbell Lamp Guards with Half Reflector

For Brass Shell Sockets
15 to 60 Watts

Schedule E



Separate basket for No. 5766 with reflector, 21 cents list. Top with collar, 12 cents list.

Separate reflectors for this guard, \$9.00 per hundred.

Price Each Less Than 10	PRICE, PER 100					
	10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
\$.33	\$28.95	\$27.00	\$25.05	\$23.15	\$22.20	\$21.20

Non-locking Type
Flaring Bottom

Cat. No.	Size Lamp Watts	Style Socket	Cat. No.	Size Lamp Watts	Style Socket
6995	25-50	Brass	6996	25-50	W. P.
PRICE, PER 100					
Cat. No.	Price Each Less Than 10	750 and Over	450 to 749	150 to 449	100 to 99
6995	\$.16	\$10.40	\$10.85	\$11.35	\$12.30
6996	.16	10.00	10.50	10.95	11.85
					12.75
					\$13.25
					\$14.20

Separate baskets for Nos. 6992, 6993, guards, 15 cents each. Tops only, 20 cents each, list.

Hubbell Flared Bottom Type Lamp Guards

No. 5485—15 to 60 Watts

Schedule E



Price, per 100	Price, per 100			
	Less Than 10	10 to 49	50 to 99	100 to 149
\$20.00	\$17.85	\$16.65	\$15.50	
\$14.30	\$13.70	\$13.10	.....

No. 5487—75 Watts

Price, per 100

Price, per 100	Price, per 100					
	Less Than 10	10 to 49	50 to 99	100 to 149	150 to 749	750 and Over
\$23.00	\$20.00	\$18.65	\$17.30	\$16.00	\$15.30	\$14.65

Hubbell Non-locking Type Lamp Guards

Schedule E

For Brass Shell Sockets

No. 5691 is for 15, 25, 40 and 60-watt lamps. No. 5692 is for 75-watt lamps.

For Weatherproof Sockets

No. 5693 fits 15, 25, 40 and 60-watt lamps and No. 5694, 75-watt lamps.



Price Each Less Than 10	PRICE, PER 100					
	10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
\$691 .16	\$14.20	\$13.25	\$12.30	\$11.35	\$10.85	\$10.40
\$692 .20	16.65	15.55	14.40	13.30	12.75	12.20
\$693 .16	13.65	12.75	11.85	10.95	10.50	10.00
\$694 .20	16.65	15.55	14.45	13.35	12.80	12.25

Hubbell Locking Guards for Bottom Reflectors

Schedule E



These guards are constructed of strong steel wire, heavily tinned and electro welded. They may be readily adapted to slight variations in reflector sizes.

The locking device is unique and decidedly effective.

Cat. No.	Size Reflector In.	WILL FIT REFLECTORS VARYING IN SIZE	
		Min. Diam., In.	Max. Diam., In.
6650	6½	6½	6¾
6652	8	7½	8¼
6653	10	9¾	10½
*6655	12	11¾	12½
*6657	14	13¾	14½
*6659	16	15¾	16½
*6660	18	17¾	18½

Price Each Less Than 10	PRICE, PER 100					
	10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
6650	\$.30	\$29.00	\$28.00	\$25.95	\$24.90	\$23.85
6652	.40	37.40	36.10	33.40	32.10	30.75
6653	.48	45.20	43.60	40.35	38.75	37.15
*6655	.57	53.15	51.25	47.50	45.60	43.70
*6657	.71	65.85	63.20	58.55	56.20	53.85
*6659	.92	86.10	83.00	76.85	73.80	70.70
*6660	1.00	96.00	92.00	85.50	83.00	80.50
						\$77.60

When placing orders for locking guards for weatherproof sockets, specify the make and catalogue number of the socket with which the guard is to be used. This will insure shipment of proper style guards.

*Packed in bulk, not in cartons. One key is furnished with each carton of locking guards. Extra keys, 5 cents each, list.

Hubbell Locking Type Lamp Guards

Schedule E



For Brass Shell Sockets

Cat. No.	Size Lamps Watts	Style Socket
5685	15-25-40-60	Brass
5635	75	"
5762	100-200	"
6410	150-250	"

Cat. No.	Price Each Less Than 10	PRICE, PER 100					
		10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
5685	\$.35	\$28.00	\$26.10	\$24.25	\$22.40	\$21.45	\$20.55
5635	.40	34.95	32.65	30.30	27.95	26.80	25.65
5762	.50	44.10	41.15	38.20	35.30	33.80	32.35
6410	.80	71.35	66.60	61.85	57.10	54.70	52.30

For Weatherproof Sockets

Cat. No.	Size Lamps Watts	Style Socket	Cat. No.	Size Lamps Watts	Style Socket
5730	15-25-40-60	W.P.	5820	100-200	W.P.
5731	75	W.P.	6411	150-250	W.P.

Cat. No.	Price Each Less Than 10	PRICE, PER 100					
		10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
5730	\$.35	\$27.80	\$25.90	\$24.05	\$22.20	\$21.30	\$20.35
5731	.40	34.35	32.05	29.75	27.50	26.35	25.20
5820	.53	46.50	43.40	40.30	37.20	35.65	34.10
*6411	.85	73.75	68.85	63.90	59.00	56.55	54.10

Separate baskets for Nos. 5685 and 5730 guards, 15 cents. Tops only, 20 cents. Separate baskets for Nos. 5635 and 5731 guards, 17 cents. Tops only, 23 cents. Separate baskets for Nos. 5762 and 5820 guards, 23 cents. Tops only for No. 5762 guards, 27 cents.

Tops only for No. 5820, 30 cents.

Hubbell Guards With Half Reflector

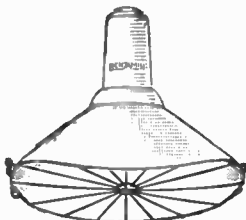
No. 5764—For Brass Shell Sockets
15 to 60 Watts

Price Each Less Than 10	PRICE, PER 100		
	10 to 49	50 to 99	100 to 149
\$.40	\$36.55	\$34.10	\$31.70
150 to 449	PRICE, PER 100		750 and Over
	450 to 749	750 and Over	750 and Over
\$29.25	\$28.05	\$26.80	



No. 5765—For Weatherproof Sockets
15 to 60 Watts

Price Each Less Than 10	PRICE, PER 100					
	10 to 49	50 to 99	100 to 149	150 to 449	450 to 749	750 and Over
\$.40	\$36.35	\$33.90	\$31.50	\$29.10	\$27.85	\$26.65



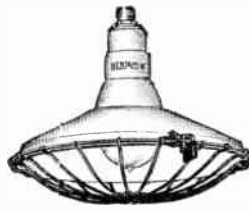
Benjamin Wire Guards

For Elliptical Angle Reflectors

Heavy steel wire, tinned. Fittings are galvanized.

Cat. No.	For Reflectors Nos.	Std. Pkg.	Price Each
1320	5522, 5525	10	\$1.25
1321	5526	10	1.50
1322	5537, 5538	10	2.00

Benjamin Locking Pendent Guards



This guard has grooved band and eye bolt for attaching to bead of reflector. A lock-nut for fastening ground wire protects lamp against static currents. Diameter given is that of the reflector which the guard fits. For padlock with two keys add 65 cents to price.

Heavy steel wire is tinned; fittings, galvanized. Std. pkg. 10.

Cat. No.	SIZE, INCHES		Price Each	Cat. No.	SIZE, INCHES		Price Each
	Diam.	Depth			Diam.	Depth	
1378	7	1 1/4	\$1.75	1386	12	2 3/4	\$2.00
1380	8	1 1/2	1.80	1388	14	4	2.15
1381	8 1/4	1 1/2	1.80	1390	15	6 3/4	2.50
1382	9	1 3/4	1.85	1392	16	5	2.70
1383	10	2 3/4	1.90	1394	18	5 3/4	3.00
1385	11 3/8	2	2.00	1396	20	7	3.50

Benjamin Locking Ceiling Guards



Has hinge and fastening plate opposite hinge; attached by screws. For brass padlock, two keys, add 65 cents. Heavy steel wire, tinned. Fittings are galvanized.

Cat. No.	SIZE, INCHES		Std. Pkg.	Price Each
	Diam.	Depth		
1350	10	7	10	\$1.60
1352	12	8	10	2.00
1354	14	9	10	2.50
1356	16	6 3/4	10	2.80
1358	18	8 3/4	10	3.50
1360	20	11	10	4.00

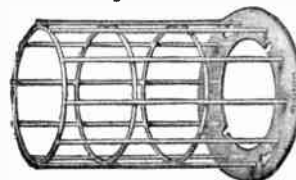
Benjamin Locking Ceiling Guards



The two-piece locking ceiling guards Nos. 1362-1375 have strong cylindrical upper guard adapted for attaching to the ceiling by three or more screws, and a shallower portion hinged to it at the bottom. They are particularly designed for single unit ceiling fixtures. Heavily tinned after parts are welded. For brass padlock with two keys add 65 cents.

Cat. No.	DIMEN., IN.			Std. Pkg.	Price Each
	Outside Diam., Top	Opening Diam., Bottom	Height Over All		
1362	13 1/2	10 1/2	9 3/4	10	\$3.00
1366	13 1/2	10 1/2	13 3/4	10	3.50
1370	16	13 1/2	16	10	4.50
1371	18 1/4	15 1/2	19 1/2	10	4.75
1372	20 1/2	17 1/2	17 3/4	10	5.00
1374	20 1/4	17 1/2	22 1/2	10	6.00
1375	24 1/4	21 1/2	22 1/2	10	7.00

Benjamin Outlet Box Lamp Guards



Adapted for low ceilings, side walls, foot lights, etc. Base is slotted to fit 3 1/4 or 4-inch boxes; will take 60 and 75-watt lamps. Heavily tinned after parts are welded.

Cat. No.	Diam. In.	Depth In.	Std. Pkg.	Wt. Lbs.	Price Each
1400	4	5 3/4	10	1/2	\$9.00

Thumb Switch Type Portable Lamp Guards

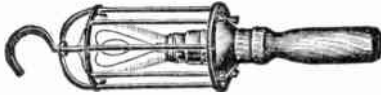


One of the best all around guards for the private and public garage, basements, etc. It has a non-breakable lever socket for one hand operation.

Price, No. 2003, to fit 25 or 50-watt Lamps.....each \$2.80

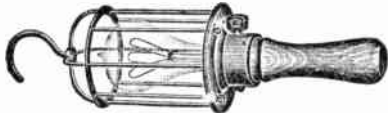
Crescent Portable Lamp Guards

A strong and convenient portable, made of Bessemer steel, copper-plated. It takes any 3/8-inch keyless socket, but is furnished without socket. Standard brass.



Price, No. 4645, to fit 40-watt Lamps.....each \$2.50
 " " 4676 " " 60 " " " " " " " " " " " " 2.50

Bulldog Portable Lamp Guards

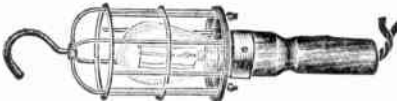


Furnished with key or keyless socket, securely embedded in handle, giving a firm, rigid base.

Price, No. 4675, Key Socket to fit 60-watt Lamps..ea. \$3.50
 " " 2590 Keyless Socket to fit 60-watt Lamps.. " 3.50

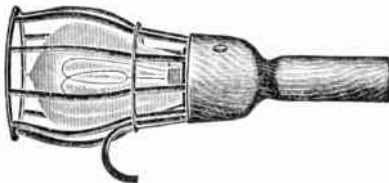
Dreadnaught Portable Lamp Guards

A strong portable guard made of Bessemer steel, built to withstand hard usage. Has a porcelain keyless socket fitted with spring contact firmly embedded in handle. Metal part, copper-plated finish.



Price, No. 4000, to fit 60-watt Lamps.....each \$3.50

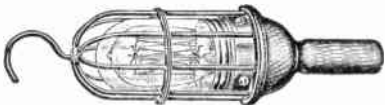
National Portable Lamp Guards



One-piece; made of steel, heavily tinned, with porcelain keyless weather-proof socket. No. 1451 for 40-watt lamp; No. 1452, 60-watt. Price...each \$2.50

Safety Vapor-proof Portable Lamp Guards

Designed to meet the requirements of the garage or wherever gases or inflammable materials may be used. Has heavy steel frame, strong handle, handy grip hook and vapor-proof receptacle. Heavily tinned finish.



Price, No. 3001, to fit 25-watt Lamps.....each \$5.00

Cable Rack Portable Lamp Guards

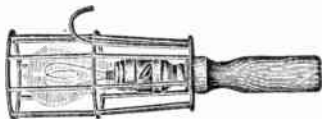


Furnished with key or keyless socket securely embedded in handle. Takes 60-watt, 110-volt mazda lamp,

Price, No. 2000, with Key Socket.....each \$2.80
 " " 2001 " Keyless Socket..... " 2.80

Monitor Portable Lamp Guards

A low priced guard furnished without socket. Prevents breakage and helps to reduce danger from hot and broken lamps.



Price, No. 1453, to fit 40-watt Lamps.....each \$1.70
 " " 1454 " " 60 " " " " " " " " " " " " 1.80

No. 445 R & S Bung-hole Lamps

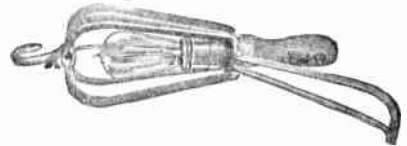


Made entirely of brass and fitted with special 16 c.p. waterproof lamp and stuffing gland for cable.

Price No.445, with Special Lamp.....each \$7.70
 " " 391, Ex. Lamp, 110 Volt..... " 1.10

R & S Non-Watertight Hand Portables

Extra strong, galvanized steel, with hardwood handle and No. 180 weatherproof keyless socket.



Price, No. 473.....each \$3.30
 " " 476..... " 3.30

No. 422 R & S Watertight Hand Portables



Cast brass body, flat brass wire guard, hardwood handle with stuffing gland for cable and screw type globe No. 806.

Price, No. 422.....each \$4.40

No. 222 R & S Watertight Hand Portables

Cast brass body, flat brass wire guard, hardwood handle with stuffing gland for cable and screw type globe No. 806.



Suitable for 40-watt Tungsten lamp.
 Price, No. 222, with Switch.....each \$6.10

No. 528 R & S Watertight Hand Portables

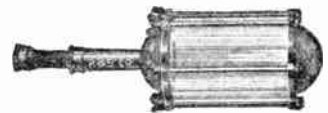


Cast brass body, round brass wire guard, hardwood handle, with stuffing gland for cable and flared type globe No. 870, absolutely vapor proof. Suitable for Edison base ball lamp.

Price, No. 528.....each \$5.50

No. 477 R & S Special Watertight Hand Portables

Extra heavy brass lamp for Submarine use fitted with heavy glass cylinder and flexible support with stuffing gland for cable.



Price, No. 477.....each \$16.50

No. 517 R & S Watertight Hand Portables

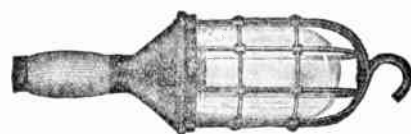


Strong, all brass body and round wire guard with hardwood handle stuffing gland for cable and flared type globe No. 882.

Price, No. 517.....each \$8.00

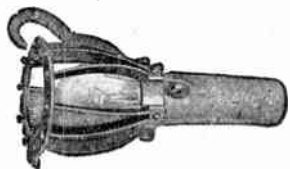
No. 519 R & S Watertight Hand Portables

All cast brass body, round wire guard with cast brass rings, hardwood handle, stuffing gland for cable and screw type globe No. 806.



Price, No. 519.....each \$6.00

Benjamin Fibre Hand Portable Lights



No. 162

For use of repair men in homes, factories, garages, and on telephone and power switchboards. The light weight portable is shockproof because it is made of non-conductive materials. Socket is so mounted that springs which protect lamp from breakage are effective. Has varnished hard maple handle and strong fibre guard and hook. Will not roll when placed on a flat surface. Fibre half shade keeps glare out of user's eyes. 25 or 50-watt mill type lamps should be used.

No. 165, equipped with 2 adjustable hooks, is especially convenient around switchboards and distributing frames.

Cat. No.	Description	Std. Pkg.	Wt. Lbs.	Price Each
162	With 1 Hook.....	10	1 1/2	\$2.40
165	" 2 Hooks.....	10	1 1/2	2.50

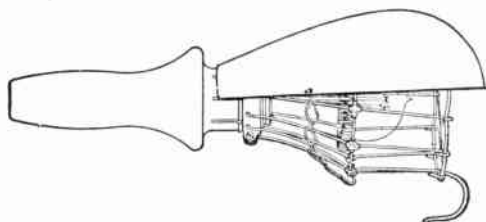
Benjamin Vapor Proof Hand Portables



This portable light is handy for use in cramped places and also a safe light in the presence of dangerous gases and vapors. AT-10 25 to 60 watt tubular lamp is protected by a removable, galvanized metal guard with hinged hook, and vapor proof globe. Wooden handle is black and is furnished with stuffing gland. Vapor proof globe only lists at 50 cents each. Prices do not include lamps.

Cat. No.	Description	Std. Pkg.	Wt. Lbs.	Price Each
259VP	With Stuffing Gland in Handle..	10	18	\$3.80
261VP	Less " " " " " "	10	17	3.40

Matthews Holdfast Portables



The No. 4112 is a combination of a specially designed Holdfast Guard with a hook, otherwise the same as 112 W.P. Holdfast Guard, a heavy aluminum weather-proof socket and a reinforced hardwood handle.

The No. 4112S is the same as No. 4112 but has a holdfast shade.

Price, No. 4112	Holdfast Portable.....	per 100	\$440.00
" 4112S	" " " " " "	"	500.00

Matthews Hold-fast Lamp Changers



Price, No. 2	for 15-60-watt Mazda Lamps...each	\$12.00
" 3	" 60-150-watt Mazda Lamps, Up to Five Inches in Diameter.....	each 14.00

Adaptable Lamp Changers



Fits any style of incandescent lamp from 8 C.P. to 100 watts. Furnished without steel poles in 5 1/2-foot sections as desired. In ordering poles, specify length.

Price, Changer Only.....	each	\$6.50
" Steel Pole.....	per section	4.50

Two-ball Cord Adjusters



These adjusters permit the lengthening of the cord to three times its normal length, thereby giving a very wide range to the lamp. When not in use the lamp is pushed up toward the ceiling where it is out of the way.

Style A

Style A is for factories, shops, garages, stock-rooms, etc.

Price, Black.....	each	\$1.15
" Gold.....	"	1.15
" Aluminum.....	"	1.15
" Special Finishes.....	"	1.50

Special finishes are white, blue, green, etc.

Style B

Style B is used in offices, homes, public buildings, etc. It has a polished metal surface and is well finished.

Price, Polished Brass.....	each	\$1.85
" Oxidized ".....	"	1.85
" Brush Brass.....	"	1.85
" Special Finishes.....	"	2.10

Special finishes are nickel, oxidized copper, etc. When equipped with extra heavy loaded lower balls for use with heavy shades, add 40 cents each to above prices.

Automatic Extension Reels

Especially adapted for use in garages, machine shops, etc. Equipped with 25 feet of re-enforced cord, lamp socket, and guard.

Attached to ceiling, beam or conduit. A swivel joining enables lamp to be carried in any direction from reel, returning it automatically when not in use. An automatic lock holds the lamp at any desired distance from the reel.

This reel is approved by the underwriters.

Finished in black japan.

Packed one in package.

Weight of package, 9 pounds.

Price.....each \$15.00



Nos. 1403 and 4635 Wood Adjusting Balls

Made of hard wood and enameled a glossy black.

Price, No. 1403, for Type C Cord.....each \$1.14

Price, No. 4635, Re-enforced Cord.....each .14



Universal Cord Spools

Hard wood, black enameled. Standard size, 3 3/4 inches long, takes 6 feet of cord; Factory size, 5 1/2 inches long, takes 12 feet of cord.

Price, No. 1417, Standard Size.....each \$.07

" 1418, Factory "....." .10

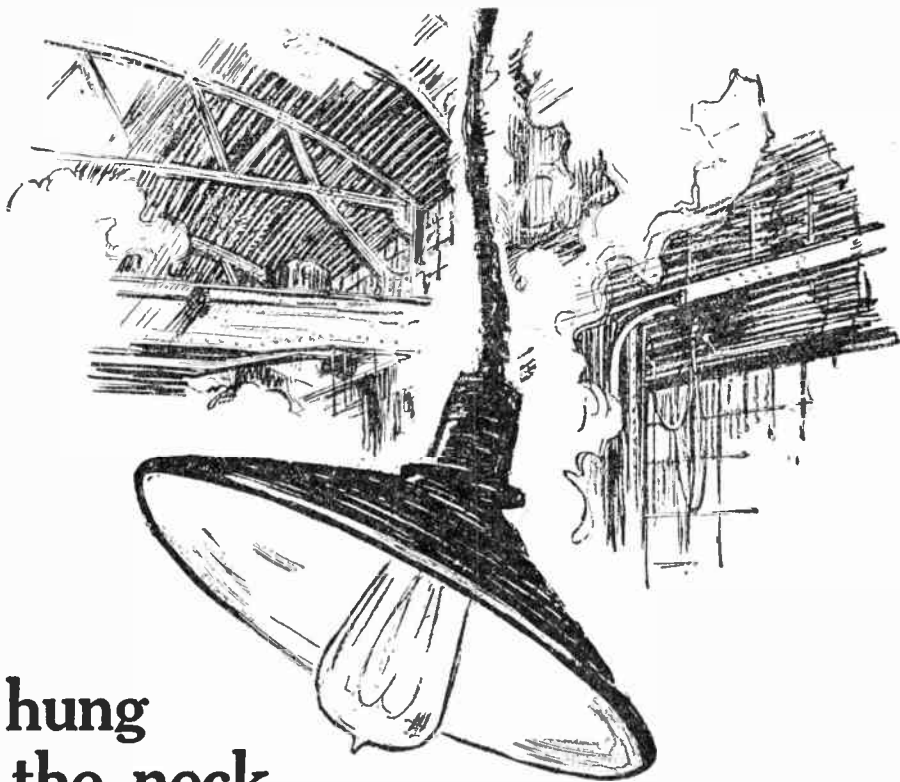
" 1419, for Re-enforced Cord....." .12



Bryant Socket Handles



Cat. No.	Sched. ulc	For Cord No.	Hole In.	Nipple In.	Car- ton	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
1240	H	16	3/2	1/8	25	100	17	\$.14
1388	H	16	1 1/2	3/8	25	100	17	.14

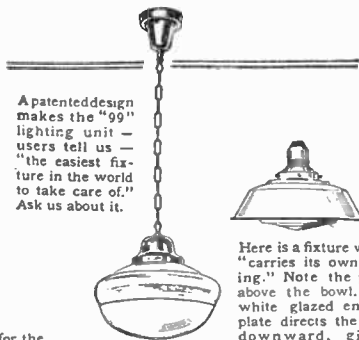


To be hung by the neck until dead!

SWINGING on a frayed cord, many an ancient electric fixture lingers long after it has served its usefulness. If any like this one are still hanging on in your shop or office, give them decent burial in the junk heap. Clear the way for the more efficient, better-looking units now available to up-to-date business — units that mean safer, pleasanter working conditions and greater production.

That light can be made a real tool of production is a fact proved by many factory owners. In one typical instance improved fixtures were selected, and installed by an expert with an eye to strategic location. Result — gloom and glare were alike corrected, the operatives could now see what they were doing, and production increased 25 per cent.*

There may be shortcomings in your present layout not so apparent as an obsolete fixture but many times more wasteful. Call in a dependable contractor or us to advise you on an adequate and economical installation.



A patented design makes the "99" lighting unit — users tell us — "the easiest fixture in the world to take care of." Ask us about it.

Here is a fixture which "carries its own ceiling." Note the plate above the bowl. This white glazed enamel plate directs the light downward, giving splendid results even where ceiling and walls are dark.

*Write us for the full facts on this and other examples of light as a producer.

Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Illumination Design

BY PERMISSION OF ENGINEERING DEPT. NATIONAL LAMP WORKS
OF G. E. CO., CLEVELAND, OHIO

Calculations for Lighting Installations

In Table 3 is indicated the lamp wattage which must be supplied per square foot of floor area to produce standard intensities of illumination for various classes of service, when modern reflecting and diffusing equipments of efficient design are used. While not necessary for the calculation of a lighting installation as outlined below there are included in the table these standard values of illumination intensity expressed in foot-candles. They are given as a reference for those who have a foot-candle meter, a small portable instrument for measuring the intensity of illumination of any point, and are therefore in a position to check up the lighting in various interiors. These values will also prove useful to any whose fuller knowledge of illumination design enables them to calculate accurately the exact results for specific units.

For each location two ranges of values are given under "Watts per Square Foot." The proper value for a given interior will generally fall between these two sets of figures. It will depend upon the proportions of the room to be lighted. Where the ceiling is very high compared with the width of the room, there is a large amount of wall area to absorb light and a higher value of watts per square foot will be required than for a wide, low room.

The values for large rooms, Table 3, apply where the width is 4 to 5 times the average height of the ceiling. Small rooms are assumed as those in which the width is not more than 1½ times the ceiling height. Rooms of intermediate proportions will require correspondingly corrected values.

To plan a system of general illumination, proceed as follows:

1—Select reflecting or diffusing equipment suited to the class of installation, having regard for total light output, the distribution of light on surfaces in various planes, glare directly from the units or reflected from polished surfaces, the density of shadows cast and the maintenance required. In Table 1 the more common types of lighting unit are analyzed with reference to these fundamental considerations.

2—Determine from Table 3 the correct value of lamp wattage per square foot of floor area for a room of the given proportions and class of work carried on.

3—Multiply the total area of the room in square feet by the selected value of watts per square foot. This will give the total lamp wattage required.

4—Determine from Table 2 the proper spacing distance for the permissible or desired mounting height, (note that mounting height is the vertical distance between working surfaces and lighting sources).

5—With approximately this spacing, lay out a symmetrical arrangement of outlets and determine the total number required.

6—Divide the total wattage (see 3 above) by the total number of outlets. The result will indicate the approximate wattage of each lamp. From this it will be evident what standard size, 75-watt, 100-watt, 150-watt, etc., should be selected. When in doubt install the larger size of lamp rather than the smaller.

The required value of watts per square foot even for a given intensity and size of room will still be subject to variation, depending upon the reflecting properties of the ceilings, walls and work surfaces, the efficiency of the reflectors and diffusing devices, the size of lamp employed and the character of maintenance service provided. The more decorative equipments are usually less efficient. Somewhat lower wattages than those indicated may be sufficient where the ceiling and walls are very light in color, where the most efficient reflectors of the types employed in the respective classifications are used, the largest sizes of lamps employed, and the lighting units kept free from dust. Likewise, somewhat higher values than those called for may be required where ceilings and surrounding surfaces are very dark, inefficient accessories are supplied, the smallest sizes of Mazda C lamps are employed, or the lighting units are cleaned only at long intervals.

A Guide to the Selection of Reflecting Equipment

It is important that good reflecting equipment be installed. The luminaires shown in these charts illustrate certain types. For example, No. 15 and No. 16 show units of a general type of which there are a great variety made by various manufacturers. Of two or more units of the same type the choice should be governed by considerations of brightness, diffusion, absorption, appearance, and cost.

Illumination on Horizontal Surfaces

Illumination on horizontal surfaces is a prime requisite in offices, drafting rooms and those shops where the problem is to provide the best illumination for sustained vision of flat surfaces on the horizontal or slightly oblique planes in which papers, books and other flat objects are usually examined.



Illumination on Vertical Surfaces



Illumination on vertical surfaces of work or machine parts is fully as important as the lighting of the surface in the horizontal plane. In a consideration of the amount of light necessary for factory illumination, the criterion must be the intensity on all working surfaces, vertical, horizontal, etc.

Favorable Appearance of Lighted Room

Favorable appearance of lighted room refers only to the general or casual effect produced by the complete system and is not intended to rate the unit as to satisfaction from the standpoint of good vision or freedom from eye fatigue.



Direct Glare

This is the most frequent and serious cause of bad lighting. It results among other things from unshaded or inadequately shaded light sources located within the field of vision, or from too great contrast between the bright light source and a dark background or adjacent surfaces.



Reflected Glare

Reflected glare from polished working surfaces is particularly annoying because the eyes are by nature especially sensitive to light rays from below. The harmful effects of this specular reflection can be minimized.



Shadows

Shadows, differences in brightness of surfaces, are essential in observing objects in their three dimensions but are of little value in the observation of flat surfaces. Where shadows are desirable, they should be soft and luminous, not so sharp and dense as to confuse the object with its shadow.



Maintenance

Maintenance depends upon contour of reflector, construction of fixture and condition of ceiling. The rating is based upon the likelihood of breakage, the labor involved in maintaining the units at comparable degrees of efficiency and indication given of need of cleaning.



A Guide to the Selection of Reflecting Equipment

Choice of Reflecting Equipment

Various lighting units are rated in accordance with seven fundamentals, illustrated on following page. The importance of these criteria is different for different classes of work. It must be emphasized that relative importance of various criteria should be carefully weighed with respect to the particular problem at hand. In an office the criteria would rank in importance: (1) direct glare; (2) reflected glare; (3) shadows; (4) efficiency based upon illumination of horizontal; (5) maintenance; (6) vertical illumination. Where lamps are to be hung above a crane in a foundry, the order of importance would be: (1) efficiency based upon illumination on horizontal; (2) vertical illumination; (3) maintenance; (4) shadows; (5) direct glare; (6) reflected glare.

In chart best rating given is A+; D, the lowest, indicates that an installation of units so rated in any particular, will very likely prove unsatisfactory in an installation where this factor is important. Ratings B and C while not equal to A, are decidedly superior to rating D. Rating B, C+ or C in certain respects does not disqualify a unit provided that in the essential requirements of a given location, the unit is rated A or B+.

Table No. 1

Direct Lighting Porcelain Enamel Reflectors

LIGHTING UNIT	EFFICIENCY BASED UPON ILLUMINATION OF HORIZONTAL OR APPLICABLE IN VERTICAL		FAVORABLE APPEARANCE OF LIGHTED ROOM	DIRECT GLARE	REFLECTED GLARE	SHADOWS	MAINTENANCE
	EFFICIENCY	EFFICIENCY					
1 Clear Lamp 90° to 180°-90°	A+	B+	C+	C	D	C+	A+
2 Best Exposed Lamp 90° to 180°-90°	A-	B	B	B+	B	B+	A-
3 Glass Enamel Reflector 90° to 180°-75°	B+	B	A-	A-	B+	A-	B+
4 Clear Lamp 90° to 180°-90°	B+	B-	C	C+	D	C	A
5 Best Exposed Lamp 90° to 180°-90°	B	C+	C	B	C+	C+	B+
6 Flat Cone Lamp 90° to 180°-90°	B	C+	C+	C+	D	C	B+
7 Clear Lamp 90° to 180°-90°	B	B	C	D	D	C	A+

Direct Lighting Open Glass Reflectors

LIGHTING UNIT	EFFICIENCY BASED UPON ILLUMINATION OF HORIZONTAL OR APPLICABLE IN VERTICAL		FAVORABLE APPEARANCE OF LIGHTED ROOM	DIRECT GLARE	REFLECTED GLARE	SHADOWS	MAINTENANCE
	EFFICIENCY	EFFICIENCY					
8 Clear Lamp 90° to 180°-90°	B+	B	B+	C+	D	B-	B
9 Best Exposed Lamp 90° to 180°-90°	B	B-	A-	B-	B-	B+	B-
10 Clear Lamp 90° to 180°-90°	A+	B+	B+	B	D	C+	A-
11 Best Exposed Lamp 90° to 180°-90°	B+	B-	A-	B+	B-	B	B
12 Clear Lamp 90° to 180°-90°	A	B	C	C+	D	C	A-
13 Best Exposed Lamp 90° to 180°-90°	B	C+	C	B-	C	C+	B-
14 Clear Lamp 90° to 180°-90°	A+	A-	B+	C+	D	C+	B-

A Guide to the Selection of Reflecting Equipment

Table No. 1—Continued

Direct Lighting Enclosing and Semi-enclosing Units

LIGHTING UNIT	EFFICIENCY BASED UPON ILLUMINATION OF HORIZONTAL OR APPLICABLE IN VERTICAL		FAVORABLE APPEARANCE OF LIGHTED ROOM	DIRECT GLARE	REFLECTED GLARE	SHADOWS	MAINTENANCE
	EFFICIENCY	EFFICIENCY					
15 Clear Lamp 90° to 180°-90°	B-	B-	A	B-	B	B+	B+
16 Clear Lamp 90° to 180°-90°	B	B	A	B	B	A-	A-
17 Clear Lamp 90° to 180°-90°	B+	B	A	B	B-	B+	B
18 Clear Lamp 90° to 180°-90°	B	B	A	B	B	B+	B-
19 Clear Lamp 90° to 180°-90°	B	B	A	A	A-	A-	C+
20 Clear Lamp 90° to 180°-90°	B	B	A	B+	B+	A-	B
21 Clear Lamp 90° to 180°-90°	B	B	A	B+	B	A-	A-

Semi-indirect and Indirect Lighting Units

LIGHTING UNIT	EFFICIENCY BASED UPON ILLUMINATION OF HORIZONTAL OR APPLICABLE IN VERTICAL		FAVORABLE APPEARANCE OF LIGHTED ROOM	DIRECT GLARE	REFLECTED GLARE	SHADOWS	MAINTENANCE
	EFFICIENCY	EFFICIENCY					
22 Clear Lamp 90° to 180°-90°	B-	C+	A	B+	B+	A-	C
23 Clear Lamp 90° to 180°-90°	C+	C	A	A+	A	A+	C
24 Clear Lamp 90° to 180°-90°	C+	C	A	A+	A	A+	C
25 Clear Lamp 90° to 180°-90°	B-	C+	A	A-	A-	A-	B
26 Clear Lamp 90° to 180°-90°	C+	C	A	A+	A	A	B
27 Clear Lamp 90° to 180°-90°	C+	C	B+	A+	A	A+	C
28 Clear Lamp 90° to 180°-90°	C	C	B+	A+	A	A+	C

*For luminous bowl type, Rate A.

Table No. 2

Spacing and Mounting Height for Lighting Units in Feet

*Mounting Height of Unit	Permissible Distance between Outlets	PERMISSIBLE DISTANCE BETWEEN OUTLETS AND SIDE WALLS		
		In Usual Location Where Aisles and Storage are Next to Wall	In Offices or Where Work Benches are Next to Wall	†Suspension Distance Indirect Units, Ceiling to Top of Reflector
4	6	3	2	1
5	7½	3½	2½	1¼
6	9	4½	3	1½
7	10½	5	3½	1¾
8	12	6	4	2
9	13½	6½	4½	2¼
10	15	7½	5	2½
11	16½	8	5½	2¾
12	18	9	6	3
13	19½	9½	6½	3¼
14	21	10½	7	3½
15	22½	11	7½	3¾
16	24	12	8	4
18	27	13½	9	4½
20	30	15	10	5
22	33	16½	11	5½
24	36	18	12	6
27	40½	20	13½	6¾
30	45	22½	15	7½

*Note permissible distance between outlets depends upon height of light source above work. In offices, work plane corresponds to desk tops, usually 2½ feet above floor; in factories, work plane will often be 3½ or 4 feet above floor. Note, in case of semi and totally-indirect lighting units, figures in this column are height of ceiling above work.

†Based on best distribution of light and efficiency of utilization for standard units. In some installations other considerations may require a different suspension distance.

Present Standards of Illumination

Table No. 3

This table is based upon Mazda C lamps with reflecting or diffusing media in the sizes and of the character, respectively, most often used in modern practice.

The values given are for average, service conditions during the life of the lamps and include allowance for depreciation due to moderate collections of dust, etc.

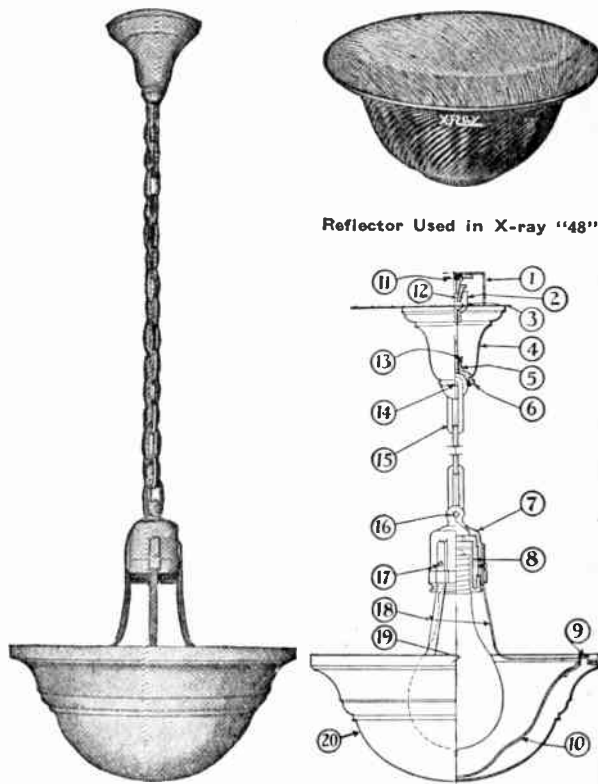
	Foot-Candles	†WATTS, PER SQ. FT.†	
		Large Rm.	Small Rm.
Auditorium, Church.....	2-4	.4 - .8	.6 - 1.2
Armory, Public Hall.....	3-6	.6 - 1.2	.9 - 1.8
School, Classroom, Study Room, Library.....	5-10	1.25-2.5	1.75-3.5
Store			
Show Window.....	10-70	‡	‡
First Floor Department, Shop on Bright Street or Corner...	8-12	2. - 3	2.4-3.6
Other Clothing, Dry Goods, Haberdashery, Millinery, Jew- elry, Etc.....	5-10	1.25-2.5	1.75-3.5
Other Drug, Grocery, Meat, Bakery, Book, Florist, Furni- ture, Etc.....	4- 8	1. - 2	1.4-2.8
Office			
Private, General.....	6-12	1.2-3	1.8-3.6
Drafting Room.....	10-20	2.5-4.7	3.5-6.5
Industrial*			
For Intermediate and Auxiliary Spaces in Interiors: Aisles, Passageways, Stairways, Etc...	1- 2	.15- .3	.2- .4
For Handling Coarse Material and Work Involving no Dis- crimination of Detail.....	2- 4	.3 - .6	.4 .8
For Rough Manufacturing Oper- ations, such as: Rough Assem- bling, Rough Forging, Rough Woodworking, Rough Bench- work, Ice Making, Etc.....	3- 6	.45-.9	.6-1.2
For Medium Manufacturing Oper- ations, such as: Medium Ma- chine Work, Meat Packing, To- bacco Manufacturing, Laundries, Etc.....	5-10	.75-1.5	1. - 2
For Fine Manufacturing Oper- ations, such as: Fine Assembling, Fine Pattern Making, Fine Machining on Metals, Knitting, Office Work, Etc.....	6-12	.9-1.8	2 - 2.4
For Extra Fine Manufacturing Operations, such as: Watch and Jewelry Making, Engraving Typesetting, Machine Stitch- ing on Shoes, Cutting and Sew- ing Dark Garments, Etc.....	10-50	1.5 ...	2.0 ...
Building Exteriors.....	3-20	‡	‡

*It must be remembered that, other things being equal, work on dark goods requires a higher illumination than work on light goods.

†The values for watts per square foot may be reduced slightly if the walls and ceilings are very light in color, if the most efficient reflectors or diffusers of the type commonly employed in the several classifications are used, if the maintenance and cleaning service is the best, or if larger sizes of lamps are employed. On the other hand, these values may be increased slightly if the walls, ceiling and surroundings are dark, if inefficient reflecting and diffusing equipment is used or if smaller sizes of lamps are employed.

‡The lighting of show windows and of building exteriors presents special problems. Manufacturers of reflectors and projectors for these fields furnish information as to the proper application of their product.

X-ray "48" Lighting Units



Reflector Used in X-ray "48"

This unit is built around the most powerful reflecting surface, an X-ray reflector which is scientific in design, of permanent efficiency, and low maintenance cost.

The housing is of stamped steel finished in a cream colored washable enamel. It is made in graceful lines and being of cream color is sufficiently neutral to go well with most walls and ceilings used in interiors.

The housing is supported and attached to the special socket by three inconspicuous arms

Bushing and coupling supplied facilitate installation on either 3/8 or 1/2-inch stud or the running-thread piece may be fastened into crowfoot if necessary. One screw terminal and one end of wire are marked in black for correct grounding. They are easy to assemble and install.

Test Lamp, Clear Mazda C

200 Watts, 110 Volts
Output of Clear Lamp 3100 Lumens

Zone	Lumens	% Total Clear Lamp	Zone	Lumens	% Total Clear Lamp
0-60	90-180	2480	80
0-90	0-180	2480	80

Specifications

- | | |
|---|--|
| 1 Outlet box. | 13 Locknut. |
| 2 Coupling. | 14 Pin. |
| 3 Ceiling line. | 15 Neat pendant method of suspension with well-proportioned chain links of liberal size. |
| 4 Canopy. | 16 Screw. |
| 5 Hickey. | 17 Arm retaining screw. |
| 6 Canopy ring. | 18 Simple method of attaching arm suspensions to fixture. |
| 7 Socket (special). | 19 Mazda C lamp. |
| 8 Porcelain interior parts insulating socket from socket cover. | 20 Outer bowl of good steel, washable enamel cream finish. |
| 9 Lugs. | |
| 10 X-ray reflector insures high efficiency. | |
| 11 Fixture stud. | |
| 12 Bushing. | |

Cat. No.	Watts	Diam. Bowl Inches	Depth Bowl Inches	Cat. No. Reflector	Diam. Reflector Inches
4801-V	100-150	14	6	E. C. 12	9 1/2
4801-W	200	14	6	E. C. 12	9 1/2
4801-M	300-500	14	6	E. C. 345	12

Prices upon application.

99 Screw Type Enclosed Lighting Units



Hanging Type



Ceiling Type

The 99 Screw Type Units are equipped with a 22-gauge brass canopy with rolled edges to produce additional strength and provided with a knockout for canopy switch mounting.

This large, roomy canopy makes installation an easy matter.

A snug fitting holder, also of 22-gauge brass, prevents dirt and insects from entering the globe.

Solid brass, 2-inch links constitute the chain which is attached, at the upper end, to a cast brass hickey.

Porcelain sockets held rigidly within the holder are equipped with No. 14 Deltabeston stranded wire.

Metal parts are finished in statuary bronze.

The superb quality of eased glass in the globe produces maximum efficiency and diffusion with minimum absorption.

When ordering state catalogue number including the letter C (for ceiling type) or H (for hanging type) of fixture.

Cat. No.	Size Lamps Watts	Diam. Globe In.	Length Over All, Inches	Price, Each		
				Holder Only	With Plain Glass	With Dec. Glass
9975C	40-75	9	11 1/2	\$2.60	\$4.90	\$6.20
9980C	75-100	10	11 1/2	2.60	5.20	6.90
9910C	100-150	12	13	2.60	6.90	9.00
9920C	200	14	14 1/2	3.70	9.90	12.70
9930C	300-500	16	15 1/2	4.80	13.00	15.80
9975H	40-75	9	32 1/2	3.40	5.70	7.00
9980H	75-100	10	32 1/2	3.40	6.00	7.70
9910H	100-150	12	34	3.40	7.80	7.80
9920H	200	14	35	4.40	10.60	13.40
9930H	300-500	16	36	5.00	13.20	16.00

66 Screw Type Enclosed Lighting Units



Hanging Type



Ceiling Type

The 66 Screw Type Units are equipped with a 22-gauge brass canopy with rolled edges to produce additional strength and provided with a knockout for canopy switch mounting.

The large, roomy canopy makes installation an easy matter.

A snug fitting holder, also of 22-gauge brass, prevents dirt and insects from entering the globe.

Solid brass, 2-inch links constitute the chain which is attached, at the upper end, to a cast brass hickey.

Porcelain sockets held rigidly within the holder are equipped with No. 14 Deltabeston stranded wire.

Metal parts are finished in statuary bronze.

Globes are of the best grade of opal glass.

This unit is suitable for commercial lighting, using a Mazda C lamp, and having adequate diffusion and distribution to produce pleasing illumination without sharp shadows or glare.

Where only an opal unit is desired the "66" gives very efficient service.

When ordering state catalogue number including the letter C (for ceiling type) or H (for hanging type) of fixture.

Cat. No.	Size Lamps Watts	Diam. Globe In.	Length Over All, Inches	Price, Each	
				Holder Only	With Plain Glass
6675C	40-75	9	10	\$2.60	\$4.00
6680C	75-100	10	11	2.60	4.30
6610C	100-150	12	12	2.60	5.10
6620C	200	14	14	3.70	7.20
6630C	300-500	16	15	4.80	9.30
6675H	40-75	9	31	3.40	4.80
6680H	75-100	10	32	3.40	5.10
6610H	100-150	12	33	3.40	5.90
6620H	200	14	34 1/2	4.40	7.90
6630H	300-500	16	35	5.00	9.60

99 Safety Type Enclosed Lighting Units



Hanging Type



Ceiling Type

The 99 Safety Unit in both ceiling and hanging types is provided with a globe holding device which makes it possible to release or lock the globe by adjusting a single nut. By moving operation pin across a safety slot the glass is held in a grip which centers it while allowing for expansion.

The metal parts are finished in statuary bronze and buffed and polished to insure smoothness of surface and uniformity of color.

The 99 Safety Unit combined with the 99 Standard Glassware represents the highest class of workmanship and comprises a unit of superb quality and appearance.

When ordering state catalogue number including the letter C (for ceiling type) or H (for hanging type) of fixture.

66 Safety Type Enclosed Lighting Unit



Hanging Type



Ceiling Type

The 66 Safety Type Units have an extra large, 22-gauge brass canopy, provided with a knockout for canopy switch mounting.

The large roomy canopy makes installation an easy matter.

A snug fitting holder, also of 22-gauge brass, prevents dirt and insects from entering the globe.

Solid brass, 2-inch links constitute the chain which is attached, at the upper end, to a cast brass hickey.

Porcelain sockets held rigidly within the holder are equipped with No. 14 Deltabeston stranded wire.

Metal parts are finished in statuary bronze.

The glass is opal.

When ordering state catalogue number including the letter C (for ceiling type) or H (for the hanging type) of fixture.

Plain Type

Cat. No.	Size Lamps Watts	Diam. Globe In.	Length Over All, Inches	PRICE, EACH		
				Holder Only	With Plain Glass	With Dec. Glass
9975C	40-75	9	10	\$4.70	\$7.00	\$8.30
9980C	75-100	10	10	4.70	7.30	9.00
9910C	100-150	12	11½	4.70	9.00	11.20
9920C	200	14	16	6.20	12.40	15.20
9930C	300-500	16	17	7.00	15.20	18.00
9975H	40-75	9	39½	5.90	8.20	9.40
9980H	75-100	10	39½	5.90	8.40	10.20
9910H	100-150	12	40½	5.90	10.20	12.30
9920H	200	14	41	6.90	13.10	15.90
9930H	300-500	16	42	7.80	15.90	18.80

Ornamental Type

9975C	40-75	9	10	\$7.10	\$9.40	\$10.70
9980C	75-100	10	10	7.10	9.70	11.40
9910C	100-150	12	11½	7.10	11.40	13.40
9920C	200	14	16	9.85	16.05	18.85
9930C	300-500	16	17	10.75	18.95	21.75
9975H	40-75	9	39½	9.65	11.95	13.25
9980H	75-100	10	39½	9.65	12.25	13.95
9910H	100-150	12	40½	9.65	13.95	16.05
9920H	200	14	41	11.40	17.60	20.40
9930H	300-500	16	42	12.25	20.45	23.55

Furnished with tassel when specified, at extra cost.

Plain Type

Cat. No.	Size Lamps Watts	Diam. Globe In.	Length Over All, Inches	PRICE, EACH	
				Holder Only	With Plain Glass
6675C	40-75	9	10	4.70	\$6.20
6680C	75-100	10	10	4.70	6.40
6610C	100-150	12	12	4.70	7.20
6620C	200	14	13	6.20	9.70
6630C	300-500	16	15½	7.00	11.50
6675H	40-75	9	37½	5.90	7.30
6680H	75-100	10	38½	5.90	7.50
6610H	100-150	12	39½	5.90	8.30
6620H	200	14	39½	6.90	10.40
6630H	300-500	16	40½	7.80	12.30

Ornamental Type

6675C	40-75	9	10	\$7.10	\$8.50
6680C	75-100	10	10	7.10	8.80
6610C	100-150	12	12	7.10	9.60
6620C	200	14	13	9.85	13.35
6630C	300-500	16	15½	10.75	15.25
6675H	40-75	9	37½	9.65	11.05
6680H	75-100	10	38½	9.65	11.35
6610H	100-150	12	39½	9.65	12.15
6620H	200	14	39½	11.40	14.90
6630H	300-500	16	40½	12.25	16.75

Furnished with tassel when specified, at extra cost.

Special Safety Type Enclosed Lighting Units



With 99 Glass



With 66 Glass

Incorporating the patented mechanism described under 99 Safety Unit.

These special safety units have a cast metal spindle at the lower end of the chain. This simple decoration gives the fixture a dignity desired for the better installations.

The lighting efficiency and decorative quality of these units makes them particularly adaptable to store lighting.

Has canopy made of 22 gauge brass with rolled edge to give extra strength.

A knockout is provided for canopy switch mounting and the large, roomy canopy makes installation an easy matter.

Dirt and insects are excluded by the snug fitting globe holder for which 22 gauge brass is also used.

Solid brass 2-inch links are used in the chain and all strain is taken off canopy by a stem and brass hickey.

Porcelain sockets held rigidly in position are used and the wire is No. 14 Deltabeston stranded.

All metal parts are plated statuary bronze finish.

The 99 is cased glass; 66 is opal glass.

When ordering give catalog number including the letter C (for ceiling type) or H (for hanging type) of fixture.

Cat. No.	Size Lamps Watts	Diam. Globe Inches	Length Over All Inches	PRICE, EACH		
				Holder Only	With Plain Glass	With Dec. Glass
9975H	40-75	9	36	\$7.20	\$9.50	\$10.80
9980H	75-100	10	36	7.20	9.80	11.50
9910H	100-150	12	37½	7.20	11.50	13.70
9920H	200	14	37½	8.30	14.50	17.30
9930H	300-500	16	38½	9.20	17.30	20.20
6675H	40-75	9	35	7.20	8.70	.....
6680H	75-100	10	36	7.20	8.90	.....
6610H	100-150	12	36½	7.20	9.70	.....
6620H	200	14	37	8.30	11.80	.....
6630H	300-500	16	38	9.20	13.70	.....

Special Screw Type Enclosed Lighting Units



With "99" Glass



With "66" Glass

On these Special Screw Type Fixtures the chain terminates in a cast metal spindle forming a pleasing combination.

The lighting efficiency and the decorative quality of these units makes them particularly adaptable to store lighting.

The canopy is made of 22-gauge brass with rolled edge to give extra strength.

A knockout is provided for canopy switch mounting and the large, roomy canopy makes installation an easy matter.

Dirt and insects are excluded by the snug fitting globe holder for which 22-gauge brass is also used.

Solid brass 2-inch links are used in the chain and all strain is taken off canopy by a stem and cast brass hickey.

Porcelain sockets held rigidly in position are used and the wire is No. 14 Deltabeston stranded.

All metal parts are finished in statuary bronze.

The glass is opal.

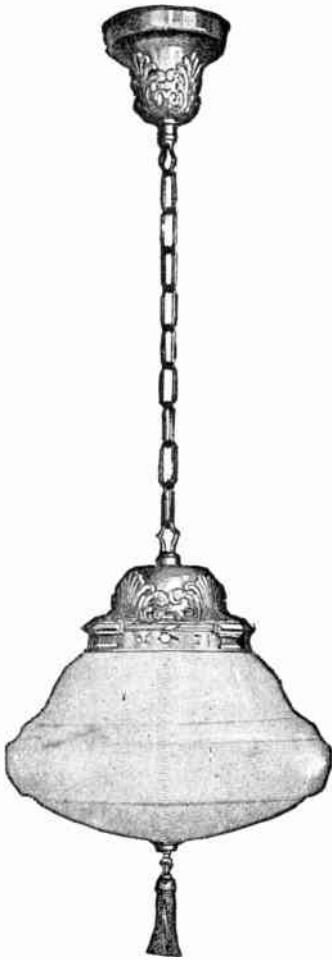
When ordering state catalogue number including the letter C (for ceiling type) or H (for hanging type) of fixture.

Cat. No.	Size Lampe Watts	Diam. Globe Inches	Length Over All Inches	PRICE, EACH		
				Holder Only	With Plain Glass	With Dec. Glass
9975	40-75	9	36	\$4.80	\$7.10	\$8.40
9980	75-100	10	36	4.80	7.40	9.10
9910	100-150	12	37	4.80	9.10	11.20
9920	200	14	38½	5.70	11.90	14.70
9930	300-500	16	39½	6.40	14.60	17.40
6675	40-75	9	34½	4.80	6.20	.....
6680	75-100	10	35½	4.80	6.40	.....
6610	100-150	12	37	4.80	7.20	.....
6620	200	14	37½	5.70	9.20	.....
6630	300-500	16	38½	6.40	10.90	.....

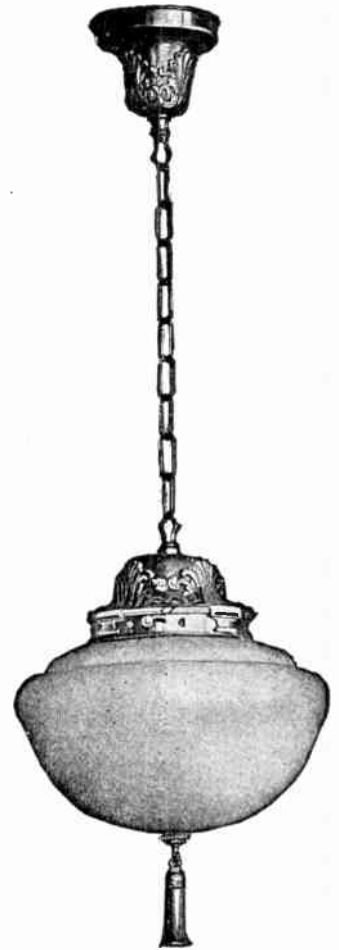
Enclosed Lighting Units

Ornamental Suggestions

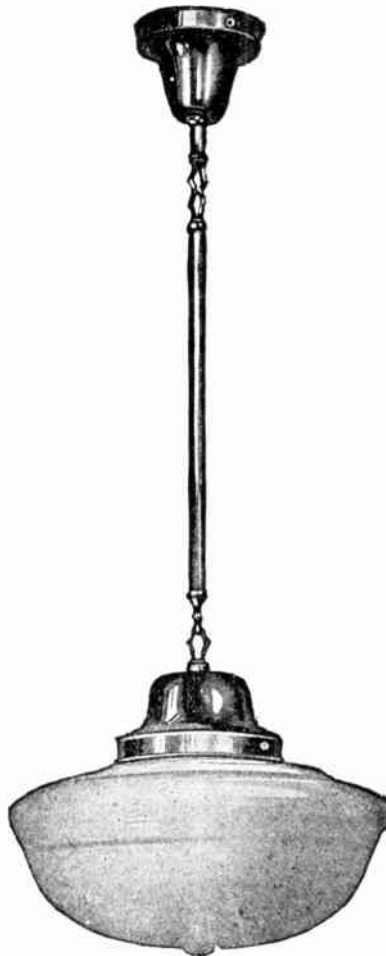
Both the 99 and 66 lines of enclosed units are adaptable to a wide range of ornamentation, without in any way affecting the high quality of lighting obtained. Besides ornamental adaptation for the fixtures, decorative glass can be used with other combinations to give almost any desired effect in ornamentation.



**Hanging Safety Type with
66 Glass**



**Hanging Safety Type with
99 Glass**



**Tube Suspension Adaptable to Any
Hanging Type**



**Ceiling Safety Type with
66 Glass**



**Ceiling Safety Type
with 99 Glass**

Miscellaneous Lighting Fixtures

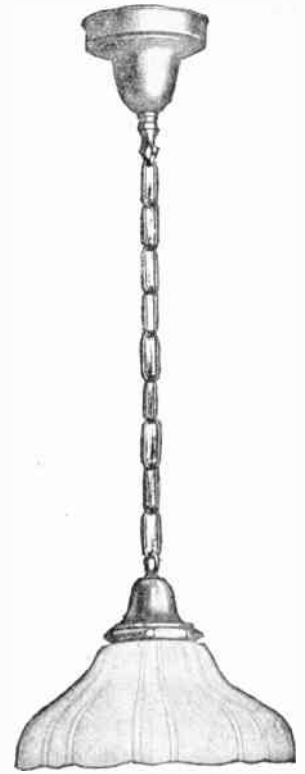
For locations which require simpler types of fixtures, brackets or exit lights, the fixtures illustrated on this page will be found highly satisfactory. These products are made of 22 gauge metal wired complete and finished in plated bronze.



No. 2002
2 1/4-inch Fitter
Length 24 Inches



No. 842
Exit Light
3 1/4-inch Fitter



No. 2003
3 1/4-inch Fitter
Length 24 Inches



No. 4002
2 1/4-inch Fitter
Length of Holder, 4 3/4 Inches
Spread of Holder, 6 1/4 Inches



No. 4003
3 1/4-inch Fitter
Length of Holder, 5 Inches
Spread of Holder, 6 1/4 Inches



No. 3004
4-inch Fitter
Extends 7 Inches



No. 3002
2 1/4-inch Fitter
Extends 7 Inches



No. 3003
3 1/4-inch Fitter
Extends 7 Inches

Cat. No.	Description	Price Each	Cat. No.	Description	Price Each
2002	Pendant Only.....	\$2.90	3002	Bracket Only.....	\$2.75
2003	" ".....	3.10	3003	" ".....	3.05
4002	Ceiling ".....	2.35	3004	" ".....	3.10
4003	" ".....	2.50	3003	With 842 Exit Globe Complete.....	6.05
4003	With 842 Exit Globe Complete.....	5.50	842	Triangular Exit Globe Only.....	3.00

Prices do not include glass unless indicated.

No. 201 Lindsay Pendent Fixtures



Supplied only in silver and black, nippon, french gray and gold.

Cat. No.	No. of Lights	Spread Inches	Length Inches	Std. Pkg.	PRICE, EACH	
					Silver and Black	Nippon French Gray and Gold
201	5	16	36	6	\$11.38	\$9.94
202	4	16	36	6	10.49	9.11
203	3	14	36	6	8.95	7.96
205	2	12	36	6	5.93	5.40

Prices do not include glassware sockets or wiring. Each fixture packed in individual carton.

No. 125 Lindsay Pendent Fixtures

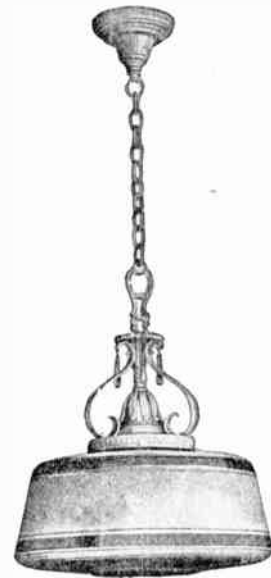


Supplied only in nippon, french gray and gold.

Cat. No.	No. of Lights	Spread Inches	Length Inches	Std. Pkg.	Price Each
122	2	12	36	6	\$7.40
123	3	14	36	6	9.26
124	4	16	36	6	11.11
125	5	18	36	6	13.88

Prices do not include glassware sockets or wiring. Each fixture packed in individual carton.

No. 903 Lindsay Pendent Fixtures



Finished in Verde bronze and silver and black only.

Cat. No.	No. of Lights	Fitter Inches	Length Holder, In.	Std. Pkg.	Price Each
903	1	6	45	6	\$18.75

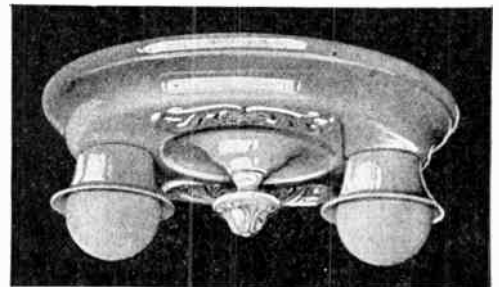
No. 144 Lindsay Ceiling Pieces



Finished in nippon and french gray and gold only.

Cat. No.	No. of Lights	Spread Inches	Length Inches	Std. Pkg.	Price Each
142	2	12	11	6	\$8.88
143	3	14	12	6	10.92
144	4	16	12	6	12.98
145	5	18	12	6	15.00

No. 802 Lindsay Ceiling Pieces

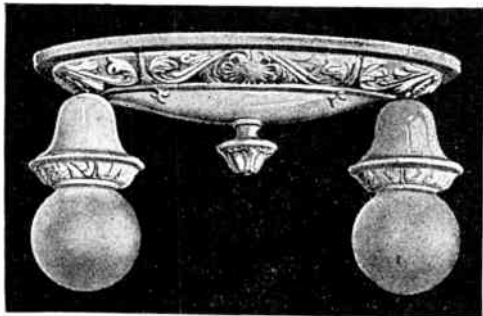


Nos. 802 and 803 are finished in old ivory only. Nos. 804 and 805 finished in nippon, French gray and gold and old ivory only.

Cat. No.	No. of Lights	Ceiling Plate Diam., In.	*Length Inches	Std. Pkg.	Price Each
802	2	10	4	6	\$4.37
803	3	10	4	6	5.00
804	4	13	4 1/2	6	7.50
805	5	13	4 1/2	6	8.12

*Including 25-watt lamp.

No. 812 Lindsay Ceiling Pieces



Finished in old ivory only.

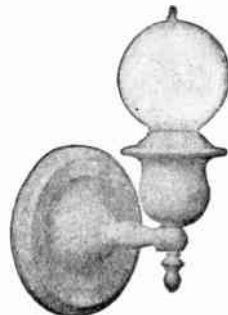
Cat. No.	No. of Lights	Ceiling Plate, In	*Length Inches	Std. Pkg	Price Each
812	2	12x4	7	6	\$4.30

*With 40 watt lamp.

Lindsay Wall Brackets



No. 711



No. 712

Finished in old ivory or white enamel.

Cat. No.	No. of Lights	Spread In.	Dimen. of Bracket Back Diam., In.	Std. Pkg.	Price Each
711	1	4	5	6	\$3.45
712	1	4	5	6	3.09

No. 1000 Lindsay Pendent Fixtures

Finished in nippon, French gray and gold, white enamel, ivory and brush brass only.



Cat. No.	No. of Lights	Length Inches	Std. Pkg.	Price Each
1000	1	36	6	\$1.54

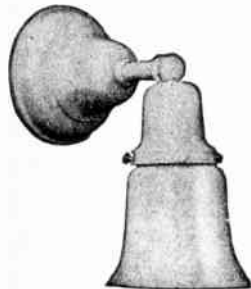
No. 173 Lindsay Ceiling Lights



Finished in white enamel, old ivory and nippon only.

Cat. No.	No. of Lights	Spread Inches	Std. Pkg.	Price Each
173	1	4 1/2	6	\$1.25

No. 713 Lindsay Bracket Lights



Finished in nippon, white enamel and ivory only.

Cat. No.	No. of Lights	Spread In.	Dimen. of Bracket Back, In.	Std. Pkg.	Price Each
713	1	5	4 1/4	6	\$1.60

No. 140 Lindsay Ceiling Lights

Finished in ivory or white enamel only.



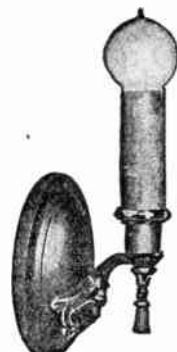
Cat. No.	No. of Lights	Fitter Inches	Spread Inches	Std. Pkg.	Price Each
140	1	2 1/4	6	6	\$1.58
141	1	3 1/4	6	6	1.74



No. 206



No. 207



No. 208

Finished in nippon, French gray and gold, silver and black, and old ivory only.

Cat. No.	No. of Lights	Extends Inches	Dimen. of Bracket Back Diam., In.	Std. Pkg.	PRICE, EACH	
					Silver Black and Old Ivory	Nippon French Gray and Gold
206	1	3 1/2	4x6	6	\$2.40	\$2.00
207	1	3 1/2	4x6	6	2.80	2.30
208	1	3 1/2	4x6	6	3.04	2.47

Lindsay Porch Lights

Finished in either verde with crystal moss glass or copper with amber moss glass.



No. 508

Made of copper and will withstand exposure to temperatures and moisture. Use weatherproof socket or receptacle. In most cases a 25 or 40-watt clear lamp is satisfactory.



No. 509

Cat. No.	No. of Lights	Lgth. In.	Extends In.	Length Lantern, In.	Std. Pkg.	Price Each
508	1	15 1/4	..	10x4 3/4	6	\$12.93
509	1	....	6	10x4 3/4	6	12.93

No. 2 Lindsay Ball Lamp Adapters

Finished in nippon, French gray and gold, silver and black, old ivory, Flemish brass and verde bronze.



Cat. No.	Size In.	Std. Pkg.	Price Each
2	3 1/4 x 3/4	6	\$3.30

Lindsay Kitchen Units



No. 4085



No. 3085



No. 3185

White Porcelain Enamel



No. 5085



No. 5030



No. 5031

White Duco Painted

Selling Points

One piece holder seamless rigid steel shell. Two heavy coats of white porcelain enamel. Will endure as long as kitchen endures. The permanent light. Easy to clean and keep clean. Concealed installation; no unsightly screws exposed. Attached by screws which fasten inside the shell.

Substantially constructed and rigid when installed. Approved by Underwriters' Laboratories.

Simple and convenient to install. Patent applied for concealed method of installation.

Each unit complete in itself. One screw only and 2 lugs to hold globe. Each holder has 4-inch standard fitter for glassware.

No. 14 asbestos, National Code, covered wire used on all wiring. About half the time usually required to install.

Each unit, without glass, properly packed. Each unit designed for 75-150 watt lamp.

Returns on campaign plan are reduced to a minimum. The ideal campaign unit.

Specifications

No.	Finish	DIMENSIONS, INCHES					Std. Pkg.	Wt. Lbs. Std. Pkg.	PRICE, EACH	
		Diam. Canopy	Depth Flange	Diam. Globe	Depth Globe	Depth Over All			With Glass	Without Glass
4040	* White Porcelain	10	1 1/4	10	7 3/4	12 3/4	4	31	\$10.68	\$8.21
3030	** " "	6	1 1/4	10	7 3/4	11 1/2	4	24	7.40	4.94
3131	† " "	6	1 1/4	10	7 3/4	11 1/2	4	14	6.46	4.01
4085	* " "	8 1/2	1 1/4	8 1/2	6 3/4	12	12	39	9.60	7.56
3085	** " "	8 1/2	1 1/4	8 1/2	6 3/4	11	12	30	7.59	5.55
3185	† " "	8 1/2	1 1/4	8 1/2	6 3/4	11	12	30	6.66	4.63
5085	* " Duco Paint	8 1/2	1 1/4	8 1/2	6 3/4	12	12	39	8.67	6.63
5030	** " "	6	1 1/4	8 1/2	6 3/4	11	12	31	5.89	3.84
5031	† " "	6	1 1/4	8 1/2	6 1/8	11	12	31	4.97	2.93

Add 10 cents each net for units packed one in a carton complete with glass.

*For kitchen without convenience outlet without wall switch.

**For kitchen with convenience outlet without wall switch.

†For kitchen with convenience outlet with wall switch.

Aglite Fixtures

Aglite canopies are stamped from a single piece of heavy gauge Armco Iron and 3 coats of permanent porcelain enamel are then fused on at 1600 degrees Fahrenheit in electric porcelain enameling furnaces. No metal parts visible; pure white glass shade is attached by means of a concealed metal screw collar which holds glass firmly in place. Installation made direct to house wires in 5 minutes with only screw-driver and pliers. Three colors, white, old ivory and gray.



Types A722 and A723 Aglite Fixtures

Canopy, 4½ inches in diameter. Shade, 6¼ inches in diameter. Length, over all, 7½ inches. Shipping weight, 2 pounds. Wire guards, \$4.00 extra.

Type No.	Description	Std. Price Pkg. Each
A722	Keyless.....	4 \$2.75
A723	Pull Chain.....	4 3.60

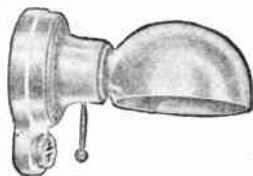
Types A724 and A725 Aglite Fixtures

Canopy, 4½ inches in diameter. Extends 8½ inches. Shipping weight, 2 pounds. Wire guards, \$4.00 extra.



Type No.	Description	Std. Price Pkg. Each
A724	Keyless.....	4 \$2.75
A725	Pull Chain.....	4 3.60

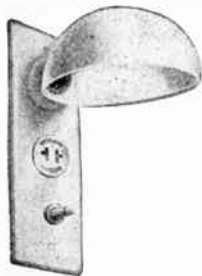
Types A729 and A730 Aglite Fixtures



Canopy, 6¾ inches high and 5 inches wide. Extends 9¼ inches. Shipping weight, 3 pounds. Plug receptacle to accommodate any electrical appliances included.

Type No.	Description	Std. Price Pkg. Each
A729	Keyless.....	4 \$4.10
A730	Pull Chain.....	4 4.95

Type A731 Aglite Fixtures



A flush type bracket combining light, plug receptacle and toggle switch. Long switch lever. Shade No. G-196. Wall plate in white porcelain enamel finish. White opal shade.

Especially suitable for hospital use.

Flush plate, 9x3¾ inches. Screws spaced, 6½ inches.

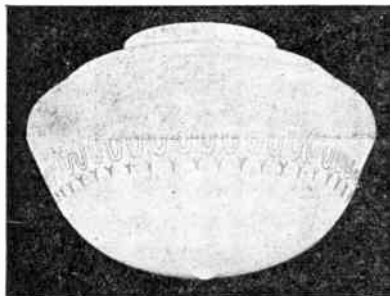
A standard two-gang tandem switch box should be provided for mounting this bracket.

Price, Type A731.....each \$13.50

Glassware for Enclosed Lighting Units



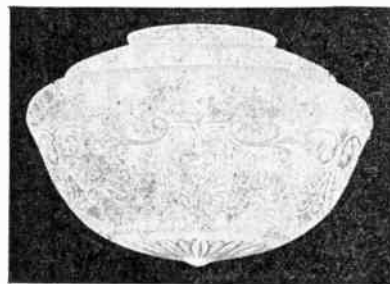
Decoration No. 285



Decoration No. 452



Decoration No. 322



Decoration No. 453

Globe decoration in many interiors is desirable in order to harmonize the lighting units with color and plan of decoration of surroundings. Four new standard designs of 99 decorations are illustrated.

Special designs for 99 and 66 globes supplied to suit special conditions. Prices on application.

Cat. No.	Lamps Watts	Fitter Diam. In.	In.	Std. Pkg.	Price, Each		EXTRA	
					Dec.	For Drilling	For Tassel	
9975	40-75	4	9	4	\$2.30	\$3.60	\$.20	\$1.10
9980	75-100	4	10	4	2.60	4.30	.20	1.10
9910	100-150	4	12	1	4.30	6.40	.30	1.10
9920	200	6	14	1	6.20	9.00	.40	1.10
9930	300-500	6	16	1	8.20	11.00	.50	1.50
6675	40-75	4	9	12	1.40	....	.20	1.10
6680	75-100	4	10	4	1.70	....	.20	1.10
6610	100-150	4	12	4	2.50	....	.30	1.10
6620	200	6	14	2	3.50	....	.40	1.10
6630	300-500	6	16	2	4.50	....	.50	1.50

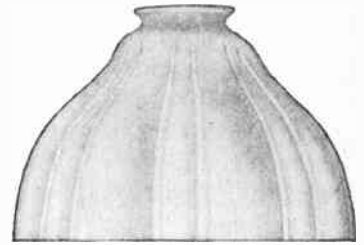
Residential Lighting Glassware



2219 Ribbed



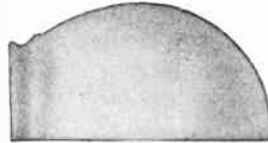
1490



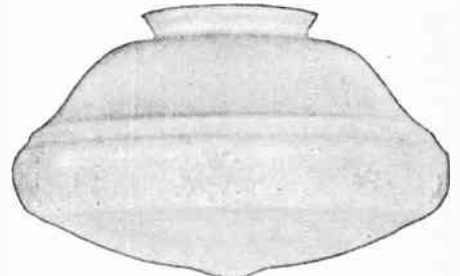
2220 Ribbed



9980



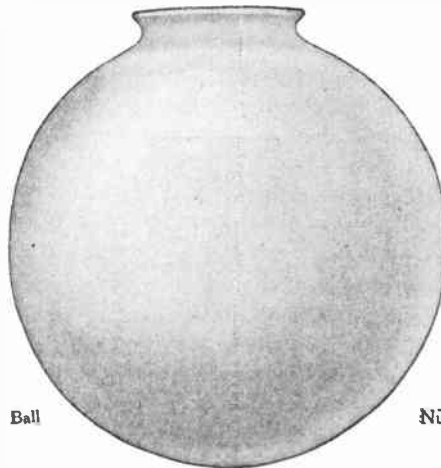
2209



6680



2519



Ball

Nuite



1320

Nuite and C. R. I. Globes and Shades

Cat. No.	Glass	Description	DIMENSIONS, INCHES			No. Doz. in Std. Pkg.	Approx. Wt., lbs. Std. Pkg.	Price per Doz.
			Diameter	Deep	Fitter			
2219	Nuite	Ribbed Shade	7 ³ / ₈	3 ¹ / ₂	2 ¹ / ₄	2	27	\$6.65
*2222	"	"	8 ³ / ₄	4 ¹ / ₈	2 ¹ / ₄	1	21	8.25
*2223	"	"	10 ³ / ₄	4 ¹ / ₂	2 ¹ / ₄	1	39	11.35
2209	"	Half	5 ⁷ / ₈	3 ¹ / ₄	2 ¹ / ₄	2	23	8.00
†2218	"	Ribbed	5 ⁷ / ₈	4 ³ / ₄	2 ¹ / ₄	3	36	6.65
2220	"	"	7 ³ / ₈	4 ⁵ / ₈	2 ¹ / ₄	1	21	8.25
†2221	"	"	8 ¹ / ₂	6	2 ¹ / ₄	1	24	11.35
9980	Cora	Globe	10	6 ¹ / ₄	4	1/3	..	31.20
2519	Nuite	"	8 ³ / ₈	6 ¹ / ₁₆	4	1	..	15.85
6680	"	"	10	6	4	1	..	20.40
1320	"	Bell Shade	6	4 ¹ / ₂	2 ¹ / ₄	1	14	4.50
1320	C.R.I.	"	6	4 ¹ / ₂	2 ¹ / ₄	1	14	3.75
1490	Nuite	Elect.	4 ¹ / ₄	4 ³ / ₄	2 ¹ / ₄	3	32	7.25
6-inch Ball	C. R. I.	Ball Globe	6	6	3 ¹ / ₄	3	70	3.75
7 " "	C. R. I.	"	7	7	3 ¹ / ₄	1 1/2	60	5.60
8 " "	C. R. I.	"	8	8	3 ¹ / ₄ or 4	1	55	8.00
6 " "	Nuite	"	6	6	3 ¹ / ₄	3	70	4.80
7 " "	"	"	7	7	3 ¹ / ₄	1 1/2	60	7.05
8 " "	"	"	8	8	3 ¹ / ₄ or 4	1	55	11.35

*Same shape as No. 2219. †Same shape as No. 2220.

Sold in standard packages only.

Residential Lighting Glassware



1246 1/2
Dec. 502



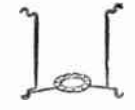
2507
Dec. 502



2227
Dec. 502



2500
Dec. 502



Wire Fitter for
2500 Candle Shield



8" Ball
Dec. Parrot



2225
Dec. 501



Glass Plate Holder
for 2506 Candle
Shade



2506
Dec. 502



1490
Dec. 501



2307
Dec. 501



2438



2302
Dec. 501

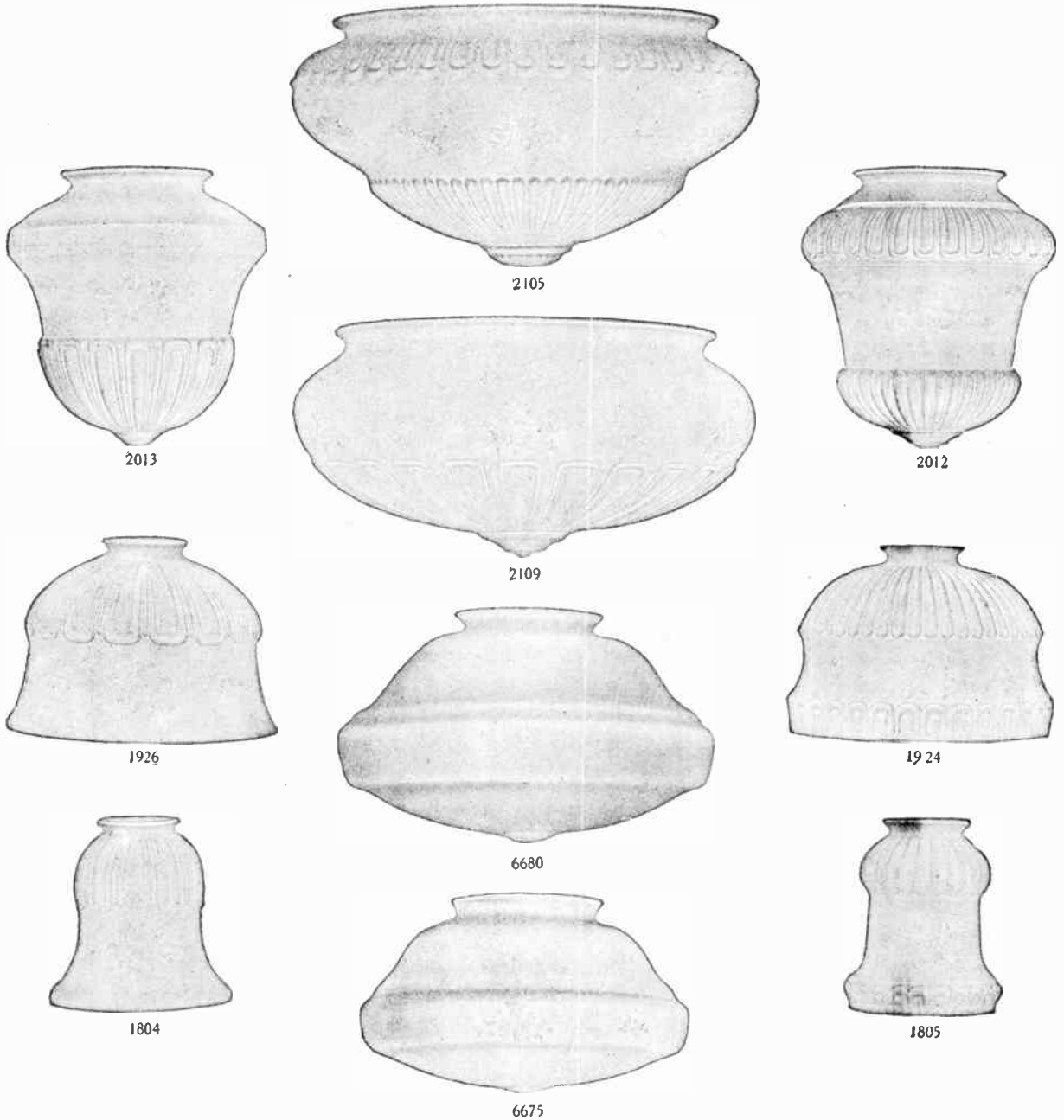
Residential Decorated Line

Decorations 501 and 502

Cat. No.	Glass	Description	DIMENSIONS, INCHES			Fitter	No. Doz. in Std. Pkg.	Approx. Wt. Lbs. Std. Pkg	Price per Doz.
			Diameter	Deep					
*1246 1/2	Nuite	Elect. Shade	5 3/8	4 1/2		2 1/4	3	30	\$18.70
*1490	"	"	4 1/4	4 3/4		2 1/4	3	32	18.20
*†2225	"	Ball Lamp	4 1/4	3 1/4		2 1/4	3	25	16.60
*†2227	"	"	5	3 3/8		2 1/4	3	27	16.60
2500	"	Candle Shield	4 3/4	3 7/8		Spec.	1	10	19.30
Holder	for	"	...	...		...	1	..	6.40
*2506	Nuite	" Shade	4	3 7/8		Spec.	3	15	18.70
Plate	for	"	...	...		...	3	10	2.25
2507	Nuite	Bowl	12	5 1/8		10	1/3	18	56.00
2302	"	Dresser Drop	7	5 1/2		2 1/4	2/3	15	25.60
2307	"	Globe	8	8		4	2/3	22	48.00
			Lantern Black or Green Decoration						
2438	Mat Crystal	Lantern	6	8		3 1/4	2/3	30	\$38.00
			Ball Parrot Decoration						
8-inch Ball	Nuite	Globe	8	8		4	1/3	12	\$60.00

*If one dozen packages are ordered in place of 3 dozen, add 60 cents per dozen to above lists.
†Collar may be ground off and replaced with fitter adapter rings at \$1.90 extra per dozen.
Sold in standard packages only.

Residential Lighting Glassware



Bowl—Globe—Electric Sets

Decoration No. 1000

Cat. No.	Glass	Description	DIMENSIONS, INCHES			No. Doz. in Std. Pkg.	Approx. Wt., Lbs. Std. Pkg.	Price per Doz.
			Diameter	Deep	Fitter			
†1804	Nuite	Elect. Shade	4 ⁷ / ₈	4 ³ / ₄	2 ¹ / ₄	3	30	\$8.95
1926	"	Dresser	7 ¹ / ₈	5	2 ¹ / ₄	1	20	13.35
*1927	"	Bowl	14	7 ¹ / ₂	12	1 ¹ / ₃	23	64.00
2013	"	Globe	6 ⁷ / ₈	7 ¹ / ₄	3 ¹ / ₄ or 4	1	22	32.00
2109	"	Bowl	12	6	10	1 ¹ / ₃	18	49.00
†1805	"	Elect. Shade	4 ¹ / ₈	5	2 ¹ / ₄	3	30	8.95
1924	"	Dresser	6 ⁷ / ₈	5	2 ¹ / ₄	1	20	13.35
†1925	"	Bowl	13 ¹ / ₂	6 ⁷ / ₈	12	1 ¹ / ₃	21	64.00
2012	"	Globe	6 ³ / ₄	7 ¹ / ₄	3 ¹ / ₄ or 4	1	22	32.00
2105	"	Bowl	12	6 ¹ / ₂	10	1 ¹ / ₃	18	49.00
6675	"	Globe	9	5	4	1 ¹ / ₃	10	32.50
6680	"	"	10	6	4	1 ¹ / ₃	12	42.00

*Same design as No. 2109. †Same as No. 2105.

‡If one dozen packages are ordered in place of 3 dozen, add 60 cents per dozen to above lists. Sold in standard packages only.

Pittsburgh Triangular Exit Balls



For theatres, stores, schools, hospitals and other public buildings.

Diameter, 6 inches.

Depth, 6 inches.

Fitter, 3/4 inches.

Standard package, 27.

Cat. No.	Description	Price per Doz.
S-842-R-1	Royal Copper Roughed Inside	\$21.00
S-842-G-2	Green Roughed Inside	19.00

No. S-544-G Electric Shades

Green Cased Glass



Cat. No.	Diam. Fitter Inches	Length Shade Inches	Price per Doz.
S-544-G	2 1/4	5 1/2	\$11.10

Standard package quantity is 150.

No. S-544 1/2-G Electric Shades

Green Cased Glass

Cat. No.	Diam. Fitter Inches	Length Shade Inches	Price per Doz.
S-544 1/2-G	2 1/4	5 3/4	\$11.10

Standard package quantity is 150.



No. S-545-G Electric Shades

Green Cased Glass



Cat. No.	Diam. Fitter Inches	Length Shade Inches	Price per Doz.
S-545-G	2 1/4	6	\$11.10

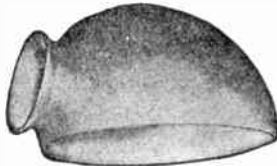
Standard package quantity is 36.

No. S-546-G Electric Shades

Green Cased Glass

Cat. No.	Diam. Fitter Inches	Length Shade Inches	Price per Doz.
S-546-G	2 1/4	6	\$11.10

Standard package quantity is 36.



No. S-548-G Electric Cone Shades

Green Cased Glass



Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-548-G	2 1/4	7	5	\$9.30

Standard package quantity is 60.

No. S-549-G Electric Cone Shades

Green Cased Glass

Cat. No.	Diam. Fitter In.	Diam. Shade In.	Ht. Shade In.	Price per Doz.
S-549-G	2 1/4	10	5	\$18.50

Standard package quantity is 24.



No. S-550-G Electric Cone Shades

Green Cased Glass



Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-550-G	3 1/4	10	5	\$18.50

Standard package quantity is 24.

No. S-555-G Electric Shades

Green Cased Glass

Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-555-G	{ 2 1/4, 3 1/4 / 4 or 5 }	10	5 1/2	\$18.00

Standard package quantity is 16.



No. S-556-G Electric Shades

Green Cased Glass



Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-556-G	{ 3 1/4, 4 / or 5 }	12	5 3/4	\$31.00

Standard package quantity is 8.

No. S-558-G Electric Shades

Green Cased Glass

Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-558-G	{ 3 1/4, 4 / or 5 }	14	6 1/2	\$44.45

Standard package quantity is 8.



No. S-607 1/2-G Inverted Gas or Electric Shades

Green Cased Glass



Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-607 1/2-G	3 1/4	8	4 1/2	\$11.10

Standard package quantity is 48.

No. S-10-G Gas Shades

Green Cased Glass

Cat. No.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-10-G	10	4	\$16.70

Standard package quantity is 24.



No. S-8023 Gas Shades

Green Cased Glass



Cat. No.	Diam. Fitter In.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-8023-G	10	11	6 1/2	\$27.75

Standard package quantity is 8.

No. S-8027-G Gas Shades

Green Cased Glass

Car. No.	Diam. Shade In.	Depth Shade In.	Price per Doz.
S-8027-G	7	6	\$14.80

Standard package quantity is 18.



No. 3 X-Ray Mill Reflectors

For 50-watt Mazda B Lamps



The No. 3 Mill Reflector is the smallest of the Beehive line and is primarily adapted for localized lighting, such as on drop cords for local and bench lighting. An efficient little reflector over work tables and counters in shops for general illumination where ceilings are low.

Cat. No.	DIMENSIONS, INCHES			Size Holder	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Diam.	Height	Depth	Inches			
3	4½	3¼		2¼	40	19½	\$1.50

X-Ray Beehive Reflectors

Gives wide spread of light and hides lamp. Adapted for illuminating factories, etc. One-piece blown corrugated glass with reflecting surface of pure silver.

No. 535 may be used with 40 and 50-watt Mazda B lamps. No. 580 is furnished with special holder.



Cat. No.	Diam., In.	Ht., In.	Holder, In.	Mazda Lamp, Watts	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
3	4½	3¼	2¼ O	50MT	40	19½	\$1.50
535	5¾	5½	2¼ H	75	24	25	2.00
570	7⅞	6⅞	3¼ A	100-150	16	32	3.50
575	9¾	8	3¼ A	200	8	25	4.25
580	11⅞	9¾	Special	300-500	4	23	9.50
54	16½	13¾	"	750 or 1000	1	....	25.00

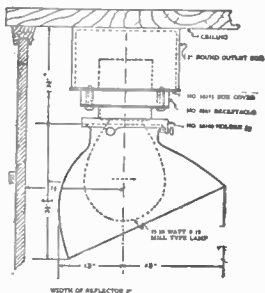
No. 7 Scoop Junior Mill Reflectors

For 50-watt Mazda B-Lamps

The Scoop Junior is a small edition of the No. 778 Scoop and is designed for use with the 50-watt Mill Type Mazda B Lamp. Fills a long need for a small reflector to light deep windows less than five feet high and for large display cases used inside many stores.



Cat. No.	DIMENSIONS, INCHES			Size Holder	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Width	Height	Depth	Inches			
7	5	3⅞	4⅞	2¼ O	40	22	\$2.50



X-Ray Direct Lighting Reflectors

These reflectors are of one-piece blown corrugated glass, with a pure silver reflecting surface; green finish outside. No. 696 gives a concentrated light for billiard tables, etc. No. 700 is a semi-distributing reflector, suited for use over type cases, desks, etc. No. 710 gives an intense light for small areas.



Cat. No.	DIMENSIONS, INCHES	Size Holder	Mazda C Lamp, Watts	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Diam. Height	Inches				
*696	8 5	2¼ O	75	24	40	\$3.00
†700	10 5½	2¼ H	100-150	18	38	3.50
710	11½ 6¾	3¼ A	200	6	21½	8.00

*696 may be used with 40, 50 and 60-watt Mazda B lamps. †No. 700 may be used with 100-watt Type B lamps.

No. 54 X-Ray Jumbo Reflectors

For 750 and 1000-watt Mazda C Lamps

The No. 54 unit is complete with No. 770 reflector, special holder and mogul socket. It is designed for the illumination of large interiors.



Made of corrugated blown glass with reflecting surface of pure silver, green finish outside.

Diameter of reflector only 16½ inches; height reflector only 13¾ inches.

Standard package, 1; package weight, 48 lbs.

Price, No. 54, with Holder.....each \$25.00

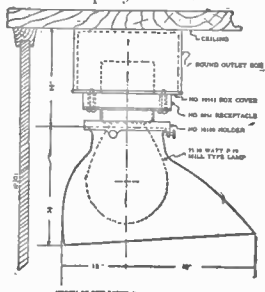
No. 11 Hood Junior Mill Reflectors

For 50-watt Mazda B Lamps



The Hood Junior is a smaller size of the Hood No. 731 reflector. Designed for use with the 50-watt Mill Type Mazda B Lamp, and will light shallow windows less than five feet high as effectively as the Hood and Jupiter light the large windows. Use for high, shallow display cases.

Cat. No.	DIMENSIONS, INCHES			Size Holder	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Width	Height	Depth	Inches			
11	5½	3⅞	5⅞	2¼ O	40	24	\$3.00



No. 778 X-Ray Scoop Reflectors

For 75-watt Mazda C Lamps

Designed to illuminate small windows of depth equal to height, and where trim is made high in back of windows. No light is wasted on the ceiling of the window or sidewalk.

It is of one-piece mirrored glass, pure silver-plated and corrugated to break up light rays. It is protected by a special green backing which prevents cracking, peeling or blistering.

Form O shade holder is used.



Cat. No.	DIMENSIONS, INCHES			Size Holder	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
	Width	Height	Depth	Inches			
778	7⅞	6⅞	6½	2¼	24	35	\$4.00

No. 400 X-ray Jack Show Window Reflectors

For 150-watt Mazda C Lamps



Designed for show windows of average proportion. A high trim reflector intended for deep windows.

The Jack Reflector, designed to be used with 150-watt lamp can also be used with a 100-watt lamp.

Has a pure silver X-ray reflecting surface and characteristic X-ray green backing.

Packed with a Form X holder which is included in the price and which fits any socket.

Cat. No.	DIMENS., INCHES			Type of Holder	Std. Pkg.	Price Each
	Width	*Height	Depth			
400	8½	8	7¾	X	10	\$4.50

*Including holder.

No. 410 X-ray Jill Show Window Reflectors

For 150-watt Mazda C Lamps

A semi-concentrating reflector for use in shallow, low trim windows.

Uses 150 or 100-watt lamp and gives an even distribution of light over the entire window.

Blown from one piece of crystal glass.

Has reflecting surface of pure silver, and characteristic X-ray green backing.

Packed with a Form X holder which is included in the price and fits any socket.



Cat. No.	DIMENS., INCHES			Type of Holder	Std. Pkg.	Price Each
	Width	*Height	Depth			
410	9¾	8¾	9½	X	10	\$4.50

*Including holder.

No. 500 X-ray King Show Window Reflectors

For 200-watt Mazda C Lamps



Designed to light large show windows that have a high ceiling and deep background.

Blown from tough 1-piece corrugated crystal glass.

Has pure silver mirrored reflecting surface and the characteristic X-ray green backing. Lights the entire window without wasting any light on ceiling or sidewalk.

Packed with a Form X holder which is included in the price and which fits any socket.

Cat. No.	DIMENS., INCHES			Type of Holder	Std. Pkg.	Price Each
	Width	*Height	Depth			
500	10	9¾	10½	X	10	\$6.00

*Including holder.

No. 510 X-ray Queen Show Window Reflectors

For 200-watt Mazda C Lamps

A semi-concentrating reflector suited to large shallow windows with high ceilings.

The silver mirrored X-ray reflecting surface directs the light rays evenly and efficiently over the entire display.

Outside of the reflector is finished in characteristic X-ray green.

Packed with Form X holder which is included in the price and which fits any socket.



Cat. No.	DIMENS., INCHES			Type of Holder	Std. Pkg.	Price Each
	Width	*Height	Depth			
510	10	9¾	10¾	X	10	\$6.00

*Including holder.

No. 731 X-Ray Hood Reflectors

For 75-watt Mazda C Lamps



Designed to light low shallow windows. A high concentration is produced in the window, cutting the light off sharply at the window plate. Closely follows correct window lighting principles.

Reflector is made of one-piece mirrored glass, corrugated, pure silver-plated inside, green protecting surface outside.

Made of corrugated blown glass and has a pure silver reflecting surface, protected by a special green backing.

Cat. No.	DIMENSIONS, INCHES			Size Holder Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Width	Height	Depth				
731	8¾	6¾	8¾	2¼H	16	26	\$4.75

No. 600 X-Ray Jove Reflectors

For 100 or 150-watt Mazda C Lamps

Designed for windows of average proportion, those where height is one to one and one-half times their depth; reflection from glass or mirror background is eliminated.

The shape of this reflector completely conceals the intensely bright lamp filament, and the special corrugations properly break up and distribute the light.



Cat. No.	DIMENSIONS, INCHES			Size Holder Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Width	Height	Depth				
600	10	7¾	9¾	3¼A	12	35	\$6.00

No. 610 X-Ray Jupiter Reflectors

For 100 or 150-watt Mazda C Lamps



Designed for the brilliant illumination of show windows where height equals about twice their depth. A high temperature backing is used which indefinitely withstands the intense heat of the lamp.

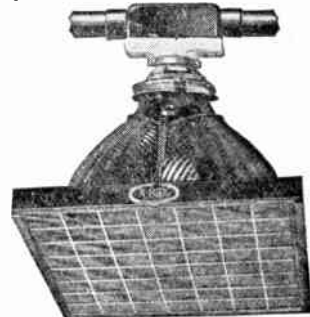
Made of corrugated blown glass with reflecting surface of pure silver, green finish outside.

Cat. No.	DIMENSIONS, INCHES			Size Holder Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Width	Height	Depth				
610	10	7¾	10¾	3¼A	12	35	\$6.00

No. 66 X-Ray Color Rays

For Jove and Jupiter Reflectors

Consists of one color frame, harness for attaching to reflector and four color screens; one each of the standard shades of red, amber, green and blue. The color frame can be attached in a few seconds and the color slides may be slipped in and out of the frame without disturbing it. Color screens are made of gelatin supported by a screen of fine steel strips.



Cat. No.	Size Inches		Std. Pkg.	Price Complete
	Width	Height		
66	10½	10¾x1¼	10	\$5.00

No. 900 X-Ray Giant Reflectors



This reflector is a recent development in window lighting equipment. Super-light, as illumination from these reflectors is called, is a powerful sales force. The Giant is designed for use in large deep windows with high trim.

Furnished equipped with a Mogul type socket and holder and uses a 500-watt Mazda C lamp.

Price, No. 900.....each \$15.00

No. 910 X-Ray Leviathan Reflectors

This reflector is a recent development in window lighting equipment. Super-light, as illumination from these reflectors is called, is a powerful sales force.

The Leviathan is designed for use in large shallow windows where the trim is fairly low.

Furnished equipped with a Mogul type socket and holder and uses a 500-watt Mazda C lamp.



Price, No. 910.....each \$15.00

No. 750 X-Ray Poke Bonnet Reflectors

For 2 Each of 25, 40, 50, 60-watt Mazda B Lamps and 50-watt Milk-white Mazda C-4 Lamps



For low, deep windows, and is fitted with an adjustable holder which may be easily attached to the ceiling or transom bar. The lamps are held in place in the reflector by a nickel-plated twin socket.

Cat. No.	Size In.	Std. Pkg.	Price Each
750	14x7x3 1/4	8	\$12.00

No. 515 X-Ray Midget Reflectors

For 25-watt Mazda B Tubular Lamps



For lighting small windows and cases, coves, etc.

This reflector requires no special fittings. It can be easily installed with conduit, brass tubing or with metallic moulding.

These reflectors, if placed one foot apart, will give a brilliant lighting effect.

Cat. No.	DIMENSIONS, INCHES			Holder	Std. Pkg.	Price Each
	Width	Height	Length			
515	2 7/8	1 3/4	6 1/4	Special	36	\$2.00

No. H-199 X-Ray Hoodette Reflectors

For 15 and 25-watt G-18 1/2 Medium Screw Base Mazda B Lamps Or 25 or 50-watt Mill Type Lamps



Designed for lighting low, shallow windows, outside display cases, wall cases, etc. The light is so controlled that while sufficient light is directed toward the back of the case, the greater part is directed downward and brilliantly illuminates the lower part. No. H-199 includes reflector, socket with cover, and reflector holder attached to socket shell. Black finish.

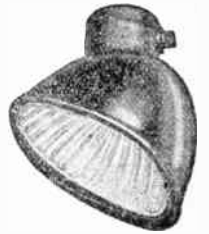
When installing, the wires are brought up back of the case and enter an outlet box at the top. The switch for controlling the lamps is concealed at one end.

Cat. No.	DIMENSIONS, INCHES			Holders	Std. Pkg.	Wt., Lbs.	Price Each
	Width	Depth	Height				
H-199	3 3/4	5 3/8	4 1/8	Special 10	14	\$4.75	

No. S-200 X-Ray Scoopette Reflectors

For 15 and 25-watt G-18 1/2 Medium Screw Base Mazda B Lamps Or 25 or 50-watt Mill Type Lamps

For show case lighting. Any can be lighted with it. This unit offers the least possible obstruction to a clear view of the interior of the case, gives even and efficient illumination with complete concealment of the lamp, low current consumption and maintenance, smallest amount of heat and absolute safety from fire risks. No. S-200 includes reflector, socket and cover, housing for reflector, and special clip to hold reflector in place. Black nickel finish.



Cat. No.	DIMENSIONS, INCHES		Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
	Height Inc. Socket	Depth Front to Back			
S-200	4 1/2	3 5/8	10	7	\$4.75

Complete Outfits

Complete assortments of finished material necessary for equipping square-end show cases of various sizes with any number of Scoopettes specified are regularly supplied. Material includes a special insulating joint, a push button switch, a special switch box, which is easily installed, all tubing, elbows, T-fittings, Scoopettes, straps or brackets for supporting tubing, cap for end of tubing and sufficient special flexible No. 18 stranded wire to wire entire case. Prices do not include assembling, wiring, installing or lamps.

No. Scoopettes per Case	LENGTH OF CASE, FEET					
	3 to 5	5 to 7	7 to 9	9 to 11	11 to 13	13 to 15
2	\$24.85	\$25.85	.....	.....	.....	.....
3	30.75	*31.70	\$32.65	.....	.....	.....
4	36.70	37.60	*38.55	\$39.50	.....	.....
5	.....	43.50	44.55	45.40	\$46.35	.....
6	.....	.....	50.45	51.30	52.25	\$53.20
7	.....	.....	56.35	57.20	58.15	59.10
8	.....	.....	.....	63.10	64.05	65.00
9	.....	.....	.....	69.00	69.95	70.90
10	.....	.....	.....	74.90	75.85	76.80

The charge for bending tubing for a case with a single curved end is \$2.50 and for a case with two curved ends is \$3.25. *Standard package outfits.

Method of Installing

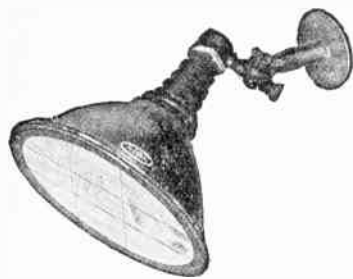
Floor Entrance, for Wood Frame Cases

The feed wires enter from underneath the floor of case extending up through the flexible conduit, which is concealed back of one of the front corner posts. Floor entrance outfits can be supplied for same prices as back entrance outfits.

Back Entrance, for All-plate Cases

Feed wires are brought up one of the back posts; tubing extends across the case inside at the top at one end, being connected to the front tube with an elbow. This is a most satisfactory method, as it is not necessary to disturb the trim, move the case or tip it over.

No. 33 X-Ray Show Window Flood Lights



The No. 33 window flood light lights the entire window with a flood of direct light from the 200-watt Mazda C lamp, and concentrates a powerful beam of light in the center of this flood. The purpose of this concentrated beam is to high-light one article in the display without making a sharp ring or cut-off of light, but rather causes the beam to fade away gradually.

It is an inexpensive method of lighting small windows where no other reflector equipment is used.

In windows already wired with reflector equipment it raises the light intensity at one point as compared to the balance of the window.

Regularly furnished with a color frame and four pieces of colored gelatin—red, blue, green and amber. The frame clips on the reflector when color flood lighting is used. Frame and color mediums can be omitted when orders so specify.

All metal parts are finished X-Ray green to match backing on the X-Ray Reflector.

Height over all, 11 inches. Diameter of color frame, 11 5/8 inches.

Furnished complete as shown, with swivel supporting base, socket holder, No. 800 reflector, color frame and four pieces of colored gelatin—red, blue, green, and amber, same as used in No. 66 Color Ray.

Standard package, 1.
Price, No. 33, Complete.....each \$15.00
" " 33, without Color Frame and Gelatins. " 12.00

No. 303 Portable Flood Lights

No. 303 consists of the regular No. 33 Flood Light mounted on a portable stand.

Price, No. 303, Complete.....each \$25.00
" " 303, without Color Frame and Gelatins " 22.00

No. 88 Hippo X-Ray Show-window Flood Lights

With Center Spot Beam



The Hippo Show Window Flood Light with Center Spot-beam has been designed to concentrate a powerful center spot beam over a small area, which fades away into the light given out over the greater area. It is a powerful light using either the 300, 400 or 500-watt P. S. bulb, mogul base lamp.

It is designed for use in large windows where it is desirable to throw a light of a high intensity, on some one center display.

This floodlight is for use with or without color equipment.

Cat. No.....	88
Base.....inches	5 1/2
Depth....."	14
Diameter....."	14
Height....."	11
Std. Pkg.....	1
Price, with Color Frame and Gelatin.....each	\$25.00
" " without Color Equipment....."	21.00

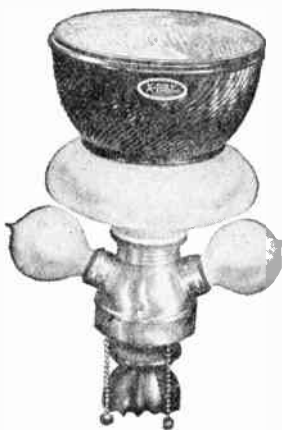
No. 808 Portable Flood Lights

No. 808 consists of the regular No. 88 Flood Light mounted on a portable stand.

This style furnished with or without color equipment.

Price, No. 808, with Color Frame and Gelatin.....each \$34.00
" " 808, without Color Equipment....." 30.00

No. 3000 X-Ray Curtis Adapters



The purpose of No. 3000 X-Ray Curtis Adapter is to make the ordinary floor or art lamp a useful as well as ornamental lighting fixture. It consists of a silvered glass X-Ray reflector mounted on an opal glass diffuser. Beneath this is a heavy brass socket which will accommodate two small frosted bulbs for local lighting as well as the larger lamp inside the reflector. The reflector is designed to use any Mazda C lamp from 75 to 200 watts capacity.

The height of the reflector can be adjusted to fit the lamp used.

Adapter Complete

The small illustration shows how the Curtis Adapter is mounted on an art lamp. The adapter lights the entire room with a glareless light. It may be applied to any lamp the top of whose shade is over 54 inches from the floor. The adapter is 9 1/2 inches high and 6 3/4 inches across the top of the reflector.



Adapter Mounted on Lamp

Packed one to a carton.

Price, No. 3000.....each \$14.00

No. 10307 X-Ray Show Window Spotlights

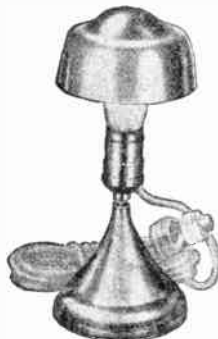


Used in show windows to attract attention to some particular article by concentrating an intense spot of light upon it. Wired with plug and is ready to attach to a regular 3 1/4-inch shade holder or can be bolted to any supporting surface.

Changes in direction, or size of the spot of light are quickly adjustable from outside the unit. For colored light, gelatin color mediums are inserted.

Cat. No.	DIMEN. BARREL, IN.			Std. Pkg.	Price Each
	Height	Depth	Width		
10307	9	9 1/2	6	1	\$29.75

Buss Lights



This light can be used for every purpose. It may be clamped or hung anywhere and is an artistic stand lamp that is neat and attractive. Not just a clamp lamp contraption.

Base plate screws in and out to clamp anywhere. Works like a vise. Slotted hole permits light to be hung on hook or nail. A touch of the hand adjusts the bulb or shade to any position.

Light is 11 inches high. Complete with extra long 9-foot cord and combination plug. Made in two finishes, bronze or brass, at the same price.

Price, without Bulb.....each \$2.00

Benjamin Pear Shaped Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc.
Fits standard brass shell sockets and takes Mazda B lamps up to 40 watts.

Reflector has hinged collar which allows it to swing out and give free access to lamp when making renewals.
The inside is aluminized; outside as indicated in the listing.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std.	Price Each
362	Brushed Brass	10	2	\$.80
364	Brass, Polished Nickel	10	2	.95
365	For Brass Shell Socket; Steel, Green Enameled	10	1 3/4	.45
365 ¹	For Porcelain Sockets; Steel, Green Enameled	10	1 3/4	.80

Benjamin Tubular Half Shades



For use with desk lamps, bracket lamps, oil gauge lamps, etc.

Fits standard brass shell sockets and takes T-10 Tubular lamp.

Reflector has hinged collar which allows it to swing out and give free access to the lamp when making replacement.

Aluminized inside; outside as indicated in listing.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std.	Price Each
277	Polished Nickel	10	2 1/4	\$.80
278	Steel, Green Enameled	10	2	.50

Benjamin Tubular Reflectors For 2 T-10 Tubular Lamps



For use in illuminating display cases, pictures, library shelves, office files, etc.

Reflector only, Cat. No. 282, has 2 metal straps by which it may be attached to any brass shell twin socket. It is slotted on one side to allow adjustment half-way around the lamp. The mounting bracket may be set at any one of three positions.

Reflector with socket, Cat. No. 281, consists of Reflector No. 282 and Benjamin Twin Socket No. 282, which is tapped 3/8-inch iron pipe size.

Both reflector and socket are polished nickel.

Cat. No.	Description	Lgth. In.	Std. Pkg.	Wt., Lbs. Std.	Price Each
282	Reflector Only	14	10	5	\$2.00
281	" with Socket	14	10	6 1/2	\$3.10

Benjamin Tubular Reflectors For One T-8 Tubular Lamp



For use in illuminating display cases, pictures, library shelves, office files, etc.

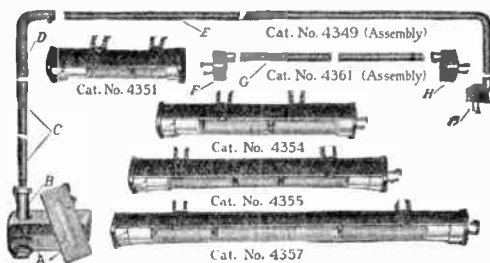
Reflector only, Cat. No. 31, has a metal strap by which it may be attached to any straight or angle type of brass shell socket. It is usually used in an upright position, employing an angle socket. The reflector may be adjusted around the lamp within an angle of 90 degrees.

Reflector with socket, Cat. No. 30, consists of Reflector No. 31 and Benjamin Angle Socket No. 431, which is tapped 3/8-inch iron pipe size.

Both reflector and socket are polished nickel.

Cat. No.	Description	Lgth. In.	Std. Pkg.	Wt., Lbs. Std.	Price Each
31	Reflector Only	14	10	3 3/4	\$2.00
30	" with Socket	14	10	5 1/4	2.75

Benjamin Show Case Lighting Fixtures



Standard finish for parts listed below is statuary bronze outside. Lamp sections are aluminized inside.

Polished nickel outside finish on brass will be furnished at 33 1/3 per cent over price.

Lamp Sections

Lamp sections are completely wired for through connection and take T-10 tubular lamps.

Cat. No.	Description	No. of Lights	Std. Pkg.	Wt., Lbs. Each	Price Each
4354	12-inch Lamp Section	1	5	1 1/8	\$4.00
4355	16 " " "	2	5	1 1/4	4.50
4357	22 " " "	2	5	1 1/2	4.70

For Curved Part of Case

Cat. No.	Description	No. of Lights	Std. Pkg.	Wt., Lbs. Each	Price Each
4351	8 1/2-inch Lamp Section	1	5	3/4	\$3.75
*4351	18 " Link		5	1 1/2	2.00

*This unit consists of a section of soft brass tubing (G) which can be cut and bent to fit show case curve, and 2 end blocks (E and H) for linking lamp sections together.

Entrance Stem Assembly

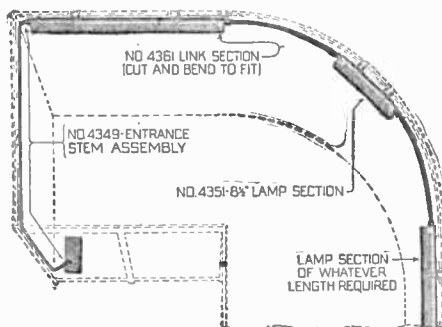
No. 4349 consists of connecting block (F), horizontal tubing of soft brass with 90-degree bend (E), elbow (D), vertical tubing of soft brass (C), with one end threaded for screwing into floor fitting, floor fitting (B), and outlet box (A).

No. 4350 consists of outlet box (A), floor fitting (B), 33 inches of soft brass tubing with 90-degree bend (E), and connecting block (F). After tubing is cut to the required length the straight end must be threaded for screwing into floor fitting.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Each	Price Each
4349	Complete for Rear Entrance	5	1 11/16	\$3.50
4350	" " Front	5	1 5/16	2.40

†A standard package consists also of any assortment of 5 of the above Cat. Nos.

Method of Installation



Lighting Curved Show Cases

The illustration above shows the method of installing Benjamin Show Case Lighting fixtures in the curved section of a case. The link sections shown are of soft brass tubing and are easily cut and bent to fit the case. No threading is necessary, because the joints slip together and are held with set screws.

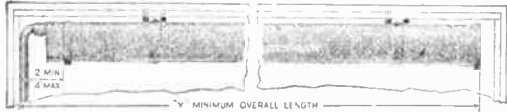
How to Install the Entrance

Tubing is of soft brass and easily cut and bent. No threading is necessary because the joints slip together and are held with a set screw.

Supporting the Lamp Sections

The method of fastening reflector sections to wood or glass cases is by means of especially designed supporting brackets.

Benjamin Show Case Lighting Fixture Combinations



The charts below simplify ordering Benjamin Show Case Lighting Fixtures.

Degree of Illumination

AVERAGE ILLUMINATION.—Should be used where light colored goods, jewelry, etc., are displayed, or where general lighting is not exceptional.

HIGH ILLUMINATION.—Should be used where dark colored goods are displayed, or where the general lighting of the store is exceptionally bright.

For 6 and 8-foot Square Cases

As these lengths of cases are most commonly used, Benjamin Show Case Lighting Fixtures are listed below for them in complete combinations for either an average or high degree of illumination.

Actual Length of Case, Feet	Degree of Illumination	Cat. No.	Price Each	*No. and Lgth. of Sections	Y Minimum Over All Length, Inches	No. of Lamps	Std. Pkg.
6	Av.	25909	\$17.60	3-22"	68	6	1
6	High	25910	21.50	4-16"	66	8	1
8	Av.	25917	22.30	4-22"	90	8	1
8	High	25918	29.75	5-16" & 1-8 1/2"	90 1/2	11	1

For Square Cases from 46 1/2 to 123 Inches

To determine the catalogue number of the proper combination, measure the inside length of the show case, determine the degree of illumination as explained above, and then refer to the first 2 columns of the chart. Then, opposite nearest length and the degree of illumination required, the catalogue number and other relative data will be found.

Actual Inside Length of Case, Inches	Degree of Illumination	Cat. No.	Price Each	*Number and Length of Sections	Y Minimum Over All Length, Inches	No. of Lamps	Std. Pkg.
47-50	Av.	25901	\$12.90	2-22"	46	4	1
47-50	High	25902	16.50	2-16" & 1-12"	46	5	1
51-58	Av.	25903	12.90	2-22"	46	4	1
51-58	High	25904	17.00	3-16"	50	6	1
59-62	Av.	25905	16.90	2-22" & 1-12"	58	5	1
59-62	High	25906	17.20	1-22" " 2-16"	56	6	1
63-68	Av.	25907	17.40	2-22" " 1-16"	62	6	1
63-68	High	25908	21.00	3-16" " 1-12"	62	7	1
69-74	Av.	25909	17.60	3-22"	68	6	1
69-74	High	25910	21.50	4-16"	66	8	1
75-80	Av.	25911	21.40	2-22", 1-16" & 1-12"	74	7	1
75-80	High	25912	25.25	4-16" & 1-8 1/2"	74 1/2	9	1
81-84	Av.	25913	21.60	3-22" " 1-12"	80	7	1
81-84	High	25914	25.50	4-16" " 1-12"	78	9	1
85-90	Av.	25915	22.10	3-22" " 1-16"	81	8	1
85-90	High	25916	26.00	5-16"	82	10	1
91-98	Av.	25917	22.30	4-22"	90	8	1
91-98	High	25918	29.75	5-16" & 1-8 1/2"	90 1/2	11	1
99-104	Av.	25919	26.05	4-22" " 1-8 1/2"	98 1/2	9	1
99-104	High	25920	30.50	6-16"	98	12	1
105-110	Av.	25921	26.30	" 4-22 & 1-12"	102	9	1
105-110	High	25922	30.70	" 1-22 " 5-16"	104	12	1

*Combinations consist of 1 No. 4349 entrance stem and the sections listed.

†Prices do not include wire or lamps except as specified.



Socket Separates Like a Standard Attachment Plug, So That Lamps Can Be Changed Outside of Case



Sections Being Joined Together Electrically and Mechanically by Tightening Two Machine Screws



Bracket Mounted on All Glass Case



Bracket Mounted on Wood Frame Case

Greist Portable Lamps



The base of this lamp is heavily weighted, insuring stability when used as a desk, table or piano lamp.

A rubber covered ring set into the base and a felt lined hook fastener protect any surface on which the lamp is placed.

Has separable plug.

Furnished with 8-foot cord.

- Price, Brushed Brass and Mahogany Bronze... each \$5.00
- " Statuary Bronze... " 6.00
- " Decorated Statuary Bronze... " 7.00

Greist Juniorlite Adjustable Lamps

This lamp is particularly useful as a bed or boudoir lamp and the choice of many beautiful finishes makes it possible to obtain a lamp that will harmonize with the color scheme of any room.



The shade will effectively protect the eyes from the light rays in whatever position the lamp is used.

- Price, Brushed Brass and Mahogany Bronze... each \$4.50
- " Ivory Enamel or Statuary Bronze... " 5.00
- " Decorated Ivory, Decorated Statuary Bronze or Crackle Enamel... each 5.50
- Price, Decorated Crystalline... " 6.00

Wallace Portable Adjustable Lamps



This lamp stands, hangs, clamps anywhere it is put. It may be tilted at any angle, twisted in any direction, and the shade adjusted to reflect the light where it is wanted.

A handy lamp for traveling, as it may be folded up. It weighs only a pound and takes up but little room.

Has separable plug. Furnished with 8-foot cord.

- Price, Brushed Brass and Mahogany Bronze... each \$2.50
- " Verde Antique " Nickel... " 2.75

Adjusto-Lites

Made of solid brass in four finishes: Brass, bronze, nickel and white enamel.

Durable and handsome. The Adjusto-Lite stands 12 1/2 inches high with 5-inch by 3-inch base.

Shade is 5 3/4 inches in diameter.

An eight-foot cord with push button socket and two-piece plug is attached to every lamp.

Sold with a five-year guarantee.

The lamp clamps, stands or hangs anywhere. Clamp is felt lined.

- Price, Brass Finish... each \$3.95
- " Bronze or Nickel Finish... " 4.45



Greist Do-all Lamps



Rubber cushion on base to prevent scratching of polished surfaces.

Has large hook for hanging to head of bed, back of chair, etc. Small hook to hang on wall or bracket.

Separable plug. Key socket. Adjustable oval shade.

Has 6½-inch double adjustable arm. Furnished with 8-foot cord. Heavy base, hook and eye folding into same.

Price, Brush Brass or Mahogany Bronze.....each \$5.00
 " Statuary Bronze..... " 6.00

No. 45 Dim-A-Lamp Portables

This lamp is simple in operation. Pushing the stem down will open a clamp, pushing the stem up will clamp the lamp securely on round, square or flat surfaces. Will also hang or stand anywhere. The adjustable shade and socket provide for light at any angle. Standard finishes are brush brass, bronze and ivory. It is furnished with separable plug, Dim-a-lite Socket and 8-foot cord.

Gives five changes of light and saves 30 to 80 per cent current.



Finish	Std. Pkg.	Wt. Lbs.	Price Each
Brush Brass.....	12	23	\$3.75
Ivory.....	12	23	4.25
Bronze.....	12	23	4.25

Add 10 cents to list price for 32-volt and 220-volt Dim-a-lamps.

No. 46 Dim-A-Lamp Portables



Gives five changes of light. Saves 30 to 80 per cent current. Just the lamp for bedroom, sick-room, desk, or nursery, in fact anywhere a decorative lamp of neat design is desired.

This lamp is made of brass throughout. Has an old ivory or bronze finish.

Furnished with separable plug, Dim-a-lite socket and 8 feet of silk cord.

Cat. No.	Max. Ht. In.	Base In.	Reflector In.	Wt. Lbs.	Price Each
46	17½	5½	5½	2½	\$4.75

No. 8734TW Emeralite Portable Lamps



A most efficient and practical fixture for stenographer's and flat-top desks. The base is covered with felt and held securely in place by means of special adjustable clamp at rear, clamping against underside of desk top. The arm and shade can be adjusted to any angle; and arm has extension adjustment to accommodate various widths of desks. Base, 4 inches square. Arm does not interfere with opening and closing of desk.

Price, No. 8734TW.....each \$14.00

No. 8734½E Emeralite Portable Lamps

This pattern is a neat and compact fixture and economizes space on desk top. Base, 7x7½ inches; height, 18 inches to top of shade. Inkwell has metal cover finished to match stand, with pen rack located conveniently above.

Furnished complete with shade, pull socket, six-foot silk cord, plug and inkwell.

Finish is brushed brass with brass.

Price, No. 8734½E.....each \$15.00

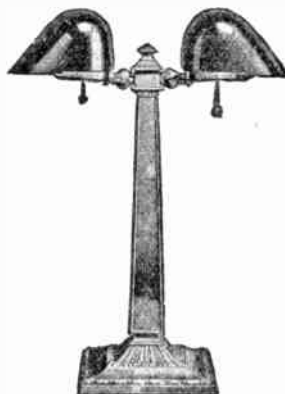
No. 8734E

Similar to No. 8734½E but with two inkwells. Size, base, 7x9 inches.

Price, No. 8734E.....each \$16.50



No. 8734C Emeralite Portable Lamps



For double desk or table; height to top of shades, 19 inches. Efficient illumination area, 48 inches wide by 36 inches in front of each shade. Both shades are adjustable to any angle.

Complete with shades, pull sockets, six-foot silk cable and plug.

Finish, brushed brass with black relief.

Price, No. 8734C.....each \$20.00

No. 8734AC Emeralite Portable Lamps



For roll top desks. Arm is adjustable. Size of base, eight inches. Heavily weighted and felted.

Equipped with Daylight screen which modifies the glare so that natural daylight is closely approximated.

Finish, brushed brass with black relief.

Price, No. 8734AC.....each \$12.00

No. 8734ECS Emeralite Portable Lamps



Fitted with perpetual calendar and Sengbusch self-closing inkwells of special pattern cut glass.

The Sengbusch well is dust-proof, non-evaporating and economical in ink consumption.

Base of lamp is 7x9 inches. Height, 18 inches.

Finish is brushed brass.

Furnished complete with pull socket, six-foot silk cord and plug.

Price, No. 8734ECS.....each \$23.50

No. 8734AM Emeraldite Machine Lamps



For adding, posting and calculating machines supported by bracket which clamps leg of 1-inch tubular or U section stands.

The light can be adjusted in such a manner as to eliminate the glare reflected from keyboard and will also illuminate keys, platen, and shelf of any machine of the type illustrated.

Equipped with rich, emerald green glass shade, white porcelain-lined.

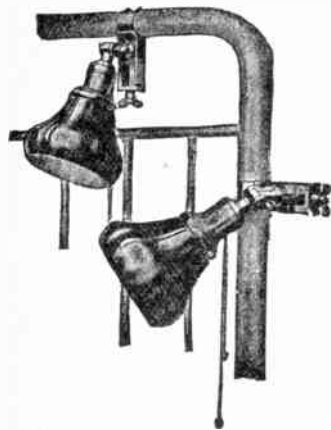
Daylight attachment is recommended for all machine lighting.

This lamp has vertical and horizontal adjustments.

Finish: Black enamel.

The No. 8734AM is furnished complete with bracket and 9-foot cord.

Price, No. 8734AM, Complete as Described . . . each \$13.00



No. 0615M Emeraldite Portable Bed Lamps

Can be attached to any round or square, vertical or horizontal bed post, of any diameter, regularly furnished with clamp to fit posts from 1 to 2 1/4 inches diameter, larger clamps to order. Clamp is felt-lined and operated by thumb-screw in end of fixture.

No. 0615M, for metal and No. 0615R, for wood beds. Satin brass finish.

Price, No. 0615M, ea \$8.00
" " 0615R. " 8.00

No. 8734B Emeraldite Portable Lamps

Square pattern, 7-inch base, for flat top desk or table.

Height to top of shade, 18 inches. Illumination area 48 inches wide by 30 inches in front of base.

With white porcelain lined green glass shade and fitted with Daylight screen.

Furnished complete with shade, pull socket, plug and six-foot cord.

Finish is brushed brass, black relief.

Price, No. 8734B . . . each \$12.00



Emeralite Portable Lamps



Daylight Screen

The Emeraldite Shade is made of a rich emerald green glass, plated inside with a white opal glass and made the proper shape to give the most efficient distribution of light, protecting the eyes from all glare and strain. The smooth glass shade will not tarnish or collect dust. All Emeraldites designated by No. 8734 are fitted with new type holder and shade which can be detached without disturbing electric wiring. The standards and fixtures are all carefully made of the best materials, heavily weighted and felted. All shades are adjustable to any angle and will accommodate any standard Edison electric lamp up to 60-watt size. All portables furnished complete with shade, pull socket, plug and six feet of cord.

The Daylight Screen consists of a patented glass filter, completely concealed from view, which modifies the glare and closely approximates daylight. Daylight attachments are now included with all No. 8734 Emeraldites without extra charge.

Emeralite Junior Adjustable Lamps



This practical little lamp will clamp, stand or hang any place, and will be found exceedingly useful in any home. It is desirable as a study or reading lamp for children; for the boudoir, or for use on side shelf of grand piano, dressing table or nursery.

The shade can be tilted to any position and, no matter how adjusted, the eyes are always protected from the direct glare of the lamp. Any standard electric lamp can be used.

Base is heavily weighted and felted, and contains an efficient clamp.

Total height of lamp, 12 inches; glass shade, 6 inches diameter.

Description	PRICE, EACH	
	Brass	Bronze
Green Shade	\$6.50	\$7.50
Buff "	7.00	8.00
" Decorated Shade	7.00	8.00
Old Ivory Green "	6.50	.....
" " Buff Decorated Shade	7.00	.....

No. 8734G Emeraldite Portable Lamps

With adjustable arm. For use on roll top desk. Size of base, 7 inches square.

The Emeraldite shade is made of rich emerald green glass, white porcelain lined. Fitted with Daylight screen.

Furnished complete with shade, pull socket, plug and 6 feet of cord.

Price, No. 8734G, Brushed Brass with Black Relief .ea. \$12.00



No. 458 Esrobert Greenalite Portable Lamps

BASE.—Solid cast metal base, 7 inches square.

STEM.—Jointed arm and shade bracket, 10 inches long, with special friction joint.

SHADE.—Oblong green glass, $8\frac{5}{8} \times 5\frac{1}{4} \times 3\frac{1}{4}$ inches.

WIRING.—Approved pull chain socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

MAXIMUM HEIGHT.—17 $\frac{1}{8}$ inches.

WEIGHT.—12 pounds.

FINISH.—Flemish brass, antique bronze, verde green.

Price, No. 458. each **\$12.00**



No. 468 Esrobert Greenalite Portable Lamps

BASE AND COLUMN.—Solid cast metal base and column; base, 7 inches square.

SHADE.—Oblong green glass, $8\frac{5}{8} \times 5\frac{1}{4} \times 3\frac{1}{4}$ inches.

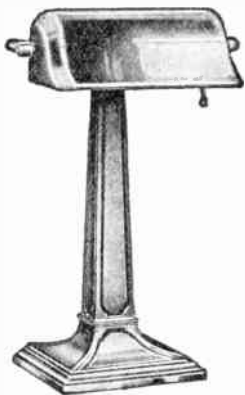
WIRING.—Approved pull chain socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

MAXIMUM HEIGHT.—18 inches.

WEIGHT.—13 pounds.

FINISH.—Flemish brass, antique bronze, verde green.

Price, No. 468. each **\$12.00**



No. 492 Esrobert Greenalite Portable Lamps

BASE.—Adjustable clamp for attachment to the top of a desk or table. Clamp is felted to prevent damage to polish of furniture.

STEM.—Made of brass tubing.

SHADE.—Oblong green glass, $8\frac{5}{8} \times 5\frac{1}{4} \times 3\frac{1}{4}$ inches. (Patented Nov. 22, 1921.)

WIRING.—Approved pull chain socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

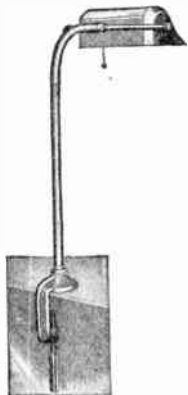
HEIGHT.—20 inches.

WEIGHT.—7 pounds.

FINISH.—Statuary bronze.

PACKING.—Every lamp is individually packed in corrugated carton.

Price, No. 492. each **\$13.00**



No. 478 Esrobert Greenalite Portable Lamps

BASE.—Solid cast metal base and column; base 7 inches square.

SHADE.—Two oblong green glass shades, $8\frac{5}{8} \times 5\frac{1}{4} \times 3\frac{1}{4}$ inches.

WIRING.—Two approved pull chain sockets, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

HEIGHT.—18 inches.

WEIGHT.—15 pounds.

FINISH.—Flemish brass, antique bronze, verde green.

PACKING.—Every lamp is individually packed in a corrugated carton.

Price, No. 478. each **\$20.00**



No. 2042 Esrobert Portable Lamps

Telescopic

BASE.—8 inches in diameter, felted on bottom.

STEM.—Outer stem 30 inches by $\frac{3}{4}$ inch, inner stem 24 inches x $\frac{5}{8}$ inch. Twelve-inch Phlex-arm.

WIRING.—Approved key socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

MAXIMUM HEIGHT.—71 $\frac{3}{4}$ inches.

FINISH.—Brushed brass and statuary bronze.

WEIGHT.—Packed in carton, 13 pounds.

ASH TRAY.—Can be furnished at slight advance in price.

Price, No. 2042. each **\$7.50**
 " Ash Tray. " **2.00**



No. 3042 Esrobert Portable Lamps

BASE.—Cast iron, 10 $\frac{1}{4}$ inches in diameter, felted on bottom.

STEM.—Outer stem is 36 $\frac{1}{2} \times \frac{7}{8}$ inch long, inner stem 24x $\frac{5}{8}$ inch; 12-inch brass Phlexarm.

WIRING.—Approved push socket, 10 feet new code parallel mercerized cord; 2-piece approved attachment plug.

MAXIMUM HEIGHT.—79 inches.

WEIGHT.—Packed in carton, 16 $\frac{1}{2}$ pounds.

FINISH.—Verdgold and Bronzegold.

ASH TRAY.—Can be furnished at slight advance in price.

PACKING.—Every Esrobert Portable Lamp is individually packed in a strong corrugated carton, to insure it against breakage.

Each box carries a standard 4-color label on the front that shows a picture of the lamp.

Label on each box shows the number of the portable lamp and also gives a description of its finish.

Price, No. 3042. each **\$9.00**



No. 309 Esrobert Portable Lamps

BASE.—Cast iron, 8 $\frac{1}{4}$ inches long, 5 $\frac{1}{4}$ inches wide, felted on bottom.

STEM.—Special 12-inch Phlex-arm.

WIRING.—Approved push socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.

MAXIMUM HEIGHT.—24 $\frac{1}{2}$ inches.

WEIGHT.—Packed in carton, 6 pounds.

FINISH.—Verdgold and Bronze-gold.

PACKING.—Every lamp is individually packed in a strong corrugated carton.

Price, No. 309. each **\$4.50**



No. 1459 Esrobert Greenalite Portable Lamps



BASE.—7-inch diameter, weighs 6 pounds.
 STEM.—Jointed arm and shade bracket, 9½ in. long.
 SHADE.—Oblong green glass, 8⅞x5¼x3¼ inches.
 WIRING.—Approved pull chain socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.
 MAXIMUM HEIGHT.—17¼ inches.
 WEIGHT.—12 pounds.
 FINISH.—Brushed brass, statuary bronze.
 PACKING.—Every lamp is

individually packed in a strong corrugated carton.
 Price, No. 1459..... each \$9.50

No. 1469 Esrobert Greenalite Portable Lamps

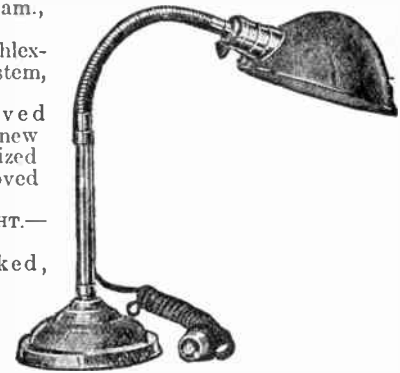
BASE.—7-inch diameter, weighs 6 pounds,
 COLUMN.—Base to brackets, 12¼ inches.
 SHADE.—Oblong green glass, 8⅞x5¼x3¼ inches.
 WIRING.—Approved pull chain socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.
 MAXIMUM HEIGHT.—18 inches.
 WEIGHT.—12 pounds.
 FINISH.—Brushed brass, statuary bronze.

PACKING.—Every lamp is individually packed in corrugated carton.
 Price, No. 1469.....each \$9.50



No. 149 Esrobert Portable Lamps

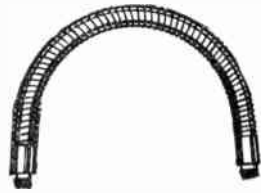
BASE.—5½-in. diam., felted bottom.
 STEM.—9-inch Phlex-arm, 6-inch rigid stem, ⅝-in. diam.
 WIRING.—Approved push socket, 10-foot new code parallel mercerized cord, 2-piece approved attachment plug.
 MAXIMUM HEIGHT.—26 in.
 WEIGHT.—Packed, 6½ lbs.
 FINISH.—Brushed brass, statuary bronze.



Price, No. 149.....each \$4.25

Esrobert Phlexarms

Designed for use with electric portable lamps and wall brackets in factory, home and office. The Phlexarm is made in two sizes:
 STYLE A.—½-inch iron pipe, thread at each end, and ¼-inch hole all the way through.
 STYLE B.—⅜-inch iron pipe, thread at each end, and ⅜-inch hole all the way through. This style is standard for factory use.



STYLE A			STYLE B		
Size, In.	Std. Pkg.	Price Each	Size, In.	Std. Pkg.	Price Each
6	50	\$.65	6	50	\$.78
9	50	.75	9	50	.90
12	50	.90	12	50	1.08
15	50	1.10	15	50	1.32
18	50	1.35	18	50	1.62

Price, 24-inch and longer, per foot: Style A, 90 cents, Style B, \$1.08.

No. 1519 Esrobert Portable Lamps



BASE.—6¼ inches in diameter, felted on bottom.
 STEM.—Double-jointed arm, 13½ inches long, with special corrugated joint.
 WIRING.—Approved push socket, 10 ft. new code parallel mercerized cord, 2-piece approved attachment plug.

MAXIMUM HEIGHT.—24½ inches; weight, packed in carton, 9¾ pounds.
 FINISH.—Brushed brass and statuary bronze.
 PACKING.—Every lamp is individually packed in a strong corrugated carton.
 Price, No. 1519.....each \$4.50

Esrobert Bases and Stems



Standard finish, brushed brass.

Cat. No.	Base Diam. Inches	Length Stem In.	Std. Pkg.	Price Each
141	5½	6	50	\$1.30
*151	6	6	50	1.60

*No. 151 has special weighted base.

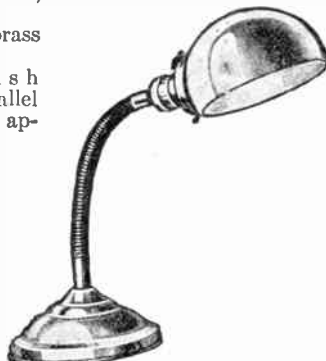
Extension Cord Sets



Consists of 10 feet new code parallel mercerized cord, keyless socket, 2-piece approved plug.
 Colors, oak tan and olive green.
 Packed one to a carton.
 Price, Cord Set.....each \$1.50

No. 138 Esrobert Portable Lamps

SHADE.—Oval green glass.
 BASE.—5½ inches in diameter, felted on bottom.
 STEM.—Special 9-inch brass Phlex-arm.
 WIRING.—Approved push socket, 10 feet new code parallel mercerized cord, 2-piece approved attachment plug.
 MAXIMUM HEIGHT.—21 inches.
 WEIGHT.—Packed in carton, 6½ pounds.
 FINISH.—Brushed brass and statuary bronze.
 PACKING.—Every lamp is individually packed in a strong corrugated carton.
 Price, No. 138, each \$4.00



Esrobert Greenalite Shades



No. 400
 Price, No. 400, without Bushing.....each \$2.75
 " " 401, with "....." 2.75

No. 22 Esrobert Brass Parabola Shades

Brushed brass aluminum finish inside.

Standard finish, brushed brass.

Cat. No.	Std. Pkg.	Price Each
22	50	\$.90



Benjamin Wireless Stand Lamp Clusters

A newly designed, graceful, neat appearing wireless cluster possessing advantageous features for use in making floor and table lamps, converting oil and gas lamps and making over pottery, wooden and wickerware vases. The wireless stand lamp cluster has a close grouping of sockets which makes it suitable for narrow shades. Each socket has an individual controlling switch working independent of the other.

The electrical connections to both sockets are made at once by simply bringing the wire ends through and fastening under two binding screws.

To harmonize with most fine lamps, standard finish is made Roman Gold. All other finishes are special.

Making Lamps

Vases as well as gas and oil lamps are easily and profitably transformed into electric lamps, by the use of a Benjamin Stand Lamp Cluster and one of several adapters, which are made by reliable manufacturers.

Usually these devices comprise a cover, a short threaded pipe and an expanding claw, which grips the interior of the vase when the cluster stem is tightened, anchoring the cluster in position. Manufacturers of adapters of this kind and similar devices for converting gas and oil lamps are listed in the electrical directories.

Instructions for making such lamps will be sent upon request.



Clusters Complete

Cluster consists of a wireless cluster body, stem with casing and 1/4-inch coupling as shown in illustration. Length is approximately 7 1/2 inches from shade support to bottom of coupling.

Coupling for 1/8-inch pipe connection or flange for attaching to wood, supplied at a small additional cost as listed at bottom of this page.

Mfrs. No.	No. of Lights	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
842	2	5	3 1/2	\$1.60

Cluster Bodies Only

Cluster shown here is without stem and top ornament. Top stud has 1/8-inch pipe thread and cluster bottom has double tapping, one for 1/8-inch pipe and the other for 1/4-inch pipe.



Mfrs. No.	No. of Lights	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
841	2	5	2 3/8	\$1.30

Additional Parts for Clusters

Couplings for 1/8-inch Stem Connections

Mfrs. No.	Size In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
5099	1/4 x 1/8	5	1/8	\$.05

Flanges for Attaching to Wood

5094	1 1/8" Diam.	5	1/8	\$.05
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Benjamin Adjustable Stand Lamp Clusters

This cluster is especially suitable for fine lamps using silk or parchment shades. It has a drawn brass body with two (or three) adjustable, pull chain sockets.

The pull chain sockets are spaced appropriately for cord and tassels and are adjustable to any angle from horizontal to vertical. This adjustable feature is very important. With shallow shades the lamps may be adjusted so as not to be visible to the eye. With deeper shades, any angle of the lamps may be obtained to give the most desirable quality and direction of light, and show off the shade to its greatest advantage.

To harmonize with most fine lamps, standard finish is made Roman Gold. All other finishes are special.

Clusters Complete



Cluster consists of body to which Benjamin Angle Sockets are fastened adjustably, top ornament, stem with casing and 1/4-inch coupling, as shown in illustration. Length is approximately 7 3/4 inches from shade support to bottom of coupling.

Coupling for 1/8-inch pipe connection No. 5099, or flange for attaching to wood No. 5094 will be supplied at 5 cents advance in list.

Mfrs. No.	No. of Lights	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
890	2	5	4 3/8	\$2.45
891	3	5	5	2.35

Clusters Only—With Top Stud Assembly

Clusters listed below are furnished without stem, as shown.

Top stud has 1/4 x 27 thread. Cluster body has bottom bushing tapped both for 1/8 and 1/4-inch iron pipe connection.



Mfrs. No.	No. of Lights	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
880	2	5	2 3/4	\$2.00
881	3	5	3 3/8	2.90

Clusters Only—Less Top Stud Assembly



Hickey in cluster body tapped 1/8 inch top iron pipe size. Cluster body has bottom bushing tapped regularly for both 1/8 and 1/4-inch iron pipe sizes.

Mfrs. No.	No. of Lights	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
877	2	10	6	\$2.00
878	3	10	7	2.90

Stand lamp clusters are regularly packed assembled in individual cartons. For manufacturers' use, clusters will be furnished in bulk in quantities of 100 or more, when so specified.

Ben-ox Interchangeable Devices
A Benjamin Product



The Old Way
Soldered and Taped Joints

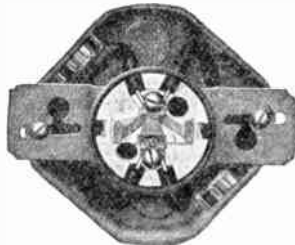
Ben-ox is an improved line of equipment designed to meet present-day requirements for use in the lighting of industrial plants, hotels, office buildings, stores, public buildings and hospitals.

In addition to serving the purpose of ordinary lighting equipment, Ben-ox has the following advantages:

EASY TO INSTALL.—The old material and time wasting taped and soldered joints are no longer necessary. Simply attach Ben-ox mounting element to outlet box by tightening two screws. Then loop the wires around terminal screws and slip the Ben-ox Canopy into place. The equipment thus installed is called a Ben-ox Basic Unit. See illustrations below.



Side View of Ben-ox Mounting Element in Place



The New Way
Bottom View of Ben-ox Mounting Element in Place

The Mounting Element Plus Canopy Plus Canopy Supporting Ring Makes Up the Ben-ox Basic Unit



Mounting Element



Canopy



Supporting Ring

To this Ben-ox Basic Unit may be attached any style of lighting equipment. See illustrations on following pages.



Ben-ox Basic Unit

INSPECTION AND APPROVAL.—When the Ben-ox Basic Unit is in place, immediate inspection and final approval can be secured before the tenant arrives or before the use of the space is determined. Later when the use is known, any style of equipment can be put in place with the ease of attaching a lamp bulb.

LIGHTING EFFICIENCY EASILY MAINTAINED.—Dirt accumulations diminish the available light output. Without the use of tools, Ben-ox equipment may be taken down, thoroughly cleaned and replaced just as easily.

OUT OF THE WAY FOR THE DECORATORS.—During periods of redecorating and cleaning, injury to brass work (splashing of painters' material) or glassware breakage is avoided by removing the Ben-ox equipment.

LIGHTING EQUIPMENT EASILY TRANSFERRED.—Ben-ox equipment in one room or part of plant can be taken down and reconnected in another location without disturbing the wiring in any way and with the ease and same manner as that of removing and replacing a lamp bulb. Expansion of the business and future tenants' needs, present lighting equipment problems best solved by Ben-ox.

FUTURE CONVENIENCE.—At some future date, if the lighting equipment should become out of style, a speedy substitution can be made without requiring tools.

Ben-ox Ceiling Units

Keyless

660 Watts, 600 Volts—Medium Base

Ben-ox Keyless Units are for use in offices, stores, hospitals, restaurants, etc. They have definite advantages of greater usefulness and economy. Holders are of standard sizes to take all forms of modern glassware. Units may be attached to the ears of standard 3 1/4 and 4-inch outlet boxes.

Standard package, 10.



6-inch Unit
Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4805	With 2 1/4-in. Holder	8	\$1.85
4806	" 3 1/4-in. "	9	2.05
4957	" 4-in. "	10	2.35
4958	" 5-in. "	11	2.65
4959	" 6-in. "	12	3.05
*4804	Less Holder,	7	1.70

6-inch Unit, Acid Bronze

8-inch Unit, Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4808	With 2 1/4-in. Holder	10	\$2.20
4809	" 3 1/4-in. "	11	2.80
4960	" 4-in. "	12	2.70
4961	" 5-in. "	13	3.00
4962	" 6-in. "	14	3.40
*4807	Less Holder	9	2.05



8-inch Unit
Acid Bronze

8-inch Unit, White Porcelain Enameled

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4921	With 2 1/4-in. Holder	10	\$2.75
4922	" 3 1/4-in. "	11	3.00
4963	" 4-in. "	13	4.05
4964	" 6-in. "	14	4.25



8-inch Unit
White Porcelain
Enameled

Pull Chain

660 Watts, 250 Volts—Medium Base

Ben-ox Pull Ceiling Units are used in offices, stores, hospitals, etc. Holders are of standard sizes to take all forms of modern glassware. Sockets have Benjamin Lamp Grip. Units may be attached to the ears of standard 3 1/4 and 4-inch outlet boxes.

Standard package, 10.



8-inch Unit
Acid Bronze

6-inch Unit, Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4823	With 2 1/4-in. Holder	11	\$3.05
4824	" 3 1/4-in. "	12	3.25
*4822	Less Holder	10	2.75

8-inch Unit, Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4826	With 2 1/4-in. Holder	13	\$3.30
4827	" 3 1/4-in. "	14	3.50
*4825	Less Holder	12	3.00



8-inch Unit
White Porcelain
Enameled

8-inch Unit, White Porcelain Enameled

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4931	With 2 1/4-in. Holder	13	\$4.05
4932	" 3 1/4-in. "	14	4.30

Ben-ox Basic Units

660 Watts, 600 Volts

Takes Ben-ox Connectors and socket elements. Units may be attached to the ears of standard 3 1/4 and 4-inch outlet boxes. Standard package, 10.



8-inch Unit
Acid
Bronze

6-inch Unit, Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4952	Basic Unit Only	8	\$1.35

8-inch Unit, Acid Bronze

Cat. No.	Description	Wt., Lbs. Std. Pkg.	Price Each
4954	Basic Unit Only	10	\$1.70

*Benjamin Porcelain Enameled Steel Reflectors, with Ben-ox threaded neck, may be attached if desired.

Ben-ox Porcelain Enameled Steel Reflectors

With Ben-ox Threaded Neck

Ben-ox Porcelain Enameled Steel Reflectors are designed for use especially with Ben-ox Sockets and Outlet Box Fittings. Reflectors have green porcelain enamel finish outside and white inside. Standard package, 10.

RLM Dome Reflectors



Cat. No.	Size Lamp Watts	DIMENSIONS, INCHES		Wt. Lbs. Each	Price Each
		Diameter	Height		
14025.A	*25, 50	10	3 3/4	1	\$1.45
14050.A	50	12	4 7/8	1 3/8	2.00
14075.A	75	12	5 1/2	1 3/8	2.10
14100.A	100, 150	14	6 3/4	2 1/8	2.40
14200.A	200	16	7 3/4	2 1/2	2.80

Shallow Bowl Reflectors



Cat. No.	Size Lamp Watts	DIMENSIONS, INCHES		Wt. Lbs. Each	Price Each
		Diameter	Height		
11050.A	25, 40, 50	10	3 1/4	3/4	\$1.45
11060.A	50, 60	12	4 1/4	1 1/8	1.65
11075.A	75	12	5	1 1/4	1.90
11100.A	100, 150	15	6 1/4	1 1/2	2.70

Bowl Reflectors



Cat. No.	Size Lamp Watts	DIMENS., IN.		Wt. Lbs. Each	Price Each
		Diam.	Height		
12050.A	*25, 50	5	2 7/8	5/16	\$1.05
12060.A	40, 50, 60	7	4 3/4	3/4	1.70
12075.A	75	8 1/4	6 1/8	7/8	1.80
12100.A	100, 150	9	7	7/8	2.00
12200.A	200	10	8	1	2.40

Angle Reflectors

Cat. No.	Size Lamp Watts	DIMENS., IN.		Wt. Lbs. Each	Price Each
		Diam.	Height		
15040.A	**25, 40, 50	7 5/2	7/16	1	\$1.35
15060.A	60	8 6 1/2	1/2	1	1.65
15075.A	75	8 7 3/8	5/8	1	1.65
15100.A	100, 150, 200	10 9 1/2	1	1	2.15



Examples of Ben-ox Combinations



All Ben-ox Devices have identical threads for coupling together.

Ben-ox Keyless Outlet Box Fitting No. 4980 is easily attached to any standard 4-inch box. If a 200-watt reflector is wanted, simply screw on Cat. No. 14200.A.

*For 25 and 50 Watt mill type lamps.

**For small Mazda B type, also mill type lamps.

†The height is taken as from bottom of reflector to top of neck where the screw collar is attached.

Ben-ox Keyless and Pull Chain Sockets

Ben-ox Sockets have an interior of the 2-piece easy-to-wire type consisting of a terminal base and Benjamin lamp grip. Bin ling screws are extra large and are easy to reach for making connections. Sockets with natural copper finish are for "weatherproof" work.

Keyless Sockets

660 Watts, 600 Volts—Medium Base

When used without reflector, threaded clamping ring is supplied to support interior. When used with Ben-ox Reflector, the threaded holder supports socket interior.

With Clamping Ring—For use without Reflector



Cat. No.	Finish	Size Tapped In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4700	Nat. Copper	1/2	10	3 1/4	\$1.10
4701	"	3/8	10	3 1/4	1.10
4702	Acid Bronze	1/2	10	3 1/4	1.10
4703	"	3/8	10	3 1/4	1.10

Without Clamping Ring—For Use with Reflector

In ordering the Ben-ox Sockets for use with the Ben-ox Threaded Reflectors or holders, one of the following catalogue numbers should be specified.

Cat. No.	Finish	Size Tapped In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4712	Nat. Copper	1/2	10	4	\$.95
4713	"	3/8	10	4	.95
4714	Acid Bronze	1/2	10	4	.95
4715	"	3/8	10	4	.95



Pull Chain Sockets

660 Watts, 250 Volts—Medium Base

A Ben-ox Pull Chain Socket consists of the keyless casing and terminal base as above, into which is screwed the pull socket element.



Cat. No.	Finish	Size Tapped In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4706	Nat. Copper	1/2	10	6	\$1.75
4707	"	3/8	10	6	1.75
4708	Acid Bronze	1/2	10	6	1.75
4709	"	3/8	10	6	1.75

Ben-ox Pendant Unit Connectors



Pendant Unit Connector



3-chain Fixture Hook



Single Chain Loop

Ben-ox pendant unit connectors provide means for connecting various types of pendants to Ben-ox Basic Units.

For Chain or Drop Cord Pendants

Connectors Nos. 4845 and 4850 may be attached to Ben-ox Basic Units. Electrical contact is made against the wiring terminal base and mechanical connection with the Ben-ox Thread. They are tapped 3/8 inch or bushed for drop cord, as indicated. No. 4845 will take three chain hook, No. 4847, or Single Chain Loop, No. 4849. With this type of connector the pendant is grounded to the conduit system. Where insulating joint is required a fibre disc insulator will be supplied for this purpose at no extra charge. Finish, acid bronze.

Cat. No.	Description	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
*4845	Pendant Unit Connector, Tapped 3/8-inch	10	3	\$.70
*4850	Connector for Drop Cord	10	3	.75
4847	3-chain Fixture Hook, 3/8-inch Thread	10	1	.30
4849	Single Chain Loop, 3/8-inch Thread	10	5/8	.20

Ben-ox Chain Supporting Rings



3-chain Supporting Ring


Chain supporting ring No. 4848 is used as a support for a bowl with three chains. Electrical connection is made through a drop cord and socket connected to the ceiling unit by a Benjamin No. 904 swivel attachment plug. This arrangement may be applied to either Ben-ox pull chain or keyless ceiling units such as No. 4825 and No. 4807.

Cat. No.	Description	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
4848	3-chain Supporting Ring	10	5/8	\$.35


Ben-ox Threaded Shade Holders

Any Ben-ox Holder will fit any Ben-ox Socket or ceiling unit. All Ben-ox one-piece holders are equipped with one or more neck screws with locking spring so that vibration cannot loosen screws and allow glassware to drop. Fitter positions with respect to the lamp filament accord with modern standards.


Acid Bronze Holders

Cat. No.	For Neck, Size Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std. Pkg.	Each	
 No. 4745	4744	2 1/4	10	5/8	\$.30
	4745	3 1/4	10	1 1/4	.50
	4746	4	10	1 5/8	.80
	4747	5	10	3	1.10
	4748	6	10	5	1.50

Natural Copper Holders

Cat. No.	For Neck, Size Inches	Std. Pkg.	Wt., Lbs.		Price Each
			Std. Pkg.	Each	
 No. 4753	4751	2 1/4	10	5/8	\$.30
	4752	3 1/4	10	1 1/4	.50
	4753	4	10	1 5/8	.80
	4754	5	10	3	1.10
	4755	6	10	5	1.50

White Enamelled Holders

Cat. No.	For Neck, Size Inches	Kind of Enamel	Wt., Lbs.		Price Each
			Std. Pkg.	Each	
 No. 4862	4862	2 1/4 Baked	10	5/8	\$.50
	4863	3 1/4 "	10	1 1/4	.75
	4739	4 Porcelain	10	3	1.80
	4741	6 "	10	5	2.00


Ben-ox Accessories

Socket Elements

For use in converting Ben-ox Basic Units from one form of lighting device to another. Socket elements are equipped with Benjamin Lamp Grip.


Keyless Type—660 Watts, 600 Volts

Cat. No.	Description	Std. Wt., Lbs.		Price Each
		Pkg.	Each	
4727	Medium Base	10	1	\$.20



No. 4727


Pull Socket Type—660 Watts, 250 Volts

Cat. No.	Description	Std. Wt., Lbs.		Price Each	
		Pkg.	Each		
 No. 4788	4788	Medium Base, Natural Copper Finish	10	2 1/2	\$ 1.00
	4790	Medium Base, Acid Bronze Finish	10	2 1/2	1.00

Canopy Extensions

Used to cover the pull socket element on canopy type Ben-ox Ceiling Units.

Cat. No.	Finish	Std. Wt., Lbs.		Price Each
		Pkg.	Each	
4839	Acid Bronze	10	3/4	\$.40




No. 4839

Mounting Stirrups

For mounting Ben-ox or other wiring devices on outlet boxes, condulets, etc. May be attached to fixture stud, with locknut or by screws threaded to box. Inside bolt holes are on 1 1/2-inch centers; outside pair, tapped, on 2 3/4-inch centers. For 4-screw support, two stirrups are used in a crossed position. On 3 1/4-inch boxes with only two supporting ears, adding the proper stirrup, see listing, gives the other 2-screw supports.

Cat. No.	For Stud Size, In.	For Approx. Box Depth, In.	Std. Wt., Lbs.		Price Each
			Pkg.	Each	
4855	3/8	3/4	10	3/8	\$.08
4856	3/8	1 5/8	10	1/2	.12
4853	1/2	3/4	10	1/2	.08
4854	1/2	1 5/8	10	5/8	.12



No. 4855
Attached to Outlet Box—Box Not Included

How To Make Lighting Calculations
For Benjamin Porcelain Enamelled Steel Reflectors

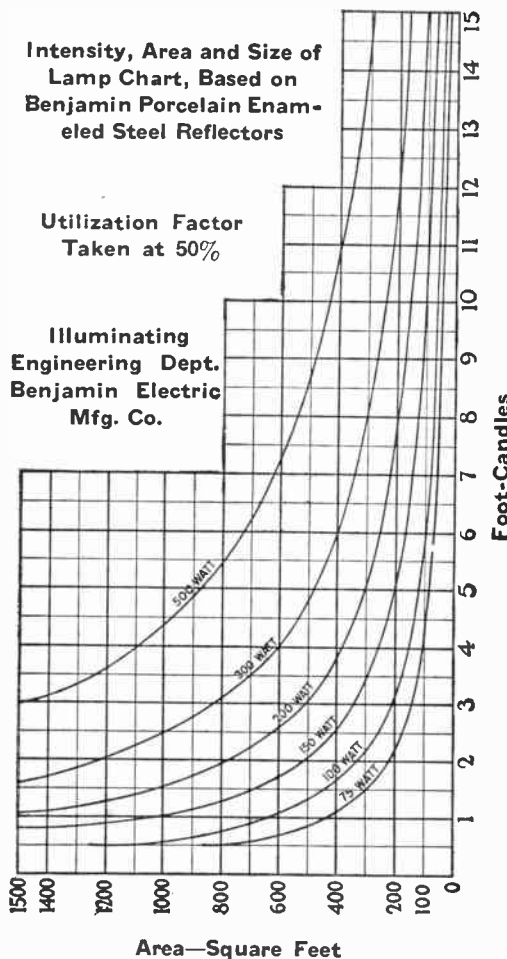


Chart C—Area Intensity and Size of Lamp Guide
The Proper Lamp Size

Using the recommendations of the Illuminating Engineering Society in table on the preceding page, as a guide, adopt for the purposes of illustration, 8 foot candles as being the intensity for a buffing and grinding room. Under the condition assumed, suppose this room is divided into equal parts of 12 feet by 12 feet each, like the layout on previous page. Then each division to be lighted is 144 square feet. Next referring to Chart C, locate the intersection of a line opposite 150 square feet (this figure taken for convenience in place of 144) and the line above the figure 8 (foot candles). This intersection is seen to be near the curved line representing the 150-watt lamp, which is the size to adopt in this case.

To Find Area

For instance, in designing a lighting system, it may be decided to use a 200-watt Mazda C lamp and obtain an intensity of 3 foot candles. By following the lines carrying these respective quantities to their intersection, the area which this lamp will cover at this intensity is shown as 500 square feet.

To Find Intensity

If it is desired to light 400 square feet with 200-watt lamps and the query is, what intensity will result? The answer shown by the chart is 3 3/4.

To Find Size of Lamp

Suppose it is wished to obtain 11 foot candles of intensity over an area of 400 square feet. What size of lamp shall be used? Looking at the chart the perpendicular line above 11 foot candles intersects the horizontal line opposite 400 square feet at the curve of the 500-watt lamp.

How to Make Lighting Calculations for Benjamin Porcelain Enamelled Steel Reflectors

Selecting the Type of Reflector

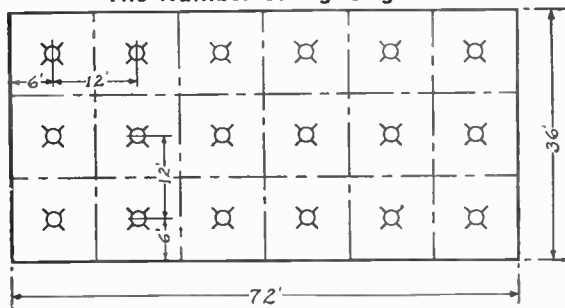
Each type of Benjamin Reflector has a character of distribution which makes it more suitable to certain applications. Their uses are briefly set forth as follows:

R L M DOME—For general illumination where it is desired to light both upright and flat surfaces; to eliminate sharp shadows by good diffusion; to avoid reflected glare from the surfaces lighted and to avoid glare by having the angle of light cut-off agree with all state lighting codes. Suitable for mounting heights of approximately 8 to 18 feet. Angle of cut-off, 17½ degrees.

BOWL—For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area; also where reflectors must be mounted high above working plane.

SHALLOW BOWL—For general illumination where the lighting requirements are of an extensive character and where eye shielding is not considered of first importance.

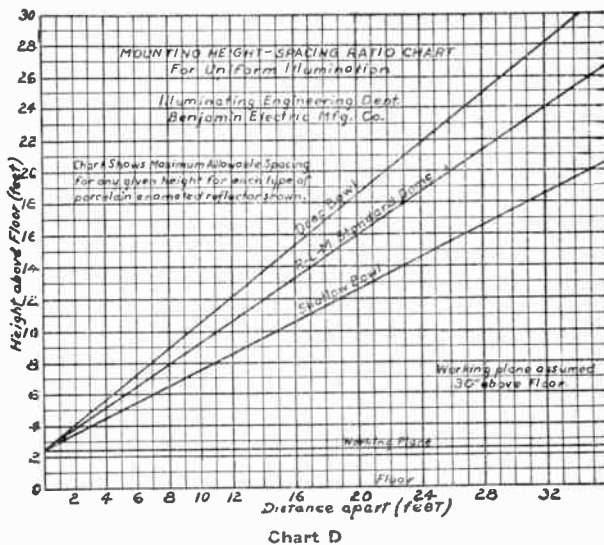
The Number of Lighting Units



For illustration, assume a room, 36x73 feet, a mounting height of 10½ feet (this is usually determined by the height of ceiling) and the use of the R L M Reflector.

Reference to Chart D gives a spacing distance, on the R L M Reflector of 12 feet for this mounting height. The next step is to divide the area to be lighted, into equal parts, 12 feet square and locate one unit in the center of each division. This relationship of mounting height and spacing distance will give uniform illumination over the entire area.

In case the overhead construction of the building does not lend itself easily to this layout, it is possible to divide the area to correspond to the bays of the overhead construction. If this is done, it must be borne in mind that the spacing distance for a given mounting height should not be greater than the ratio given in Chart D and that a large number of small units is preferable to a small number of large units.



Method of Using Chart D

Each of the diagonal lines drawn across Chart D represents one of the three chief types of Benjamin Reflectors. The distance between reflectors when they are properly installed is in constant proportion to the mounting height. This ratio is the same for all reflectors of any one type but the ratio of each type is different from that of the others.

Finding the Proper Height

One purpose of Chart D is to show the proper mounting height for reflectors when the outlets are already in place and the spacing is therefore known.

For instance, if the distance between outlets is sixteen feet and the R L M Standard Dome Reflector is to be used, first find the intersection of the vertical line extending from 16 feet on the scale at the bottom of the chart and the diagonal line representing the R L M Standard Dome. The horizontal line which would cross at this intersection would run to 13¼ on the scale. This therefore is the proper mounting height.

Where the installation is to be entirely new, the chart can be used in a similar manner, to find the proper spacing based on a desired mounting height.

Degrees of Illumination Recommended by Illuminating Engineering Society

Together with Recommendations of the State Lighting Codes

The figures given are degrees of illumination on work, expressed in foot-candles.

Illuminating Engineering Society	Roads and Yards	Storage	Stairways, Aisles	Rough * (1) Mfg.	Rough † (-) Mfg.	Medium (3) Mfg.	Fine ‡ (4) Mfg.	Very Fine (5) Mfg.	Office Work	Toilets and Washrooms
	0.05-0.25	1.0-2.0	0.75-2.00	2.0-5.0	2.0-4.00	3.0-6.00	4.0-8.00	10.0-15.00	6.0-10.0	0.5-2.0
New Jersey	0.05-0.25	0.50-1.00	0.75-2.00	2.00-4.00	3.00-6.00	4.00-8.00	10.00-15.00	4.00-8.00	.....	.....
Pennsylvania	0.05-0.25	0.50-1.00	0.75-2.00	2.00-4.00	3.00-6.00	4.00-8.00	10.00-15.00	4.00-8.00	.....	.....
California	0.05-0.25	0.50-1.00	1.00-2.00	1.00-3.00	2.00-4.00	3.00-6.00	4.00-8.00	7.00-15.00	.....	.....
Massachusetts	0.05-0.25	0.50-1.00	1.00-2.00	1.00-2.00	2.00-4.00	4.00-6.00	6.00-8.00	8.00-15.00	6.00-8.00	1.00-2.00
Oregon	0.05-0.25	0.50-1.00	0.75-2.00	.....	3.00-6.00	.....	4.00-8.00	10.00-15.00	4.00-8.00	1.50-3.00
Wisconsin	0.05-0.25	0.50-1.00	0.75-2.00	.....	2.00-4.00	3.00-6.00	4.00-8.00	10.00-15.00	4.00-8.00	1.50-3.00
Ohio	.....	0.25	0.50-2.00	0.50-2.00	1.00-3.00	2.00-6.00	3.00-9.00	4.00-12.00	8.00-10.00	.....

* (1) WHERE DISCRIMINATION OF DETAIL IS NOT ESSENTIAL.—Such as: Handling material of a coarse nature; grinding clay products; rough sorting; coal and ash handling; foundry charging.

† (2) WHERE SLIGHT DISCRIMINATION OF DETAIL IS ESSENTIAL.—Such as: Rough machining; rough assembling; rough bench work; rough forging; grain milling.

‡ (3) WHERE MODERATE DISCRIMINATION OF DETAIL IS ESSENTIAL.—Such as: Machining; assembly work; bench work; fine core making in foundries; cigarette rolling.

(4) WHERE CLOSE DISCRIMINATION OF DETAIL IS ESSENTIAL.—Such as: Fine lathe work; pattern making; tool making; weaving light colored silk or woolen textiles; office work; accounting; typewriting.

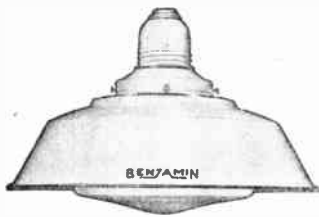
(5) WHERE DISCRIMINATION OF MINUTE DETAIL IS ESSENTIAL.—Such as: Watchmaking; engraving; drafting; sewing dark colored material.

†† Approved by American Engineers Standards Committee.

Benjamin Glassteel Diffusers

With Type R R Threaded Hood

A Union of Reflector and Glass Diffusing Bowl



No. 26300, 200-watt

In addition to the accepted merits of the porcelain enameled steel reflector this combination offers the following advantages:—

1. Light is permitted to reach the ceiling which softens the contrast between the working plane and the space above the reflector. This increases eye comfort and enhances the cheerfulness of the room.
2. The brightness of the unit is reduced to about 3 or 5 candlepower per square inch which further reduces eye effort resulting from both direct and reflected glare.
3. Protection of the glass from excess breakage because surrounded by the steel reflector.
4. Exceptionally good appearance of the lighted unit.
5. Reflection and diffusion favorable to the needs of the daylight lamp.

General Features

The total light output of the Glassteel Diffuser with a clear lamp is equal to that of an R L M reflector and bowl-enameled lamp of corresponding size.

The Glassteel Diffuser directs light on the ceiling (about 7 per cent) and also more light on higher angles than the other equipment mentioned.

Comparison of corresponding brightness favors the Glassteel equipment, which is 3 or 5 against 15 candlepower per square inch of the R L M reflector and bowl-enameled lamp.

The most notable results of the Glassteel Diffuser are softening of shadows and the reduction of direct and reflected glare.

Construction

HOOD.—Hood is of porcelain enameled steel with Benjamin R R Thread.

SUPPORTING FITTING.—X Type, tapped for 1/2-inch conduit.

SOCKET.—Porcelain, two-piece, easy-to-wire type.

REFLECTOR.—Reflector is porcelain enameled steel in two sizes with Benjamin Type R R Threaded Neck permitting easy removal of the reflector for cleaning. The reflector has six apertures at the top for the passage of light to the ceiling. It also embodies a globe holder of the set screw type.

FINISH.—White porcelain enamel with small neat dark blue bead at bottom edge of both hood and reflector.

With Pendent Hood

Cat. No.	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		Diam.	Ht.			
26300	200	18	11 3/4	4	23	\$9.00
26302	300, 500	20	13 3/8	4	30	12.50

With Ceiling Type Hood

This fixture is the same as shown in the above illustration, excepting that the hood is for mounting direct to a standard 4-inch outlet box.

Cat. No.	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
		Diam.	Ht.			
26304	200	18	11 3/4	4	23	\$9.00
26306	300, 500	20	13 3/8	4	30	12.50

Prices do not include wires or lamps.

Benjamin Reflector Sockets

Porcelain Enameled Steel

USES.—Each type of reflector performs a definite service. See individual description immediately above each listing.

REFLECTORS.—Seamless Crysteel porcelain enameled steel. They are weather-proof and may be used for indoor and outdoor service.

SOCKETS.—National Electrical Code Standard. Sockets are two-piece porcelain, keyless, easy-to-wire type with Benjamin Lamp Grip which prevents loosening and falling of lamps under vibration.

Locking Type Socket will be supplied with reflectors up to and including 200 watt sizes at an advance of 40 cents each. Key, No. 1399, at \$1.00 each. Pull chain socket with lamp grip will be supplied with reflectors up to and including 200 watt sizes at an advance of 80 cents.

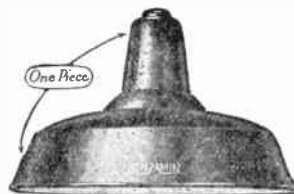
FITTINGS.—Reflectors are supported by heavy cast fitting, independent of socket, making the whole fixture uniformly strong.

TAPPING.—Fitting tapped for 1/2-inch iron pipe regularly furnished; 3/4-inch tapping or 1/2-inch insulating bushing, No. 1265 for drop cord use, furnished if specified at no advance in price.

FINISH.—Reflectors are Benjamin green porcelain enamel outside; white inside.

Benjamin Dome Reflector Sockets

R L M Standard



No. 5642, 100-150-watt



Characteristic Distribution Curve

For general illumination where it is desired to light both upright and flat surfaces and to eliminate sharp shadows by good diffusion.

Cat. No.	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt., Lbs. Ea.	Price Each
		Diam.	Height			
5640	50	12	7 1/2	10	2 1/4	\$3.20
5641	75	12	8 1/8	10	2 3/8	3.30
5642	100, 150	14	9 1/4	10	3 1/4	3.50
5643	200	16	10 1/2	10	3 5/8	4.30
5644	300, 500	18	12 1/8	5	4 1/4	5.30
5645	750, 1000	20	15 1/8	5	5 5/8	7.20

Benjamin Bowl Reflector Sockets



No. 6189, 100-150-watt



Characteristic Distribution Curve

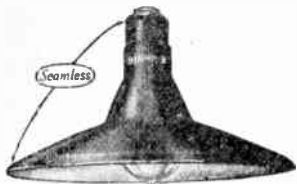
For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Cat. No.	Size of Lamp Watts	DIMENS., IN.		Std. Pkg.	Wt., Lbs. Ea.	Price Each
		Diam.	Height			
6166	40, 50, 60	7	7 1/2	10	1 5/8	\$2.90
6161	75	8 1/4	8 3/4	10	1 7/8	3.10
6189	100, 150	9	9 1/2	10	2	3.30
6169	200	10	10 5/8	10	2 1/2	3.80
6173	300, 500	12	12	10	3 1/4	4.70

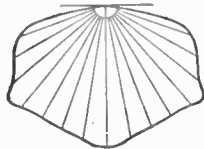
Prices do not include wires or lamps.

Benjamin Shallow Bowl Reflector Sockets

Porcelain Enameled Steel



No. 5423
100-150-watt



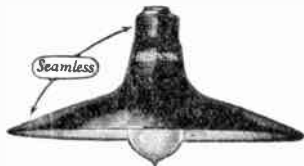
Characteristic Distribution Curve

For general illumination where the lighting requirement is of an extensive character and where eye shielding is not considered of first importance.

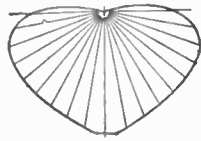
Cat. No.	Size of Lamps Watts	DIMENS., IN. Diam. Height	Std. Pkg.	Wt. Lbs.	Price Each
5437	25, 40, 50, 60	12 6 3/8	10	2 1/4	\$3.30
5421	75	12 7 1/2	10	2 1/4	3.50
5423	100, 150	14 8 1/2	10	2 3/4	3.80
5425	200	16 9 3/4	10	3 1/4	4.60
5509	300, 500	18 11	10	3 3/8	5.70

Benjamin Flat Cone Reflector Sockets

Porcelain Enameled Steel



No. 5402
100-150-watt



Characteristic Distribution Curve

For broad extensive light distribution—for such places as lumber yards, railroad terminal yards and street lighting.

Cat. No.	Size of Lamps Watts	DIMENS., IN. Diam. Height	Std. Pkg.	Wt. Lbs.	Price Each
5431	40, 50, 60	14 5	10	2 3/8	\$3.30
5401	75	14 5 7/8	10	2 1/2	3.50
5402	100, 150	16 6 5/8	10	3 1/8	3.80
5403	200	18 7 3/4	10	3 3/4	4.60

Benjamin Parabolites

Porcelain Enameled Steel

Characteristic Distribution of Curve



Plane Through Major Axis



No. 1235, 100-150-watt



Plane Through Minor Axis

The Benjamin Parabolite is a specially designed fixture for the illumination of aisles, platforms, and other long narrow areas indoors or outdoors.

The reflector is porcelain enameled steel, white inside, and black outside. The socket is porcelain, keyless two-piece, easy-to-wire type with lamp grip. The separable X fitting is regularly tapped 1/2-inch and will be tapped 3/4-inch if specified, at no advance in price. The light is projected in a narrow stream with a low cut-off on each side.

Cat. No.	Size of Lamps Watts	DIMENSIONS, IN. Length Height	Std. Pkg.	Wt. Lbs.	Price Each
1234	60, 75	21 8 1/2	10	3 3/4	\$8.00
1235	100, 150	21 9 1/4	10	3 7/8	8.80
1236	200	21 10 1/8	10	4 1/8	9.30

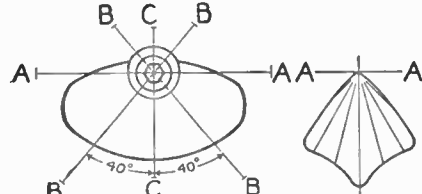
Prices do not include wires or lamps.

Benjamin Elliptical Angle Reflectors

Installation Data

For Illumination In and Around Industrial Buildings

The Elliptical Angle Reflector-socket has proven advantageous in many industries, for example: Mills, foundries and yards where cranes interfere with overhead suspension of lighting equipment; finishing departments of automobile factories; in printing plants, lighting presses so that interior parts can be observed; in paper and pulp mills, where broken parts of an overhead lamp might seriously damage the product; in rubber tire factories, on tire rolling machines and bending machines; to light washing racks in garages; in textile mills, lighting print rolls and inspection tables; in rug departments, lighting display racks.



Above is a top view of the Elliptical Angle Reflector. Distribution curves are made on perpendicular planes through the lines marked AA, BB, and CC.

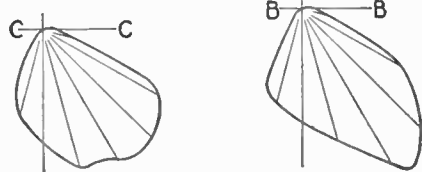
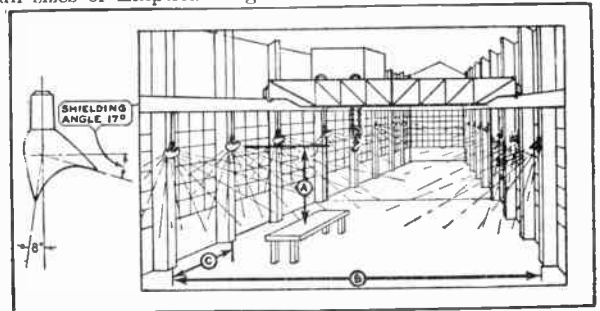


Diagram below illustrates the installation for interior illumination. Details indicated by letters on diagram refer to corresponding letters in table below, which gives the most commonly used mounting heights and spacing distances for all sizes of Elliptical Angle Reflector-sockets.



If some particular conditions are not covered by table, and special recommendations are required, correspondence is invited.

W.C. Above	Plane "A" Ft.	Distance Between Refs. "C" Room	Max. Dist. Between Refs. "C" (Length of Room) Ft.	CLASS OF WORK					
				Rough Size of Lamp	Ordinary	Medium	Fine	Very Fine	
				Lamp Watts	60	75	100	150	200
				Ref. No.	5522	5522	5525	5525	5526
				Lamp Watts	75	100	150	200	300
				Ref. No.	5522	5525	5525	5526	5537
				Lamp Watts	100	150	200	300	500
				Ref. No.	5525	5526	5537	5537	5537
				Lamp Watts	150	200	300	500	750
				Ref. No.	5526	5537	5537	5537	5538
				Lamp Watts	200	300	500	750	1000
				Ref. No.	5526	5537	5537	5537	5538
				Lamp Watts	300	500	750	1000	1500
				Ref. No.	5537	5537	5538	5538	5538
				Lamp Watts	500	750	1000	1500	2000
				Ref. No.	5537	5537	5538	5538	5538
				Lamp Watts	500	750	1000	1500	2000
				Ref. No.	5537	5537	5538	5538	5538

Benjamin Elliptical Angle Reflectors
Porcelain Enameled Steel

Benjamin Elliptical Angle Reflectors
Porcelain Enameled Steel



No. 5525
Side View



No. 5525
Front View

There are many places in industrial plants where lighting requirements cannot be satisfied with overhead illumination alone. Traveling cranes sometimes preclude the use of pendant fixtures. Vertical surfaces and deep recesses, such as shelving, must be better lighted.

The Benjamin Elliptical Angle Reflector satisfies perfectly these, as well as many similar cases, requiring illumination from the side.

The Elliptical Angle Reflector is also a most effective unit for sign, bill and bulletin board lighting.

Imposing buildings, large structures, and other contrasts clamor for recognition during the day. The attention value of the best billboard, poster or sign is lessened because of these. At night, however, all lose their prominence. If the message is well illuminated it becomes a better advertisement by night than by day. It then works day and night. The darkness "stands" it out in bold relief.

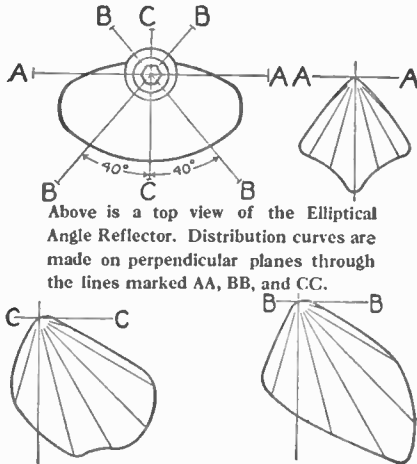
Benjamin Elliptical Angle Reflectors, in addition to the usual flux of light cast directly in front of the reflectors, direct a wide distribution horizontally.

Illumination is thus built up "in between" the units, where it would be otherwise weak. This gives an even distribution over the entire area.

The letters of the table indicating dimensions refer to corresponding letters in the diagram below.

This is a safe guide for use when installing Benjamin Elliptical Angle Reflectors.

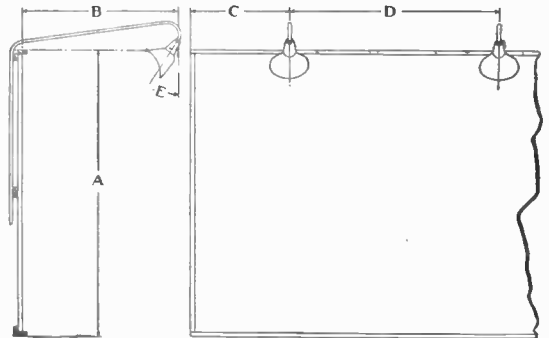
Characteristic Distribution Curves



Above is a top view of the Elliptical Angle Reflector. Distribution curves are made on perpendicular planes through the lines marked AA, BB, and CC.

Table of Spacing Distances
For Sign Board Lighting

Cat. No.	Size of Lamp Watts	A Height Board Feet	B Distance Out Feet	C Distance From End Feet	D Distance Apart Feet	E Angle From Vertical
5522	75	2-4	3	2½	5	17°
5525	100	5-6	4	3	6	17°
5525	150	7-8	4½	3¼	6½	17°
5526	200	9-12	5½	4	8	20°
5537	300	13-16	6½	5	10	20°
5537	500	17-21	9	6½	13	20°
5538	750	22-25	12	8½	17	20°
5538	1000	26-30	15	10	20	20°



Reflectors are of porcelain enameled steel and are weather resisting. Socket is N. E. C. Standard, keyless two-piece porcelain easy-to-wire type with lamp grip which prevents lamps from becoming loosened by wind or vibration. Nos. 5522, 5525 and 5526 are regularly tapped for ½-inch pipe; ¾-inch, if specified. Nos. 5537 and 5538 are regularly tapped for ¾-inch iron pipe.

Cat. No.	Size of Lamp Watts	DIMENS., INCHES	Net Wt. Lbs. Ea.	Std. Pkg.	Price Each
5522	60, 75	8 7/8 x 13 1/4	12 3/8	2 3/4	10 \$4.20
5525	100, 150	8 7/8 x 13 1/4	14	3	10 4.20
5526	200	11 1/8 x 16 3/8	16 1/2	3 5/8	10 5.40
5537	300, 500	13 7/8 x 19 7/8	19 5/8	3 3/4	5 8.70
5538	750, 1000	13 7/8 x 19 7/8	21 3/8	4 1/8	5 9.00

Prices do not include wires or lamps. A self locking socket, to prevent lamp theft, is supplied with Nos. 5522, 5525 and 5526 at an advance of 40 cents list. For coupling to increase to 1 or 1¼-inch, add 20 cents to list price.

- Used Indoors For**
- Craneways in Machine and Erecting Shops
 - Round Houses, Ash Pits, Turn Tables
 - Foundries with Uni-rail Systems
 - Power Rooms
 - Switch Boards
 - Loading Platforms
 - Tool Rooms
 - Stock Rooms
 - Rows of Shelving
 - Time Clocks
 - Bulletin Boards
 - Rooms with Movable Roofs
 - Paper Making Machines
 - Bowling Alleys
 - Hand Ball Courts

- Used Outdoors For**
- Bill, Sign and Bulletin Boards
 - Alleys and Runways
 - Docks and Yards
 - Building Fronts
 - Tower Clocks
 - Loading Platforms
 - Construction Work: Bridges, Viaducts, Tunnels
 - Safety Islands at Street Crossings
 - Tennis Courts
 - Hand Ball Courts
 - Bathing Beaches
 - Athletic Fields

Benjamin Type R. R. Threaded Fixtures

Where dirty or smoky atmospheric conditions make the frequent and thorough cleaning of reflectors necessary, Type R. R. Fixtures make the work less difficult and hazardous. Without the use of tools, reflectors may be removed and given a thorough washing. They are replaced just as easily. Every threaded reflector will fit any threaded hood in the Benjamin Type R. R. Line.

CONSTRUCTION.—Hoods are pressed steel, porcelain enameled or cast as indicated in listing. All are threaded to take Type R. R. Reflectors listed in opposite column. Sockets supplied with hoods are described in the next paragraph.

SOCKETS.—National Electrical Code Standard; keyless and pull chain types have lamp grip.

Keyless medium base socket is arranged so that it may be converted to Mogul base without disturbing the wiring.

To prevent theft or unauthorized exchange of lamps, the locking socket is effective; locking socket key No. 1399, lists at \$1.00—listings below do not include key.

REFLECTORS.—Reflectors are porcelain enameled steel with screw thread to accommodate all hoods listed below.

FINISH.—Pressed steel hoods are green porcelain enameled; cast hoods are green paint enameled. Reflectors are green porcelain enameled outside; white inside.

IMPORTANT.—All Type R. R. Reflectors and Hoods are interchangeable; for this reason, they are listed separately. When ordering complete fixtures, specify the catalogue number of both the reflector and hood desired.



No. 26003 Showing Key for Lamp Lock Inserted



No. 26030 Pendant Hood



No. 26002 Outlet Box Hood



No. 26025 Outlet Box Hood

Pendent Cast Hood with Socket

Tapped for 1/2-inch iron pipe stem; 3/4-inch, if specified.

Cat. No.	Includes Hood with	Std. Pkg.	Net Wt. Lbs., Each.	Price Each
26001	Medium Base, Keyless Socket	5	2 1/4	\$2.30
26003	" " Locking "	5	2 1/4	2.70
26005	Mogul " Keyless "	5	2 1/2	2.70
26007	Medium " Pull Chain "	5	2	3.10

Pendent Steel Hood with Socket

Tapped for 1/2-inch iron pipe stem; 3/4-inch, if specified.

26030	Medium Base, Keyless Socket	5	1 1/4	\$1.95
26033	" " Locking "	5	1 1/4	2.35
26035	Mogul " Keyless "	5	1 1/2	2.35
26037	Medium " Pull Chain "	5	1	2.75

Outlet Box Cast Hood with Socket

Fits 4-inch standard outlet box.

26002	Medium Base, Keyless Socket	5	2 1/8	\$2.40
26004	" " Locking "	5	2 1/8	2.80
26008	Mogul " Keyless "	5	2 1/4	2.80
26010	Medium " Pull Chain "	5	1 7/8	3.20

Outlet Box Steel Hood with Socket

Fits 4-inch standard outlet box.

26025	Medium Base, Keyless Socket	5	1	\$1.95
26027	" " Locking "	5	1	2.35
26029	Mogul " Keyless "	5	1 1/4	2.35
26031	Medium " Pull Chain "	5	7/8	2.75

Prices are for hoods and sockets only.

**Benjamin Type R R Threaded Fixtures
R L M Dome Reflectors**



No. 26014, 100-150-watt

Finish, outside of reflector is Benjamin green, inside is white porcelain enamel.

Cat. No.	Size of Lamp Watts	DIMENS., INCHES Diam. Height	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
26012	75	12 4 3/8	10	1 3/8	\$2.10
26014	100, 150	14 5 9/16	10	2 1/8	2.40
26016	200	16 6 11/16	10	2 5/8	2.80
26018	300, 500	18 8 1/16	5	3 1/4	3.80
26020	750, 1000	20 11	5	4 1/4	5.80

Shallow Bowl Reflectors

Best adapted to the lighting of yards, warehouses and platforms, or where it is desired that one unit light a large area.



No. 26416

Cat. No.	Size of Lamp Watts	DIMENS., IN. Diam. Height	Std. Pkg.	Price Each
26414	60, 75	14 3 1/4	10	\$2.15
26416	100, 150, 200	16 4 3/8	10	2.75
26418	300, 500	18 5 3/4	5	3.80

Bowl Reflectors

For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.



No. 26109, 100-150-watt

Cat. No.	Size of Lamp Watts	DIMENS., INCHES Diam. Height	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
26108	75	8 1/4 5	10	3/4	\$1.80
26109	100, 150	9 5 15/16	10	7/8	2.00
26110	200	10 6 5/16	10	1 1/4	2.40
26112	300, 500	12 7 3/4	5	1 3/4	3.80

Fluted Bowl Reflectors

The only type of porcelain enameled steel reflector having a concentrated distribution. It is used therefore for high mounting, i. e., 18 feet and upward.



No. 26114, 300-500-watt

Cat. No.	Size of Lamp Watts	DIMENS., INCHES Diam. Height	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
26114	300, 500	14 8 5/16	5	2 3/4	\$4.00
26117	750, 1000	17 12	5	4	5.30



No. 26212, 300-500-watt

Symmetrical Angle Reflectors

For illuminating places where the light must come from the side.

Prices are for reflectors only.

Cat. No.	Size of Lamp Watts	DIMENS., INCHES Diam. Height	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
26210	100, 150, 200	10 8 1/4	10	1	\$2.75
26212	300, 500	12 12	5	1 3/4	4.55
26214	750, 1000	14 15 5/8	5	2 3/4	6.25

Benjamin Symmetrical Angle Reflector-Sockets



No. 5542

For illuminating places where the light must come from the side.

REFLECTORS.—Seamless Crysteel porcelain enameled steel. They are weather-proof and may be used for indoor and outdoor service.

SOCKETS.—Two-piece, porcelain, key keyless with Benjamin lamp grip which prevents loosening and falling of lamps under vibration.

TAPPING.—Fitting tapped for 1/2-inch iron pipe regularly furnished; 3/4-inch tapping furnished if specified at no advance in price.

FINISH.—Reflectors are Benjamin green porcelain enamel outside; white inside.

Cat. No.	Size of Lamp Watts	DIMENSIONS, IN. Diam. Height	Std. Pkg.	Wt., Lbs. Each	Price Each
5541	50, 60, 75	8 10	10	1 5/8	\$2.95
5542	100, 150, 200	10 12	10	2	3.45

Locking type sockets can be supplied with reflectors at an advance of 40 cents each. Key No. 1399 at \$1.00 each.

Pull chain sockets can be furnished at an advance of 80 cents.

Benjamin Reflector Fittings



No. 4651

Used with Benjamin Reflector Sockets and Hooded Type Fixtures; and listed here as replacement parts. Sockets are equipped with Benjamin Lamp Grip, which prevents loosening and falling of lamps under vibration. When ordering give Cat. No. or description of fixture, so that proper fitting is supplied.



No. 4661

Keyless Socket—Medium Base—Porcelain
660 Watts, 600 Volts

Cat. No.	Size Tapped In.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
4651	1/2	Socket with X Type Fitting	10	8 1/2	\$1.05
88	..	“ Only (No Fittings)	10	4	.60

Keyless Socket—Mogul Base—Porcelain
1500 Watts, 600 Volts

4657	1/2	Socket with X Type Fitting	10	10 1/2	\$1.50
698	..	“ Only (No Fittings)	20	12	.80

Pull Chain Socket—Medium Base

Molded Composition
660 Watts, 250 Volts

4661	1/2	Socket with Stirrup and X Type Fitting	10	6 1/2	\$1.85
4664	..	Socket with Stirrup Only	10	2 1/2	1.40

Benjamin Two-piece Locking Sockets

Medium Base—660 Watts, 600 Volts

For the prevention of theft.

Locks lamp in place automatically without the use of key. The latter is needed only when a lamp must be withdrawn for any reason.

The locking device is pushed out of the way when lamp is screwed into socket but any attempt to reverse the action causes the locking arrangement to grip lamp base.

No. 586 may be substituted for body of No. 88 sockets now in use, without interference with wiring.



No. 86

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
86	Complete Socket, without Key	10	4 1/2	\$1.00
586	Locking Body	10	3	.80
1399	Key	1	1/8	1.00

Benjamin Canopy Type Aligners
With or Less Shock Absorbers



No. 3355

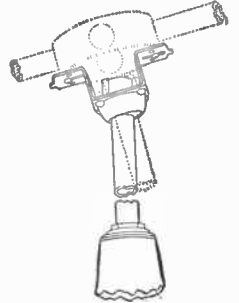
The reasons for the use of flexible suspension fittings are two:

1.—It is practically impossible to set every outlet box straight, yet correct industrial lighting depends greatly upon the lighting equipment hanging plumb. Therefore, a fixture aligner is essential to good illumination as well as good appearance.

2.—Most industrial or manufacturing buildings are subject to the vibrations induced by moving machinery. Under these conditions, the shock absorbing feature in Benjamin Fixture Aligners protects the lamps and tends to prolong their life.

No. 3355 has flexible knuckle and shock absorber. Supported by a strap with slots to slip over the screws on the ears of standard 3 1/4-inch and 4-inch outlet boxes. No. 3359 is the same as No. 3355, less shock absorber. These aligners may also be mounted on fixture stud by use of stirrups. Canopy attaches to outer edge of straps by a thread. Finish is galvanized.

Furnished with either a light, medium or heavy shock absorber. Light springs are for fixtures weighing 1 to 3 pounds, medium for 3 to 8 pounds, and heavy for those weighing 8 to 16 pounds. Specify the spring desired otherwise medium weight will be supplied.



Showing How Fixture Assumes a Vertical Position when Outlet Box is not Set Level

Cat. No.	Description	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3355	Aligner with Shock Absorber and Canopy	1/2	10	6 1/4	\$.75
3359	Less Shock Absorbers, with Canopy	1/2	10	5 5/8	.65

Benjamin Shock Absorber Suspension Fittings

Made of galvanized iron.



Cat. No.	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6030	1/2	10	9	\$1.90

Benjamin Aligners with Shock Absorber

Outlet Box Cover Type

Nos. 3366 to 3369, inclusive, have shock absorbing feature and flexible knuckle, permitting fixture to hang plumb. Fitting is supported by a cover of cast iron or steel which fastens to standard 4-inch outlet boxes and Benjamin Marine Junction Boxes as listed. Finish is galvanized.



No. 3366

Cat. No.	Cover	For Box	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
3366	Steel	Std. 4-inch	1/2	10	5	\$.65
3367	“	Benjamin Marine	1/2	10	5	.65
3368	Cast	Std. 4-inch	1/2	10	12 1/4	1.00
3369	“	Benjamin Marine	1/2	10	12 1/4	1.00

Benjamin Shock Absorber Cross Arms



No. 6202

Cat. No.	Description	Size Tapped In.	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
6202	With Shock Absorber	1/2	10	14	\$1.40
6200	Without Shock Absorber	1/2	10	13	1.30

Benjamin Shade Holder Reflectors



Type N



Type A



Type B

Benjamin Shade Holder Reflectors are for use where it is desired to attach reflectors to existing fixture equipment already installed. The strong rigidly attached Benjamin holders, furnished with these reflectors, have 2 principal advantages:—They place the reflector in the proper position with relation to the lamp, giving correct light distribution, and impart that strength and permanency to the reflector, necessary for a satisfactory and lasting job.



Type P

Type B Shade Holder Reflector is designed for attaching to any standard brass shell socket. This socket is the one commonly found in existing interior lighting installations.

Type N Shade Holder Reflector is fitted with a neck so shaped as to fit any standard 2 1/4-inch shade holder.

Type P Shade Holder Reflector is equipped with a holder which will fit any standard porcelain socket.

Type S Shade Holder Reflector has a screw threaded holder to fit Benco Sockets and Type S Outlet Box Fittings.

Type A Shade Holder Reflector has Ben-Ox Threaded Holder which attaches to Ben-Ox Sockets and Units.

FINISH.—Benjamin green porcelain enamel outside; white inside.



Type S

Benjamin Dome Shade Holder Reflectors

Reflector and Lamp Manufacturers' Standard



No. 14100N
100-150-watt

For general illumination when it is desired to avoid reflected glare from the surfaces lighted and to avoid direct glare by having the angle of light cut-off agree with all state lighting codes.

With Type N Neck for Standard 2 1/4-inch Shade

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*14025N	25, 50	10	10	1	\$1.25
14050N	50	12	10	1 3/8	1.80
14075N	75	12	10	1 3/8	1.90
14100N	100, 150	14	10	2 1/8	2.20
14200N	200	16	10	2 1/2	2.60
†14300N	300, 500	18	10	3 1/8	3.60
†14750N	750, 1000	20	10	4	5.30

With Type A Holder for Ben-Ox Sockets and Fittings

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*14025A	25, 50	10	10	1	\$1.45
14050A	50	12	10	1 3/8	2.00
14075A	75	12	10	1 3/8	2.10
14100A	100, 150	14	10	2 1/8	2.40
14200A	200	16	10	2 1/2	2.80

With Type B Holder for Brass Shell Sockets

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*14025B	25, 50	10	10	1	\$1.40
14050B	50	12	10	1 3/8	1.95
14075B	75	12	10	1 3/8	2.05
14100B	100, 150	14	10	2 1/8	2.35
14200B	200	16	10	2 1/2	2.75

With Type P Holder for Porcelain Sockets

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*14025P	25, 50	10	10	1	\$1.45
14050P	50	12	10	1 3/8	2.00
14075P	75	12	10	1 3/8	2.10
14100P	100, 150	14	10	2 1/8	2.40
14200P	200	16	10	2 1/2	2.80

With Type S Holder for Benco Sockets and Type S Outlet Box Fittings

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*14025S	25, 50	10	10	1	\$1.40
14050S	50	12	10	1 3/8	1.95
14075S	75	12	10	1 3/8	2.05
14100S	100, 150	14	10	2 1/8	2.35
14200S	200	16	10	2 1/2	2.75

*For use with 25 and 50-watt mill type lamp. †With 3/4-inch filter.

Benjamin Bowl Shade Holder Reflectors



No. 12100N, 100, 150-watt



Characteristic Distribution Curve

For general illumination where the lighting of flat surfaces is of first importance and where a high intensity is required in a relatively small area.

With Type N Neck for Standard 2 1/4-inch Shade Holders			Shade Holders		
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*12050N	25, 50	5	10	5/16	\$.95
**12040N	25, 50	6	10	3/4	1.40
12060N	40, 50, 60	7	10	3/4	1.50
12075N	75	8 1/4	10	7/8	1.60
12100N	100, 150	9	10	7/8	1.80
12200N	200	10	10	1	2.20
With Type A Holder for Ben-Ox Sockets and Fittings					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*12050A	25, 50	5	10	5/16	\$1.05
12060A	40, 50, 60	7	10	3/4	1.70
12075A	75	8 1/4	10	7/8	1.80
12100A	100, 150	9	10	7/8	2.00
12200A	200	10	10	1	2.40
With Type B Holder for Brass Shell Sockets					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*12050B	25, 50	5	10	3/4	\$1.10
**12040B	25, 50	6	10	3/4	1.55
12060B	40, 50, 60	7	10	3/4	1.65
12075B	75	8 1/4	10	7/8	1.75
12100B	100, 150	9	10	7/8	1.95
12200B	200	10	10	1	2.35
With Type P Holder for Porcelain Sockets					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*12050P	25, 50	5	10	5/16	\$1.05
12060P	40, 50, 60	7	10	3/4	1.70
12075P	75	8 1/4	10	7/8	1.80
12100P	100, 150	9	10	7/8	2.00
12200P	200	10	10	1	2.40
With Type S Holder for Benco Sockets and Outlet Box Fittings					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
*12050S	25, 50	5	10	3/4	\$1.10
**12040S	25, 50	6	10	3/4	1.55
12060S	40, 50, 60	7	10	3/4	1.65
12075S	75	8 1/4	10	7/8	1.75
12100S	100, 150	9	10	7/8	1.95
12200S	200	10	10	1	2.35

*For use with 25 and 50-watt mill type lamps.

**For small Mazda B type, also mill type lamps.

Benjamin Shallow Bowl Shade Holder Reflectors



No. 11100N, 100, 150-watt

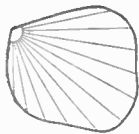


Characteristic Distribution Curve

For general illumination where the lighting requirement is of an extensive character.

With Type N Neck for Standard 2 1/4-inch Shade Holders					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
11050N	25, 40, 50	10	10	3/8	\$1.25
11060N	50, 60	12	10	1 1/8	1.45
11075N	75	12	10	1 1/4	1.70
11100N	100, 150	15	10	1 1/2	2.50
With Type B Holder for Brass Shell Sockets					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
11050B	25, 40, 50	10	10	3/8	\$1.40
11060B	50, 60	12	10	1 1/8	1.60
11075B	75	12	10	1 1/4	1.85
11100B	100, 150	15	10	1 1/2	2.65
With Type P Holder for Porcelain Sockets					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
11050P	25, 40, 50	10	10	3/8	\$1.45
11060P	50, 60	12	10	1 1/8	1.65
11075P	75	12	10	1 1/4	1.90
11100P	100, 150	15	10	1 1/2	2.70
With Type S Holder for Benco Sockets and Outlet Box Fittings					
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
11050S	25, 40, 50	10	10	3/8	\$1.40
11060S	50, 60	12	10	1 1/8	1.60
11075S	75	12	10	1 1/4	1.85
11100S	100, 150	15	10	1 1/2	2.65

Benjamin Angle Shade Holder Reflectors



Characteristic Distribution Curve

For illuminating places where the light must come from the side.

See Benjamin Elliptical Angle Reflectors.

No. 15075N, 75-watt

With Type N Neck for Standard 2 1/4-inch Shade Holders						
Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each	
15040N	25, 40, 50	7	10	3 3/8	\$1.15	
15060N	60	8	10	1 1/2	1.45	
15075N	60, 75	8	10	5 8	1.45	
15100N	100, 150, 200	10	10	1	1.95	
With Type A Holder for Ben-Ox Sockets and Fittings						
15040A	25, 40, 50	7	10	3 3/8	\$1.35	
15060A	60	8	10	1 1/2	1.65	
15075A	60, 75	8	10	5 8	1.65	
15100A	100, 150, 200	10	10	1	2.15	
With Type B Holder for Brass Shell Sockets						
15040B	25, 40, 50	7	10	3 3/8	\$1.30	
15060B	60	8	10	1 1/2	1.60	
15075B	60, 75	8	10	5 8	1.60	
15100B	100, 150, 200	10	10	1	2.10	
With Type P Holder for Porcelain Sockets						
15040P	25, 40, 50	7	10	3 3/8	\$1.35	
15060P	60	8	10	1 1/2	1.65	
15075P	60, 75	8	10	5 8	1.65	
15100P	100, 150, 200	10	10	1	2.15	
With Type S Holder for Benco Sockets and Outlet Box Fittings						
15040S	25, 40, 50	7	10	3 3/8	\$1.30	
15060S	60	8	10	1 1/2	1.60	
15075S	60, 75	8	10	5 8	1.60	
15100S	100, 150, 200	10	10	1	2.10	

*Order this size also for use with 25 and 50-watt Mill Type Lamps.

**Benjamin Viaduct and Crossing Fixtures
Heavy Duty Cast Iron Reflectors**



Complete fixture includes cast iron reflector, special X type fitting, tapped 1/2-inch and socket with lamp grip. Reflector only less fitting and socket, \$3.60. Price does not include wires or lamps. Finish is green porcelain enamel outside, white inside.

Cat. No.	Size of Lamp Watts	Diam. In.	Ht. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
5602	25-75	12	7 1/2	10	6 1/4	\$4.65

No. 5560 Benjamin Viaduct Fixtures

Designed particularly for side installation and by reason of its wide angle of light distribution is used extensively for the lighting of railroad subways, viaducts, trestles, etc., where overhead lighting is not feasible.

Symmetrical angle reflector of porcelain enameled steel, X type separable fitting and two-piece easy-to-wire porcelain socket with Benjamin Lamp Grip. Fitting tapped 1/2-inch regularly furnished. For tinned wire guard No. 1385 add \$2.00.



No. 5560

Cat. No.	Size of Lamp Watts	Diam. In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
5560	75, 100, 150	11 3/8	10	3 1/4	\$4.70

Price does not include wires or lamps.

**No. 5566 Benjamin Symmetrical Angle Reflectors
With Bull's Eye**

A combination warning signal and lighting unit. It has a red light for a warning signal and a white light to show the way. The light shining through a 3 1/2-inch corrugated ruby glass lens in back of reflector, warns drivers to approach cautiously.



Finish, green porcelain enamel outside, white inside.

Porcelain enameled steel reflector; X type fitting tapped 3/4-inch and socket with lamp grip.

Cat. No.	Size of Lamp Watts	DIMENS. INCHES Diam.	Ht.	Std. Pkg.	Price Each
5566	60 to 75	12	13 3/4	5	\$6.25

**No. 32613 Benjamin Elliptical Angle Reflectors
With Bull's Eye**

A combination warning signal and lighting unit.

It has a red light for a warning signal and a white light to show the way. Finish, green porcelain enamel outside, white inside. Porcelain enameled steel reflector with 3 1/2-inch corrugated ruby lens in back; X type fitting tapped 3/4-inch, and socket with lamp grip.



Cat. No.	Size of Lamp Watts	DIMENS. INCHES Diam.	Height	Std. Pkg.	Price Each
32613	*50	9x13 1/4	9 1/2	5	\$5.50

*Mill type lamp.

Benjamin Gas and Vapor Proof Fixtures

**Ceiling or Outlet Box Type
With Dome Reflector and Enclosing Globe**



Cat. No. 6541

Designed for use where atmospheric conditions are severe and where mounting must be on the ceiling.

The reflector is dome type and has an angle of cut-off 17 1/2 degrees. Porcelain enameled steel, green outside, white inside.

The base is either a cast iron or brass outlet box which will be tapped, when specified, for 1/2-inch conduit on 1 to 4 sides or top, as required.

Where certain chemicals are used, such as sulphur, the brass outlet box is recommended.

Guard is of tinned wire, with brass threaded supporting ring.

The enclosing globe used is Cat. No. 6867.

Specify tapping when ordering. Supplied not tapped for conduit entrance unless specified.

With Guard

Cat. No.	Size of Lamp Watts	Kind of Box	DIMENS., INCHES		Std. Pkg.	Wt., Lbs.	Price Each
			Reflector Diam.	Globe Height			
6541	100	Iron	14	4 3/8	11	95	\$8.60
6542	200	"	16	4 3/8	11	100	10.10
6543	100	Brass	14	4 3/8	11	95	9.90
6544	200	"	16	4 3/8	11	100	13.40

Without Guard

Cat. No.	Size of Lamp Watts	Kind of Box	Reflector Diam.	Globe Height	Std. Pkg.	Wt., Lbs.	Price Each
6546	100	Iron	14	4 3/8	10	85	\$7.00
6547	200	"	16	4 3/8	10	90	8.50
6548	100	Brass	14	4 3/8	10	85	8.30
6549	200	"	16	4 3/8	10	90	9.80

*Height taken as from top of box to bottom of globe.

No. 15103N Benjamin Show Window Reflectors

Porcelain Enameled Steel



No. 15103N



No. 15106N

No. 15103N is especially recommended for deep windows. It is an elliptical angle reflector and, owing to the broad character of distribution, may be mounted on wide spacings when there is to be a limited number of reflectors in each window.

No. 15106N, because of its narrow shape, may be mounted on close centers and is, therefore, recommended for shallow windows. It is also especially suitable for flush mounting with false ceilings.

Both of these reflectors have Type N neck for standard 2 1/4-inch shade holders.

Either of these reflectors may be used in windows of ordinary depth and usual proportions. Lamps ranging from 75 watts to 200 watts may be used.

Cat. No.	*Size of Lamp Watts	Diam. Size In.	Reflector Ht., In.	Std. Pkg.	Wt., Lbs. Std.	Price Each
15103N	100, 150	8 1/2 x 13 1/2	11	10	16 1/4	\$3.50
15106N	100, 150	12 1/4 x 8 3/4	7 5/8	10	15	3.50

*75-watt may be used by inserting No. 91 socket extension.

200-watt lamp may be used by inserting No. 4387 shade holder extension.

Benjamin Dust Tight Glass Covers

The best lighting equipment in steel mills and foundries seldom operates efficiently for any length of time. Dust and soot soon make the installation frequently less than 50 per cent efficient.

The dust tight glass cover easily attaches to Benjamin reflectors and effectively keeps out the dirt.

Dust and soot cannot collect on the lamp and in the reflector to destroy the clean surface, lighting efficiency.

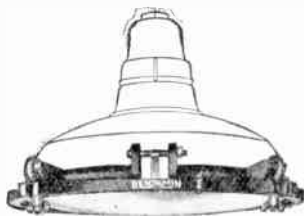
With the dust tight glass cover the clean maintenance of equipment becomes an easy matter.

It is only necessary to wipe outer surface of glass disk and the original light output is restored.

Dust tight glass covers fasten to Benjamin 12, 14, 16 and 18-inch dome reflector-sockets, 14 and 16-inch shallow bowl reflector, 12-inch bowl reflector-socket and 12-inch Type RR bowl sockets, 12, 14, 16 and 18-inch Type RR dome reflectors, 14 and 17-inch Type RR fluted bowl and 12 and 14-inch Type RR symmetrical angle reflectors.

Attachment can be made direct to units already installed. Construction.—Holder of cast aluminum is divided into 2 parts. The upper half slips into place over the reflector bead and the lower half containing the clear glass disk, with a circular rubber gasket, clamps rigidly to it.

Cover hinges to permit easy changes of lamps.



No. 29950

Cat. No.	Description	Std. Pkg.	Net Wt., Lbs. Each	Price Each
29940	Cover for 12-inch Reflector	5	4 1/2	\$12.50
29950	" " 14 " "	5	5	14.00
29970	" " 16 " "	5	6 1/2	16.50
29960	" " 17 " "	5	7	18.00
29980	" " 18 " "	5	7 1/2	20.00

Benjamin Flat Cone Reflectors

With Heel to Fit Standard Shade Holders



No. H515, 15-inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside.

Cat. No.	Size, Inches Reflector	Size, Inches Fitter	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H510	10	2 1/4	10	6	\$.90
H512	12	2 1/4	10	10	1.15
H515	15	3 1/4	10	12	1.65

Benjamin Shallow Bowl Reflectors



No. H416, 16-inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside, with heel to fit standard shade holders.

Cat. No.	Size, Inches Reflector	Size, Inches Fitter	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H410	10	2 1/4	10	7	\$.95
H412	12	2 1/4	10	13	1.15
H414	14	2 1/4	10	15	1.50
H416	16	3 1/4	10	19	1.90

Benjamin Flat Cone Reflectors



No. H15, 15-inch

Benjamin standard finished, porcelain enameled steel reflectors, green outside, white inside.

Fixture includes fitting tapped for 1/2-inch iron pipe stem.

Cat. No.	Size, Inches Reflector	Size, Tapped Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
H10	10	1/2	10	7	\$1.00
H12	12	1/2	10	12	1.25
H15	15	1/2	10	16	1.65

Benjamin Sewing Machine Reflectors



No. 31002B

The Benjamin Sewing Machine Reflector is used for localized lighting in connection with power sewing machines. Light is directed right where it is needed. Usually it is best to attach the reflector to a Benjamin Angle Socket, which in turn is supported by whatever supporting fixture the particular conditions necessitate. No. 31002B is paint enameled steel, finished green outside and aluminized inside.

No. 31012B is paint enameled, white inside, green outside.

Cat. No.	Size, Lamp Watts	DIMENS., In. Diam.	Height	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
31002B	10 to 20*	3 5/8	4	10	2 1/2	\$.60
31012B	10 " 20*	3 5/8	4	10	2 1/2	.90

*Also 25-watt Mill Type Lamps.

Benjamin Gas and Vapor Proof Fixtures

Without Reflector



Cast iron hood tapped for 1/2-inch stem, two-piece, easy-to-wire porcelain receptacle with Benjamin Lamp Grip, screw threaded enclosing globe and aluminum globe holder.

Iron parts are green paint enameled.

No. 1565

Cat. No.	Size of Lamp Watts	Diam. In.	Height In.	Std. Pkg.	Wt., Lbs. Each	Price Each
1563	25 to 75	3 1/2	8 1/4	10	3	\$3.25
1565	100, 150	5 1/8	9 7/8	10	4	3.90
1568	200	8	13 7/16	5	4 1/2	5.25
1570	300, 500	8	13 7/16	5	4 1/2	6.30

With Dome Reflector

Cast iron hood tapped for 1/2-inch stem, porcelain enameled steel reflector, two-piece, easy-to-wire porcelain receptacle with Benjamin Lamp Grip, screw threaded enclosing globe and aluminum globe holder.

Iron parts are green paint enameled; reflector is porcelain enameled; white inside and green outside.



No. 1545

Cat. No.	Size of Lamp Watts	Diameter Reflector Inches	Std. Pkg.	Wt., Lbs. Each	Price Each
1543	60, 75	12	10	4	\$6.25
1544	100, 150	14	10	5	7.00
1545	200	16	5	6 1/4	8.50
1546	300, 500	18	5	7 3/4	10.35

With Bowl Reflector



No. 1538

Includes cast iron hood tapped for 1/2-inch stem, porcelain enameled steel reflector, two-piece, easy-to-wire porcelain receptacle with Benjamin Lamp Grip, screw threaded enclosing globe and aluminum globe holder.

Iron parts are green paint enameled; reflector is porcelain enameled, white inside and green outside.

Cat. No.	Size of Lamp Watts	Diameter Reflector, Inches	Std. Pkg.	Wt., Lbs. Each	Price Each
1538	100 to 200	10	5	5	\$7.75

With Flat Cone Reflector

Includes cast iron hood tapped for 1/2-inch stem, porcelain enameled steel reflector, two-piece, easy-to-wire porcelain receptacle with Benjamin Lamp Grip, screw threaded enclosing globe, gaskets and aluminum globe holder. Iron parts are green paint enameled; reflector is white porcelain enameled inside and green outside.



No. 1555

Cat. No.	Size of Lamp Watts	Diameter Reflector Inches	Std. Pkg.	Wt., Lbs. Each	Price Each
1553	25 to 75	15	10	4	\$5.50
1555	100, 150	16	10	5 1/4	6.95
1558	200	18	5	6 1/4	9.50

Benjamin Heavy Duty Gas and Vapor Proof Fixtures



Heavy cast hood, porcelain enameled steel threaded reflector, socket and heavy screw globe of clear glass, together with the necessary gaskets for sealing the fixture. Hood is regularly tapped 1/2 inch but may be ordered 3/4 inch at no advance in price. Hood is threaded to take

reflector and neck of reflector in turn has an inside thread which receives the enclosing globe.

Finish: hood, green enameled; reflector, green porcelain enamel outside, white inside.

With Dome Reflector

For general illumination where it is desired to light both upright and flat surfaces; to avoid reflected glare from the surfaces lighted and to avoid glare by having the angle of light cut-off agree with all state lighting codes. Angle of cut-off, 17 1/2 degrees.



No. 6501

Prices do not include wires or lamps.

Cat. No.	Size, Lamp Watts	Reflector Diam., In.	Fixt. Height, In.	Std. Pkg.	Net Wt. Lbs., Each	Price Each
6500	75	12	9 3/4	10	4 3/4	\$8.00
6501	100, 150	14	10 1/2	10	5 5/8	8.25
6502	200	16	11 1/2	5	6 3/4	9.00
6503	300, 500	18	14	5	9 1/2	13.00

With Bowl Reflector



No. 6506

For general illumination where the lighting of horizontal surfaces is of first importance and where a high intensity is required in a relatively small area.

Prices do not include wires or lamps.

Cat. No.	Size, Lamp Watts	DIMENS., IN. Reflector Diam.	Fixt. Height	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
6506	100, 150	9	10 1/2	10	4 7/8	\$7.90
6507	200	10	11 1/2	5	5 7/8	8.80
6508	300, 500	12	14	5	8 3/4	12.60

With Symmetrical Angle Reflector

For lighting vertical surfaces, deep recesses, shelving, bays, etc., where the light must come from the side.

Prices do not include wires or lamps.



No. 6510

Cat. No.	Size, Lamp Watts	Reflector Diam., In.	Height In.	Std. Pkg.	Net Wt. Lbs., Ea.	Price Each
6510	100, 150, 200	10	13 1/2	5	5	\$9.00
6512	300, 500	12	16 3/8	5	8 3/4	13.15

Benjamin Dust-tight Drop Cord Fixtures



No. 659

No. 659 is a dust tight fixture, especially for drop cord work in mills, elevators, granaries, etc. It affords a high degree of protection by reason of the substantial construction and heavy screw globe which encloses the lamp.

Hood is of copper. Porcelain bushing for drop cord has 3/2-inch cord opening. Ample space is provided for cord knotting. Finish of hood is natural copper.

Cat. No.	Size of Lamp Watts	Description	Std. Pkg.	Price Each
659	*25, 50	Copper Hood	10	\$1.80

*Takes 25 and 50-watt mill type lamps only.

Prices do not include wires or lamps.

Benjamin Moisture and Dust Proof Fixtures

These fixtures are for use in refrigerating plants, engine rooms, plating rooms, mills, etc., where it is desirable to protect the lamp and live electrical parts from the deposit of moisture, dust and dirt.

Fixtures without Guard

Weatherproof hood of copper regularly tapped for 1/2-inch stem, easy-to-wire porcelain socket with Benjamin Lamp Grip and screw globe of heavy clear glass.



No. 665

Asbestos gasket between globe and hood makes the fixture tight.

Finish, natural copper.

Cat. No.	Size of Lamp Watts	Kind of Hood	Std. Pkg.	Price Each
663	25 to 60	Copper	10	\$2.10
665	75, 100	"	10	2.65

Fixtures with Guard



Guarded type fixture No. 657 has strong tinned wire guard which screws on outside of hood and globe. In other respects, this unit is like No. 663 above. Standard package, 10.

Cat. No.	Size of Lamp Watts	Kind of Hood	Price Each
657	25 to 60	Copper	\$3.40

Prices do not include wires or lamps.

Benjamin Radial Wave Reflectors

With Ornamental Bracket



No. 1208

One-piece radial wave reflector fixture with ornamental bracket and fitting. For fixtures less bracket, deduct \$4.00.

Iron parts are galvanized. Fixtures are green enamel outside, white inside.

Cat. No.	Size of Lamp Watts	Size Reflector Inches	Std. Pkg.	Price Each
1208	100, 150, 200	18	5	\$10.65
1209 (Mogul)	300, 500	18	5	11.35

Benjamin Cross Arms

With Porcelain Wire Openings

Cat. No.	Bottom Thread In.	Top Tapped In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6203	3/4	3/4	10	16	\$1.75
6205	1/2	3/4	10	16	1.75



No. 6203

No. 6029 Benjamin Suspension Fittings

These fittings are made of galvanized iron.

Cat. No.	Size Tapped Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6029	1/2	10	8	\$0.80



Benjamin Suspension Fittings

Made of galvanized iron.

Cat. No.	Size Tapped Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6028	1/2 Female	10	3	\$0.35
6028-M	1/2 Male	10	3	.40



No. 6028

Benjamin Galvanized Iron Suspension Fittings

With Porcelain Wire Openings

Cat. No.	Size Tapped Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6031	1/2 Female	10	5	\$0.95
6031-M	1/2 Male	10	5	1.05



No. 6031-M

Benjamin Galvanized Iron Suspension Fittings

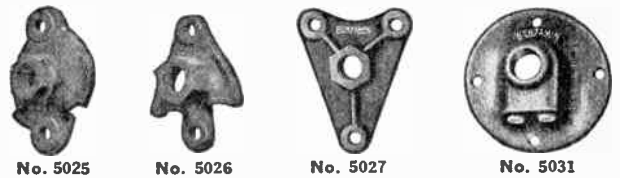
With Porcelain Wire Openings

Cat. No.	Size Tapped Inches	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
6049	1/2	10	11 1/2	\$1.15
6049-M	1/2 Male	10	11 1/2	1.20
6049-V	3/4	10	11 1/2	1.20



No. 6049-V

Benjamin Pole and Wall Fittings

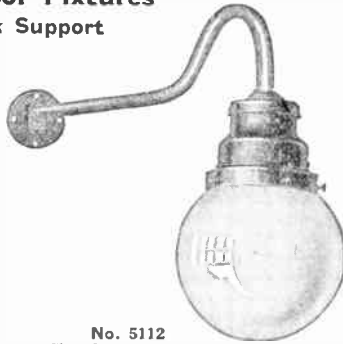


Cat. No.	Description	Size Tapped, In.	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
*5025	With Wire Openings	1/2	10	8	\$0.35
5026	" " "	1/2	10	4	.35
5027	Less " " "	3/4	10	13 1/2	.65
5028	" " "	3/4	10	13 1/2	.65
5031	With Insulated Wire Openings	3/4	10	15 1/2	1.15
5032	" " "	1/2	10	15 1/2	1.15

*With curved back, for pole use only. Iron parts are galvanized.

**Benjamin Outdoor Fixtures
With Gooseneck Support**

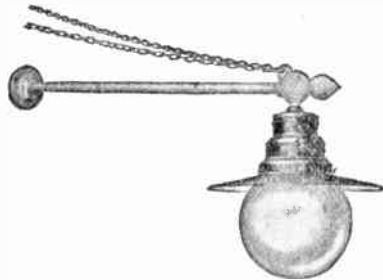
Includes steel hood with fitting tapped for 1/2-inch iron pipe stem; 3/4-inch if specified; 1 or 1 1/4-inch at an advance of \$.20. Ball globe, two-piece porcelain socket with Benjamin Lamp Grip, and 40x3/4-inch gooseneck with No. 5031 pole fitting. Hoods are finished black porcelain enamel; iron parts are galvanized.



Cat. No.	Lamp Watts	Size of Globe, In.	Std. Plg.	Price Each
5112	300, 500	10x6	5	\$8.80
6102	750, 1000	12x8	5	11.39

Benjamin Outdoor Fixtures

With Reflector and Mast Arm



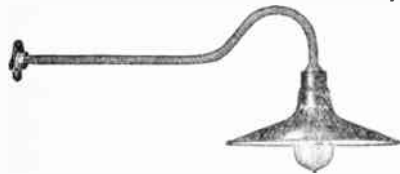
No. 5118

Has steel hood and ball globe as above, easy-to-wire two-piece porcelain socket with Benjamin Lamp Grip, porcelain enameled steel reflector and three-foot mast arm with head, chains and pole fittings. For fixture less mast arm, and fittings deduct \$3.50 list.

Reflector and hood are finished black outside. Iron parts are galvanized.

Cat. No.	Size of Lamp Watts	Steel Hood Kind of Finish	Size Reflector Inches	Std. Pkg.	Price Each
5118	300, 500	Porcelain Enamel	15	5	\$12.65
6120	750, 1000	" "	20	5	16.50

**Benjamin Flat Cone Reflectors
With Gooseneck Support**



No. 5412

or pole fitting as specified.

Iron parts are galvanized. Reflector is Benjamin green outside, white inside.

Cat. No.	Lamp Watts	Reflector Inches	Std. Pkg.	Price Each
5443	25, 40, 50, 60	14	10	\$4.40
5410	75	14	10	4.60
5412	100, 150	16	10	4.90
5413	200	18	10	5.70

**Benjamin Shallow Bowl Reflectors
With Gooseneck Support**

Reflector of porcelain enameled steel, green outside, white inside, extra heavy separable fitting and socket with Benjamin Lamp Grip, galvanized 1/2x30 in. iron pipe gooseneck and wall or pole fitting as specified.



No. 5420

Cat. No.	Lamp Watts	Reflector Inches	Std. Pkg.	Price Each
5449	25, 40, 60	12	10	\$4.40
5419	75	12	10	4.60
5420	100, 150	14	10	4.80
5422	200	16	10	5.70
5521	300, 500	18	10	6.80

Benjamin Flat Cone Reflectors

With Cross Arm Suspension



No. 802

Has Benjamin Flat Cone Reflector socket, metal cross arm with porcelain knobs, separable connection and weatherproof outlet for line wires. For fixture with shock absorber, add 10 cents.

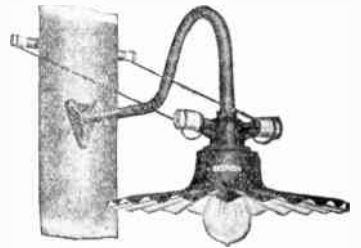
Two-piece socket with Benjamin Lamp Grip.

Iron parts galvanized. Reflector, Benjamin green porcelain enamel outside, white inside.

Cat. No.	Lamp Watts	Reflector Inches	Std. Pkg.	Price Each
802	25, 40, 50, 60	14	10	\$4.60
801	75	14	10	4.80
803	100, 150	16	10	5.10
804	200	18	10	5.90

**Benjamin Radial Wave Reflectors
With Cross Arm and Gooseneck**

Fixture has one-piece radial wave reflector of porcelain enameled steel, cast iron hood, tapped for 3/4-inch pipe, porcelain socket with Benjamin Lamp Grip together with gooseneck support and pole fitting. For fixture less gooseneck and fitting, deduct \$1.80.



Cat. No.	Lamp Watts	Kind of Wiring	Reflector Inches	Std. Pkg.	Price Each
1204	100, 150, 200	Concealed	18	5	\$8.45
1205	300, 500	"	18	5	9.15
1206	100, 150, 200	Open	18	5	9.35
1207	300, 500	"	18	5	10.00

**Benjamin Shallow Bowl Reflectors
With Stem and Suspension Fitting**

Has Benjamin Shallow Bowl Reflector socket, 8-inch stem of 1/2-inch iron pipe and suspension fitting. For shock absorber fitting Cat. No. 6030 add 10 cents to price. Two-piece easy-to-wire socket with Benjamin Lamp Grip. Iron parts are galvanized. Reflector is Benjamin green porcelain enamel outside and white inside.

Cat. No.	Size of Lamp Watts	Size Reflector Inches	Std. Pkg.	Price Each
6070	25, 40, 60	12	10	\$4.45
6071	75	12	10	4.65
6072	100, 150	14	10	4.95
6073	200	16	10	5.75
6074	300, 500	18	10	6.85

Prices do not include wires or lamps.



No. 6073



No. 5045 Benjamin Brass Chain Suspension

With 1/2-inch Loop Canopy and 3/8-inch Hickey

Cat. No.	Standard Length Inches	Size Canopy Inches	Std. Pkg.	Price Each	Price Extra Chain per Ft.
5045	14	5x4	10	\$2.30	\$.35

Benjamin Iron Pipe Stems



No. 5063



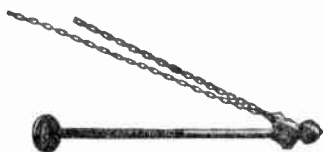
No. 5064

Without Shock Absorber

Cat. No.	Standard Length Inches	Kind of Fitting	Size Pipe Inches	Std. Pkg.	Price Each	Price Extra Length per Ft.
*5063	8	No. 6029	1/2	10	\$1.15	\$.35
*5064	8	" 6031	1/2	10	1.30	.35

*For fitting with shock absorber, No. 6030 add ten cents to list.

No. 6180 Benjamin Iron Mast Arms



Furnished with chains. Mast arms furnished up to 10 feet in length.

Cat. No.	Std. Lgth. Inches	Fitting Inches	Size Pipe Inches	Std. Pkg.	Price Each	Price Extra Length per Ft.
6180	36	3/4x1/2	3/4	10	\$3.50	\$.80

Benjamin Iron Goosenecks

With Wall Fitting

Gooseneck, No. 5066 is regularly furnished with wall fitting No. 5026, but may be furnished if specified, with pole fitting No. 5025. Cat. No. 5067 includes wall fitting No. 5027.



No. 5066

Cat. No.	Standard Length Inches	Size Pipe Inches	Std. Pkg.	Price Each
5066	30	1/2	10	\$1.10
5067	40	3/4	10	1.80

Without Fitting

Cat. No.	Standard Length Inches	Size Pipe Inches	Std. Pkg.	Price Each
5036	30	1/2	10	\$.75
5037	40	3/4	10	1.15

All iron parts are galvanized finish.

Benjamin Shallow Bowl Reflectors With Gooseneck Support

Designed as a general utility outdoor fixture. Material is weatherproof throughout, has Benco copper shell socket, porcelain enameled steel reflector, and gooseneck with wall or pole fitting. Gooseneck is of 1/2-inch pipe and extends 30 inches from wall to lamp. Wall fitting is regularly furnished. Iron parts are galvanized. Reflector is Benjamin green outside, white inside.



No. 1215

Cat. No.	Size of Lamp Watts	Size Reflector Inches	Std. Pkg.	Price Each
1215	50, 60	12	10	\$3.55
1216	75	12	10	3.80
1217	100	15	10	4.60

Benjamin Iron Brackets



No. 5040

Width 3/4x1/2-inch fittings.

Cat. No.	Std. Length Inches	Description	Size Pipe Inches	Std. Pkg.	Price Each
5038	40	Less Brace	3/4	10	\$2.50
5040	40	Complete	3/4	10	4.00
6186	..	Ball Fitting Only	3/4x1/2	10	.55

Benjamin Wireless Cluster Bodies

Series Type



No. 15 1/2



No. 34 1/2 T

Series Wireless Clusters are used largely on street railway circuits, or wherever it is desired to use 110-volt lamps or other 110-volt devices in series, on higher voltages, either for indoor or outdoor service.

They are regularly furnished without flange, but a 3/8-inch steel flange No. 3200 or 3100 may be specified without additional charge.

Series connections are standard. Series-multiple and other special connections can be furnished either 3 or 4-wire. Diagram of possible connections will be sent upon application.

Standard finish is brushed brass.

Type 1 1/2—Diameter of Base, 4 Inches

Cat. No.	Description	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
12 1/2	2 Light	10	13	\$1.60
13 1/2	3 "	10	13	1.85
14 1/2	4 "	10	13	2.10
15 1/2	5 "	10	13	2.35

Type 3 1/2 T—Diameter of Base, 4 1/2 Inches

Cat. No.	Description	Std. Pkg.	Wt. Lbs. Std. Pkg.	Price Each
32 1/2 T	2 Light	10	12	\$1.75
33 1/2 T	3 "	10	13	2.00
34 1/2 T	4 "	10	14	2.25
35 1/2 T	5 "	10	14	2.50

Three supporting screw holes are equally spaced on a 3 3/8-inch circle.

Benjamin Multiple Wireless Cluster Bodies



No. 82



No. 23

Clusters are regularly furnished with steel supporting flange tapped for 3/8-inch iron pipe stem. Cast iron flange with larger tapping can be furnished if desired.

Where clusters are to be attached by screws, individual listings for screw hole centers should be consulted.

Cat. No. 2452 shade holder attaches to these clusters to take shades with 2 1/4-inch fitter.

Price includes flange No. 3800 on Type 8 and flange No. 3200 on Type 2.

Types 8 and 2 have 2 supporting screw holes spaced on 1 3/4-inch centers.

Standard finish is brushed brass.

Diameter		Type 8		Std. Pkg.	Wt., Lbs.	Price Each
Cat. No.	Inches	Description	Price			
82	2 1/2	2 Light	10	5	\$1.00	
Type 2						
22	3	2 Light	10	7	\$1.35	
23	3	3 "	10	7	1.60	
24	3	4 "	10	7	1.85	

Benjamin Multiple Wireless Clusters



No. 34T

Benjamin Wireless Clusters are serviceable for ceiling and pendent fixtures, domes, portable stand lamps and indirect units. Prices include steel flange No. 3100 tapped for 3/8-inch iron pipe. Standard finish brushed brass.

Three supporting screw holes are equally spaced on a 3 5/8-inch circle.

Wireless Clusters Type 3T are designed for a relatively close grouping of lamps. Prices include flange No. 3100 on Type 3T, tapped for 3/8-inch iron pipe. Standard finish is brushed brass.

Type 1		Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
Cat. No.	Description			
12	2 Light	10	12	\$1.60
13	3 "	10	12	1.85
14	4 "	10	12	2.10
15	5 "	10	12	2.35
16	6 "	10	12	2.60

Type 3T

33T	3 Light	10	13	\$2.00
34T	4 "	10	14	2.25

Hubbell Cone Reflectors

Schedule C



No. 5440

Green and white. Can be furnished frosted aluminum inside instead of white, at the same price.

No.	Tin Ref. Size, In.	Size Lamps Watts	Price, Each		PRICE, PER 100			
			Less Than 10	10 to 49	50 to 99	100 to 499	500 and Over	
For Brass Shell Sockets								
5440	8	15-25	\$.28	\$24.45	\$22.70	\$21.00	\$20.10	
5441	10	25-40	.32	28.15	26.15	24.10	23.10	
5442	12	40-60	.42	36.35	33.75	31.15	29.85	
For Weatherproof Sockets								
6760	8	15-25	\$.40	\$34.80	\$32.30	\$29.80	\$28.60	
6761	10	25-40	.44	38.80	36.00	33.25	31.85	
6762	12	40-60	.55	48.70	45.20	41.75	40.00	

Hubbell Half Reflectors

Schedule C



No. 6151

No. 6151, for 10-15 watt lamps is steel, finished green outside and white inside.

No. 6152, for 10-15 watt lamps furnished in brass. Brush brass outside and frosted inside.

No.	Price, Each Less Than 10	PRICE, PER 100			
		10 to 49	50 to 99	100 to 499	500 and Over
6151	\$.27	\$23.20	\$21.55	\$19.90	\$19.05
6152	.50	43.15	40.05	37.00	35.45

No. 5429, for 25-40-60 watt lamps is steel, finished green and white. No. 5532, for 25-40-60 watt lamps is brass. B. B. frosted. No. 6789, for 25-40-60 watt lamps is steel, lacco B. B. and frosted.



No. 5429

No.	Price, Each Less Than 10	PRICE, PER 100			
		10 to 49	50 to 99	100 to 499	500 and Over
5429	\$.26	\$23.75	\$22.65	\$21.55	\$19.90
5532	.65	54.55	50.65	46.75	44.85
6789	.40	32.80	30.45	28.10	26.95

The above reflectors are all fitted with holders for brass shell sockets. If desired for weatherproof sockets place the letter P after catalogue number and add 12 cents to list price.

Hubbell Parabola Reflectors

For 25, 40 and 60-watt Lamps
With Holder at Side—6 1/2 Inches in Diameter

Schedule C



No. 5461

No. 5564 is made of steel, green and frosted. No. 5571 is made of brass, B. B. and frosted. No. 5461 is made of aluminum, green and frosted. No. 6788 is made of steel, lacco, B. B. and frosted.

Cat. No.	Price Each Less Than 10	PRICE, PER 100			
		10 to 49	50 to 99	100 to 499	500 and Over
5564	\$.55	\$51.10	\$43.80	\$42.00	\$40.15
5571	.85	77.60	64.50	61.75	59.10
5461	.65	56.40	48.30	46.30	44.30
6788	.60	53.85	50.00	46.15	44.20

Hubbell Parabola Reflectors

For 25, 40 and 60-watt Lamps
With Holder at Top

Schedule C

Diameter of reflector is 6 1/2 inches.

No. 6094 is made of steel, green and frosted. No. 6548 is made of brass, B. B. and frosted. No. 6549 is made of aluminum, green and frosted.



No. 6548

Cat. No.	Price, Each Less Than 10	PRICE, PER 100			
		10 to 49	50 to 99	100 to 499	500 and Over
6094	\$.60	\$53.10	\$45.55	\$43.65	\$40.40
6548	.90	76.85	65.90	63.15	60.40
6549	.70	58.75	50.35	48.25	46.15

Adjustable Wall Brackets



Three sets of double joints allow instant adjustment to any desired position. Can be supplied with quick detachable clamp instead of wall plate.

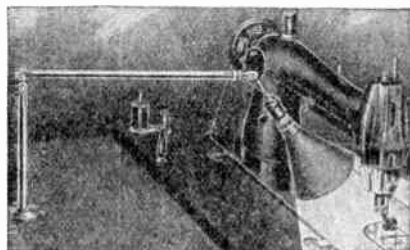
Standard package, 12; assorted, if desired.

Cat. No.	Description	Lgth. to Socket In.	Price, Each			
			Black Enamel	Brush Brass	Nickel or Bronze	*White Enamel
262	Bracket Only	24	\$4.25	\$5.50	\$6.00	\$6.50
263	"	36	4.75	6.00	6.50	7.00
264	"	48	5.25	6.50	7.00	7.50

Wiring, Socket, Shade to Match, Add. 2.25 2.50 2.50 2.50
 With Clamp Instead of Plate, Add .75 1.25 1.25 1.25

*White enamel bracket has nickel socket, shade and joints.

No. 250 Adjustable Bench Brackets



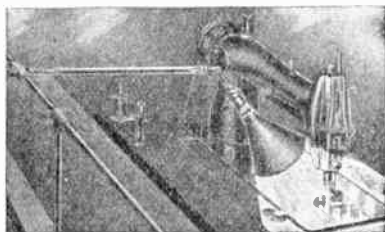
Flange base attaches to table.

Combination joint at top of standard and next to socket. Height of standard, 12, 15 or 18 inches. Length of arm, 12, 15 or 18 inches. Standard package, 12; assorted.

Price, No. 250, Bracket Only, Black Finish each \$3.00
 " " 15, Shade to Match.50
 " 3/8-inch Key Socket.60
 " Wiring.50
 " Special Nipple Attached to Base, Extending Through Table into Outlet Box Below each .25

No. 251 Adjustable Bench Brackets

With 1/2-inch I. P. connection. Universal joint at base end.

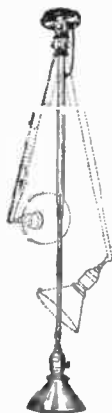


Combination joint at socket end. Length over all, 15, 18 or 21 inches, not including socket.

Standard package, 12; sizes can be assorted.

Price, No. 251, Bracket Only, Black Finish each \$2.50
 " " 15, Shade to Match.50
 " 3/8-inch Key Socket.60
 " Wiring.50
 " Special Nipple Attached to Base, Extending Through Table into Outlet Box Below each .25

**Adjustable Ceiling Fixtures
Black Enamel**



Universal joint at top allows fixture to be moved easily into any position, where it will remain without use of a thumb screw. By use of the 20-inch telescope tube, it can be lengthened or shortened to suit requirements. Wiring concealed in tube. Made in various lengths as needed.

Sizes specified indicate length when telescope tube is extended, or drawn out.

Standard package, 12; can be assorted sizes.

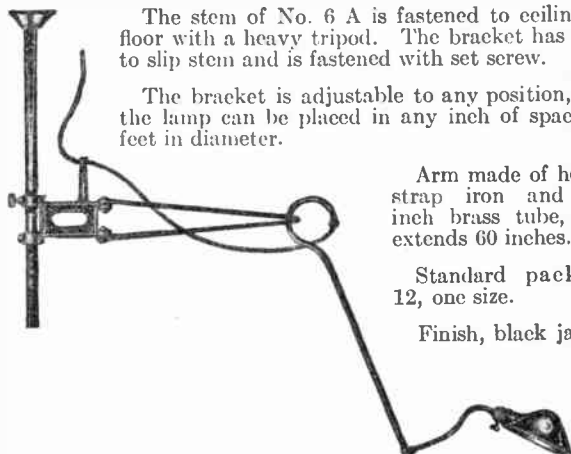
Price, No. 105, 5-ft. each \$8.00
 " " 106, 6 " 8.00
 " " 107, 7 " 8.50
 " " 108, 8 " 9.00
 " " 109, 9 " 9.50
 " " 110, 10 " 10.00

For brush brass, nickel, or statuary bronze finishes, add \$2.50.

No. 6 Faries Adjustable Brackets

The stem of No. 6 A is fastened to ceiling or floor with a heavy tripod. The bracket has eyes to slip stem and is fastened with set screw.

The bracket is adjustable to any position, and the lamp can be placed in any inch of space 10 feet in diameter.



Arm made of heavy strap iron and 1/2-inch brass tube, and extends 60 inches.

Standard package 12, one size.

Finish, black japan

Cat. No.	Length Over All Inches	Price Each	Cat. No.	Length Over All Inches	Price Each
6A	48	\$5.60	6C	72	\$6.20
6B	60	5.90	6D	84	6.50

No. 78 Faries Adjustable Brackets



Adjustable bracket with flexible arm for factory bench work. This bracket is adjustable

to any angle. Base, 4 1/2 inches diameter.

Stem, 3/8-inch iron pipe. Arm, 3/8-inch flexible tube, 18 inches long. Standard package, 12, one size.

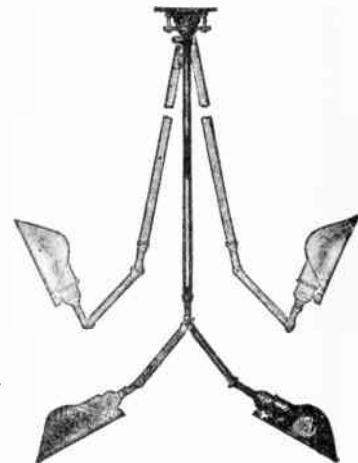
Cat. No.	Finish	Length Over All Inches	Std. Pkg.	Price Each
78A	Black Japan	36	12	\$6.00
78B	" "	48	12	6.35

No. 11 Faries Adjustable Brackets

At the ceiling there is a thoroughly practical ball-joint, allowing the stem to be placed in any desired position.

The arm is attached to the stem with a heavy adjustable joint and the arm is also provided with an extra adjustable joint which permits the raising of the arm to any position or angle.

Finished in black japan.



Cat. No.	Length Over All Inches	Price Each	Cat. No.	Length Over All Inches	Price Each
11D	48	\$7.00	11F	72	\$7.65
11E	60	7.30	11G	84	7.95

Sampson Access System Universal Clamps and Fittings

The Access Universal Clamp not only increases the flexibility of Access Lighting but is indispensable to the machinist, builder, contractor, electrician and handy-man-about-the-house. This clasp suspends, holds and joins together, as well as holds apart 2 or more objects. It is easy to install and flexible to use. The economic application and value of these fixtures apply to at least 50 per cent of all manufacturing operations where human eyes are needed to guide and direct.

Substantially, all Access Universal Fixtures are made of some combination of the units as shown.

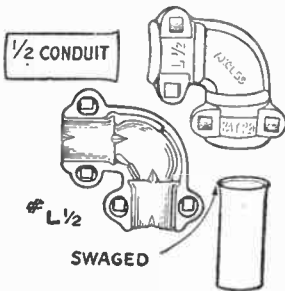
Type FA Flexible Arms



This flexible arm is made 24 inches long. It absorbs vibration, protects lamps, bends easily with one hand and stays put. Packed 10 in carton. Standard package, 50.

Price, Type FA.....each \$2.00

No. L $\frac{1}{2}$ -90° Access Split Elbows



This elbow clamps up as a stiff joint.

It is strong and durable and when used with the 90 degrees bent pipe it makes a Universal joint.

Price, No. L $\frac{1}{2}$, Complete.....each \$.38

No. 1/2P Access Arm Pipes

The variables of Access Fixtures are the arm sections. They are cut and swaged in the standardized lengths of bent and straight sections as follows:



Length Inches	STRAIGHT SECTIONS		BENT SECTIONS, 90°	
	No.	Price Each	No.	Price Each
15	P1500	\$.25	P1590	\$.35
18	P1800	.28	P1800	.38
21	P2100	.31	P2190	.41
24	P2400	.34	P2490	.44
30	P3000	.40	P3090	.50

Fittings of Access Clamping System



No.	CT3	SS5	PS	U	CP3
Price.....each	\$.12	.12	.38	See Below	.12



No.	CH3	EC	CPC	BT7	IB
Price.....each	\$.12	.50	.19	.10	.44

U Bolts Are the Only Variables

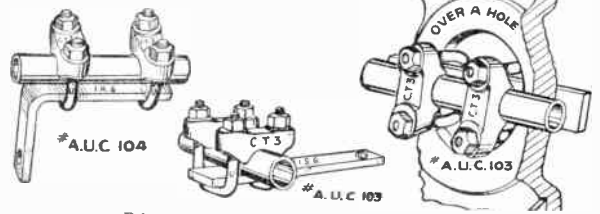
No.	Price Each	No.	Price Each	No.	Price Each	No.	Price Each
UR 5213	\$.12	UR5214	\$.14	UR5285	\$.16	US 5215	\$.18
UR 5283	.12	UR5284	.14	US 5214	.16	UR5218	.20
US 5212	.12	US 5213	.14	UR5217	.18	UR5445	.20
USB5212	.12	UR5215	.16	UR5364	.18	US 5218	.20

UR means round end U; US means square end U; USB means U is bent sideways for AUC 301. Example UR 5213 1st figure 5- $\frac{5}{16}$ -inch diameter wire; 21- $\frac{21}{16}$ -inch spread; 3 inches is the length of U.

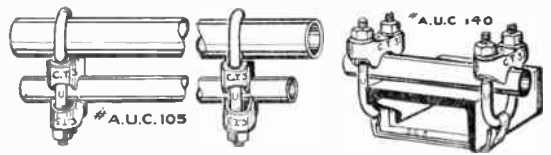
Sampson Access System Universal Clamps and Fittings

Continued

Some Examples of Access Clamping



No.	Price Each	No.	Price Each	No.	Price Each
2CT3	\$.24	2CT3	\$.24	2CT3	\$.24
2US5212	.24	2US5212	.24	2US5213	.28
1IK6	.18	1IS6	.14	1IS6	.14
AUC No.104	.66	AUC No. 103	.62	AUC No. 103	.66

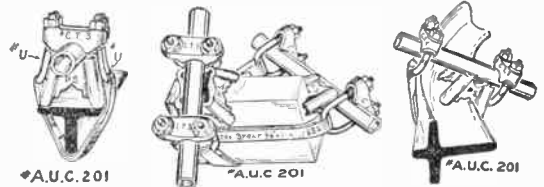
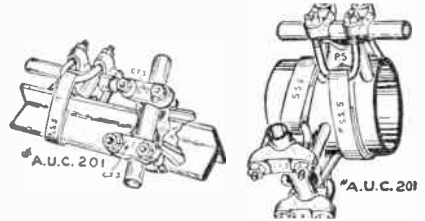


No.	Price Each	No.	Price Each
2CT3	\$.24	2CT3	\$.24
1UR5213	.14	2US5213	.24
		1SS5	.12
AUC No. 105	.38	AUC No. 140	.60



No.	Price Each
1SS 5 Feet Long	\$.12
2CT3	.24
2US5212	.24
1PS	.38
AUC No. 201.....	.98

Examples Show 5 of the Many Shapes AUC 201 Will Clamp Onto



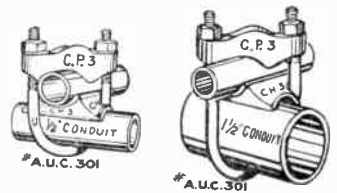
AUC No. 301

1/2x1/2 Combination

1CP3	\$.12
1CH3	.12
1UR5283	.12
AUC No. 301.....	.36

1 1/2x1/2 Combination

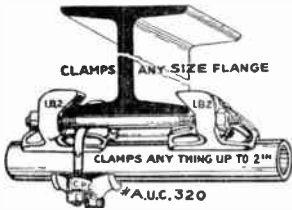
1CT	\$.12
1CH3	.12
1UR5445	.20
AUC No. 301A....	.44



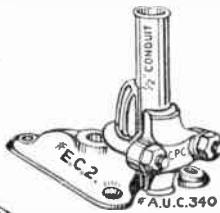
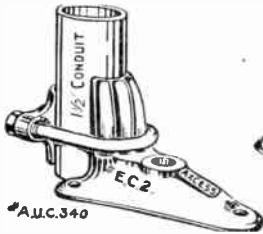
Sampson Access System Universal Clamps and Fittings

Continued

Some Examples of Access Clamping



No.	Price Each
2 IB 2	\$.88
2 BT 7 Inches	.20
1 CPC	.19
1 UR 5284	.14
AUC No. 320	1.41



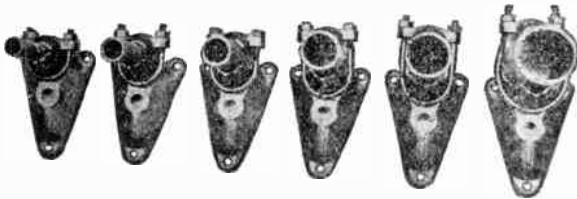
EC with 1/2-inch Pipe

EC with 1/2-inch Pipe

No.	Price Each
1 EC 2	\$.50
1 CPC	.19
1 UR 5364	.18
AUC No. 340B	.87

No.	Price Each
1 EC 2	\$.50
1 CPC	.19
1 UR 5283	.12
AUC No. 340	.81

AUC No. 340 End Clamps and Pipe Sizes Complete with U Bolts as Below



Price, 1/2 to 1 Inch UR 5283 No. 340	each	\$.81
" 1 1/4 to 1 1/2 Inch UR 5364 No. 340A	"	.87
" 2 Inches UR 5445 No. 340B	"	.89

Access Threadless Fittings

Type A Clamp



The Type AP is for clamping 3/8-inch greenfield to 1/2-inch conduit.

Price, Type AP 1/2..... each \$.26

Type C Clamp Coupling



Size.....inches	1/2	3/4	1	1 1/4
Price.....each	\$.28	.30	.34	.38

Type L Clamp Elbows



Size.....inches	1/2	3/4	1	1 1/4
Price.....each	\$.38	.42	.50	.60

Type TB Tee Box



No.	Size Inches	Price Each	No.	Size Inches	Price Each
TB 1/2	1/2	\$.98	TB 1	1	\$1.20
TB 3/4	3/4	1.10	.....	..	.....

Sampson Access System Universal Clamps and Fittings

Continued

Access Threadless Fittings

AB 3/4 Ball Base Joint

UB 1/2 Universal Ball Box



AB 3/4

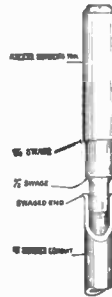


UB 1/2

No.	Price Each
AB 1/2	\$1.75
AB 3/4	1.83

No.	Price Each
UB 1/2	\$1.55
.....

No. ST Access Swaging Tool



Access swaging tool replaces the die stock, reamer, Stilson wrench, etc.

Cut off the conduit, insert swaging tool, a few blows with a hammer rounds the inner edge and flares the outer, over which the Access fittings clamp securely on the conduit which has not been weakened by threads.

It is simple, strong and durable.

Price, No. ST.....each \$1.25

No. G542 Access Fixtures

This fixture is principally used for ceiling attachment when ceilings are over 12 feet 6 inches high. It can be used on open or conduit wiring. There are a large number of operations where it is of great advantage.

This fixture for 10 to 11-foot ceilings consists of one AB 1/2, one P3000, one P3090, one F. A., one KS10 key socket, 1 Sha 730 shade.

Length over all, 90 inches.

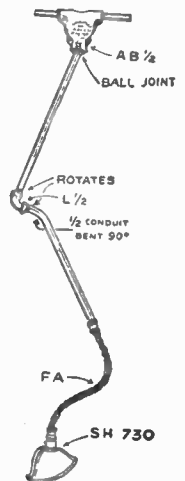
Longer or shorter lengths may be ordered at 1 per cent inch more or less.

Prices for wiring fixtures will be sent upon request.

In the place of any Access clamp shown with a fixture any clamp may be ordered.

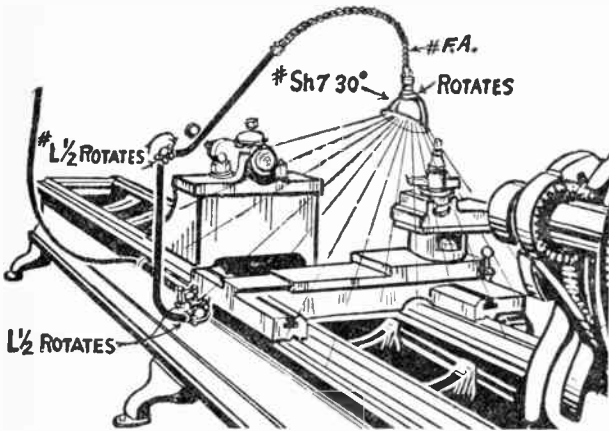
Access Fixtures have lengths that are sufficient for the average type of machine.

Large fixtures may be ordered as follows: By adding the letter A, B, or C to the group number of any fixture 6, 12, or 18 inches respectively will be added. This will allow the fixture to cover an area the diameter of which will be 1, 2, or 3 feet greater than that listed.



No. G523 Sampson Access Lighting Fixtures

Typical Installation of Sampson Access System



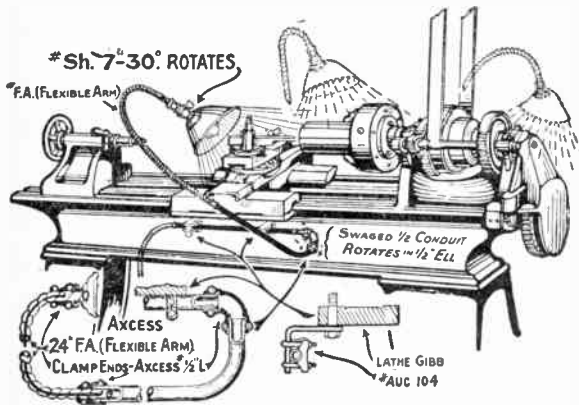
This is the large lathe lighting fixture. The larger size calls for one universal section of 90-degree bent pipe and one access elbow is added. This increases the flexibility of movement and gives further range.

This fixture is valuable for turret lathes in which case they are not attached to carriage.

No. G523 has a 6-foot range of movement in any direction.

Price, No. G523, Complete.....each \$4.96
 " Clamping Device, Extra 2 AUC 104..... " 1.32

No. G505L Sampson Access Lighting Fixtures



This fixture being clamped securely to the carriage beneath the cap screws of the gibb, makes easy and quick attachment.

Because it moves with the carriage, quick sight at points of operation is permitted.

Furthermore, the flexible arm may be moved to any required position beyond either side, above, or below the lathe.

This flexibility of movement is particularly adaptable to boring and setting-up operations.

The one hand, easy adjustment, stay-put qualities and lamp protection features, make it a necessity.

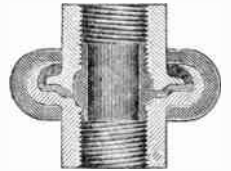
This excess fixture as shown has a range of 3 feet 6 inches in any direction in addition to carriage movement.

Price, No. G505L, Complete.....each \$4.20
 " Clamping Device, Extra 2 AUC 104..... " 1.32

Macallen Insulating Joints for Gas Service Mains and Interior Conduits



Insulating Joint



Sectional View

Composition Brass

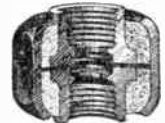
They are insulated on the interior surface to prevent moisture lodging around the mica insulation where they are used on gas service mains.

Cat. No.	Size In.	Price Each	Cat. No.	Size In.	Price Each
1624	3/4 x 3/4	\$8.00	1628	2 x 2	\$61.00
1625	1 x 1	13.00	1629	2 1/2 x 2 1/2	90.00
1626	1 1/4 x 1 1/4	21.00	1630	3 x 3	120.00
1627	1 1/2 x 1 1/2	33.00	.....	.....	.....

Malleable Iron

1634	3/4 x 3/4	\$6.00	1636	1 1/4 x 1 1/4	\$15.00
1635	1 x 1	9.00	....	.....	.....

Macallen Joints for Combination Fixtures



No. 7501

Sectional View

Cat. No.	Size In.	Price Each	Cat. No.	Size In.	Price Each
7501	3/8 x 1/8	\$.72	7509	3/4 x 1/2	\$2.50
7502	3/8 x 1/4	.72	7510	3/4 x 3/4	2.50
7503	3/8 x 3/8	.72	7511	1 x 1/2	3.50
7504	1/2 x 1/8	1.00	7512	1 x 3/4	3.50
7505	1/2 x 1/4	1.00	7513	1 x 1	3.50
7506	1/2 x 3/8	1.00	7514	1 1/4 x 1 1/4	7.50
7507	1/2 x 1/2	1.00	7515	1 1/2 x 1 1/2	12.00
7508	3/4 x 3/8	2.50	7516	2 x 2	18.00

Macallen Malleable Iron Hickeys



Cat. No.	Size In.	Price per 100	Cat. No.	Size In.	Price per 100
1450	1/8 x 1/8	\$6.00	1463	1/2 x 3/8	\$12.00
1451	1/4 x 1/8	6.00	1456	1/2 x 1/2	14.00
1452	1/4 x 1/4	6.00	1597	3/4 x 3/8	28.00
1453	3/8 x 1/8	8.00	1464	3/4 x 1/2	30.00
1454	3/8 x 1/4	8.00	1457	3/4 x 3/4	35.00
1455	3/8 x 3/8	9.00	1465	1 x 3/4	40.00
1461	1/2 x 1/8	12.00	1458	1 x 1	45.00
1462	1/2 x 1/4	12.00	.....	.....	.....

Macallen Electrolier or Separable Joints

With Malleable Iron Male Thread Hickeys



Cat. No.	Size Inches	Price Each	Cat. No.	Size Inches	Price Each
7681	3/8 x 1/8	\$.80	7685	1/2 x 1/4	\$1.08
7682	3/8 x 1/4	.80	7686	1/2 x 3/8	1.09
7683	3/8 x 3/8	.81	7687	1/2 x 1/2	1.14
7684	1/2 x 1/8	1.08	.....	.....	.....

Macallen Insulating Joints



No. 7521



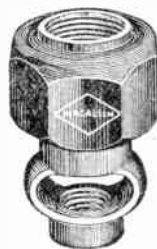
No. 7551

Female End Same Size or Larger Than Male End			
Cat. No.	Size In.	Price Each	
7521	3/8 F x 1/8 M	\$.72	
7522	3/8 F x 1/4 M	.72	
7523	3/8 F x 3/8 M	.72	
7524	1/2 F x 1/8 M	1.00	
7525	1/2 F x 1/4 M	1.00	
7526	1/2 F x 3/8 M	1.00	
7527	1/2 F x 1/2 M	1.00	

Male End Same Size or Larger Than Female End			
Cat. No.	Size In.	Price Each	
7534	3/8 M x 1/8 F	\$.72	
7535	3/8 M x 1/4 F	.72	
7523	3/8 M x 3/8 F	.72	
7536	1/2 M x 1/8 F	1.00	

Male Thread on Each End			
Cat. No.	Size In.	Price Each	
7551	3/8 x 1/8	\$1.00	
7552	3/8 x 1/4	1.00	
7553	3/8 x 3/8	1.00	
7554	1/2 x 3/8	1.30	

Macallen Insulating Joints
Electrolier or Separable Joints
With Iron Hickey

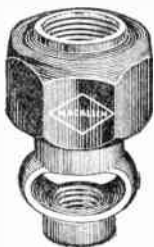


Cat. No.	Size In.	Price Each	Cat. No.	Size In.	Price Each
7601	3/8 x 1/8	\$.78	7607	1/2 x 1/2	\$1.14
7602	3/8 x 1/4	.78	7608	3/4 x 3/8	3.00
7603	3/8 x 3/8	.80	7609	3/4 x 1/2	3.05
7604	1/2 x 1/8	1.08	7610	3/4 x 3/4	3.25
7605	1/2 x 1/4	1.08	7611	1 x 3/4	4.35
7606	1/2 x 3/8	1.09	7612	1 x 1	4.45

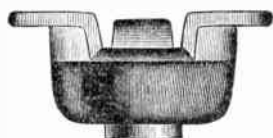
Electrolier or Separable Joints
With Hickeys Tapped Brass Tube Sizes

Brass tubing sizes given are outside measurements, and are tapped to Macallen's standard sizes.

Cat. No.	Size Inches	Material	Price Each
7631	3/8 Iron x 3/8 Brass	Brass	\$.80
7632	" x 7/8	"	.80
7633	" x 1 1/2	"	.80
7634	" x 5/8	"	.84
7635	" x 3/8	"	1.08
7636	1/2 " x 7/8	"	1.10
7637	1/2 " x 1 1/2	"	1.10
7638	1/2 " x 5/8	"	1.12



Macallen Insulated Crowfeet

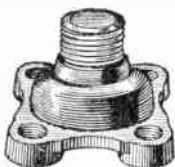


Cat. No.	Size In.	Price Each
1401	1/8	\$.90
1402	1/4	.90
1403	3/8	.90
1404	1/2	1.20
1405	3/4	2.50

Macallen Insulated Fixture Studs

WITHOUT HICKEY			WITH HICKEY		
Cat. No.	Size Inches	Price Each	Cat. No.	Size Inches	Price Each
1335	1/8	\$.75	1329	1/8	\$.81
1339	1/4	.75	1330	1/4	.81
1340	3/8	.80	1334	3/8	.89

These fixtures studs fit standard outlet boxes.



Macallen Blank Joints
For Externally Wired Fixtures

Cat. No.	Size In.	Price Each
7701	3/8 x 1/8	\$.72
7702	3/8 x 1/4	.72
7703	3/8 x 3/8	.72
7704	1/2 x 1/8	1.00
7705	1/2 x 1/4	1.00
7706	1/2 x 3/8	1.00
7707	1/2 x 1/2	1.00
7708	3/4 x 3/8	2.50
7709	3/4 x 1/2	2.50
7710	3/4 x 3/4	2.50
7711	1 x 1/2	3.50
7712	1 x 3/4	3.50
7713	1 x 1	3.50
7714	1 1/4 x 1/4	7.50
7715	1 1/2 x 1/2	12.00
7716	2 x 2	18.00



Plain Joint

Male and Female

Cat. No.	Size In.	Price Each
7721	3/8 F x 1/8 M	\$.72
7722	3/8 F x 1/4 M	.72
7723	3/8 F x 3/8 M	.72
7724	1/2 F x 1/8 M	1.00
7725	1/2 F x 1/4 M	1.00
7726	1/2 F x 3/8 M	1.00
7727	1/2 F x 1/2 M	1.00
7734	3/8 M x 1/8 F	.72
7735	3/8 M x 1/4 F	.72
7728	3/4 F x 3/8 M	2.90
7729	3/4 F x 1/2 M	2.90
7730	3/4 F x 3/4 M	2.90
7731	1 F x 1/2 M	4.00
7732	1 F x 3/4 M	4.00
7733	1 F x 1 M	4.00
7736	1/2 M x 1/8 F	1.00
7737	1/2 M x 1/4 F	1.00
7738	1/2 M x 3/8 F	1.00



Davis Sunlight Projectors

For Use with the 500, 400 or 300-watt Standard PS Bulb, Sunbeam Mazda C Lamps



MOUNTING.—Each projector equipped with cradle mounting suitable for either horizontal or perpendicular surface.

HOUSING.—16-gauge sheet aluminum stamping, 15 1/2 inches in diameter, with cast iron socket housing on top, and constructed so that projector may be made weatherproof with standard 15 1/8-inch clear, or colored, heat-resisting glass front.

FRONT GLASS.—To be supplied at additional cost as indicated in prices below. Clear, heat-

resisting glass, 15 1/8 inches in diameter.

REFLECTOR.—Polished aluminum; last operation in manufacture of housing indicated above is to spin same true to an efficient projective contour—the inside of this is then highly polished and becomes the reflector of this unit.

SOCKET.—Benjamin Composition Mogul No. 7905 with lamp grip.

WIRE.—Two leads of 14-gauge, extra flexible, heat-resisting and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—500 feet.

SPREAD OF BEAM.—39 degree.

RECOMMENDED MOUNTING HEIGHT.—15 to 50 feet.

FINISH.—Rust-resisting rubberized black enamel.

HEIGHT.—19 inches, over all.

DIAMETER.—15 1/2 inches, over all.

DEPTH.—9 inches, over all.

WEIGHT.—10 pounds, complete with glass front. Shipping weight, 25 pounds.

Price, with Front Glass.....each \$30.00
" without Front Glass....." 22.00

Davis Search-light Projectors

For Use with the 500, 750, 1000 and 1500-watt Standard G Bulb, Mazda C Lamps



Searchlight Base Mounted

MOUNTING.—Each projector equipped complete with combination base and bracket.

HOUSING.—Weatherproof, Arme-co Steel, 12½ inches in diameter, with rear door hinged at the side.

FRONT GLASS.—Clear, heat-resisting glass, 12½ inches in diameter.

REFLECTOR.—Glass, 11 inches in diameter, ground and polished true to contour on both sides. Silvered, coppered, and backed with heat-resisting compound which also prevents the copper and silver being attacked by gases or fumes of any kind.

FOCUSING MECHANISM.—Hand-operated from outside of projector.

SOCKET.—Benjamin composition Mogul No. 7905 with lamp grip.

WIRE.—Two leads, 14 gauge, extra flexible, heat-resisting, and weather-proof wire.

FINISH.—Rust-resisting rubberized black enamel.

HEIGHT.—20 inches when supplied with standard mounting equipment. Special mountings can be furnished, in accordance with requirements, at a slight additional cost.

DEPTH.—11 inches.

WEIGHT.—20 pounds. Shipping weight, 35 pounds.

Price.....each \$72.00

No. 1W Flood-light Projectors

For Use with the 1000 or 750-watt Standard PS Bulb, Sunbeam Mazda C Lamps

MOUNTING.—Each projector equipped complete with combination base and bracket.

HOUSING.—Weatherproof, cast-iron, 14 inches in diameter, with cast-iron front and rear doors hinged at bottom. This unit is also manufactured with the barrel of Armeo steel instead of cast-iron.

FRONT GLASS.—Clear, polished wire glass, 13½ inches in diameter, scored. **NOTE:** Clear, or colored, heat-resisting glass fronts can be furnished with this unit at a slight additional cost.

REFLECTOR.—Glass, 12½ inches, of two types: Hammered glass to project a great flood and eliminate glare, and clear glass to project a stronger and narrower flood. Each is silvered and coppered, and backed with a heat-resisting compound which also prevents the copper and silver being attacked by gases or fumes of any kind. Clear glass furnished unless otherwise specified.

FOCUSING MECHANISM.—Hand-operated from the outside of unit, and equipped with a locking nut.

SOCKET.—Benjamin Composition Mogul No. 7905 with lamp grip.

WIRE.—Two leads, 14 gauge, extra flexible, heat-resisting, flame-proof and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—1000 to 1500 feet.

SPREAD OF BEAM.—With hammered glass reflector, 24 degrees. With clear glass reflector, 18 degrees.

AVERAGE MOUNTING HEIGHT RECOMMENDED.—50 to 75 feet.

FINISH.—Rust-resisting rubberized black enamel.

HEIGHT.—28 inches, over all.

DIAMETER.—15 inches, over all.

DEPTH.—11 inches, over all.

WEIGHT.—60 pounds. Shipping weight, 80 pounds.

Price, No. 1W.....each \$68.00



No. 1W Base Mounted

No. G-5 Davis Beam-light Projectors

For Use with the 500-watt Standard, G Bulb Sunbeam Mazda C Lamps



No. G-5 Base Mounted

MOUNTING.—Each projector equipped complete with combination base and bracket.

HOUSING.—Weatherproof cast aluminum, 15 inches in diameter, with cast-iron front door hinged at side.

FRONT GLASS.—Clear, heat-resisting glass, assembled in such a manner as to make the unit weatherproof, 15¼ in. diameter. Also, furnished in colors—ruby, amber, green and blue at slight additional cost.

REFLECTOR.—Plain glass, 13¼ inches in diameter, silvered and coppered, and backed with heat-resisting compound which also prevents the silver and copper being attacked by gases or fumes of any kind.

FOCUSING MECHANISM.—Hand-operated from outside of unit, and equipped with a locking nut.

SOCKET.—Benjamin Composition Mogul No. 7905, with lamp grip.

WIRE.—Two leads of 14 gauge, extra flexible, heat-resisting and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—500 feet.

SPREAD OF BEAM.—19 degrees.

FINISH.—Rust-resisting, rubberized black enamel.

HEIGHT.—21½ inches, over all.

DIAMETER.—16½ inches, over all.

DEPTH.—8 inches, over all.

WEIGHT.—20 pounds. Shipping weight, 34 pounds.

Price, No. G-5.....each \$47.00

No. PS-5 Davis Flood-light Projectors

For Use with the 500, 400 or 300-watt Standard PS Bulb, Sunbeam Mazda C Lamps

MOUNTING.—Complete with combination base and bracket.

HOUSING.—Weatherproof cast-aluminum, 15 inches in diameter, with cast-iron front door hinged at side.

FRONT GLASS.—Clear heat-resisting glass, 15¼ in. diameter. Also furnished in colors—ruby, amber, green and blue at slight additional cost.

REFLECTOR.—Hammered glass, 13⅞ inches in diameter, silvered and coppered, and backed with heat-resisting compound which also prevents the silver and copper being attacked by gases and fumes of any kind.

FOCUSING MECHANISM.—Hand-operated from outside; equipped with locking nut.

SOCKET.—Benjamin Composition Mogul No. 7905 with lamp grip.

WIRE.—Two leads of 14 gauge, extra flexible, heat-resisting and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—500 feet.

SPREAD OF BEAM.—36 degrees.

FINISH.—Rust-resisting rubberized black enamel.

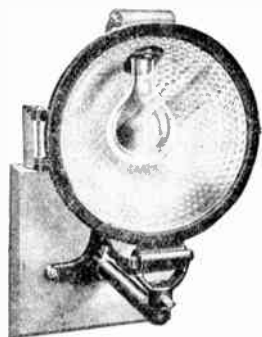
HEIGHT.—22½ inches, over all.

DIAMETER.—16½ inches, over all.

DEPTH.—8 inches, over all.

WEIGHT.—20 pounds. Shipping weight, 34 pounds.

Price, No. PS-5.....each \$47.00



No. PS-5 Bracket Mounted

No. G-250 Davis Beam-light Projectors

For Use with the 250-watt Standard, G Bulb Sunbeam Mazda C Lamp



No. G-250 Base Mounted

MOUNTING.—Each projector equipped complete with combination base and bracket.

HOUSING.—Weatherproof, cast-aluminum, 13 inches in diameter, with cast-iron front door hinged at side.

FRONT GLASS.—Clear, heat-resisting glass, 12½ inches in diameter, assembled in such a manner as to make the unit weatherproof. Can also be furnished in colors—ruby, amber, green and blue at slight additional cost.

REFLECTOR.—Glass, 11¾ inches in diameter, silvered and coppered, and backed with

heat-resisting compound which also prevents the copper and silver being attacked by gases or fumes of any kind.

FOCUSING MECHANISM.—Hand-operated from outside of unit, and equipped with a locking nut.

SOCKET.—Benjamin Composition Edison No. 7902 complete with lamp grip and two 24-inch leads of wire described below.

WIRE.—Two leads of 14 gauge, extra flexible, heat-resisting, and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—250 feet.

SPREAD OF BEAM.—24 degrees.

FINISH.—Rust-resisting, rubberized black enamel.

HEIGHT.—19 inches, over all.

DIAMETER.—14 inches, over all.

DEPTH.—8 inches, over all.

WEIGHT.—17 pounds. Shipping weight, 31 pounds.

Price, No. G-250.....each \$35.00

No. PS-2 Davis Flood-light Projectors

For Use with the 200-watt Standard, PS Bulb Sunbeam Mazda C Lamp

MOUNTING.—Each projector equipped complete with combination base and bracket.

HOUSING.—Weatherproof, cast-aluminum, 13 inches in diameter, with cast-iron front door hinged at side.

FRONT GLASS.—Clear, heat-resisting glass, 12½ inches in diameter, assembled in such a manner as to make the unit weatherproof; can also be furnished in colors—ruby, amber, green and blue at slight additional cost.

REFLECTOR.—Hammered glass, 11¾ inches in diameter, silvered and coppered, and backed with heat-resisting compound which also prevents copper and silver being attacked by gases or fumes of any kind.

FOCUSING MECHANISM.—Hand-operated from outside of unit, and equipped with a locking nut.

SOCKET.—Benjamin Composition Edison No. 7902, complete with lamp grip and two 24 inch leads of wire described below.

WIRE.—Two leads of 14 gauge, extra flexible, heat-resisting, and weatherproof wire.

MAXIMUM LENGTH OF AREA LIGHTED.—200 feet.

SPREAD OF BEAM.—43 degrees.

RECOMMENDED MOUNTING HEIGHT.—15 to 25 feet.

FINISH.—Rust-resisting rubberized black enamel.

HEIGHT.—20 inches, over all.

DIAMETER.—14 inches, over all.

DEPTH.—8 inches, over all.

WEIGHT.—18 pounds. Shipping weight, 32 pounds.

Price, No. PS-2.....each \$35.00



No. PS-2 Bracket Mounted

Davis Projectors

The Davis System of Lighting

PROJECTORS.—
Flood-light
Beam-light
Search-light
Interior

USES.—
Advertising
Beaches, Arena, etc.
Building
Construction
Industrial
Protective
Railroads

Davis Projection Units and Their Application

The Davis Projector consists of a standard, PS or G Bulb Mazda C lamp mounted in front of a parabolic reflector, all enclosed in a weatherproof case.

A focusing attachment is provided to regulate the projected beam. This regulator makes Davis Projection a practical and economical method of lighting large areas where it is not easy or desirable to install complicated or extensive wiring.

Davis Projection Units are manufactured in 8 standard types:

1. Search-light Projector
2. Flood-light Projector No. 1W
3. Beam-light Projector G-5
4. Flood-light Projector PS-5
6. Beam-light Projector G-250
7. Flood-light Projector PS-2
8. Utility Projector, Model RR
9. Sunlight Spot and Flood Light Projector

The advantages of Davis Projectors are:

- Ability to light evenly large areas at low cost.
- Suitability for emergency lighting or for lighting areas over which it is impractical to place wires.
- Portability, lending flexibility to the installation.
- Low installation cost.
- Ease of installation.
- Simplicity of maintenance.
- Unobtrusive in daytime.
- Weatherproof.
- Long-lived under the most severe or deteriorating atmospheric conditions.
- Safety in the presence of gas or oil fumes.
- Adaptability to base or bracket mounting, according to requirements.
- Simplicity of outside focus adjustment.

Applications

Advertising: As a means of illuminating bill-boards, display-windows, show-rooms, and signs; also for aerial and spectacular advertising.

Bathing beaches, arenas, play-grounds, ball parks, etc.

Buildings: Architectural exterior and interior; also for statutory, etc.

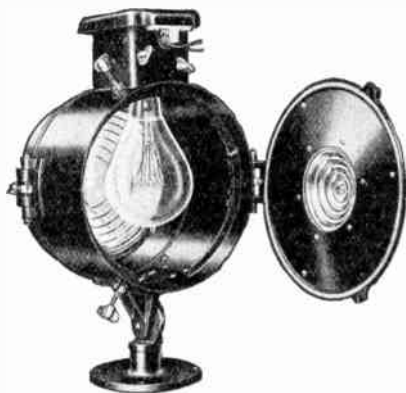
Construction: To allow a safe twenty-four hour working day in building, excavating, steel raising, tunnel and ship-ward work, oil rigs, etc.

Protection: Reveals obstacles in passages between buildings and in and around yards and extends the area under the watchman's eyes. The degree of protection to persons and property is increased, as is the effectiveness of policing.

Railroad: In railroad work, they are used extensively to illuminate roundhouses, turntables, classification yards, teaming yards, station platforms, emergency lighting, etc.

Type RCA Crouse-Hinds Imperial Incandescent Floodlight Projectors

Swivel Base, Quadrant Mounting—Hand Control



Heat-resisting semaphore lens in the front door and heat-resisting prism glass reflector on inside of the rear door are not affected by lamp heat, gases, rain or snow.

Case and door are cast iron, finished inside and out with baked-on enamel. Focusing mechanism is cast brass.

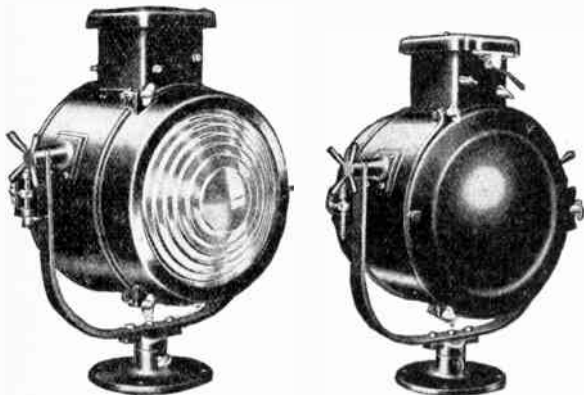
Designed to take 300 to 1000-watt, 110 or 220-volt, Type C Mazda lamps in a PS52 bulb. The lamp may be adjusted from the outside of the casing by turning two wing screws. The adjustment may be made vertically and horizontally, so that the beam of light may be concentrated or spread.

With 12-inch Semaphore Lens and 6-inch Prism Reflector—300 to 1000 Watts

Cat. No.	Style of Lens	Weight Pounds	Price Each
29845	Clear Semaphore	70	\$63.00
29841	Spread "	70	63.00
29843	Diffusing "	70	63.00

Type RCE Crouse-Hinds Imperial Incandescent Floodlight Projectors

Swivel Base, Trunnion Mounting—Hand Control



3/4 Front View

Rear View

Heat-resisting semaphore lens in the front door and heat-resisting prism glass reflector on inside of the rear door are not affected by lamp heat, gases, rain or snow.

Case and door are cast iron, finished inside and out with baked-on enamel. Focusing mechanism is cast brass.

Designed to take 300 to 1000-watt, 110 or 220-volt, Type C Mazda lamps in a PS52 bulb. The lamp may be adjusted from the outside of the casing by turning two wing screws. The adjustment may be made vertically and horizontally, so that the beam of light may be concentrated or spread.

With 12-inch Semaphore Lens and 6-inch Prism Reflector—300 to 1000 Watts

Cat. No.	Style of Lens	Weight Pounds	Price Each
29846	Clear Semaphore	72	\$65.00
29842	Spread "	72	65.00
29844	Diffusing "	72	65.00

Type SDA Crouse-Hinds Imperial Incandescent Floodlight Projectors

Swivel Base, Quadrant Mounting—Hand Control



Mounted on a cast iron swivel base which permits it to be turned at will in any direction. It is also equipped with a quadrant, likewise of cast iron, which provides means for elevating or depressing the beam. Thus it is possible to turn the beam of light upon the object to be illuminated. Casing is made of black japanned, alloy-coated iron (rust-resisting), is weatherproof and ventilated to dissipate heat given off by lamp.

With 9 5/8-inch Reflectors—150 Watts

Cat. No.	Style of Reflector	Wt. Lbs.	Price Each
28685	Crystal Glass Mirror	49	\$18.25
28686	Nickel Plated Copper	43	16.00
28687	Polished Aluminum	43	15.25

With 12-inch Reflectors—250 Watts

28621	Crystal Glass Mirror	56	\$34.00
28622	Nickel Plated Copper	50	30.00
28623	Polished Aluminum	50	29.00

With 16-inch Reflectors—500 Watts

28714	Crystal Glass Mirror	90	\$62.00
28624	Nickel Plated Copper	82	37.00
28625	Polished Aluminum	82	35.50

Type SDE Crouse-Hinds Imperial Incandescent Floodlight Projectors

Swivel Base, Trunnion Mounting—Hand Control



Supported on trunnions with star-wheel for locking in position to hold the beam at any desired elevation. The casing is black japanned, alloy-coated (rust-resisting), is thoroughly weatherproof and ventilated to dissipate heat given off by lamp. The reflectors are true paraboloids; metal reflectors are spun over accurate steel forms, while glass reflectors are ground, buffed and polished on both surfaces. Backing on glass reflectors conforms to the navy standard.

With 9 5/8-inch Reflectors—150 Watts

Cat. No.	Style of Reflector	Shp. Wt., Lbs.	Price Each
29069	Crystal Glass Mirror	51	\$20.25
29070	Nickel-plated Copper	45	18.00
29071	Polished Aluminum	45	17.25

With 12-inch Reflectors—250 Watts

28688	Crystal Glass Mirror	60	\$36.00
28689	Nickel-plated Copper	54	32.00
28690	Polished Aluminum	54	31.00

With 16-inch Reflectors—500 Watts

28715	Crystal Glass Mirror	100	\$64.50
28711	Nickel-plated Copper	92	39.50
28712	Polished Aluminum	92	38.00

Type SDX Crouse-Hinds Imperial Incandescent Floodlight Projectors

Lever Control

Designed for river, harbor and pleasure craft and can also be used to advantage on watch towers. It has an effective range of 2000 feet and light can be elevated or depressed 45 degrees and revolved at will. The casing is black japanned, alloy-coated sheet iron. Pedestal is a substantial iron casting, finished with black japan. Reflectors are true paraboloids, metal reflectors being spun over accurate steel forms, while glass reflectors are ground, buffed and polished on both surfaces. The backing on these glass mirrors is in accordance with the Navy standard.

Resistance can be furnished for operation on voltages other than 105-130 volts.

Spread and diffusing glasses for producing wide-angle beams will be furnished on request.



With 12-inch Reflector—250 Watts

Cat. No.	Style of Reflector	Wt. Lbs.	Price Each
29779	Crystal Glass Mirror	73	\$122.00
29780	Nickel-plated Copper	70	118.00
29781	Polished Aluminum	70	117.00

With 16-inch Reflector—500 Watts

29830	Crystal Glass Mirror	91	\$150.00
29831	Nickel-plated Copper	83	125.00
29832	Polished Aluminum	83	123.00

Prices do not include incandescent lamps.

Type SDLN Crouse-Hinds Imperial Incandescent Floodlight Projectors

Stationary Mounting, Sheet Steel or Copper Case Lever Control

Type SDLN is to be mounted on the roof of the pilot house or tower.

The projector revolves on a ball thrust bearing enclosed in a water-shedding housing.

The lever control for vertical adjustment locks automatically in any position within its range of movement. The horizontal adjustment is independent of, but may be operated with, the vertical adjustment.

The number boxes are water-tight, will take two 3-inch Arabic numerals, and a 40-watt Mazda lamp. These lamps are on an independent circuit.

The projector is fitted with a three-way focusing mechanism enabling accurate focusing.

Case is coated with black japan which is baked after application.

Extra length control stem can be furnished at an additional price.



With 16-inch Reflector—500 Watts

Style of Reflector	Steel Case			Copper Case		
	Wt. Lbs.	Cat. No.	Price Each	Cat. No.	Price Each	
Crystal Glass Mirror	190	29617	\$215.00	29623	\$230.00	
Nickel-plated Copper	180	29618	190.00	29624	205.00	
Polished Aluminum	180	29619	188.00	29625	203.00	

Type RME Crouse-Hinds Imperial Incandescent Floodlight Projectors



Type RME is a new, rugged, cast-iron floodlight for portable use. It is to be used where it is desired to transport the light to the job. It is invaluable around railroad shops and yards where repairs must be made to heavy apparatus, and a strong light is necessary. It can be used to great advantage when working under cars and locomotives.

Finished with black japan, which is baked after application.

With Clear Glass in Door

With 10-inch Reflector—25 to 60 Watts

Equipment in Door	WHITE ENAMELED STEEL REFLECTOR		POLISHED ALUMINUM REFLECTOR	
	Wt. Lbs.	Cat. No.	Price Each	Cat. No.
Clear, Flat Glass	28	29474	\$21.50	29473
Noglare Flat Glass	28	29814	28.00	29815

With 10-inch Reflector—75 Watts

Clear, Convex, Heat-resisting	30	29803	\$24.75	29802	\$24.75
Noglare Convex Glass	30	29816	29.25	29817	29.25
Clear Semaphore Lens	30	29477	25.00	29476	25.00
Noglare " "	30	29818	29.50	29819	29.50
Diffusing Semaphore Lens	30	29991	25.00	29992	25.00

With 12-inch Reflector—100 to 200 Watts

Clear Glass	38	29480	\$25.00	29479	\$25.00
Noglare Glass	38	29820	34.25	29821	34.25
Clear Semaphore Lens	40	29483	34.00	29482	34.00
Noglare " "	40	29824	41.00	29825	41.00
Diffusing Semaphore Lens	40	29993	34.00	29994	34.00

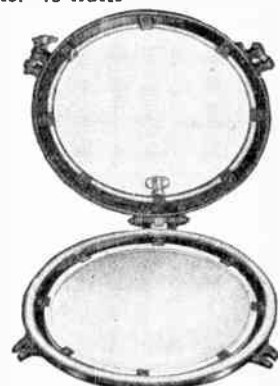
Prices do not include incandescent lamps.

Type RAS Crouse-Hinds Imperial Incandescent Floodlights

Porcelain Enameled Reflector with Cast-iron Door Frame 12-inch Reflector—75 Watts



Type RAS Floodlight



Enclosing Door and Frame for Type RAS Floodlight

Designed for suspension direct to a rigid conduit system and offers full protection against the accumulation of dirt and corroding vapors to both the incandescent lamp and the reflecting surface of reflectors. The reflector itself is a standard 75-watt RLM reflector which gives an ideal distribution for industrial purposes. It is of solid top type with the lamp receptacle entirely within the reflector. The reflector is enameled on both the inner and outer surfaces, the enamel being evenly applied in several coats. Especially designed for use with 75-watt Mazda C lamps, although 100 and 150-watt lamps may be used if desired.

Cat. No.	Description	Wt. Lbs.	Price Each
29808	Complete with Clear, Convex, Heat-resisting Glass	15	\$17.50
29809	Enclosing Door and Frame Only, for Type RAS Floodlight	15	10.00

Prices do not include incandescent lamps.

Type RM Crouse-Hinds Reflectors



With Clear Semaphore Lens

Type RM can be installed in any desired position. Light is projected at a right angle to the surface against which reflector is mounted. This reflector constitutes a durable and efficient lighting fixture for railroad roundhouses, turn-tables, ash pits, etc., as well as meeting illumination requirements in industrial plants. In steel mills, Type RM reflectors are used variously on larry, scale and bin-filling cars, to light runway where skip cars dump into

hopper at top of blast furnace, to give illumination for operators attaching peel at charging boxes; also to illuminate gauges and the approach tables in rolling mills, and to light crane yards.

One lighting system for roundhouses that has satisfactorily met every requirement involves the illumination of each aisle by three Type RM reflectors. Two of these reflectors are mounted on the front wall, about 8 feet from the floor.



With Clear Glass

With Clear Semaphore Lens

Cat. No.	White Enamel	Size of Lamps Watts	Ship. Wt. Lbs.	Price Each
26005	26055	25 to 75	39	\$13.00
26021	26071	100 " 200	50	22.00

With Clear Semaphore Diffusing Lens

29984	29983	25 to 75	39	\$14.00
29986	29985	100 " 200	50	23.50

With "Noglare" (Yellow) Semaphore Lens

26087	26097	25 to 75	39	\$17.50
26092	26102	100 " 200	50	29.00

With Clear Glass

26001	26051	25 to 75	35	\$9.50
26017	26067	100 " 200	45	13.00

With "Noglare" (Yellow) Glass

26085	26095	25 to 75	35	\$16.00
26090	26100	100 " 200	45	22.25

With Safety First (Green with White Letters) Glass

26112	26113	25 to 75	35	\$13.00
26114	26115	100 " 200	45	17.00

Type RLS Crouse-Hinds Imperial Floodlights

This type of floodlight is for suspension and meets lighting requirements in roundhouses, steel mills, or where similar conditions exist.

The floodlight can be placed where most convenient and the beam of light directed where desired.



With White Enameled Steel Reflector

Cast Iron Case

Cat. No.	Diameter Inches	Watts	Wt. Lbs.	Price Each
29726	16	500	63 1/2	\$37.50
29767	12	200	40	23.00
29768	12	100 to 150	40	23.00
29769	12	75	40	23.00

Cast Aluminum Case

29732	16	500	32	\$54.00
29773	12	200	19 1/2	36.50
29774	12	100 to 150	19 1/2	36.50
29775	12	75	19 1/2	36.50

Type HDA Crouse-Hinds Imperial Incandescent Projectors

For Series or Multiple Circuits



The New York State Highway Law requires illumination of all speed limit signs. The following is an excerpt from this law:

"Each city or village shall have placed conspicuously within 15 feet of the traveled portion of each main public highway where the city or village line crosses the same, or at a point within the limits of such city or village on such highway and within 15 feet of the traveled portion of every main highway where the rate of speed changes, on posts on both sides of the highways, at the

point where the speed limit is reduced, or changed, signs adequately illuminated between sunset and sunrise and of sufficient size to be easily readable by a person using the highway."

Possibly other states have similar laws, but whether or not such a law is in effect, the illumination of speed limit signs is desirable as it removes the opportunity of any driver using the excuse that he did not see the sign. This law, while perhaps not in existence in a good many states, will, doubtless, be adopted in the near future. Type HDA Projector was designed to illuminate these speed limit signs, and does so with excellent effect.

It is customary to connect these projectors to the street lighting circuits. This insures the illumination of the signs during the period required by law. When so connected it is unnecessary to employ an attendant to turn the lights on and off, individually.

Type HDA Projector, when furnished for multiple lighting circuits, is equipped with a push and pull socket mechanism, thereby permitting the use of any PS bulb up to and including the 200-watt PS-30 lamp, or GS bulb up to and including 150-watt G-25 bulb.

When projector is furnished for series circuits it will take a series lamp up to and including a 7.5-ampere in an S-24 1/2 bulb.

The series type of projector has been listed so that it can be purchased either equipped with a series standard film socket or a series regent Type C film socket. In this case the lamp socket is not adjustable as the focal point is fixed.

The Type HDA Projector has a sheet steel case. Furnished with 3 feet of duplex weather-proof wire.

The following lamps may be used:

Series Burning

Lumens	Bulb	AVERAGE VOLTS			
		4 Amperes	5.5 Amperes	6.6 Amperes	7.5 Amperes
600	S-24 1/2	11.0	8.1	6.8	6.3
800	S-24 1/2	13.9	10.0	8.4	7.8
1000	S-24 1/2	16.5	12.0	10.0	9.4

Multiple Burning

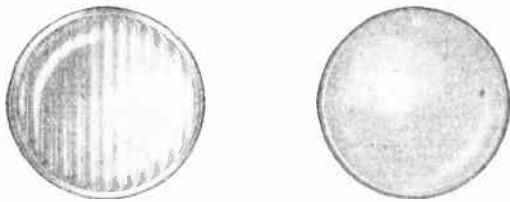
Watts	Volts	Bulb	Watts	Volts	Bulb
100	110-115-120	PS-25	100	220-230	PS-25
150	110-115-120	PS-25	200	240-250	PS-30
200	110-115-120	PS-30	...	.....	.....

Type HDA with 9 5/8-inch Reflector

Cat. No.	Style of Reflector	Wt. Lbs.	Price Each
29995	With Standard Series Film Socket.....	18	\$21.00
30001	" Regent Type C Series Film Socket	18	21.00
29996	" Medium Screw Base Socket.....	18	21.00

Prices do not include incandescent lamps.

Forms S and M Crouse-Hinds Lenses for Imperial Projectors and Floodlights



Form S Convex Spread Lens Form M Convex Diffusing Lens

It is sometimes advisable to use certain light-control devices on floodlight projectors. The function of these light control devices is to change the spread of the beam of light in one or in both directions.

Form S convex spread lens is used for spreading the beam of light in one direction only. This lens is made in various sizes for all Crouse-Hinds Imperial Floodlight Projectors. The light rays are spread at right angles to the direction of the ribs, that is, when the ribs are vertical the beam is spread in the horizontal direction, but the divergence of the beam in the vertical is not changed at all. By loosening the clamping screws on the inside of the door the lens may be turned in any desired direction.

Form M convex diffusing lens spreads the natural beam of light in 2 directions.

These lenses are made of heat-resisting glass which will not crack due to temperature changes. They are generally convex in shape though flat lenses are supplied when grid doors are specified.

Crouse-Hinds Imperial Floodlight Projectors and Floodlights are all listed with clear front glasses. In the majority of cases clear, convex, heat-resisting front glass is the standard equipment, although, in certain cases where small wattage lamps are used, ordinary flat (not heat-resisting) glass is used. In cases where the standard equipment includes clear, convex, heat-resisting front glass, the projectors or floodlights may be equipped with convex, heat-resisting spread or diffusing lenses at an increase in price equal to the difference between the clear convex glass and the spread or diffusing convex lens as given below. However, when the standard equipment includes clear, flat glass, the prices given below must be added to the prices of the projectors if convex, heat-resisting spread or diffusing lenses are substituted.

Clear, Convex, Heat-resisting Front Glass

Cat. No.	For Types of Projectors	Diam. In.	Price Each
HL6800	SDA, SDE, and SDR, 9 3/8-inch	9 3/8	\$2.00
HL6813	RM, RME, and RMU, 10-inch	10	2.50
HL6802	DCX, RAS, RLS, RLU, RM, RME, RMU, SAA, SAE, SDA, SDE, SDR, and SDX, 12-inch	12	3.00
HL6806	SCA and SCE, 12-inch Cast Iron	13	3.00
HL6804	RLS, RLU, SCA, SCE, SCX, SDA, SDE, SDL, SDLN, SDX, and SDXN, 16-inch	16 7/16	5.00

Form S Convex, Heat-resisting Spread Lenses

HL6812	SDA, SDE, and SDR, 9 3/8-inch	9 3/8	\$3.00
HL6815	RM, RME, and RMU, 10-inch	10	3.50
HL6811	DCX, RAS, RLS, RLU, RM, RME, RMU, SAA, SAE, SDA, SDE, SDR, and SDX, 12-inch	12	4.50
HL6809	SCA and SCE, 12-inch Cast Iron	13	4.50
HL6810	RLS, RLU, SCA, SCE, SCX, SDA, SDE, SDL, SDLN, SDX, and SDXN, 16-inch	16 7/16	7.00

Form M Convex, Heat-resisting Diffusing Lenses

HL6801	SDA, SDE, and SDR, 9 3/8-inch	9 3/8	\$3.00
HL6814	RM, RME, and RMU, 10-inch	10	3.50
HL6803	DCX, RAS, RLS, RLU, RM, RME, RMU, SAA, SAE, SDA, SDE, SDR, and SDX, 12-inch	12	4.50
HL6807	SCA and SCE, 12-inch Cast Iron	13	4.50
HL6805	RLS, RLU, SCA, SCE, SCX, SDA, SDE, SDL, SDLN, SDX, and SDXN 16-inch	16 7/16	7.00

Crouse-Hinds Special Bases and Brackets

For Imperial Floodlight Projectors



No. HL6816 Wheel Base

There are cases where one of these special designs in bases or brackets is required for making the best installation of projectors. Each of these has been designed to meet a special type of installation as described in the following paragraphs.

Any of these bases and brackets may be used with either Type SD or Type SC projectors.

No. HL6816 is a large wheel base, 17 1/2 inches in diameter. This base is used principally on portable projectors so that they cannot be tipped over when set upon uneven surfaces.

No. HL6817 is a large pedestal base, 17 1/2 in. in diameter, with a pedestal of sufficient height to bring the center of the projector 4 1/2 feet from the base.

A base of this type is particularly suitable for construction work to replace the less powerful flare lamps.



No. HL6817 Pedestal Base



No. HL6818 Cross-arm Base



No. HL6820 Short Pole Bracket

No. HL6818 is a base designed for mounting on a standard wooden cross-arm. The stud of the base is 1 1/4 inches in diameter and will therefore fit any standard insulator pin hole. This stud is 6 1/2 inches long and is threaded back 3 inches so that it may be fastened securely to any cross-arm of standard dimensions, which are 3 1/2 by 4 1/2 inches or 4 by 5 inches.

No. HL6820 is a short pole bracket, 18 inches long. This bracket is made of bar iron 2 1/2 inches wide and 1/4-inch thick.

The pole ends of the bracket and brace are drilled for using 5/8-inch lag screws.

Cat. No.	Description	Wt. Lbs.	Add to Price of Projector
HL6816	Wheel Base		\$1.00
HL6817	Pedestal Base		2.00
HL6818	Cross-arm Base		.75
HL6820	Short Pole Bracket		5.00



The Moth and The Flame

AS moths fly to the flame, so dollar bills go where streets are brightest. That's a thought to make any man a strong advocate of a Great White Way in his city.

For brilliant lights are hard to resist. People flock to them—neighbors from the suburbs and folks from miles around. They see the new things on display, and they buy. The whole town benefits by the dollars nightly drawn to its Great White Way.

Wherever there are shops and theatres, restaurants and garages, street lighting is a sure way to build up trade. A safe way, too, for light is the arch-enemy of crime, the best accident insurance.

Think over these very practical advantages that go with the beautifying of your business streets.



One type of lighting standard that many cities use for their White Ways. Western Electric has other types, too.

Western Electric

**QUALITY ELECTRICAL SUPPLIES
WHOLESALE ONLY**

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

KING ORNAMENTAL STANDARDS

“The World’s Standard of Comparison”

While ornamental lighting standards are primarily intended to give better lighting at night to streets, parks, and highways, yet another and as important a function is that they beautify both in the daytime and during the hours of darkness.

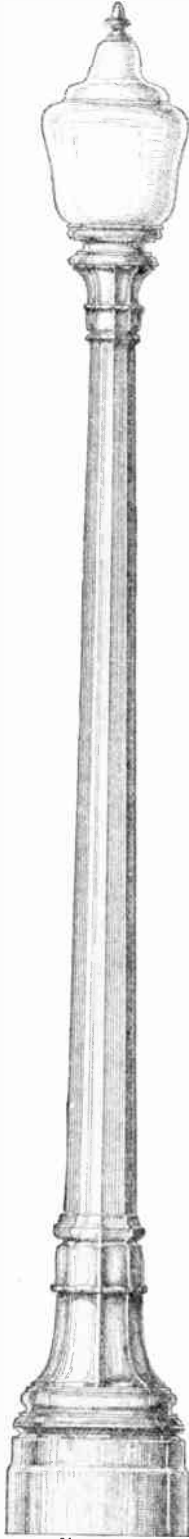
King designers have long studied street lighting in its relation to every type of location where ornamental standards may be used effectively. Design has been applied to King lighting standards from a practical as well as æsthetic standpoint. There is a purpose for design in lighting standards, and that purpose has been the fount of King creations.

It is important here, that we emphasize the scientific aspect of the design problem as applied to ornamental standards. It is not sufficient that a standard be merely ornamental, it must be a thing of beauty without sacrificing strength or economy of installation and upkeep. Beyond that it must be designed for permanency. It is upon these rocks of experience that so frequently the ordinary foundry wrecks the best of intentions.

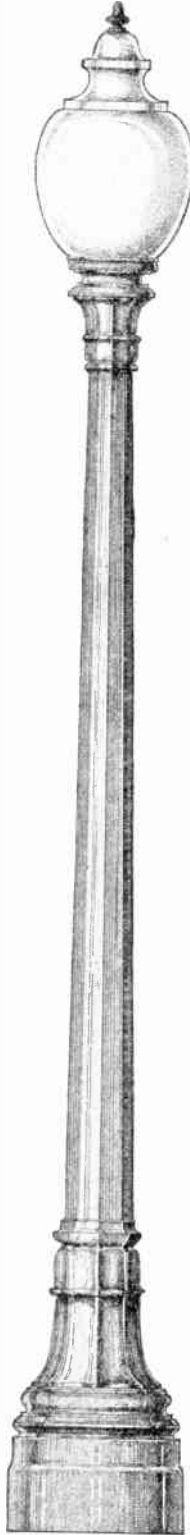
There is a series of King designs for each type of location. These designs harmonize with every possible environment. From the extensive range of King designs, any city or town, any association of business men, or any park board contemplating an ornamental lighting system can select the particular design to harmonize with the architectural surroundings.

King ornamental lighting equipment is made in every known type; the single unit, 2-light cluster, combination pole and bracket, bracket and traffic and building newels. Whatever type is required, it may be had in the particular design preferred.

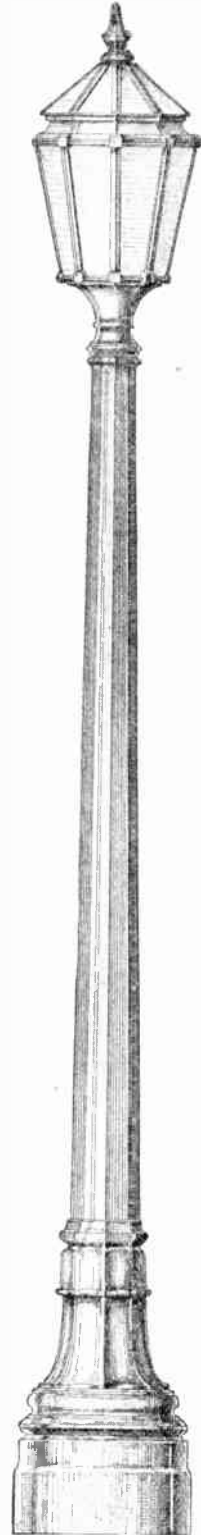
King Ornamental Standards
Flemish Design with Novalux Tops



No. 45A



No. 45B



No. 45C

The Flemish design introduces an element of extreme simplicity in combination with an accepted form of decorative style. This style was largely used during the Colonial days for metal objects such as andirons, chandeliers, candlesticks and similar articles and is quite appropriate for the decorative treatment of modern street lighting in American cities.

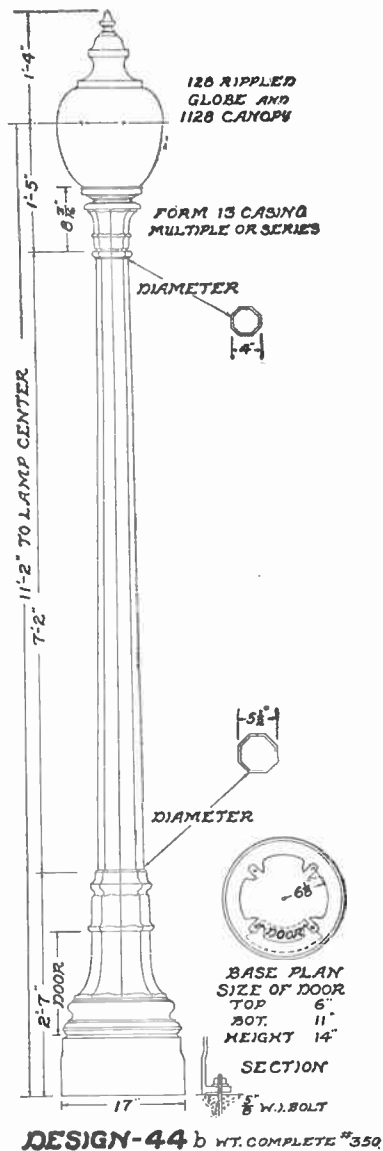
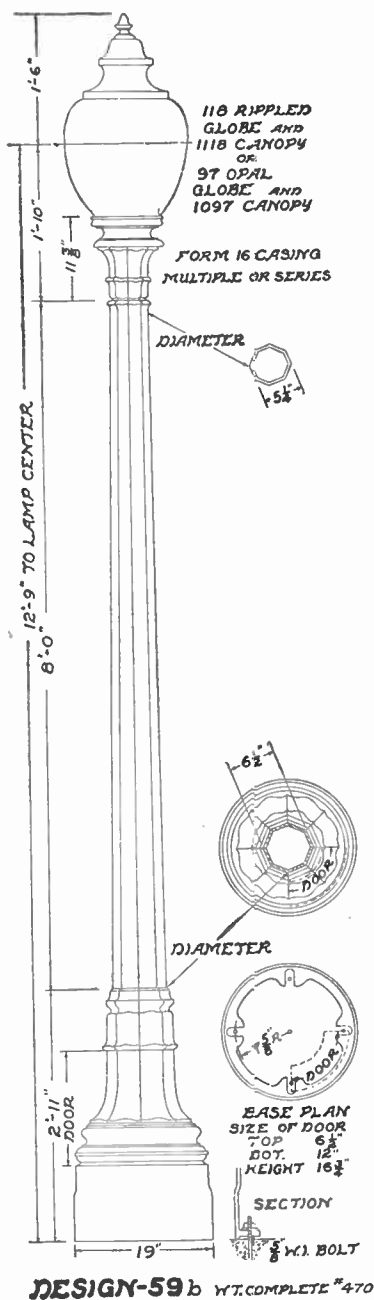
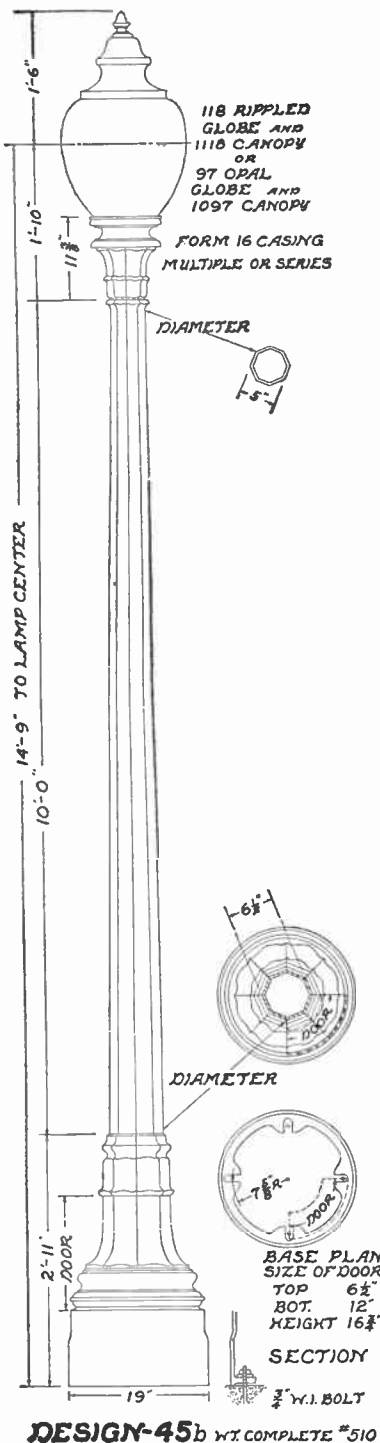
Graceful lines have been combined with sharpness of detail and smoothness of surface. It has a touch of simple elegance.

The success of the first small standards was so pronounced and the unanimous approval of the critical so emphatic that this design has been made available in 3 sizes, thereby enabling one to select a size which would harmonize with the buildings and a height which would give proper distribution of light on the streets.

Factory finish: 2 coats of black mineral paint.

King Ornamental Standards

Flemish Design



King Flemish No. 45

This standard is especially recommended for installation on wide streets with high buildings and along parkways and boulevards where the posts will be spaced a considerable distance apart. The lamp center height is correct to give an even distribution of light when the larger size lamps are used.

King Flemish No. 59

This is the ideal size standard for the average city which does not have unusually wide streets or extremely high buildings. It is of such proportions as to present an artistic effect, which can be obtained only when each member harmonizes

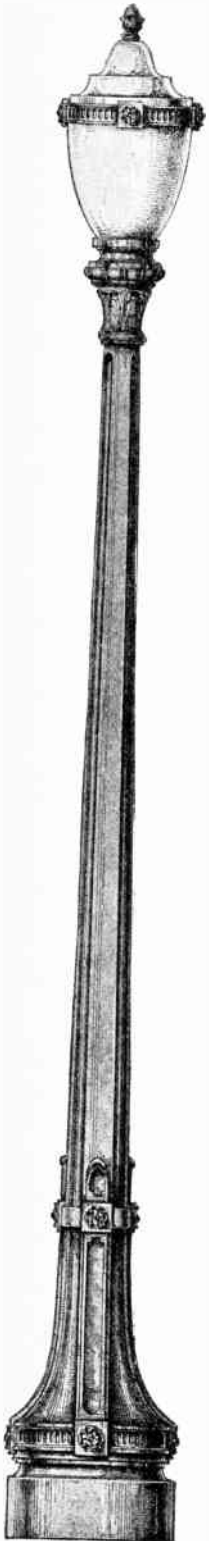
and blends with the other and with the surroundings on the thoroughfare.

King Flemish No. 44

The distinctiveness and beauty of the Flemish design is carried out in every respect in this standard. It is especially suitable for installation in smaller cities and towns where wide streets and high buildings do not predominate. It, however, has sufficient size to be in keeping with its general surroundings and is of ample height to properly and efficiently illuminate average streets and building fronts.

King Ornamental Standards

French Design with Novalux Tops



No. 62D

This French design was evolved with the express purpose of producing an ornamental standard possessing those characteristics which will appeal to persons whose artistic taste is not confined to the conventional classic post with a fluted column surmounted by the usual foliated capitol and plain ball globe. The glass canopy, ornamental globe band, urn shape globe, ornate holder, panelled column and well proportioned base, all bear a characteristic relation to each other and produce a complete unit harmonizing in every respect.

When illuminated, the silhouette of this French design is particularly graceful and attractive. All dark spots and objectionable shadows are entirely eliminated and from an artistic standpoint the existing beauty of the thoroughfare is greatly enhanced.

For blending into the changing background of a street and harmonizing with all types of architecture, for lending dignity and beauty to boulevards and elegance to parkways, this French design is recommended.

Factory finish; 2 coats black mineral paint.

King French No. 62

This design is offered to those cities planning a beautiful and intensive system of whiteway illumination. When large capacity illuminants are installed, it was found necessary to provide larger glassware than is ordinarily used, so that all the light produced may be utilized.

It is also necessary to increase the mounting height of the glassware so as to give the desired intensity and lighting effect with good distribution. Increasing the size and height of the glassware means an increase in the dimension of the supporting standard.

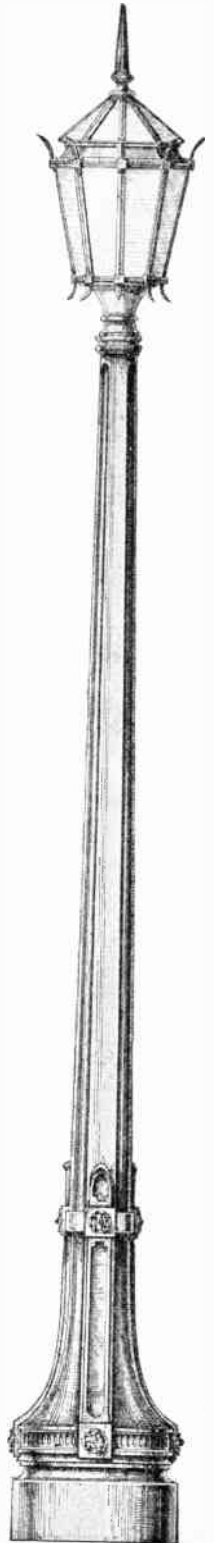
Most careful attention has been given to the increased dimensions of the design in order to insure a symmetrical lighting unit with proportions perfect in every respect.

King French No. 61

Both from an artistic and engineering standpoint, King French No. 61 will meet every requirement of an ideal lighting standard unless the conditions encountered in planning the system are unusual. Cities with streets and boulevards of average width and towns with buildings of average height are best served by an ornamental lighting standard of this size and design. Many cities throughout the country whose system of street lighting has attracted attention are using this standard because of its artistic value and general adaptability.

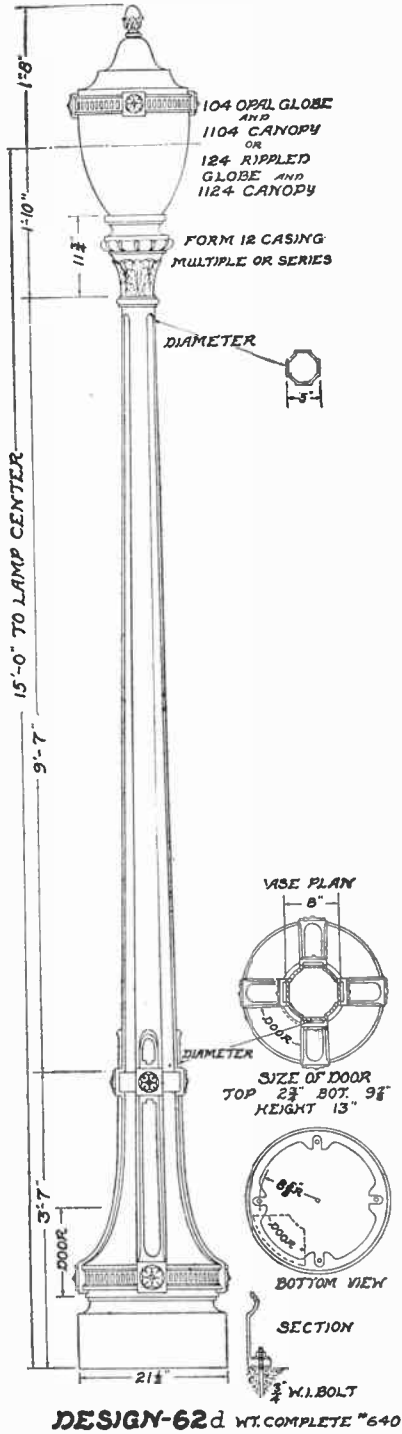
King French No. 63

Under certain conditions a lower lamp center than that of No. 61 will be recommended by illumination engineers, and for this reason this height of standard is offered to those who prefer this beautiful French design. This standard has ample height to properly distribute the light in a most efficient and pleasing manner when lamps of smaller capacity are used on streets where the buildings are of average height.



No. 62E

King Ornamental Standards
French Design

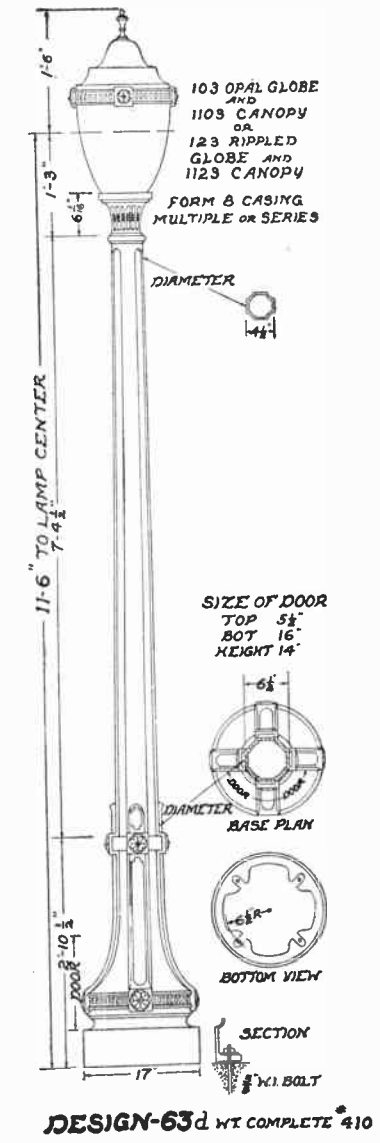
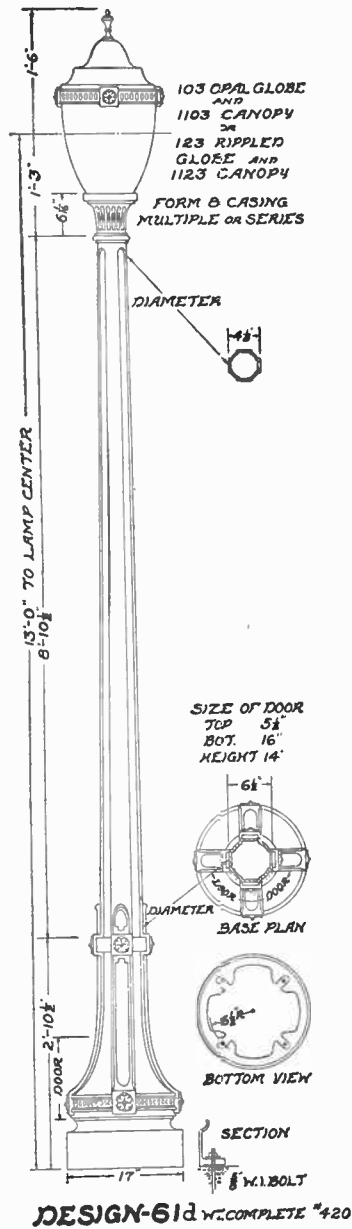


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It is also necessary to increase the mounting height of the glassware so as to give the desired intensity and lighting effect with good distribution. Increasing the size and height of the glassware means an increase in the dimension of the supporting standard.

Factory finish; 2 coats black mineral paint.



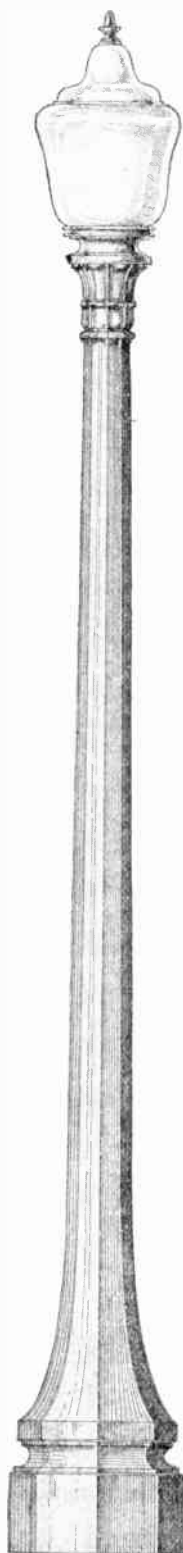
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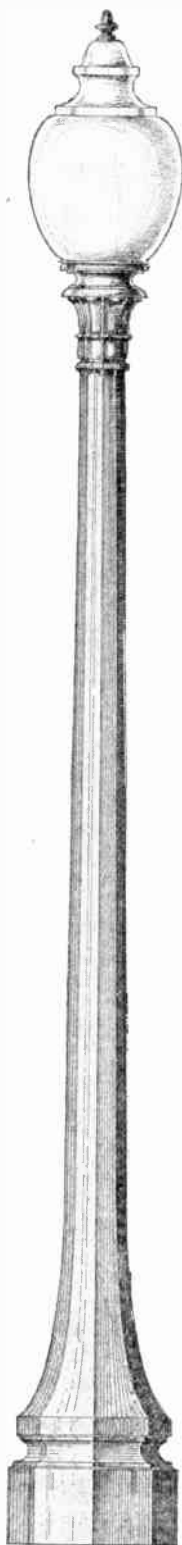
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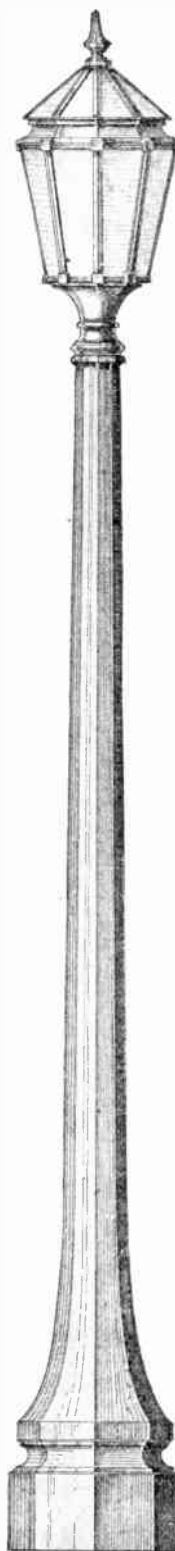
King Ornamental Standards
Community Design with Novalux Tops



No. 17A



No. 17B



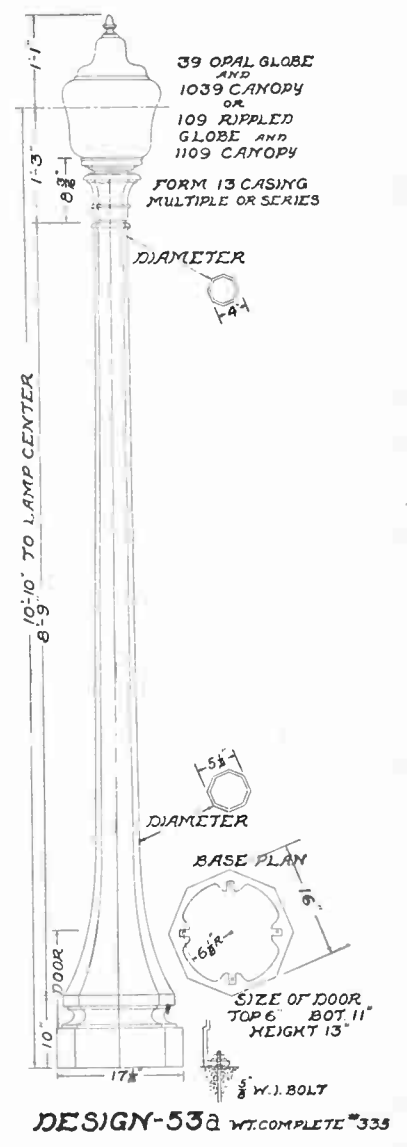
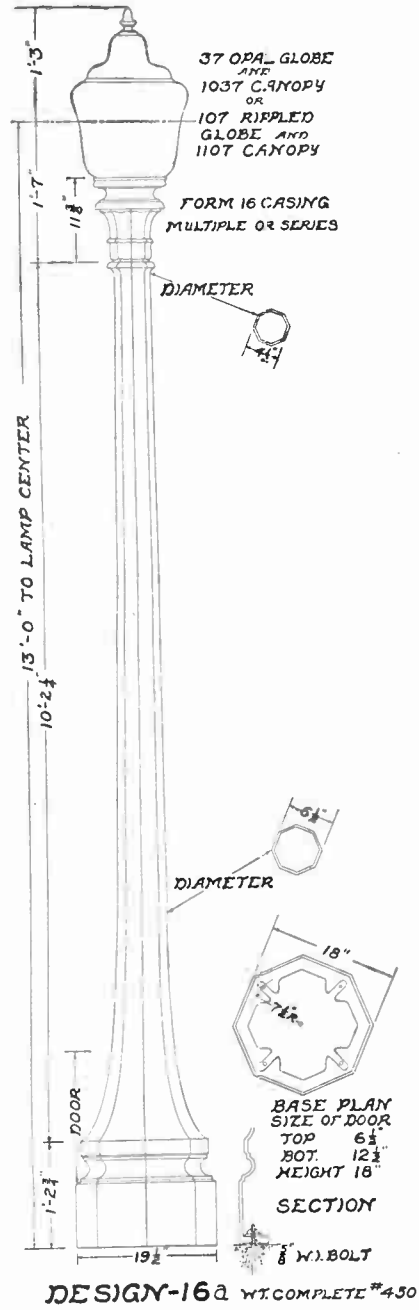
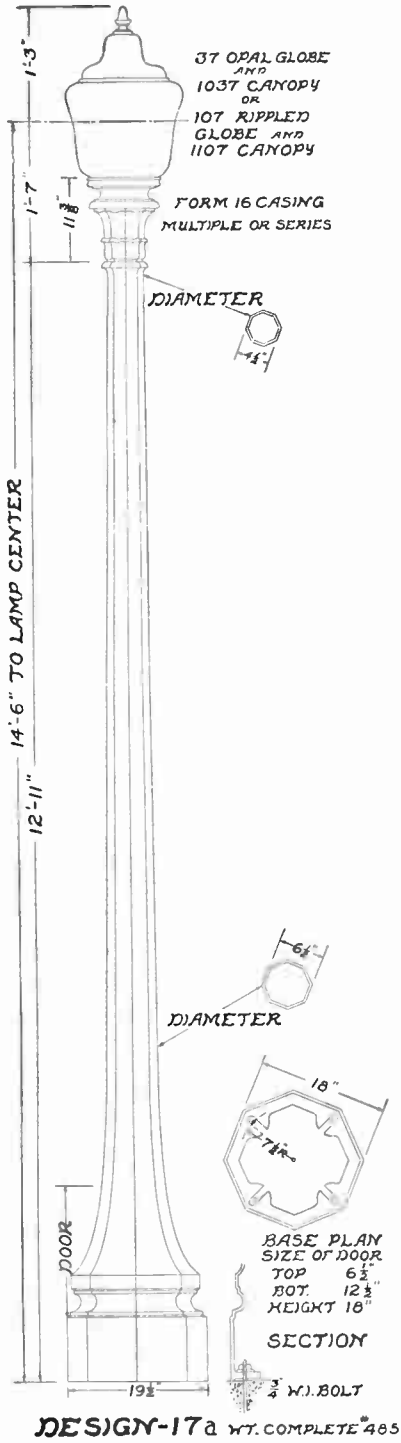
No. 17C

This King Community design was created for those who prefer a relatively plain standard, emphasizing graceful lines and well proportioned plain surfaces, instead of fluted columns and ornamental bases. This design has a large octagonal base which sweeps gracefully into a well proportioned tapered octagonal column. Surmounting the column is a beautifully modelled member which blends the column

into a suitable round support for the glassware. Taken as a whole, the base, column, holder, glassware and top ornament, produce an artistic and pleasing effect which would be impossible had the design not been most carefully worked out in every detail.

Factory finish; 2 coats black mineral paint.

King Ornamental Standards
Community Design



King Community No. 17

This standard has ample dimensions for installation in front of large buildings and sufficient height to the lamp center for large capacity lamps. It is a massive, gracefully, well proportioned standard and will add dignity and attractiveness to a thoroughfare.

King Community No. 16

This standard is suitable for white way lighting in the

smaller cities and villages, and for residence sections of large cities. It makes an attractive installation because it is pleasing in appearance, has ample dimensions and is well proportioned.

King Community No. 53

This size standard is particularly in demand where a beautiful small, plain post is desired. Especially suitable for lighting residence sections or the white way illumination of smaller cities and villages.

King Ornamental Trolley Pole Brackets

King Bracket No. 1002



This bracket was designed especially for trolley pole use. It is known to the trade as King's State Street Bracket. The bracket is gracefully built up and out from the side of the steel trolley pole, producing a neat and finished appearance. Enough ornamentation has been used to break up the plain surfaces. The bracket arm has ample dimensions to give massiveness and elegance. The pole plate is 48 inches long; the lamp center is 18 inches from the steel pole and the arm extends 24 inches overall. Can furnish this bracket with wall plate for mounting on building fronts, concrete posts or pillars at a slight additional cost.

This bracket is equipped with Form 12 Novalux Unit; consisting of an ornamental globe holder, 124 alabaster rippled globe, 1124 alabaster rippled canopy with ornate holder band and top ornament; either series film or mogul multiple socket, and all necessary screws for assembling.

King Bracket No. 1227

The design of this bracket harmonizes well with the varying styles of building architecture found along the streets. The ornamentation, while not elaborate, gives the bracket a most pleasing appearance and favorable mention has been accorded its graceful lines and attractive appearance when illuminated at night.

This bracket can be made individual for a city by casting a monogram on it. A panel suitable for such a monogram or emblem is provided on each side of the arm, and on an order of fifty or more, this design with a raised, gold letter monogram cast on both sides without additional charges will be furnished.

This bracket is equipped with a Form 8 Novalux Unit, which consists of a globe holder of ornate design which harmonizes with the bracket arm, 109 alabaster rippled globe, 1109 alabaster rippled canopy with holder and top ornament; either series film or mogul multiple socket, and all necessary bolts and screws for assembling.

NOTE.—Brackets painted black, furnished complete with necessary bolts and clamps for installation, lamps and wiring not included. When ordering give exact outside diameter of the trolley pole section at point where pole plate and clamps attach.

A 6-inch (6 $\frac{5}{8}$ -inch outside diameter) tubular pole section is generally standard size.



King Ornamental Trolley Pole Brackets

King Bracket No. 1231



This design will exactly answer all requirements where a scroll type bracket is desired. It makes an excellent looking installation and has been adopted in several cities with entire satisfaction.

All ornamental parts are well defined and the leaf design has been carried throughout the different parts. The bracket clamps to the pole with two sets of ornamental clamp members. The top clamp is threaded to receive a 2 $\frac{1}{2}$ -inch tube arm section and the bottom one serves as a support for the handsome one-piece cast scroll.

On the outer end of the tube section, an appropriate torch effect globe holder is provided for the support of the diffusing glassware. The bracket is waterproof in construction and designed for enclosed wiring.

Equipped with a Form 8 Novalux Unit, 109 alabaster rippled globe, 1109 alabaster rippled canopy, with holder and top ornament; either series film or mogul multiple socket and all necessary bolts and screws for assembling.

Where Bates Expanded trolley poles are being used, attaching clamps can be furnished at a slight additional cost.

King Bracket No. 1005



This bracket is similar to No. 1231 but is intended for use where larger size lamps will be adopted, and where a more intense illumination is desired. A Form 9 Novalux Unit, including an ornamental casing for holding the glassware, 107 alabaster rippled globe, 1107 alabaster rippled canopy with holder and top ornament is furnished with this bracket. Either series film or mogul multiple socket and all necessary bolts and screws for assembling.

NOTE.—Brackets painted black, furnished complete with necessary bolts and clamps for installation lamps and wiring not included. When ordering, give exact outside diameter of the trolley pole section at point where pole plate and clamps attach. A 6-inch (6 $\frac{5}{8}$ -inch outside diameter) tubular pole section is generally standard size.

Ornamental Concrete Posts

All concrete lighting standards will be furnished in gray granite (Mica Spar) and gray Portland cement. Other colors must be especially arranged for. White cement may also be used.

Steel reinforcing rods cast entire length of post and extending below the base for anchoring to foundations.

The finish of granite and Mica Spar gives a pleasing and artistic effect both by day and night.

Railway Signal Posts

Concrete posts for signal systems, crossing sign posts and other special posts are made according to the requirements of the purchaser. Prices quoted on receipt of blue prints.

Special Designs and Products

At times special designs are required by committees and engineers. We will quote on special work and assist in designing lighting standards and other pre-cast concrete work.

Type H

For gasoline stations, bridge railings, building entrances and all installations of similar nature where a post is required for mounting on concrete or brick piers.

Height, 3 feet.



Type H

**Ornamental Concrete Standards
Chicago City Beautiful**



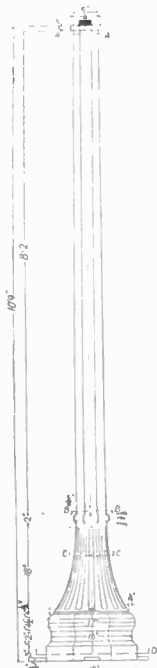
Height—11 Feet

Octagonal or round head furnished—please specify. For commercial and residence street lighting. Form No. 9 General Electric Unit is recommended for this standard. Adopted by the City of Chicago and many business associations for community lighting.

Octagonal

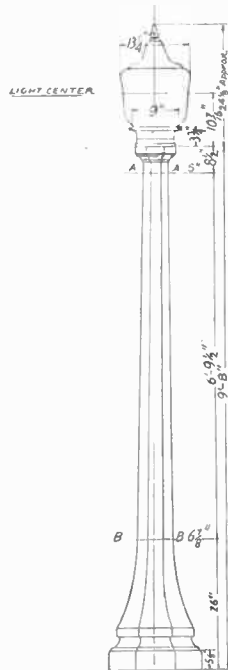
Residential Concrete Standards

City of Chicago Type



This is a small concrete post, very suitable for residential districts of or adjacent to cities. It is used extensively in the city of Chicago for residential lighting.

Height, 11 feet; to center of light, 12 feet 6 inches.



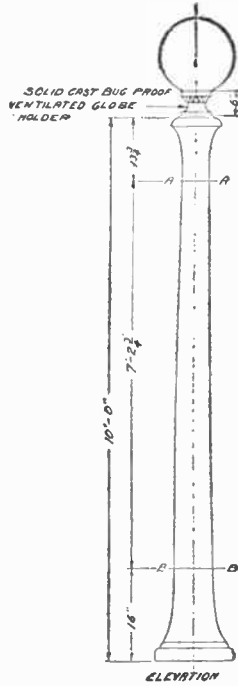
Height—10 and 12 Feet

For residential street lighting the ten-foot height is recommended. Also recommended for private estates and small parks. Especially adapted to the ornamental lantern lighting unit.

The twelve-foot height for wide streets, boulevards and main highways where a post of heavier construction is required for safety and to harmonize with the surroundings.

Ornamental Concrete Standards

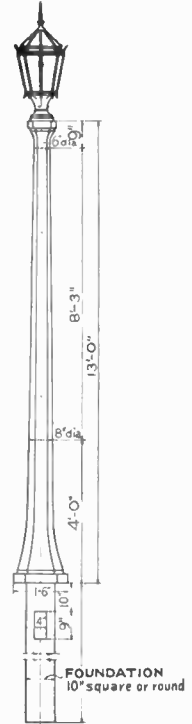
Type A



Height, 10 Feet

For all street lighting where a post of slender design is preferred.

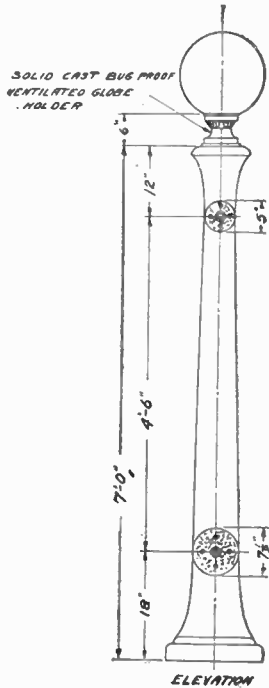
Ornamental Concrete Standards



This is a 13-foot octagonal concrete post with Form 12 Novalux lighting unit.

Saratoga[®] and lantern units are recommended for this post. Furnished with or without butt foundation.

Type C

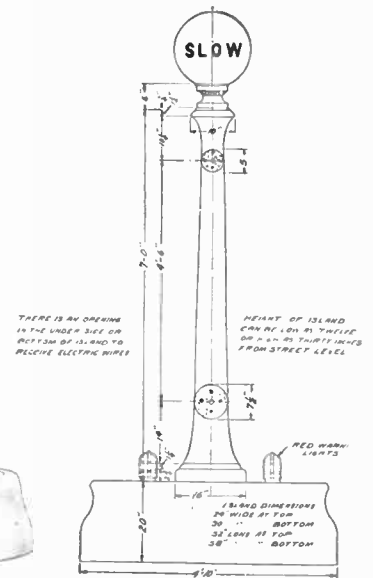
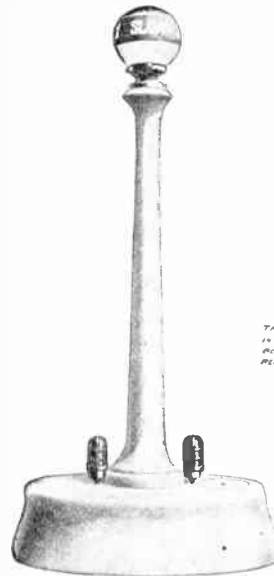


Height, 7 Feet

For safety islands, driveways, bridge railings, building courts, gasoline stations.

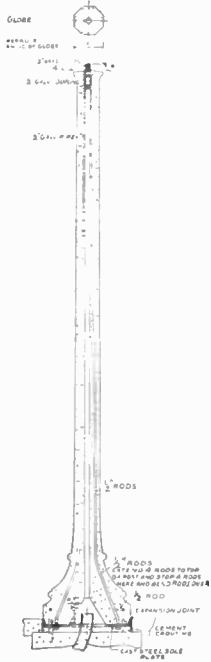
Both the ornamental lantern and advertising globes are used to a great extent in this type.

Safety Islands



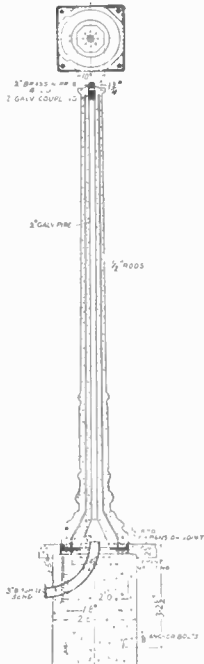
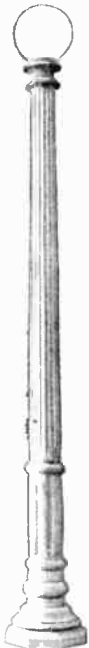
A safety island of strong design made to withstand heavy shocks. On account of the natural light gray color of the post the attention of the motorist is attracted to it both day and night.

Ornamental Concrete Posts
Chicago—Garfield



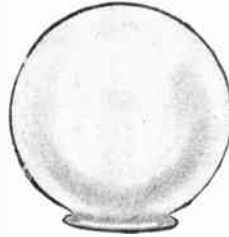
Used by the South Park System, Chicago, for Garfield Boulevard. Height of post, 13 feet; to center of light, 14 feet 6 inches.

Ornamental Concrete Standards
Chicago—Grand



Used by the South Park System in Chicago for Grand Boulevard. Has great strength and a design which is unusual. The embossed design above base and fluted column are exclusive features. Height of post, 14 feet; to center of light, 15 feet 6 inches.

Street Lighting Ball Globes



SNOW-WHITE.—Snow-White is a beautiful pure white diffusing glass. It illuminates perfectly, uniformly and does not show any lamp filament nor bright spot on the globe surface. The daylight appearance recommends it strongly for all Street Lighting Systems.

INLITE.—Inlite is a fine semi-translucent glass and very white for this character of glass. Used where it is necessary to match existing glassware of this type—the kind which shows the lamp filament.

INLAND C. R. I.—Inland C. R. I. (Crystal roughed inside) is a clear glass sandblasted inside.

INLAND RUBY AND GREEN.—Inland Ruby and Green are solid and true colored glasses.

SHIPPING.—Glassware is shipped at Consignee's risk. The common carrier is responsible for safe delivery. Any claims should be made immediately to the latter.

Large Sizes

Cat. No.	Size Inches	Std. Pkg.	Ship. Wt. Lbs. per Doz.	*PRICE, PER DOZEN	
				Clear C. R. I. or Snow-White	Extra for Holes in Bottom
2432	6 x 9	1	60	\$35.52	\$1.00
2436	4 x10	4	95	39.84	1.00
2438	5 x10	4	95	39.84	1.00
2440	6 x10	4	95	39.84	1.00
2442	7 x10	4	95	39.84	1.00
2450	6 x12	1	72	61.08	1.50
2452	7 x12	1	84	61.08	1.50
2454	8 x12	1	84	61.08	1.50
2460	8 x13	1	108	80.04	1.50
2464	6 x14	1	132	93.36	1.50
2468	7 x14	1	132	93.36	1.50
2470	8 x14	1	132	93.36	1.50
2474	6 x16	1	144	133.32	2.00
2476	7 x16	1	144	133.32	2.00
2478	8 x16	1	144	133.32	2.00
2486	8 x18	1	168	213.36	3.00
2492	8 1/4 x20	1	192	373.32	9.00

*Prices for Inlite furnished upon request.

Small Sizes

Cat. No.	Size Inches	Std. Pkg.	Ship. Wt. Lbs. per Doz.	*PRICE, PER DOZEN				
				Clear C. R. I.	Snow White	Ruby	Extra for Holes in Bottom	
2412	3 1/4 x6	27	45	\$5.64	\$6.60	\$24.00	\$28.08	\$.50
2416	3 1/4 x7	18	38	8.40	9.60	32.04	36.84	.50
2420	3 1/4 x8	12	27	12.00	15.60	38.40	48.00	.75
2422	4 x8	12	27	12.00	15.60	38.40	48.00	.75

*Prices for Inlite furnished upon request.

Ribbed

Cat. No.	Size Inches	Std. Pkg.	Ship. Wt. Lbs.	*PRICE, PER DOZEN		
				Opal	C. R. I.	Extra for Holes in Bottom
2530	3 1/4 x6	27	44	\$9.00	\$6.00	\$.75

PACKING.—The greatest care is exercised in this important item.

Special Lettered Globes

Any globe can be furnished with special lettering. Some of the standard styles are: "Turn Left," "Turn Right," "Fire Alarm," "Exit," "Gasoline," "Stop," etc.



No extra charge for packages.

Ornamental Novalux Units for Concrete Posts



No. 257762—Form 22 Novalux Fixture with No. 1 Casing, No. 39 Genco Globe and No. 1039 Genco Canopy



No. 257765—Form 22 Novalux Fixture with No. 1 Casing, No. 109 Ripple Glass Globe and No. 1109 Ripple Glass Canopy



No. 257775—Form 22 Novalux Fixture Equipped with Y Fitter, No. 37 Genco Globe and Metal Canopy Cat. No. 189546



No. 257776—Form 22 Novalux Fixture Equipped with Y Fitter, No. 37 Genco Globe and No. 1037 Glass Canopy



No. 257777—Form 22 Novalux Fixture Equipped with Y Fitter, No. 107 Rippled Globe and Metal Canopy Cat. No. 189546



No. 257779—Form 22 Novalux Fixture Equipped with Y Fitter, No. 107 Rippled Globe and No. 1107 Rippled Canopy



No. 257757—Form 22 Novalux Fixture Equipped with Y Fitter, No. 97 Genco Globe and No. 1097 Genco Glass Canopy



No. 257767—Form 22 Novalux Fixture with No. 1 Casing, No. 104 Polycase Glass Globe and No. 1104 Polycase Glass Canopy



No. 257768—Form 22 Novalux Fixture with X Casing, No. 103 Polycase Glass Globe and No. 1103 Polycase Glass Canopy



No. 257844—Form 22A Ornamental Novalux Unit, with No. 6 Casing Fitter, Pole Adapter, Form 18A Lantern, with Form SK Casing and Diffusing Glass Panels



No. 257855—Form 22B Ornamental Novalux Unit, with No. 6 Casing Fitter, Pole Adapter, Form 18B Lantern, with Form RK Casing and Diffusing Glass Panels

**Form 22 Ornamental Novalux Units
for Concrete Posts**

Straight Series Type

**With Film Cutout Series Socket and Receptacle,
Cat. No. 176944**

**For 5.5, 6.6, or 7.5 Ampere, 250, 400 or 600 C. P.
Series Mazda Lamps, with 7-inch Light Center**

Cat. No.	Description	Price Each
257749	Form Y Casing, No. 37 Genco Globe and Metal Canopy.....	\$37.00
257750	Form Y Casing, No. 37 Genco Globe and No. 1037 Genco Glass Canopy.....	37.75
257751	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and Metal Canopy.....	38.75
257752	Form Y Casing, No. 107 Light Alabaster Rippled Globe, Metal Canopy and Cat. No. 1340228 Prismatic Dome Refractor..	45.25
257753	Form Y Casing, No. 107 Medium Alabaster Rippled Globe, No. 1107 Medium Alabaster Rippled Canopy.....	37.50
257754	Form Y Casing, No. 107 Light Alabaster Rippled Globe, No. 1107 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	46.25
257755	Form Y Casing, and No. 90 8-panel Diffusing Globe.....	89.75
257756	Form Y Casing, No. 90 8-panel Stippled Globe and Cat. No. 1340228 Prismatic Dome Refractor.....	94.25
257757	Form Y Casing, No. 97 Genco Globe and No. 1097 Genco Glass Canopy.....	41.50
257758	Form Y Casing, No. 97 Genco Globe and Metal Canopy.....	40.25
257759	Form No. 1 Casing, No. 93 Genco Globe and No. 1092 Genco Glass Canopy.....	30.25
257760	Form No. 1 Casing, No. 93 Genco Globe and Metal Canopy.....	27.75
257761	Form No. 1 Casing, No. 39 Genco Globe and Metal Canopy.....	26.00
257762	Form No. 1 Casing, No. 39 Genco Globe and No. 1039 Genco Glass Canopy.....	27.75
257763	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, Metal Canopy and Cat. No. 1340228 Prismatic Dome Refractor..	33.75
257764	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and Metal Canopy.....	25.75
257765	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and No. 1109 Medium Alabaster Rippled Canopy.....	28.25
257766	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, No. 1109 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	36.50
257767	Form No. 1 Casing, No. 104 Polycase Globe and No. 1104 Polycase Glass Canopy....	65.25
257768	Form X Casing, No. 103 Polycase Globe and No. 1103 Polycase Glass Canopy....	57.00
257769	Form No. 5 Casing, No. 92 Genco Globe and Metal Canopy.....	27.75
257770	Form No. 5 Casing, No. 92 Genco Globe and No. 1092 Genco Glass Canopy.....	30.25
257771	Form No. 1 Casing, No. 124 Medium Alabaster Rippled Globe and No. 1124 Medium Alabaster Rippled Canopy.....	63.50
257772	Form No. 1 Casing, No. 124 Light Alabaster Rippled Globe, No. 1124 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	72.00
257773	Form X Casing, No. 123 Medium Alabaster Rippled Globe and No. 1123 Medium Alabaster Rippled Canopy.....	55.00
257774	Form X Casing, No. 123 Light Alabaster Rippled Globe, No. 1123 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	58.00

**Form 22 Ornamental Novalux Units
for Concrete Posts**

Straight Multiple Type

Continued

With Multiple Socket, Cat. No. 156722

For 300, 400 or 500-watt Lamps with 7-inch Light Center

Cat. No.	Description	Price Each
257775	Form Y Casing, No. 37 Genco Globe and Metal Canopy.....	\$36.00
257776	Form Y Casing, No. 37 Genco Globe and No. 1037 Genco Glass Canopy.....	36.75
257777	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and Metal Canopy.....	37.75
257778	Form Y Casing, No. 107 Light Alabaster Rippled Globe, Metal Canopy, and Cat. No. 1340228 Prismatic Dome Refractor..	44.25
257779	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and No. 1107 Medium Alabaster Rippled Canopy.....	36.50
257780	Form Y Casing, No. 107 Light Alabaster Rippled Globe, No. 1107 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	45.25
257781	Form Y Casing and No. 90 8-panel Diffusing Globe.....	88.75
257782	Form Y Casing, No. 90 8-panel Stippled Globe and Cat. No. 1340228 Prismatic Dome Refractor.....	93.25
257783	Form Y Casing, No. 97 Genco Globe and No. 1097 Genco Glass Canopy.....	40.50
257784	Form Y Casing, No. 97 Genco Globe and Metal Canopy.....	39.25
257785	Form No. 1 Casing, No. 93 Genco Globe and No. 1092 Genco Glass Canopy.....	29.25
257786	Form No. 1 Casing, No. 93 Genco Globe and Metal Canopy.....	26.75
257787	Form No. 1 Casing, No. 39 Genco Globe and Metal Canopy.....	24.00
257788	Form No. 1 Casing, No. 39 Genco Globe and No. 1039 Genco Glass Canopy.....	25.75
257789	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, Metal Canopy and Cat.No. 1340228 Prismatic Dome Refractor.....	31.75
257790	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and Metal Canopy.....	23.75
257791	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and No. 1109 Medium Alabaster Rippled Canopy.....	26.25
257792	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, No. 1109 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	34.50
257793	Form No. 1 Casing, No. 104 Polycase Globe and No. 1104 Polycase Glass Canopy....	64.00
257794	Form X Casing, No. 103 Polycase Globe and No. 1103 Polycase Glass Canopy.....	49.75
257795	Form No. 5 Casing, No. 92 Genco Globe and Metal Canopy.....	26.75
257796	Form No. 5 Casing, No. 92 Genco Globe and No. 1092 Genco Glass Canopy.....	29.25
257797	Form No. 1 Casing, No. 124 Medium Alabaster Rippled Globe and No. 1124 Medium Alabaster Rippled Canopy.....	62.50
257798	Form No. 1 Casing, No. 124 Light Alabaster Rippled Globe, No. 1124 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor.....	71.00

**Form 22 Ornamental Novalux Units
for Concrete Posts**

Straight Multiple Type

Continued

with Multiple Socket, Cat. No. 156722

For 750 or 100-watt Lamps with 9/4-inch Light Center

Cat. No.	Description	Price Each
257799	Form Y Casing, No. 37 Genco Globe and Metal Canopy	\$36.00
257800	Form Y Casing, No. 37 Genco Globe and No. 1037 Genco Glass Canopy	36.75
257801	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and Metal Canopy	37.75
257802	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and No. 1107 Medium Alabaster Rippled Canopy	36.50
257803	Form Y Casing, and No. 90 8-panel Diffusing Globe	88.75
257804	Form Y Casing, No. 97 Genco Globe and Metal Canopy	39.25
257805	Form Y Casing, No. 97 Genco Globe and No. 1097 Genco Glass Canopy	40.50
257806	Form No. 1 Casing, No. 93 Genco Globe and No. 1092 Genco Glass Canopy	29.25
257807	Form No. 1 Casing, No. 93 Genco Globe and Metal Canopy	26.75
257808	Form No. 1 Casing, No. 39 Genco Globe and Metal Canopy	24.75
257809	Form No. 1 Casing, No. 39 Genco Globe and No. 1039 Genco Glass Canopy	27.50
257810	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and Metal Canopy	23.75
257811	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and No. 1109 Medium Alabaster Rippled Canopy	27.00
257812	Form No. 1 Casing, No. 104 Polycase Globe and No. 1104 Polycase Glass Canopy	64.00
257813	Form X Casing, No. 103 Polycase Globe and No. 1103 Polycase Glass Canopy	55.75
257814	Form No. 5 Casing, No. 92 Genco Globe and Metal Canopy	26.75
257815	Form No. 5 Casing, No. 92 Genco Globe and No. 1092 Genco Glass Canopy	29.25
257816	Form No. 1 Casing, No. 124 Medium Alabaster Rippled Globe and No. 1124 Medium Alabaster Rippled Canopy	62.50
257817	Form X Casing, No. 123 Medium Alabaster Rippled Globe and No. 123 Medium Alabaster Rippled Canopy	54.00

**IL Series Transformer Type
With Multiple Socket, Cat. No. 156722**

For 15 or 20 Amperes, 400, 600 or 100 C. P. Series Mazda Lamps with 8/4-inch Light Center

Cat. No. does not include the Type IL Series Transformer which is used with these units.

Cat. No.	Description	Price Each
257818	Form Y Casing, No. 37 Globe and Genco Metal Canopy	\$36.00
257819	Form Y Casing, No. 37 Genco Globe and No. 1037 Genco Glass Canopy	36.75
257820	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and Metal Canopy	37.75
257821	Form Y Casing, No. 107 Light Alabaster Rippled Globe, Metal Canopy and Cat. No. 1340228 Prismatic Dome Refractor	44.25
257822	Form Y Casing, No. 107 Medium Alabaster Rippled Globe and No. 1107 Medium Alabaster Rippled Canopy	36.50
257823	Form Y Casing, No. 107 Light Alabaster Rippled Globe, No. 1107 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor	45.25
257824	Form Y Casing and No. 90 8-panel Diffusing Globe	88.75

**Form 22 Ornamental Novalux Units
for Concrete Posts**

**IL Series Transformer Type
with Multiple Socket, Cat. No. 156722**

For 15 or 20 Amperes, 400, 600 or 100 C. P. Series Mazda Lamps with 8/4-inch Light Center

Continued

Cat. No. does not include the Type IL Series Transformer which is used with these units.

Cat. No.	Description	Price Each
257825	Form Y Casing, No. 90 8-panel Stippled Globe and Cat. No. 1340228 Prismatic Dome Refractor	\$93.25
257826	Form Y Casing, No. 97 Genco Globe and No. 1097 Genco Glass Canopy	40.50
257827	Form Y Casing, No. 97 Genco Globe and Metal Canopy	39.00
257828	Form No. 1 Casing, No. 93 Genco Globe and No. 1092 Genco Glass Canopy	29.25
257829	Form No. 1 Casing, No. 93 Genco Globe and Metal Canopy	26.75
257830	Form No. 1 Casing, No. 39 Genco Globe and Metal Canopy	24.75
257831	Form No. 1 Casing, No. 39 Genco Globe and No. 1039 Genco Glass Canopy	27.50
257832	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and Metal Canopy	23.75
257833	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, Metal Canopy and Cat. No. 1340228 Prismatic Dome Refractor	35.00
257834	Form No. 1 Casing, No. 104 Polycase Globe and No. 1104 Polycase Glass Canopy	63.00
257835	Form X Casing, No. 103 Polycase Globe and No. 1103 Polycase Glass Canopy	54.75
257836	Form No. 1 Casing, No. 109 Medium Alabaster Rippled Globe and No. 1109 Medium Alabaster Rippled Canopy	27.00
257837	Form No. 1 Casing, No. 109 Light Alabaster Rippled Globe, No. 1109 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor	34.50
257838	Form No. 1 Casing, No. 124 Medium Alabaster Rippled Globe and No. 1124 Medium Alabaster Rippled Canopy	62.50
257839	Form No. 1 Casing, No. 124 Light Alabaster Rippled Globe, No. 1124 Light Alabaster Rippled Canopy, and Cat. No. 1340228 Prismatic Dome Refractor	71.00
257840	Form X Casing, No. 123 Medium Alabaster Rippled Globe and No. 1123 Medium Alabaster Rippled Canopy	54.00
257841	Form X Casing, No. 123 Light Alabaster Rippled Globe, No. 1123 Light Alabaster Rippled Canopy and Cat. No. 1340228 Prismatic Dome Refractor	56.00
257842	Form No. 5 Casing, No. 92 Genco Globe and Metal Canopy	26.75
257843	Form No. 5 Casing, No. 92 Genco Globe and No. 1092 Genco Glass Canopy	29.25

**Form 22A Ornamental Novalux Units
for Concrete Posts**

Straight Series Type

with Film Cutout Series Socket and Receptacle

Cat. No. 176944

For 5.5, 6.6 or 7.5 Ampere, 250, 400 or 600 C. P. Series Mazda Lamps with 7-inch Light Center

Cat. No.	Description	Price Each
257844	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Diffusing Glass Panels	\$51.50
257845	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Rippled Glass Panels and Cat. No. 1340228 Prismatic Dome Refractor	66.00

Form 22A Ornamental Novalux Units for Concrete Posts

Continued

Straight Multiple Type With Multiple Socket, Cat. No. 156722

For 300, 400 or 500-watt Lamps with 7-inch Light Center

Cat. No.	Description	Price Each
257846	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Diffusing Glass Panels.....	\$49.75
257847	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Rippled Glass Panels and Cat. No. 13-10228 Prismatic Dome Refractor.....	64.25

For 750 or 1000-watt Lamps with 9½-inch Light Center

257848	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Diffusing Glass Panels.....	\$49.75
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IL Series Transformer Type With Multiple Socket, Cat. No. 156722

For 15 or 20 Amperes, 400, 600 or 100 C. P. Series Mazda Lamps with 8¼-inch Light Center

Cat. No.	Description	Price Each
257849	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing and Diffusing Glass Panels.....	\$49.75
257850	No. 6 Casing Fitter Pole Adapter, Form 18A Lantern with Form SK Casing with Rippled Glass panels and Cat. No. 13-10228 Prismatic Dome Refractor.....	64.25

Form 22B Ornamental Novalux Units for Concrete Posts

Straight Series Type

With Film Cutout Series Socket and Receptacle, Cat. No. 176944

For 5.5, 6.6 or 7.5 Amperes, 250, 400 or 600 C. P. Series Mazda Lamps with 7-inch Light Center

Cat. No.	Description	Price Each
257851	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Diffusing Glass Panels.....	\$59.00
257852	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Rippled Glass Panels and Cat. No. 13-10228 Prismatic Dome Refractor.....	73.50

Straight Multiple Type With Multiple Socket, Cat. No. 156722

For 300, 400 or 500-watt Lamps with 7-inch Light Center

257853	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Diffusing Glass Panels.....	\$57.25
257854	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Rippled Glass Panels and Cat. No. 13-10228 Prismatic Dome Refractor.....	71.75

For 750 or 1000-watt Lamps with 9½-inch Light Center

257855	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Diffusing Glass Panels.....	\$57.25
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IL Series Transformer Type With Multiple Socket, Cat. No. 156722

For 15 or 20 Amperes, 400, 600 or 1000 C. P. Series Mazda Lamps with 8¼-inch Light Center

257856	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Diffusing Glass Panels.....	\$57.25
257857	No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Rippled Glass Panels and Cat. No. 13-10228 Prismatic Dome Refractor.....	71.75

Form 22B Ornamental Novalux Units for Concrete Posts

Continued

Series Auto-transformer Type

With Porcelain Insulator and Receptacle

For A. C. Series, 60 Cycle Constant Current Circuits for Lamps with 8¼-inch Light Center

No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing and Diffusing Glass Panels

Cat. No.	Description	Price Each
257858	6.6 Ampere, 15 Ampere 400 C. P.....	\$68.50
257859	6.6 " 20/15 " 600/400 C. P..	70.25
257860	6.6 " 20 " 1000/600 C. P..	75.50
257861	7.5 " 15 " 400 C. P.....	68.50
257862	7.5 " 20/15 " 600/400 C. P..	70.25
257863	7.5 " 20 " 1000/600 C. P..	75.50

No. 6 Casing Fitter Pole Adapter, Form 18B Lantern with Form RK Casing with Rippled Glass Panels and Cat. No. 1340228 Prismatic Dome Refractor

Cat. No.	Description	Price Each
257864	6.6 Ampere, 15 Ampere 400 C. P.....	\$83.00
257865	6.6 " 20/15 " 600/400 C. P..	84.75
257866	6.6 " 20 " 1000/600 C. P..	90.00
257867	7.5 " 15 " 400 C. P.....	83.00
257868	7.5 " 20/15 " 600/400 C. P..	84.75
257869	7.5 " 20 " 1000/600 C. P..	90.00

No. 257649 Form 15 Novalux Traffic Lighting Units

Straight Multiple—100-125 Volts



View of Unit with Door

The Form 15 Novalux Unit is a type of light especially designed to illuminate the traffic officer.

Suspended on a guy wire stretched between 2 poles at a street crossing, this unit hangs directly above the officer and throws him into strong relief to approaching traffic at a distance up to 1500 feet. In this flood of illumination, which is a concentrated beam of light equivalent to 5500 c-p., he effectively guides approaching car drivers and forestalls accidents at night as he forestalls accidents in the daytime, efficiently. Thus the Novalux Unit is a practical aid to automobile drivers and traffic policemen alike, by affording an

essential means of protection to life and limb and property at difficult street crossings after dark.

This is a straight multiple type unit equipped with Type I-20 parabolic silvered and coppered glass reflector and clear glass door. The unit complete includes the hanger for span wire suspension to which it is rigidly fastened.

Cat. No.	Wattage of Lamp	Shp. Wt., Lbs.
*257649	100, 150 or 200	50

*Catalogue number does not include Mazda lamp.

Prices upon application.

Novalux Bracket and Center Span Highway Units



The extended use of the automobile has brought with it a serious and irritating problem. Each car must provide sufficient road illumination to permit stopping or changing the direction of travel. The unrestricted light beams, however, are a serious menace to the safety of other drivers or pedestrians. The severity of the effects of glare is greatly increased in the case of headlights because of the extreme contrast with the dark surroundings. First, local ordinances and finally, state laws have been passed to regulate not only the size of the head lamp but the direction of its rays. It is impossible however, strictly to enforce these conditions, and as a result the danger from glaring headlights is still a menace.

The Requirements

The failure of other methods induced a study of the problem from another viewpoint. Highway lighting must be uniform and general. The road must furnish the light and not the automobile. On that basis a lighting system would embody many of the characteristics of an ordinary street lighting system with certain modifications to meet the new conditions imposed.

1. The intensity of light on the road surface must be fairly uniform.
2. The rays of light must be confined to the road surface and not spread out equally in all directions.
3. The height of the lamp must be sufficient to remove the light source from the normal line of vision.
4. The fixture must accommodate a fairly small lamp and yield a high degree of illumination. It must apply the utmost efficiency in distributing this illumination by bending all upward and outward rays.

The Fixture

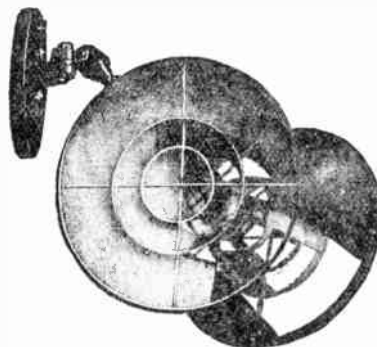
The Novalux Highway Unit is a double searchlight. It consists of two sets of parabolic reflectors with the Mazda lamp mounted in the center and filament at the focal point of both sets. Each set has three white-enamelled steel reflectors. The inside reflector intercepts the light rays that would ordinarily go beyond the outer edge of the outside reflector and directs it toward the road surface. There are openings in the lower part of all reflectors so that proper illumination will be given below the fixture.

For best results, these openings should be parallel with the road. It is for this reason that the unit is supported by a universal bracket instead of a long rigid pipe. This bracket permits adjustment for space between the post and the side of the road and also for curves and hills.

Recommended Spacing

State Highway with Dense Traffic	200 to 300	Feet Spacing
" " Less	300 " 400	" "
Improved Road	400 " 500	" "
Country Road	500 " 600	" "
Mounting Height	30 Feet or More above the Road Surface	
Size of Lamp	250 Candlepower	

Novalux Bracket and Center Span Highway Units Bracket Type



Cat. No. 246478 is furnished with porcelain series socket, Cat. No. 25711, universal bracket, and 17-inch nested parabolic reflector.

Cat. No. 246675 is furnished with multiple socket, Cat. No. 130427, universal bracket, and 17-inch nested parabolic reflector.

Cat. No. and price do not include lamp or pole.

Price, No. 246478, Shipping Weight, 75 Pounds, each \$55.00
 " " 246675 " 70 " " " 53.00

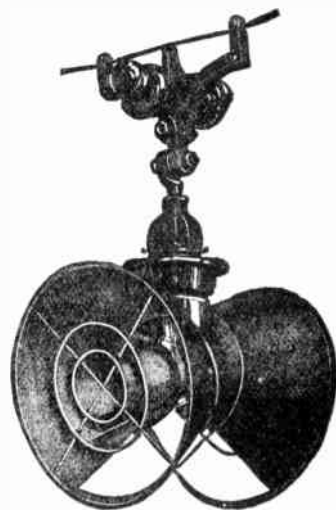
When standard bracket type fixture is used with pole extension deduct \$1.50 from price of complete fixture for omission of pole plate.

Center Span Type

Cat No. 246479 is furnished with porcelain series socket, Cat. No. 25711, universal bracket, and 17-inch nested parabolic reflector.

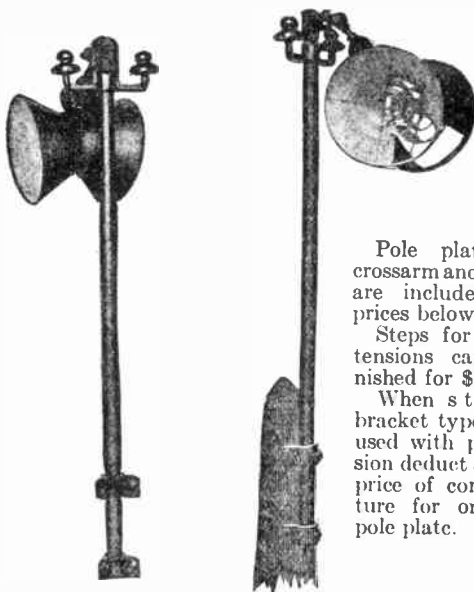
Cat. No. 246676 is furnished with multiple socket, Cat. No. 130427 universal bracket, and 17-inch nested parabolic reflector.

Cat. No. and price do not include lamp or pole.



Price, No. 246479, Shipping Weight, 75 Pounds, each \$58.00
 " " 246676 " 70 " " " 56.00

Pole Extensions



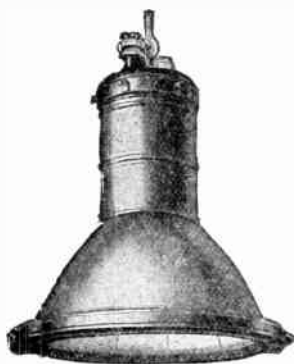
Pole plates, pipe, crossarm and insulators are included in the prices below.

Steps for these extensions can be furnished for \$1.50 extra.

When standard bracket type fixture is used with pole extension deduct \$1.50 from price of complete fixture for omission of pole plate.

Price, No. 1227413G1, with 6 Feet of Pipe, each \$21.25
 " " 1227413G2 " 11 " " " " 30.00

**Form 11 Novalux Projector Type
Traffic Lighting Units
Straight Multiple—100 to 125 Volts**



View of Unit Showing Unit Equipped with Clear Glass

The Form 11 Novalux Unit is a type of light especially designed to illuminate the traffic officer. Suspended on a guy wire stretched between 2 poles at a street crossing, this unit hangs directly above the officer and throws him into strong relief to approaching traffic at a distance up to 1500 feet. In this flood of illumination, which is a concentrated beam of light equivalent to 5500 c-p, he effectively guides approaching car drivers.

Made with a genuine glass reflector, heavily silvered and with a copper backing. This glass mirror, which is the highest type of reflecting surface obtainable, makes it an efficient unit. Owing to the special process of covering the silver with copper plating, the silver cannot rub off, crack or peel. Enclosed, top and sides in a conical-shaped water-tight housing which protects it against all weather conditions, rain, snow, sleet and the like.

Supplied with or without a door. The door is of glass and protects the lamp against dust and smoke and is easily cleaned.

Cat. No.	Without Door	Ship. Wt., Lbs.
	Wattage of Lamp	
257651	300 or 500	70
	With Door	
257650	300 or 500	80

Catalogue number does not include Mazda lamps. Prices upon application.

Holophane Refractors for Novalux Brackets and Center Span Highway Units



No. 259402 Wide Beam Refractor



No. 260509 Narrow Beam Refractor

To meet the requirements for highway lighting, the Novalux Highway Units with Holophane Refractors have been developed, for use with Mazda series lamps.

The illustrations show the 2 types of Holophane refractors. Each refractor comprises 2 pieces. The inside piece carries horizontal refracting prisms on its outer surface which turn the upward light rays downward and the downward light rays upward, to obtain the correct distribution of light in a vertical plane. The outside piece of the refractor carries vertical refracting prisms on its inside surface redirecting the light laterally or sideways to obtain the correct lateral distribution of light. These 2 pieces of refracting glass are nested and clamped together, enclosing the prisms within a dust-tight chamber. When the refractor is mounted in the fixture, the complete lighting unit is essentially dust-tight and the outer surfaces smooth and nearly vertical.

It is important that the refractor always be oriented properly with reference to the road so that the beams of light will be directed onto the roadway and not out into the fields. To insure proper orientation, 3 notches, unequally spaced, are provided in the flange of the refractor and these engage corresponding lugs in the holding ring.

When the fixture is properly mounted on the pole with reference to the roadway, the glass cannot be inserted in any other than the correct position.

Prices upon application.

Form 6 Novalux Pendent Units

The Form 6 units embody the very latest ideas in design, both of an artistic and mechanical nature.

They are made for use with the 5.5, 6.6 or 7.5 amp. straight series Mazda lamps and for use with the 4000-lumen 15 amp., 6000-lumen and 10000-lumen 20 amp. Mazda series lamps. The units for operating the high candle-power lamps are equipped with self-contained auto-transformers so that they can be operated on standard constant current circuits of either 6.6 or 7.5 amperes.

The 6000-lumen 20-amp. unit has a tap for a 4000-lumen 15-amp. lamp. The 10000-lumen 20 amp. unit has a tap for a 6000-lumen 20 amp. lamp. In selecting a unit, provide for future improvements by being able to operate the next larger size of lamp.

Characteristics

The high operating temperature of these lamps has been compensated for by ventilating the earlier fixture designs. However, if the exposed surfaces of the fixture and glassware provide sufficient area, ample cooling can be provided in an air-tight unit by radiation and conduction. Such a unit is dustproof, bugproof and moistureproof.

Construction

The Form 6 Novalux unit is air-tight. Internal temperatures are so low that life of lamps is in no way lessened. Advantages are obvious; when an enclosing globe is used, no dust can collect in lamp bulb or on inner surface of globe. The loss of light due to accumulation of dirt on these surfaces runs as high as 40 per cent even where units are cleaned once a month. The elimination of dust and dirt is a great stride toward higher efficiencies and better service. Such a fixture is absolutely watertight and bugproof.

Types

The following combinations of light distributing equipment can be used with the Form 6 Unit:

1. No. 87 LIGHT CARRARA OUTER GLOBE. Recommended for secondary business districts where the spacing is close and where it is desired to direct a certain amount of light upward.
2. No. 87 LIGHT CARRARA OUTER GLOBE AND 20-IN. REFLECTOR. Recommended for residential districts where the spacing is not over 250 ft.
3. No. 120 LIGHT ALABASTER RIPPLED GLOBE. Recommended in place of the No. 87 Globe.
4. HOLOPHANE BOWL REFRACTOR AND 20-IN. REFLECTOR. Recommended for the lighting of main thoroughfares and residential districts where the spacing is over 250 ft.
5. HOLOPHANE BAND REFRACTOR AND 20-IN. REFLECTOR. Recommended as an alternative to the bowl type for installations where it is desirable to have an inconspicuous piece of glassware.
6. HOLOPHANE DOME REFRACTOR AND RIPPLED OUTER GLOBE. Particularly recommended for all classes of lighting where bowl or band refractors have been used in the past.
7. No. 125 LIGHT ALABASTER DIFFUSER. This combination is offered as an alternative to those with refractors. The No. 125 bowl diffuser can be substituted for either the bowl refractor or 8 1/2-inch band refractor using the same holder. It gives a useful light distribution with an attractive sparkling effect.

Rippled Globes

The rippled globe has minute protuberances and depressions in its inner surface. This breaks up the light, provides adequate diffusion. The absorption is practically that of clear glass.

The rippled globe is superior to the ordinary diffusing globe in that:

1. Its efficiency is 15 to 30 per cent higher.
 2. Its appearance is better since it is the only glass which lends sparkle to the Mazda lamp.
 3. It permits the use of the Holophane dome refractor.
- When the rippled globe is compared with the bowl refractor, the former is found to have the following advantages:
1. More light—15 per cent more total lumens.
 2. Less absorption during operation.
 - One surface exposed to dust and smoke instead of three.
 3. Uniform distribution.
 4. Improved appearance.
 - A larger secondary source of light.
 - Sparkling—not dead.

Form 6 Novalux Pendent Units



Pendent Unit Equipped with No. 83 Light Carrara Globe

Straight Series Type

2500, 4000 and 6000 Lumens

*Cat. No.	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt., Lbs.
170520	5.5, 6.6 or 7.5	No. 87 Light Carrara Globe . . .	55
170521	5.5, 6.6 " 7.5	" 87 " " " and Cat. No. 170556 Reflector . . .	60
170522	5.5, 6.6 " 7.5	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector . . .	55
202208	5.5, 6.6 " 7.5	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector . . .	55
248246	5.5, 6.6 " 7.5	No. 116, Clear Rippled Globe and Cat. No. 1340228 Dome Refractor . . .	65
260418	5.5, 6.6 " 7.5	No. 120 Light Alabaster Rippled Globe . . .	55
260419	5.5, 6.6 " 7.5	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector . . .	60

Auto-transformer Type

4000 Lumens

†Complete with Auto-transformer for 6.6 Amperes 60-cycles Series Circuits

170532	15	No. 87 Light Carrara Globe . . .	65
170533	15	" 87 " " " and Cat. No. 170556 Reflector . . .	70
170534	15	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector . . .	65
202215	15	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector . . .	65
248249	15	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor . . .	75
260432	15	No. 120 Light Alabaster Rippled Globe . . .	65
260438	15	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector . . .	70

†Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles at an increased price.

*Cat. No. does not include Mazda lamps.

Prices upon application.

Form 6 Novalux Pendent Units



Pendent Unit Equipped with No. 87 Light Carrara Globe and Concentric Reflector No. 170556

Auto-transformer Type

4000 Lumens

†Complete with Auto-transformer for 7.5 Amperes 60-cycle Series Circuits

*Cat. No.	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt., Lbs.
170559	15	No. 87 Light Carrara Globe . . .	65
170560	15	" 87 " " " and Cat. No. 170556 Reflector . . .	70
170561	15	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector . . .	65
202217	15	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector . . .	65
248252	15	Cat. No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor . . .	75
260435	15	No. 120 Light Alabaster Rippled Globe . . .	65
260441	15	" 120 " " " and Cat. No. 170556 Reflector . . .	70

§6000 Lumens

†Complete with Auto-transformer for 6.6 Amperes 60-cycle Series Circuits

170554	20	No. 87 Light Carrara Globe . . .	65
170545	20	" 87 " " " and Cat. No. 170556 Reflector . . .	70
170546	20	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector . . .	65
202219	20	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector . . .	65
248250	20	Cat. No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor . . .	75
260433	20	No. 120 Light Alabaster Rippled Globe . . .	65
260439	20	" 120 " " " and Cat. No. 170556 Reflector . . .	70

§With tap for 4000 lumens.

†Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles at an increased price.

*Cat. No. does not include Mazda lamps.

Prices upon application.

Form 6 Novalux Pendent Units



Pendent Unit Equipped with Reflector No. 170556 and Prismatic Band Refractor No. 174274



Pendent Unit Equipped with No. 116 Clear Rippled Globe and Prismatic Dome Refractor No. 1340228

Straight Multiple Type

Cat. No.	Lamp Rating Watts	Equipped with	Approx. Ship. Wt. Lbs.
202201	300, 400 or 500	No. 87 Light Carrara Globe..	55
202206	750 or 1000		
202202	300, 400 or 500	and Cat. No. 170556 Reflector.....	60
202207	750 or 1000		
202203	300, 400 or 500	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Refractor.....	55
202204	300, 400 " 500	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector.....	55
248248	300, 400 " 500	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor.....	65
260428	300, 400 or 500	No. 120 Light Alabaster Rippled Globe.....	55
260426	750 or 1000		
260429	300, 400 or 500	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector.....	60
260427	750 or 1000		

†IL Series Transformer Type
4000, 6000 and 10000 Lumens

*Cat. No.	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt. Lbs.
202210	15 or 20	No. 87 Light Carrara Globe.....	55
202211	15 " 20	" 87 " " and Cat. No. 170556 Reflector.....	60
202212	15 " 20	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector.....	55
202213	15 " 20	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector.....	55
248247	15 " 20	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor....	65
260422	15 " 30	No. 120 Light Alabaster Rippled Globe.....	55
260423	15 " 30	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector.....	60

Series Rectangular Auto-transformers for Novalux Units
4000 Lumens

*Cat. No.	AMPERES		Ship. Wt. Lbs.	Cat. No.	AMPERES		Ship. Wt. Lbs.
	Primary	Secondary			Primary	Secondary	
270549	6.6	15	17	270552	7.5	15	16
270550	6.6	20	17	270553	7.5	20	16
270551	6.6	20	17	270554	7.5	20	16

†For use with, but not including, a Type IL series transformer, aerial type, which may be mounted on the cross of the nearest pole.

‡Has tap for 4000-lumen lamp.

§Has tap for 6000-lumen lamp.

*Catalogue No. does not include Mazda lamps.

Prices upon application.

Form 6 Novalux Pendent Units



Pendent Unit Equipped with No. 125 Light Alabaster Rippled Bowl Diffuser

Auto-transformer Type

‡6000 Lumens
†Complete with Auto-transformer for 7.5 Amperes
60-cycle Series Circuits

Cat. No.	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt. Lbs.
171862	20	No. 87 Light Carrara Globe.....	65
171863	20	No. 87 " " and Cat. No. 170556 Reflector.....	70
171864	20	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector.....	65
202219	20	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector.....	65
248253	20	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor.....	75
260436	20	No. 120 Light Alabaster Rippled Globe..	65
260442	20	" 120 " " " " and Cat. No. 170556 Reflector.....	70
270585	20	No. 125 Light Alabaster Rippled Diffuser and Cat. No. 170556 Reflector.....	65

§10000 Lumens

†Complete with Auto-transformer for 6.6 and 7.5 Amperes
60-cycle Series Circuits

*Cat. No.	6.3-amp. Circuits	7.5-amp. Circuits	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt. Lbs.
170550	171868	20	No. 87 Light Carrara Globe....	65	
170551	171869	20	No. 87 " " and Cat. No. 170556 Reflector.....	70	
170552	171870	20	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector.....	65	
202223	202225	20	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector.....	65	
248251	248254	20	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor.....	75	
260434	260437	20	No. 120 Light Alabaster Rippled Globe.....	65	
260440	260443	20	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector.....	70	
270583	270586	20	No. 125 Light Alabaster Rippled Diffuser and Cat. No. 170556 Reflector.....	65	

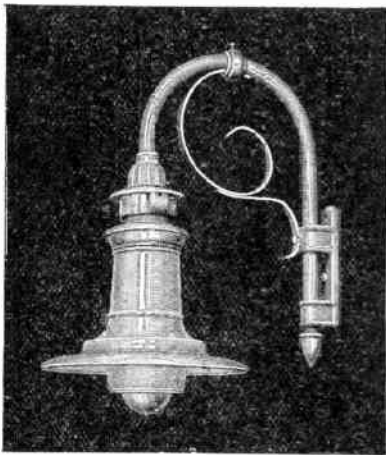
‡With tap for 4000 lumens. §With tap for 6000 lumens

†Special auto-transformers can be furnished for an alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles at an increased price.

*Cat. No. does not include Mazda lamps.

Prices upon application.

Form 6 Novalux Bracket Type Units



Unit with Reflector No. 170556 and Prismatic Band Refractor No. 174274

Straight Series Type

2500, 4000 and 6000 Lumens

*Cat. No.	Lamp Rating Amperes	Equipped with	Approx. Ship. Wt., Lbs.
170523	5.5, 6.6 or 7.5	No. 87 Light Carrara Globe	85
170524	5.5, 6.6 " 7.5	" 87 " " and Cat. No. 170556 Reflector	90
170525	5.5, 6.6 " 7.5	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector	85
202232	5.5, 6.6 " 7.5	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector	85
248255	5.5, 6.6 " 7.5	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor	95
280335	5.5, 6.6 " 7.5	No. 116 Clear Rippled Globe and Cat. No. 2346010 A-SYM-ETRIC Dome Refractor	95
260456	5.5, 6.6 " 7.5	No. 120 Light Alabaster Rippled Globe	85
260457	5.5, 6.6 " 7.5	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector	90

Straight Multiple Type

204982	300 or 500	No. 87 Light Carrara Globe and Cat. No. 170556 Reflector	85
202229	750 " 1000		
204983	300 " 500		
202230	750 " 1000		
204984	300 " 500	Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector	85
202227	300 " 500	Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector	85
248257	300 " 500	No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor	95
280337	300 " 500	No. 116 Clear Rippled Globe and Cat. No. 2346010 A-SYM-ETRIC Dome Refractor	95
260466	300 " 500	No. 120 Light Alabaster Rippled Globe and Cat. No. 170556 Reflector	85
260464	750 " 1000		
260467	300 " 500		
260465	750 " 1000		

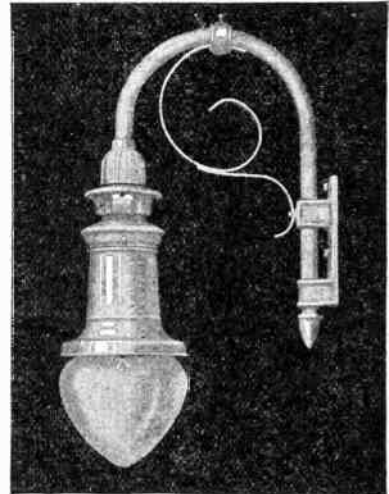
*Cat. Nos. do not include Mazda lamps or brackets.

Cat. Nos. include high-voltage insulator, and cast iron hood for attaching to 1 1/4-inch pipe. Special hoods can be supplied without increase in price for 1, 1 1/2 or 2-inch pipe.

For the addition of Cat. No. 202231 Bishop's Crook pipe, pole plate, scroll and clamp, add \$10.00 to the above prices; also add \$4.00 if galvanizing is required.

Prices upon application.

Form 6 Novalux Bracket Type Units



Unit with No. 87 Light Carrara Globe

†Auto-transformer Type for 60-cycle Series Circuit

6000 Lumens (with Tap for 4000 Lumens)

Lamp Rating, 20 Amperes

*Cat. No.	6.6-amp. Circuits	7.5-amp. Circuits	Equipped with	Approx. Ship. Wt., Lbs.
170547	171865		No. 87 Light Carrara Globe	85
170548	171866		" 87 " " and Cat. No. 170556 Reflector	90
170549	171867		Cat. No. 1340382 Bowl Refractor and Cat. No. 170556 Reflector	85
202243	202245		Cat. No. 174274 Band Refractor and Cat. No. 170556 Reflector	85
248259	248262		No. 116 Clear Rippled Globe and Cat. No. 1340228 Dome Refractor	95
280339	280342		No. 116 Clear Rippled Globe and Cat. No. 2346010 A-SYM-ETRIC Dome Refractor	95
260471	260474		No. 120 Light Alabaster Rippled Globe	85
260477	260480		" 120 " " and Cat. No. 170556 Reflector	90

10000 Lumens (with Tap for 6000 Lumens)

Lamp Rating, 20 Amperes

170553	171871		No. 87 Light Carrara Globe	85
170554	171872		" 87 " " and No. 170556 Reflector	90
170555	171873		No. 1340382 Bowl Refractor and No. 170556 Reflector	85
202247	202249		No. 174274 Band Refractor and No. 170556 Reflector	85
248260	248263		No. 116 Clear Rippled Globe and No. 1340228 Dome Refractor	95
280340	280343		No. 116 Clear Rippled Globe and Cat. No. 2346010 A-SYM-ETRIC Dome Refractor	95
260472	260475		No. 120 Light Alabaster Rippled Globe	85
260478	260481		" 120 " " and Cat. No. 170556 Reflector	90

*Catalogue numbers do not include Mazda lamps or brackets.

Catalogue numbers include high-voltage insulator and cast iron hood for attaching to 1 1/4-inch pipe. Special hoods can be supplied with increase in price for 1, 1 1/2 or 2-inch pipe.

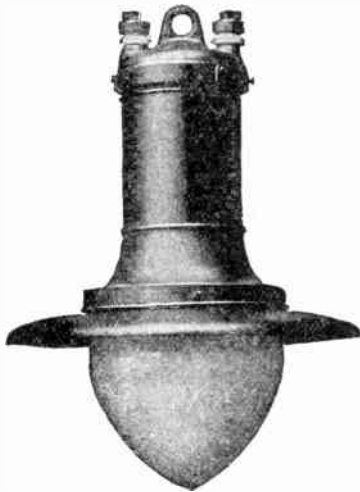
†Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles at an increased price.

For the addition of Cat. No. 202231 Bishop's Crook pipe, pole plate, scroll and lamp, add \$10.00 to the above prices; also add \$4.00 if galvanized is required.

Prices upon application.

Novalux Pendant Units

Form 11



Unit Equipped With No. 98 Diffusing Globe and 18-inch Refractor, No. 1345792

Straight Series Type

For 250, 400 and 600 Candle Power

Cat. No.	Lamp Rating Amperes	Equipped With	Approx. Ship. Wt. Lbs.
221294	6.6 or 7.5	No. 98 Diffusing Globe	30
221295	6.6 " 7.5	" 98 " " and Cat. No. 1345792 Reflector	35
221297	6.6 " 7.5	Cat. No. 1340382 Closed Base Bowl Refractor and Cat. No. 1345792 Reflector	35
221299	6.6 " 7.5	Cat. No. 174274 Band Refractor and Cat. No. 1345792 Reflector	35
221306	6.6 " 7.5	Cat. No. 221200 Radial Wave Reflector	35

Straight Multiple Type

Cat. No.	Lamp Rating Watts	Equipped With	Approx. Ship. Wt. Lbs.
221307	300, 400 or 500	No. 98 Diffusing Globe	30
221320	750 or 1000		
221308	300, 400 or 500	" 98 " " and Cat. No. 1345792 Reflector	35
221321	750 or 1000		
221310	300, 400 or 500	Cat. No. 1340382 Closed Base Bowl Refractor and Cat. No. 1345792 Reflector	35
221312	300, 400 or 500		
221319	300, 400 or 500	Cat. No. 174274 Band Refractor and Cat. No. 1345792 Reflector	35
221322	750 or 1000		
221319	300, 400 or 500	Cat. No. 221200 Radial Wave Reflector	35
221322	750 or 1000		

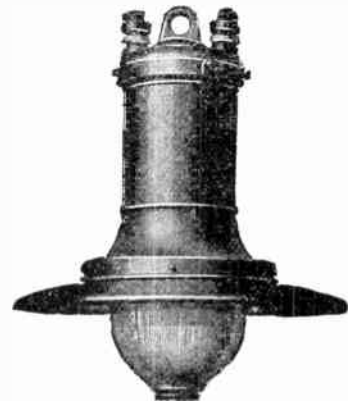
***IL Transformer Type**
For 400, 600 and 1000 Candle Power

Cat. No.	Lamp Rating Amperes	Equipped With	Approx. Ship. Wt. Lbs.
221323	15 or 20	No. 98 Diffusing Globe	30
221324	15 " 20		
221326	15 " 20	" 98 " " and Cat. No. 1345792 Reflector	35
221328	15 " 20		
221335	15 " 20	Cat. No. 1340382 Closed Base Bowl Refractor and Cat. No. 1345792 Reflector	35
221335	15 " 20		
221335	15 " 20	Cat. No. 174274 Band Refractor and Cat. No. 1345792 Reflector	35
221335	15 " 20		
221335	15 " 20	Cat. No. 221200 Radial Wave Reflector	35
221335	15 " 20		

Prices and catalogue numbers do not include Mazda lamps. *For use with, but not including a Type IL series transformer, aerial type, which may be mounted on the cross-arm of the nearest pole. Prices upon application.

Novalux Fendent Units

Form 11



Unit Equipped with No. 1340382 Bowl Refractor and 18-inch Refractor, No. 1345792

Auto-transformer Type for 60-cycle Series Circuits
For 400 Candle Power

Cat. No.		Equipped With	Approx. Ship. Wt., Lbs.
For 3.6 Amp. Circuits	For 7.5 Amp. Circuits		
221336	221375	No. 98 Diffusing Globe	40
221337	221376	" 98 " " and Cat. No. 1345792 Reflector	45
221339	221378	Cat. No. 1340382 Closed Base Bowl Refractor and Cat. No. 1345792 Reflector	45
221341	221380	Cat. No. 174274 Band Refractor and Cat. No. 1345792 Reflector	45
221348	221387	Cat. No. 221200 Radial Wave Reflector	45

Lamp rating, 15 amperes.

For 600 Candle Power

Cat. No.		Equipped With	Approx. Ship. Wt., Lbs.
For 6.6 Amp. Circuits	For 7.5 Amp. Circuits		
221349	221388	No. 98 Diffusing Globe	40
221350	221389	" 98 " " and No. 1345792 Reflector	45
221352	221391	No. 1340382 Closed Base Bowl Refractor and No. 1345792 Reflector	45
221354	221393	No. 174274 Band Refractor and No. 1345792 Reflector	45
221361	221400	No. 221200 Radial Wave Reflector	45

Lamp rating, 20 amperes.

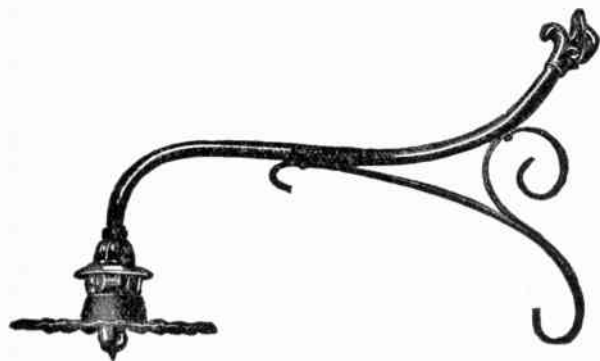
For 1000 Candle Power

Cat. No.		Equipped With	Approx. Ship. Wt., Lbs.
For 3.6 Amp. Circuits	For 7.5 Amp. Circuits		
221362	221401	No. 98 Diffusing Globe	40
221363	221402	" 98 " " and No. 1345792 Reflector	45
221365	221404	No. 1340382 Closed Base Bowl Refractor and No. 134592 Reflector	45
221367	221406	No. 174274 Band Refractor and No. 1345792 Reflector	45
221374	221413	No. 221200 Radial Wave Reflector	45

Lamp rating, 20 amperes.

Prices and catalogue numbers do not include Mazda lamps. Special auto-transformers can be furnished for any alternating current circuit, from 3 to 10 amperes, 25 to 133 cycles, at an increased price. Prices upon application.

Novalux Double Bend Brackets



With 20-inch Radial Wave Reflector

Series Bracket Complete	Cat. No.	103156
Multiple " "		152822
Reflector		46219

With Dome Radial Wave Reflector

Series Bracket Complete	174284
Multiple " "	174341
Reflector	174270

**With 6½-inch Holophane Prismatic Refractor
With Canopy and Holder**

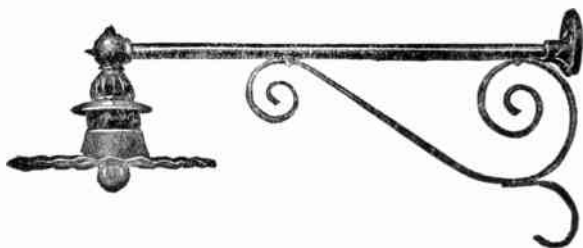
Series Bracket Complete	174285
Multiple " "	174342
Refractor	174273

**With 8½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174286
Multiple " "	174343
Refractor	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux ¾-inch Plain Gooseneck



With 20-inch Radial Wave Reflector

Series Bracket Complete	103157
Multiple " "	161356
Reflector	46219

With Dome Radial Wave Reflector

Series Bracket Complete	174292
Multiple " "	174349
Reflector	174270

**With 6½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174293
Multiple " "	174350
Refractor	174273

**With 8½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174294
Multiple " "	174351
Refractor	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux Right-angle Bend Brackets



With 20-inch Radial Wave Reflector

Series Bracket Complete	Cat. No.	105691
Multiple " "		161350
Reflector		46219

With Dome Radial Wave Reflector

Series Bracket Complete	174288
Multiple " "	174345
Reflector	174270

**With 6½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174289
Multiple " "	174346
Refractor	174273

**With 8½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174290
Multiple " "	174347
Refractor	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux ¾-inch Gooseneck Brackets



With 20-inch Radial Wave Reflector

Series Bracket Complete	114768
Multiple " "	152833
Reflector	46219

With Dome Radial Wave Reflector

Series Bracket Complete	174304
Multiple " "	174365
Reflector	174270

**With 6½-inch Holophane Prismatic Refractor
With Canopy and Holder**

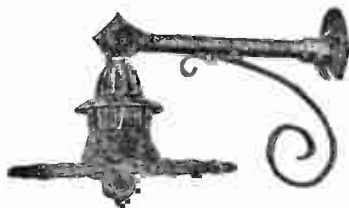
Series Bracket Complete	174305
Multiple " "	174366
Refractor	174273

**With 8½-inch Holophane Prismatic Refractor
With Canopy and Holder**

Series Bracket Complete	174306
Multiple " "	174367
Refractor	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux 20-inch Right-angle Joint Brackets



With 20-inch Wave Reflector

Series Bracket Complete	Cat. No. 111556
Multiple " "	161362
Reflector	46219

With Dome Radial Wave Reflector

Series Bracket Complete	174300
Multiple " "	174357
Reflector	174270

With 6½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Bracket Complete	174301
Multiple " "	174358
Reflector	174273

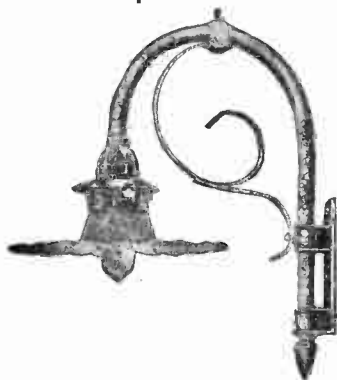
With 8½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Bracket Complete	174302
Multiple " "	174359
Reflector	174276

Catalogue number does not include incandescent lamp.

Prices upon application.

Novalux Bishop's Crook Brackets



With 20-inch Radial Wave Reflector

Series Bracket Complete	114979
Multiple " "	161339
Reflector	46219

With Dome Radial Wave Reflector

Series Bracket Complete	174280
Multiple " "	174338
Reflector	174270

With 6½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Bracket Complete	174281
Multiple " "	174338
Reflector	174273

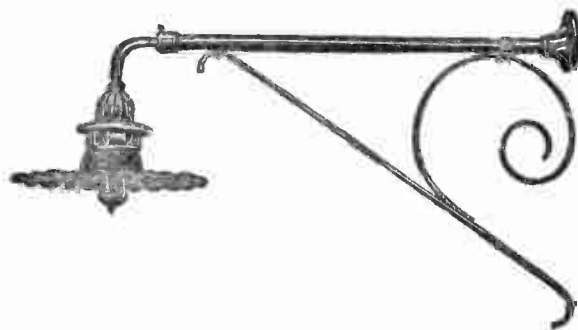
With 8½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Bracket Complete	174282
Multiple " "	174339
Reflector	174276

Catalogue number does not include incandescent lamp.

Prices upon application.

Novalux Telescoping Brackets



Pipe bracket, ¾ and 1¼-inch. External wiring, 4 to 7-foot.

With 20-inch Radial Wave Reflector

Series Fixtures Complete	Cat. No. 174311
Multiple " "	174368
Reflector	46219

With Dome Radial Reflector

Series Fixtures Complete	174313
Multiple " "	174370
Reflector	174270

With 6½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Fixtures Complete	174314
Multiple " "	174371
Reflector	174273

With 8½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Fixtures Complete	174315
Multiple " "	174372
Reflector	174276

Catalogue number does not include incandescent lamp.

Prices upon application.

Novalux Right-angle Joint Brackets

With Petticoat Insulator



With 20-inch Radial Wave Reflector

Series Fixtures Complete	46213
Multiple " "	125323
Reflector	46219

With Dome Radial Wave Reflector

Series Fixtures Complete	174308
Multiple " "	174361
Reflector	174270

With 6½-inch Holophane Prismatic Refractor With Canopy and Holder

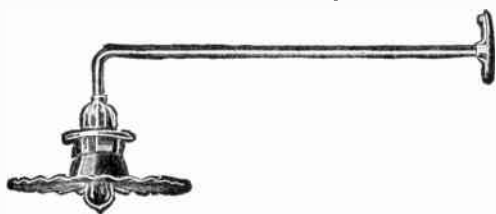
Series Fixtures Complete	174309
Multiple " "	174362
Reflector	174273

With 8½-inch Holophane Prismatic Refractor With Canopy and Holder

Series Fixtures Complete	174310
Multiple " "	174363
Reflector	174276

Cat. No. does not include lamp. Prices upon application.

**Novalux 3/4-inch Right Angle Bend
Brackets
External Wiring**



With 20-inch Radial Reflector

Series Fixtures Complete	219322	Cat. No.
Multiple " " " "	219326	
Reflector	46219	

With Dome Radial Wave Reflector

Series Fixtures Complete	291323
Multiple " " " "	219327
Reflector	174270

With 6 1/2-inch Holophane Prismatic Refractor
With Canopy and Holder

Series Fixtures Complete	219324
Multiple " " " "	219328
Reflector	174273

With 8 1/2-inch Holophane Prismatic Refractor
With Canopy and Holder

Series Fixtures Complete	219325
Multiple " " " "	219329
Reflector	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux Center Span Fixtures

Eye Suspension with Cross-arm Insulator Hanger
With 20-inch Radial Wave Reflectors



Eye Suspension

Catalogue Numbers		
Series Fixture Complete	Multiple Fixture Complete	Reflector or Reflector
74810	161383	46219
With Dome Radial Wave Reflectors		
174317	174374	174270
With 6 1/2-inch Holophane Prismatic Refractor*		
174318	174375	174273
With 8 1/2-inch Holophane Prismatic Refractor*		
174319	174376	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

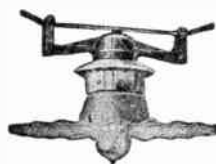
Novalux Center Span Fixtures
Strain Insulator Suspension with 20-inch Radial Wave Reflector

Catalogue Numbers	
Series Fixture Complete	Reflector or Refractor
125359	42619
With Dome Radial Wave Reflector	
174321	174270
With 6 1/2-inch Holophane Prismatic Refractor*	
174322	174273
With 8 1/2-inch Holophane Prismatic Refractor*	
174323	174267



*Furnished with canopy and holder.
Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux Center Span Fixtures
Cross-arm Suspension
With 20-inch Radial Wave Reflector



Catalogue Numbers		
Series Fixture Complete	Multiple Fixture Complete	Reflector or Refractor
103158	161389	46219
With Dome Radial Wave Reflector		
174325	174386	174270
With 6 1/2-inch Holophane Prismatic Refractor*		
174326	174387	174273
With 8 1/2-inch Holophane Prismatic Refractor*		
174327	174388	174276

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux Center Span Fixtures
Eye Suspension with Line Insulator
With 20-inch Radial Wave Reflector

Catalogue Numbers		
Series Fixture Complete	Multiple Fixture Complete	Reflector or Refractor
103159	161395	46219
With Dome Radial Wave Reflector		
174333	174378	174270
With 6 1/2-inch Holophane Prismatic Refractor*		
174334	174379	174273
With 8 1/2-inch Holophane Prismatic Refractor*		
174335	174380	174276



Eye Suspension with Radial Wave Reflector

Catalogue number does not include incandescent lamp.
Prices upon application.

Novalux Center Span Fixtures
Cross-arm Suspension, Petticoat Insulator
With 20-inch Radial Wave Reflector



Cross-arm Suspension Petticoat Insulator with Radial Wave Reflector

Catalogue Numbers		
Series Fixture Complete	Multiple Fixture Complete	Reflector or Refractor
49055	125324	46219
With Dome Radial Wave Reflector		
174329	174382	174270
With 6 1/2-inch Holophane Prismatic Refractor*		
174330	174383	174273
With 8 1/2-inch Holophane Prismatic Refractor*		
174331	174384	174276

Catalogue number does not include incandescent lamp.
Prices upon application*Furnished with canopy and holder

No. 46219 Radial Wave Reflectors



Radial wave reflector, 20 inches in diameter, for 40, 60, 80 and 100 c.p. series, and 40 and 60-watt multiple lamps.

Price upon application.

No. 174270 Dome Radial Wave Reflectors



Radial wave reflector, 20 inches in diameter for 40, 60, 80, 100, 250 and 400 c. p. series, and 100 and 200-watt multiple lamps.

Price upon application.

Holophane Prismatic Band Refractors



6 1/2-inch Diameter¹

Holophane prismatic band refractors with canopy and holder for 40, 60 80 and 100 c. p. series, and 100 and 200-watt multiple lamps.

- | | |
|----------|--|
| Cat. No. | Description |
| 174273 | Holophane Prismatic Refractor Complete |
| 174271 | Prismatic Glass Refractor Only |
| 174272 | Holder for Refractor Only |
- Prices upon application.

8 1/2-inch Diameter

Holophane prismatic band refractor with canopy and holder for 250 and 400 c. p. series, and 300, 400 and 500-watt multiple lamp.

Prices upon application.



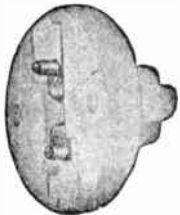
- | | |
|----------|--|
| Cat. No. | Description |
| 174276 | Holophane Prismatic Refractor Complete |
| 174274 | Prismatic Glass Refractor Only |
| 174275 | Holder for Refractor Only |

Novalux Sockets and Receptacles



Cat. No.	Description	Ship. Wt., Lbs. per 100	Price Each
25708	Porcelain Series Socket and Receptacle, complete, including iron yoke, Cat. No. 25714, for Use with Mogul Screw Base Lamps.....	200	\$2.25
25711	Porcelain Series Socket Only, for Mogul Screw Base Lamps.....	112	1.25
25713	Porcelain Receptacle with Clips Only.....	54	.85
25714	Iron Yoke (7/8-inch—18 Thread) with two screws Cat. No. 10252.....	50	.25
65951	Aluminum Disk Film Cutout. Tested for 110 Volts; probable Limit of Breakdown, 250 to 450 Volts.....	1/4	.04
147969	Lead Disk Film Cutout. Tested for 70 Volts; Probable Limit of Breakdown, 70 to 250 Volts.....	1/4	.05

No. 177143 Novalux Porcelain Receptacles



Shipping weight is 100 pounds per 100. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 177143 Receptacle with Clips.....each \$1.75

No. 25720 Novalux Porcelain Series Sockets

Shipping weight per 100 is 46 pounds. Series sockets only, for medium screw base lamps. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 25720, Socket Only.....each \$.75



No. 159377 Porcelain Multiple Sockets With 1/2-inch Pipe Tap



Shipping weight, 330 pounds per hundred. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 159377 Porcelain Multiple Socket with 1/2-inch Pipe Tap, for Mogul Screw Base Lamps with Plunger Spring Center Contact.....each \$2.50



No. 25712 Porcelain Receptacles With Clip and Iron Yoke

Shipping weight, 103 pounds per hundred. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 25712 Porcelain Receptacle with Clip and Iron Yoke.....each \$1.25

No. 156722 Novalux Skeleton Multiple Sockets



With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included.

Shipping weight per 100 is 52 pounds.

Price, No. 156722, Multiple Socket for Mogul Screw Base Lamps.....each

No. 129804 Novalux Porcelain Multiple Sockets

For Mogul Screw Base Lamps

Shipping weight per 100 is 112 pounds. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 129804.....each \$1.00



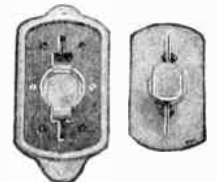
No. 129803 Novalux Porcelain Multiple Sockets

For Medium Screw Base Lamps

Shipping weight per 100 is 112 pounds. With each shipment of 12 or less of the series sockets, a package of 15 disk film cutouts, Cat. No. 65951, is included. Price, No. 129803.....each \$1.00



Form M Pole Type Series Absolute Plug Cutouts



Pole Type Series Absolute Plug Cutout (External View)
Pole Type Series Absolute Pole Cutout (Internal View)
 For use in the base of ornamental poles, on which are mounted lamps operating on series circuits. It is of the plug type and when the plug is removed all connection between lamp and line is absolutely opened.

Cat. No.	Description	Std. Pkg.	Wt., Lbs. Pkg.	Price Each
156220	Plug Type.....	8	135	\$13.00

Form 1 Novalux Industrial Lighting Units

Description

The Form 1 Novalux fixture (canopy type) is a lighting unit designed for industrial service. These units have been referred to as the Hog Island fixtures because the first large installation of them was made at the American Shipbuilding Corporation, Hog Island, Pa.

The fixture consists of the Form 1 Novalux top and the luminous arc canopy and globe. This combination permits the use of a band refractor large enough (10½ in.) to accommodate the 1000-watt Mazda "C" lamp. An internal reflector may be used in the place of the refractor and, when this is done, the fixture may be equipped with either a clear or a diffusing globe.

In installations where the fixture is to be hung in such a position that light is wanted on only one side, a suitable globe is furnished. In this case half the globe is silvered and copper coated and is thus converted into a mirror reflector 180 degrees wide. Globes of this kind are used largely around sides of shipbuilding ways and also around the outer edge of foundries and other large areas where important work is being done.

The Form 1 industrial unit is a straight multiple fixture and no room is provided inside for an auto transformer.

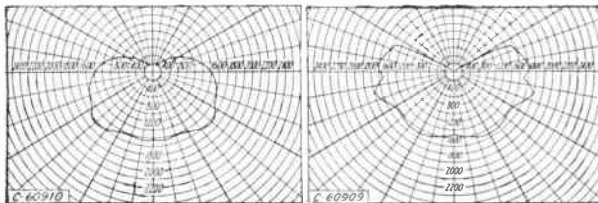
The top of the lamp can be arranged for either eye suspension or bracket suspension.

These units can be furnished for operating 300-, 400-, 500-, 750- or 1000-watt lamps but, when a large area is to be lighted, it is important to install a light source of very high candle-power.

At Hog Island the units are mounted on poles 50 ft. high. Each unit is equipped with a 10½-in. band refractor, a No. 14 clear globe and a 1000-watt lamp. Four units are mounted on each pole so that the combined candle-power gives abundant illumination over an enormous area.

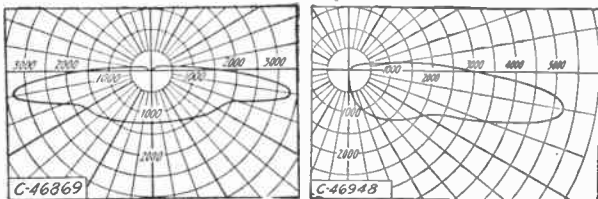
Distribution Curves

Of Units with 1000 Watt Mazda Lamps



Unit with No. 14 Clear Glass Globe and Internal Reflector No. 308789

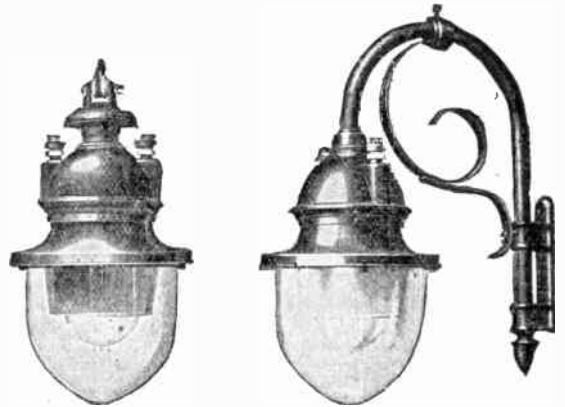
Unit with No. 14 Light Carrara Glass Globe and Internal Reflector. No. 308789



Unit with No. 14 Clear Glass Globe and 10½-inch Holophane Prismatic Band Glass Reflector No. 1312160

Unit with No. 101 Globe, Silvered and Coppered Throughout at an Angle of 180 Degrees and 10½-inch Holophane Prismatic Band Glass Reflector No. 1312160

Form 1 Novalux Industrial Lighting Units



For Pendant Suspension
10½-inch Band Refractor
No. 1312160 and No. 14
Clear Globe

For Bracket Suspension
10½-inch Band Refractor
No. 1312160 and No. 14
Clear Globe

For Pendant Suspension
For 300, 400 or 500 Watts

Cat. No.	Equipped With	Price Each
209104	10½-in. Band Refractor Cat. No. 1312160 and No. 14 Clear Globe	\$40.00
218201	10½-in. Band Refractor Cat. No. 1312160 and No. 101 Globe Silvered and Coppered throughout at an Angle of 180 Degrees	54.50
209105	Internal Reflector Cat. No. 308789 and No. 14 Clear Globe	29.50
209106	Internal Reflector Cat. No. 308789 and No. 14 Diffusing Globe	31.25
For 750 or 1000 Watts		
209107	10½-in. Band Refractor Cat. No. 1312160 and No. 14 Clear Globe	40.00
218202	10½-in. Band Refractor Cat. No. 1312160 and No. 101 Globe Silvered and Coppered throughout at an Angle of 180 Degrees	54.50
209108	Internal Reflector Cat. No. 308789 and No. 14 Clear Globe	29.50
209109	Internal Reflector Cat. No. 308789 and No. 14 Diffusing Globe	31.25

Cat. Nos. and prices do not include Mazda lamps.

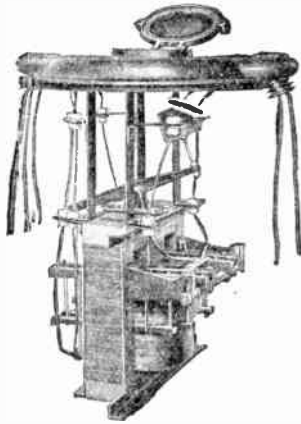
For Bracket Suspension
For 300, 400 or 500 Watts

Cat. No.	Equipped With	Price Each
218203	10½-inch Band Refractor Cat. No. 1312160 and No. 14 Clear Globe	\$40.00
218204	10½-inch Band Refractor Cat. No. 1312160 and No. 101 Globe Silvered and Coppered throughout at an Angle of 180 Degrees	45.50
218205	Internal Reflector Cat. No. 308789 and No. 14 Clear Globe	29.50
218206	Internal Reflector Cat. No. 308789 and No. 14 Diffusing Globe	31.25
For 750 or 1000 Watts		
218207	10½-inch Band Refractor Cat. No. 1312160 and No. 14 Clear Globe	40.00
218208	10½-inch Band Refractor Cat. No. 1312160 and No. 101 Globe Silvered and Coppered throughout at an Angle of 180 Degrees	54.50
218209	Internal Reflector Cat. No. 308789 and No. 14 Clear Globe	29.50
218210	Internal Reflector Cat. No. 308789 and No. 14 Diffusing Globe	31.25

Prices do not include brackets or Mazda lamps.

Type RO Automatic Constant Current Transformers

For Street Lighting—Pole or Station Mounting
2300 Volts—60 Cycles



Because of its construction accurate alignment is not necessary, and it may be installed at an angle of from 5 to 10 degrees from the vertical and still give perfect regulation. It is oil-cooled. The oil used is of a quality that will not freeze at 25 degrees below zero. This device permits direct connection to the line through an automatic time switch or a manually operated oil switch, thus eliminating the use of a control panel.

The secondary of the Type RO transformer is always connected to the lighting circuit and it is recommended

that the primary side be properly protected. For this purpose primary cut-outs Cat. No. 104227 should be used. These cut-outs should be installed back of the controlling switch.

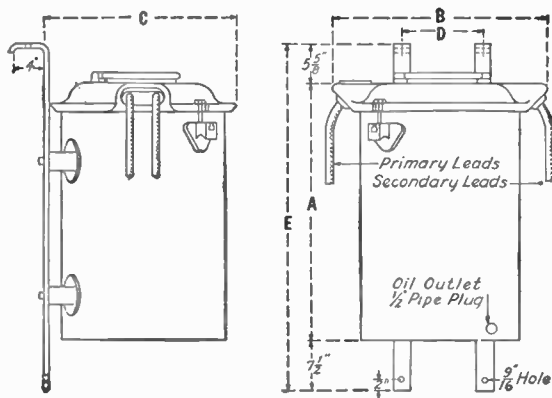
Cat. No.	kW. Output	Secondary Amp.	Oil Gal.	APPROX. WT., LBS. INCLUDING OIL Net	Ship.
246268	1.0	6.6	20	400	550
246269	2.0	6.6	25	550	750
246270	3.0	6.6	25	600	800
246271	5.0	6.6	30	700	900
246272	7.5	6.6	40	725	925
246273	10.0	6.6	40	750	950
257347	15.0	6.6	60	1060	1300
257348	20.0	6.6	60	1100	1400
257349	25.0	6.6	110	2000	2300
257350	30.0	6.6	110	2000	2300

†kW. output at unity power-factor load.

‡No. 10-C oil is regularly supplied and included in the price. If transformers are to be operated where the temperature does not fall below freezing, No. 12 Transil oil may be used and from the net price of the transformer should be deducted an amount based on the number of gallons used at 10 cents per gallon.

Suspension hooks are furnished with all Type RO transformers, except 15 and 20-kw. sizes.

Dimensions



Cat. No.	DIMENSIONS, INCHES				
	A	B	C	D	E
246268	30	24	20	9	44
246269	35	26	22	10	48
246270	35	26	25	10	48
246271	35	29	25	11 1/2	48
246272	35	29	25	11 1/2	48
246273	35	29	25	11 1/2	48
257347	41	32	28	13	54
257348	41	32	28	13	54
257349	47 1/8	38 1/8	32 1/8	15 1/2	57 1/2
257350	47 1/8	38 1/8	32 1/8	15 1/2	57 1/2

Subway Type RO Constant Current Transformers

For A.C. 6.6 Amperes Series Lighting Circuits

‡2300 Volts, 60 Cycles



The Subway Type RO Transformer is almost identical with the pole type, except that it is enclosed in a specially designed waterproof tank. The electrical and operating characteristics are the same also, except that the primary power-factor has been improved to 80 per cent. These transformers are available in the same type of construction and kw. ratings as the pole type in sizes from 1 to 20 kw. It is necessary, however, on the 25 and 30 kw. size subway transformer to construct it in a double-deck type, due to the necessity for the transformers to be narrow enough to be lowered and installed in a manhole, the cover of which is only 32 inches in diameter, maximum. The 4 leads, are

each brought out at a separate terminal, the terminals being spaced equally on the outer surface of the tank. The weight is a small percentage increase over the weight of pole Type RO. The size and the amount of oil, especially on the larger sizes, is somewhat less than is required for a similar rated pole type.

These new transformers are to be standard for 2300-volt, 60-cycle 6.6 rating but may be furnished for 25, 30, 40 or 50 cycles with primary voltages from 13,500 down to 110 and with secondary currents varying from 2.5 to 30 amperes.

Lightning arresters are recommended to be used on all sizes on both the primary and secondary for protection, the same as on the pole type. Cutouts may be used but are designed for aerial service and are not subway type devices.

All transformers have single circuit secondaries.

Cat. No.	*KW. Output (At Unity P-G. Load)	Primary Amp.	Gal. No. 21 Included in Price	WT. LBS. INCLUDING OIL Net	Ship.	†Price Each Class V
273687	1	0.66	20	580	780	\$715.00
273688	2	1.29	20	615	815	750.00
273689	3	1.93	20	645	845	790.00
273690	5	3.18	50	1175	1375	855.00
273691	7.5	4.75	50	1250	1450	940.00
273692	10	6.28	50	1300	1500	1000.00
273693	15	9.39	65	1525	1765	1190.00
273694	20	12.52	65	1610	1910	1315.00
273695	25	15.55	75	2080	2380	1640.00
273696	30	18.70	75	2080	2380	1750.00

*In order to compensate for ohmic and reactive losses in a straight series load circuit and fluctuations of voltage or frequency in the supply circuit, all of these transformers have sufficient additional load carrying capacity over normal kw. output rating.

†For special voltages other than 2300 or double voltages, 6.6 or 7.5 amperes, 60 cycles, add 10 per cent.

For 50 cycles use 60-cycle prices.

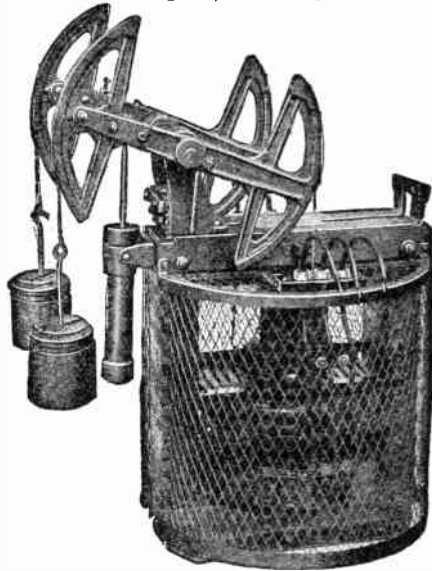
For 25, 30 or 40 cycles, 2300 volts, 6.6 or 7.5 amperes, add 20 per cent.

For special voltages other than 2300, 6.6 or 7.5 amperes, and 25, 30 or 40 cycles, add 25 per cent.

For 7.5 ampere secondaries use 6.6 ampere prices.

For special secondary current ratings other than 7.5 amperes, information will be furnished upon application.

Type RV Series Constant Current Transformers
60 Cycles, 2300 Volts



Alternating current is generally supplied at constant potential but when lamps or other apparatus requiring constant current are used it is necessary to provide some means for transforming from constant voltage to constant current. This change must be made in the most efficient manner and is accomplished with the Constant Current Transformer.

These transformers are guaranteed to regulate from full load to no load and to maintain the current constant within one per cent above or below the normal current rating for which they were designed. This is an essential feature because in a series lighting system any excessive variation in current will cause the lamps to burn out.

The Kw. output is at unity power factor load.

In order to compensate for ohmic and reactive losses in the load circuit and fluctuations of voltage and frequency in the supply circuit all transformers of this type have sufficient additional load carrying capacity above rated KW output rating.

All transformers have single circuit secondaries but the 40, 50, 60 and 70 kw. size may be operated multi-circuit.

Prices of constant current transformers for other commercial voltages, frequencies or secondary currents will be quoted upon application.

Cat. No.	Kw. Output	WEIGHT, POUNDS	
		Net	Ship.
197089	5	300	500
197091	10	475	650
197093	15	650	850
197095	20	800	1000
197097	25	1050	1450
197099	30	1250	1600
†247080	35	1300	1650
†230125	40	1350	1700
†230127	50	1550	1900
†230129	60	1800	2200
†230131	70	2100	2550

Kw.	DIMENSIONS, INCHES		
	A	B	C
5	34	17	23
10	37	20	25
15	40	23	28
20	44	25	30
25	48	27	34
30	53	28	38
35	55	30	42
40	55	30	42
50	57	31	43
60	59	34	45
70	63	36	47

†Built with multi-circuit secondary but can be operated as single circuit if desired.

Prices quoted upon application.

Series Panels for Incandescent Systems

*2200 Volts, 25 to 140 Cycles

Standard panels are blue Vermont marble, (right reserved to furnish marble or compound at option unless otherwise specified) 1 1/4 inches thick mounted on a self-supporting frame work of 1-inch pipe, 64 inches high. The primary switches are of the tubular expulsion fuse type and the secondary switch of the plug type. All instruments and meters have the standard dull black finish and the supporting frame work a black Japan finish.

For the Control of One, Two or Three Single Secondary Transformers with One Lamp Circuit per Transformer

Cat. No.	Trans. †Kw.	Secondary Amperes	No. of Trans. Controlled	Ship. Wt., Lbs.
154586	3	6.6 and 7.5	1	300
154622	3	6.6 " 7.5	2	375
154630	3	6.6 " 7.5	3	475
154587	5	6.6 " 7.5	1	300
154623	5	6.6 " 7.5	2	375
154631	5	6.6 " 7.5	3	475
154589	10	6.6 " 7.5	1	300
154625	10	6.6 " 7.5	2	375
154633	10	6.6 " 7.5	3	475
154591	15	6.6 " 7.5	1	300
154627	15	6.6 " 7.5	2	375
154635	15	6.6 " 7.5	3	475
154592	20	6.6 " 7.5	1	350
154628	20	6.6 " 7.5	2	425
154636	20	6.6 " 7.5	3	550
154593	25	6.6 " 7.5	1	350
154629	25	6.6 " 7.5	2	425
154637	25	6.6 " 7.5	3	550
154594	30	6.6 " 7.5	1	325
154595	35-40	6.6 " 7.5	1	325
154596	50	6.6 " 7.5	1	325
154597	60	6.6 " 7.5	1	325
154598	70	6.6 " 7.5	1	325
154599	80	6.6 " 7.5	1	325



Single Circuit Panel

For the Control of One Single Secondary Transformer with Two Lamp Circuits per Transformer

Cat. No.	Trans. *Kw.	Secondary Amperes	No. of Trans. Controlled	Ship. Wt., Lbs.
154604	3	6.6 and 7.5	1	350
154605	5	6.6 " 7.5	1	350
154607	10	6.6 " 7.5	1	350
154609	15	6.6 " 7.5	1	350
154610	20	6.6 " 7.5	1	350
154611	25	6.6 " 7.5	1	350
154612	30	6.6 " 7.5	1	325
154613	35-40	6.6 " 7.5	1	325
154614	50	6.6 " 7.5	1	325
154615	60	6.6 " 7.5	1	325
154616	70	6.6 " 7.5	1	325
154617	80	6.6 " 7.5	1	325

*With slight modifications the panels may be used for 1100 volts, without additional charge.

Sub-base with Watthour Meter

Trans. †Kw.	Primary Volts	Current Transformer	For One-circuit Panel		For Two-circuit Panel	
			Cat. No.	Ship. Wt., Lbs.	Cat. No.	Ship. Wt., Lbs.
3	2200	5	152108	225	152114	250
5	2200	5	152108	225	152114	250
10	2200	10	152109	225	152115	250
15	2200	10	152109	225	152115	250
20	2200	15	152110	225	152116	325
25	2200	15	152110	225	152116	325
30	2200	20	152111	225	152117	325
35-40	2200	20	152111	225	152117	325
50	2200	30	152112	325	152118	250
60	2200	30	152112	325	152118	250
70	2200	40	152113	325	152119	250
80	2200	40	152113	325	152119	250

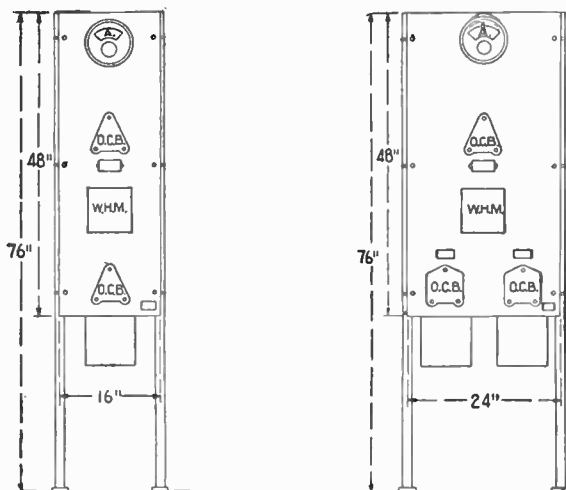
Designed for 60 cycle only, but can be furnished for other frequencies.

†Kilowatt output at unity power factor.

Prices quoted upon application.

Type RV Series Constant Current Transformers

FK-41 Oil Circuit Breaker Panels

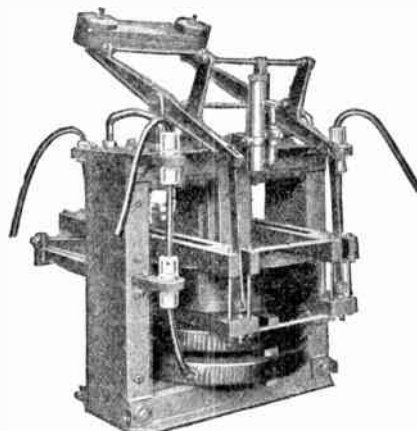


For 1 Transformer and 1 or 2 Lamp Circuits

Type RF Automatic Substation Constant Current Transformers

For A.C. 6.6 Amperes Series Lighting Circuits

2300 Volts, 60 Cycles



Front View without Wire Cage

PANEL EQUIPMENT:

- One ammeter, Type R-6, 5-amp. with movable marker.
- Two or three oil circuit breakers, Type K-41 non-automatic d-p.s-t. 4500-volt 60 amperes—mounted on back of panel.
- Two fuses s-p., 2500-volt—mounted on an insulating base on supports back of panel.
- One current transformer.
- One or two card holders.
- One name plate.

WATTHOUR METER EQUIPMENT:

- One watthour meter, Type IS-4, 110-volt, 5-ampere single-phase.
- One current transformer, Type W-12.
- One potential transformer, 2200/110-volt, 50-watt, 60-cycle with fuses.

For 2 Transformers and 1 Lamp Circuit per Transformer

PANEL EQUIPMENT:

- Two ammeters, Type R-6, 5-amp. with movable marker.
- Four oil circuit breakers, Type K-41 non-automatic d-p.s-t. (2 primary and 2 secondary).
- Four fuses, s-p., 2500-volt mounted on 2 insulating bases on supports back of panel.
- Two current transformers.
- Copper connections back of panel.
- Two card holders.
- Two name plates.

WATTHOUR METER EQUIPMENT:

- Two watthour-meters, Type IS-4, 110-volt, 5-amperes single-phase.
- Two current transformers, Type W-12.
- Two potential transformers 2200/110-volt, 50-watt, 60 cycles with fuses.

All previous station Type RV constant current transformers have been so designed that it is necessary to latch the moving coil apart so that in starting the operator would have to release the moving coil and allow it to drop to load position to prevent a current surge in the main series circuit.

The Type RV transformer requires the attention of an operator at least twice in every 24 hours and therefore it is desirable on account of the advent of the automatic substation to eliminate this feature if possible, even at the expense of a slight reduction in operating characteristics from the Type RV.

Realizing the growth in popularity of the outdoor automatically regulated transformer, viz.: Type RO, it is quite natural that an effort should be made to produce a transformer along the same general characteristics as the Type RO, but for indoor operation where no attendants are available and the presence of oil is undesirable. A new transformer has been designed which is essentially the same as the Type RO but is air-cooled and has no oil except the small amount used in the dashpot for damping purposes.

This new transformer is known as Type RF and can be built in practically any capacity and for any commercial voltage, frequency, and secondary current but it is recommended that on account of the high secondary voltage, capacities not exceeding 40 kw. be used.

Sizes from 25 to 40 kw. are furnished with multi-circuit secondary.

The operating characteristics are almost identical with the Type RO transformers except the full load primary power-factor which is 80 per cent.

This Type RF Transformer has 100 per cent more inherent reactance than the Type RV and therefore under practically any condition of load it gives better protection to modern lamps. The outfit is so designed that it can be started up automatically with coils together with only one lamp on the circuit regardless of capacity of transformer, and the current surge being slight will not be sufficient to destroy the lamp.

The weight and size is approximately 10 per cent greater than a similar rated Type RV.

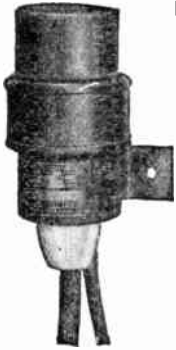
These new Type RF Transformers have sufficient additional capacity to compensate for line reactance, resistance losses and fluctuations in primary voltages and frequency when operating with a straight resistance load.

Prices upon application.

Transformer Kw. Output at Unity Power-Factor	Cap. Amp. Primary Fuses (Main Panel)	*Current Transformer Capacity in Amp. (Watthour Meters Subbase)	PANELS FOR 1 TRANSFORMER			
			PANELS FOR 1 LAMP CIRCUIT		PANELS FOR 2 LAMP CIRCUITS	
			Main Panel No.	Watthour Meter Cat. No.	Main Panel Cat. No.	Watthour Meter Subbase Cat. No.
5	4.0	5.0	258573	258606	258584	258606
10	6.0	10.0	258574	258607	258585	258607
15	10.0	10.0	258575	258608	258597	258609
20	12.0	15.0	258576	258609	258587	258609
25	15.0	15.0	258577	258610	258588	258610
30	20.0	20.0	258578	258611	258589	258611
35	20.0	20.0	.....	.....	258590	258612
40	20.0	30.0	.....	.....	258591	258613
50	25.0	30.0	.....	.....	258592	258614
60	30.0	40.0	.....	.....	258593	258615
70	40.0	40.0	.....	.....	258594	258616

*Ampere capacity of lamp circuit, 6.6, 7.5.

**Type SL Series Transformers
For Street Lighting**



Pole Type

The Type SL transformer is used for supplying current to one or a small number of lamps connected in series and located where the high potential of the ordinary constant current series circuit would be objectionable.

The field for this transformer necessarily lies in the vicinity of constant current series circuits as it is designed to operate from a circuit where the current is held constant.

Certain classes of lighting require lower potential than that obtainable from series arc or incandescent circuits and, to provide for this, companies would be compelled to run multiple circuits from

the Central Station, often at a considerable expense, if it were not for the Type SL transformer.

Some of this low-voltage lighting is supplementary to the regular street lighting system and, filling the same function, it is desirable to control it simultaneously with the streetlights. The Type SL transformer affords an ideal method for this control as the low-voltage circuit is turned on and off with the closing or opening of the main constant current transformer circuit.

Some of the places where these transformers can be used to advantage are:

1. In isolated side streets or alleys where it is desired to install a few series incandescent lamps.
2. On poles, elevated structures, etc., where it is expedient to place a series circuit but where high potential would be objectionable.
3. On bridges.
4. In underground circuits leading to ornamental poles.
5. In installations for fire alarm boxes, police boxes or letter boxes.
6. For lighting isles of safety.
7. For house lighting near series circuits where constant potential is not available.

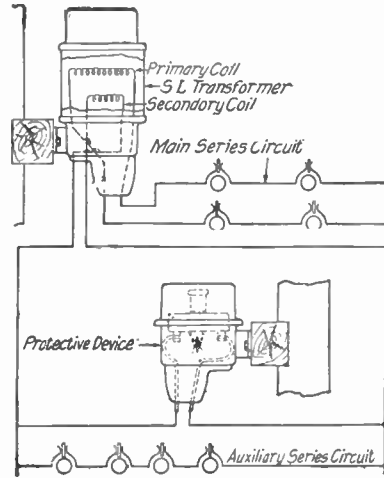


Subway Type

The connections of the Type SL are shown in the accompanying diagram.

The primary winding is connected in series with the main series circuit so that under all conditions of load on the secondary, the primary carries the full current of the main circuit which is maintained at its normal value by a constant current regulating device.

In order to limit the open circuit voltage on the larger sizes, a protective device is connected in multiple with the secondary of the transformer. The



Connections of Type SL Transformer with Protective Device

protective device is a film cut-out similar to the standard film cut-out used in connection with series incandescent lamps but having a breakdown voltage in excess of the secondary load voltage of the transformer. When the secondary circuit becomes open-circuited, the impedance voltage of the transformer builds up until the film breaks down thus short circuiting the secondary winding. The transformers will operate on short circuit indefinitely.

The open circuit voltage of the small transformers is limited by the design of the magnetic circuit which permits the saturation of the iron with no current in the secondary.

**Type SL Series Transformers
For Operating 6.6 and 7.5 Ampere Series Lamps
On A. C. 60 Cycle Constant Current Circuits**

Pole Type							
Cat. No.	*Kw. Output	AMPERES Primary Second.		Cat. No.	*Kw. Output	AMPERES Primary Second.	
†195588	0.04	6.6	6.6	†195599	0.10	7.5	7.5
†195589	0.10	6.6	6.6	247021	0.25	7.5	7.5
247012	0.25	6.6	6.6	247022	0.50	7.5	7.5
247013	0.50	6.6	6.6	247023	1.00	7.5	7.5
247014	1.00	6.6	6.6	247024	2.00	7.5	7.5
247015	2.00	6.6	6.6	247025	3.00	7.5	7.5
247016	3.00	6.6	6.6	247026	4.00	7.5	7.5
247017	4.00	6.6	6.6	247027	5.00	7.5	7.5
247018	5.00	6.6	6.6	247028	7.50	7.5	7.5
247019	7.50	6.6	6.6	247029	10.00	7.5	7.5
247020	10.00	6.6	6.6	.....	.....	.....	.....

Subway Type							
Cat. No.	*Kw. Output	AMPERES Primary Second.		Cat. No.	*Kw. Output	AMPERES Primary Second.	
†195608	0.04	6.6	6.6	†195619	0.10	7.5	7.5
†195609	0.10	6.6	6.6	†224349	0.25	7.5	7.5
†224345	0.25	6.6	6.6	†224350	0.50	7.5	7.5
†224346	0.50	6.6	6.6	†224351	1.00	7.5	7.5
†224347	1.00	6.6	6.6	†224352	2.00	7.5	7.5
†224348	2.00	6.6	6.6	†245954	3.00	7.5	7.5
†245953	3.00	6.6	6.6	†247034	4.00	7.5	7.5
†247030	4.00	6.6	6.6	247035	5.00	7.5	7.5
†247031	5.00	6.6	6.6	247036	7.50	7.5	7.5
247032	7.50	6.6	6.6	247037	10.00	7.5	7.5
247033	10.00	6.6	6.6	.....	.....	.....	.....

Weights, Etc.

Pole Type				Subway Type			
Kw.	Tank Symbol	Oil No. Gals.	Approx. Wt., Lbs. Net Ship.	Kw.	Tank Symbol	Oil No. Gals.	Approx. Wt., Lbs. Net Ship.
3	.....	.....	100 120	3	.....	.....	100 120
4	.....	.....	137 160	4	.....	.....	137 160
5	CP-015	5½	281 290	5	CP-117½	13¾	500 500
7½	CP-017	8½	390 400	7½	CP-117½	12¾	540 540
10	CP-019	11	450 470	10	CP-117½	11¾	570 570

*At unity power factor load. †No protective device required. ‡Protective device assembled in cap of transformer.

****Protective Devices for Type SL Series Transformers**

Pole Type					
Cat. No.	Trans. Kw. Output	Sec. Amps.	Cat. No.	Trans. Kw. Output	Sec. Amps.
247063	0.25	6.6	247065	3	7.5
247063	0.25	7.5	247066	4	6.6
247063	0.50	6.6	247066	4	7.5
247063	0.50	7.5	247066	5	6.6
247064	1	6.6	247066	5	7.5
247064	1	7.5	247067	7.5	6.6
247065	2	6.6	247067	7.5	7.5
247065	2	7.5	247068	10	6.6
247065	3	6.6	247068	10	7.5

Subway Type					
Cat. No.	Trans. Kw. Output	Sec. Amps.	Cat. No.	Trans. Kw. Output	Sec. Amps.
247069	5	6.6	247070	7.5	7.5
247069	5	7.5	247071	10	6.6
247070	7.5	6.6	247071	10	7.5

Film Cutouts for Type SL Series Transformers

Cat. No.	Trans. Kw. Output	Sec. Amps.	Ship. Wt., Lbs. per 100	Cat. No.	Trans. Kw. Output	Sec. Amps.	Ship. Wt., Lbs. per 100
147969	0.25	6.6	¼	198678	3	7.5	3
147969	0.25	7.5	¼	198679	4	6.6	3
147969	0.50	6.6	¼	198679	4	7.5	3
147969	0.50	7.5	¼	198679	5	6.6	3
65951	1	6.6	3	198679	5	7.5	3
65951	1	7.5	3	198680	7.5	6.6	3
198678	2	6.6	3	198680	7.5	7.5	3
198678	2	7.5	3	198681	10	6.6	3
198678	3	6.6	3	198681	10	7.5	3

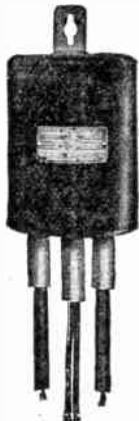
**One film cut-out included. §On subway type transformers of 0.25 to 4 kw. capacity, protective device is assembled in cap of transformer.

Type IL Series Transformers

For Operating 6.6, 15 and 20-ampere Mazda Series Lamps on A. C. Constant Current Circuits 60 Cycles



Ornamental Post Type



Ornamental Post or Subway Type



Aerial Type

These series transformers allow the use of high efficiency series lamps where high potential is impracticable and unsafe. No film cutout is required since each lamp is independent of the others in the circuit. In case of an accident to one or more, the remainder of the lamps on the circuit burn without interruption.

They protect the lamps from surges in the line.

They are a valuable adjunct to "Safety First" in ornamental street lighting, because they insulate the pole and lamp from the high tension series circuit and permit the use of high efficiency series lamps in business districts where ordinances prohibit high tension wires above the street surface.

For use with pendent units, the transformers can be mounted on the cross arms of the poles.

They save the expense of high-voltage conductors, heavy insulation and high tension cutouts.

When lamp wattage varies between 8 per cent above and 20 per cent below normal, secondary current will not vary more than 1.0 per cent with normal primary current and frequency.

Ornamental Post Type with Detachable Couplings

Mfrs. No.	LAMP RATING		Open Circuit Effective Voltage	APPROX. Wt., LBS.	
	†C-p.	Amps.		Net	Ship.
245679	100/250	6.6	85	20	30
258679	250/400	6.6/15	110	27	62
235825	400/600	15/20	72	27	62
235824	600/1000	20	117	37	70
245678	1000/1500	20	170	45	80

Ornamental Post or Subway Type with Wiping Sleeves

245677	100/250	6.6	85	15	25
258678	250/400	6.6/15	110	27	62
235823	400/600	15/20	72	27	62
235822	600/1000	20	117	37	70
245676	1000/1500	20	170	45	80

Aerial Type with Porcelain Bushings and Long Leads

245675	100/250	6.6	85	15	25
258677	250/400	6.6/15	110	27	62
235821	400/600	15/20	72	27	62
235820	600/1000	20	117	37	70
245674	1000/1500	20	170	45	80

*Special transformers can be furnished for any commercial circuit or c-p. lamps. Prices on application.

†The 100/250 c-p. transformers are 1:1 ratio and two secondary leads supply 6.6 ampere for the 100 or 250 c-p lamps.

The 250/400 c-p. transformers have three secondary leads supplying 6.6 amperes for the 250 c-p. lamps and 15 amperes for the 400 c-p. lamps. The 400/600 c-p. sizes also have three leads which furnish 15 amperes for the 400 c-p. lamp and 20 amperes for the 600 c-p. The 600/1000 c-p. and 1000/1500 c-p. have only two secondary leads as the current required for the 600 c-p. and the 1000 c-p. as well as on the 1500 c-p. is the same.

‡The maximum voltage which can be obtained by means of a voltmeter.

Prices quoted upon application.

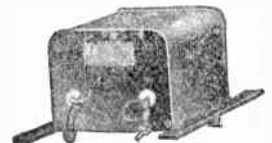
Remote Control Apparatus

Street Lighting—Series Systems



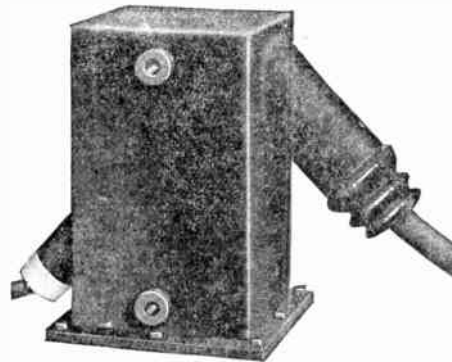
CR2810-1304-A Combination Series Relay and Coil Contactor

The multiple oil switch will make, break and carry continuously 59 amperes. The whole unit is easily suspended by iron straps, from a pole cross arm. A special feature of this unit is the lever on the top of the case, which may be moved into 3 different positions. The first position allows the apparatus to function automatically. The second position short circuits the series relay and locks open the coil contactor so that no matter if the series circuit is turned on, the contactor will still be off and the transformer or line may be worked on with perfect safety. Position three engages the oil contactor without the series relay being energized which allows the transformer to be thrown into operation manually in case of failure of the control series circuit or for testing purposes.



Type CR2810-1235-B Oil Contactor Potential Transformer at Left

When the feeder potential is above 2300 volts a separate relay and contactor are required. The contactor recommended is the Type CR2810-1235-B. This device is a double-pole single-throw oil switch which may be used on any frequency up to 60 cycles, po-



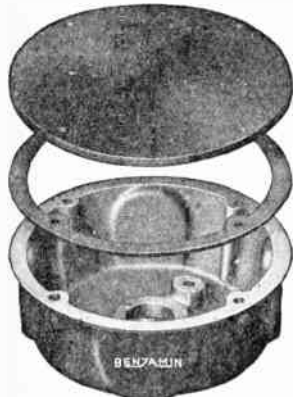
Type PL-33 Relay for Operating a Type CR2810-1235-B Contactor

tential up to 4400 volts, and currents up to 50 amperes. The contacts are closed by a 110 or 220-volt solenoid, energy for which is supplied by a potential transformer connected across the feeder circuit. The contacts, solenoid and potential transformer are all included in a single weatherproof housing suitable for pole mounting. In conjunction with this contactor, a relay connected in the series control circuit or some other device must be used to close the low-voltage constant potential circuit through the potential transformer secondary and the operating solenoid of the contactor.

A series relay, Type PL-33, is supplied to close the low-voltage constant potential circuit. It consists of a compact operating coil insulated for 10,000 volts and suitable for connection in any commercial series lighting circuit, and a simple low-voltage single-pole single-throw contact contained in a weatherproof housing.

Full particulars and prices upon application.

Benjamin Water-tight Junction Boxes
Standard—With Plain Cover and Gasket



No. 6701

Standard Junction or Outlet Boxes are 1½ inches deep inside, 4½ inches in diameter outside, and are supplied in either brass or iron. They are provided with side boss for plunger key stuffing box, and have mounting bosses in bottom, tapped for No. 8-32 screws, which are spaced to accommodate interchangeably Benjamin connecting blocks, receptacles and switches. Boxes are also tapped for the No. 10-24 brass screws furnished to fasten cover.

TAPPING.—Boxes are regularly furnished not tapped for conduit.

PLUNGER KEY.—Key Type boxes are arranged with water-tight stuffing box and furnished with plunger key for operating key receptacles or switches.

COVER.—Brass, No. 6920, or iron, No. 6921.

GASKET.—Rubber gasket, No. 6945, makes water-tight connection.

FINISH.—Brass boxes and covers are regularly unfinished, but can be finished in dead black when specified. Iron boxes and covers are dead black.

Cat. No.	Type of Box	Material	Description	Wt. Each	Lbs. Each	Price Each
6700	Keyless	Brass	Box, Cover and Gasket . . .	2¼		\$2.05
6701	"	Iron	" " " " . . .	2¼		1.05
6702	Key	Brass	" " " " . . .	2¾		2.55
6703	"	Iron	" " " " . . .	2¾		1.55
6900	Keyless	Brass	Junction Box Only	1¾		1.30
6901	"	Iron	" " " "	1¾		.60
6902	Key	Brass	" " " "	1¾		1.80
6903	"	Iron	" " " "	1¾		1.10

Benjamin Water-tight Junction Boxes
With Mounting Lugs, Plain Cover and Gasket

These outlet or junction boxes are the same as the standard boxes, Nos. 6900 to 6903, except that they have two mounting screw lugs on the side.

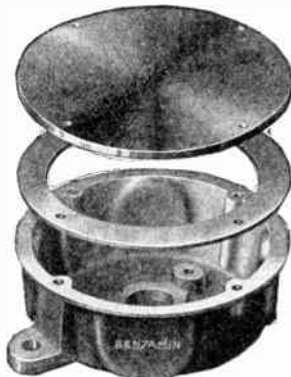
TAPPING.—Boxes are regularly furnished not tapped for outlets. They have four bosses spaced 90 degrees which may be tapped for ½, ¾ or 1-inch conduit. A ½ or ¾-inch outlet may be tapped in bottom of box.

PLUNGER KEY.—Boxes are arranged for water-tight stuffing box and furnished with plunger key for operating key receptacles or switches, as specified.

COVER.—Brass, No. 6920, or iron, No. 6921.

GASKET.—Rubber gasket, No. 6945, makes water-tight connection.

FINISH.—Brass boxes and covers are regularly unfinished but can be finished in dead black when specified. Iron boxes and covers are dead black.



No. 6636

Cat. No.	Type of Box	Material	Description	Wt. Each	Lbs. Each	Price Each
6635	Keyless	Brass	Box, Cover and Gasket . . .	2½		\$2.30
6636	"	Iron	" " " " . . .	2½		1.30
6637	Key	Brass	" " " " . . .	2¾		2.80
6638	"	Iron	" " " " . . .	2¾		1.80
6630	Keyless	Brass	Junction Box Only	2		1.55
6631	"	Iron	" " " "	2		.85
6632	Key	Brass	" " " "	2½		2.05
6633	"	Iron	" " " "	2½		1.35

Benjamin Water-tight Connecting Blocks
With Standard Water-tight Junction Boxes

Rating: 30 Amperes, 125 Volts



No. 6707

CONNECTING BLOCK.—One set of binding screws and three sets of clamp connectors which permit taking off branch circuits as necessary. Feed wires may be passed through without cutting, and clamped firmly without soldering or taping joints. Base is of high heat molded insulating material. Supporting screw holes are spaced 1¾ inches on centers.

JUNCTION BOX.—Standard junction box, brass, No. 6900 or iron, No. 6901.

TAPPING.—Box is regularly furnished not tapped for conduit but no charge is made for tapping when specifications are given with order.

COVER.—Brass, No. 6920, or iron, No. 6921.

GASKET.—Rubber gasket, No. 6945, making water-tight connection.

FINISH.—Brass boxes and covers are regularly unfinished but can be supplied in dead black finish when specified. Iron boxes and covers are dead black.

Cat. No.	Kind of Box	Description	Wt. Each	Lbs. Each	Price Each
6706	Brass	Complete as Described	2½		\$2.85
6707	Iron	" " " "	2½		1.85

Benjamin Twin Fuse Receptacles and Water-tight Connecting Blocks

With Standard Water-tight Junction or Outlet Boxes
30 Amperes, 125 Volts



No. 6709

RECEPTACLE.—For Edison Plug Fuses only. Equipped with two sets of clamp connectors which permits one or two circuits to be connected. Fuses not furnished. Receptacle is attached to connecting block by two screws which serve as center contacts for fuse plugs. Receptacle and block are of high heat insulating material. Connecting block is like that furnished with Nos. 6706 and 6707.

JUNCTION BOX.—Standard water-tight junction box, brass, No. 6900, iron, No. 6901.

TAPPING.—Box is regularly furnished not tapped for conduit. No charge is made for tapping when specifications are given with order.

COVER.—Special brass cover, No. 6922.

GASKET.—Rubber gasket, No. 6945, making water-tight connection.

FINISH.—Brass parts are regularly unfinished, but can be supplied in dead black finish when specified. Iron parts are dead black.

Cat. No.	Kind of Box	Description	Wt. Each	Lbs. Each	Price Each
6708	Brass	Complete, as Described	3¾		\$4.60
6709	Iron	" " " "	3¾		3.90

Benjamin 3-blade Water-tight Plug Receptacles



In Standard Water-tight Junction Boxes
Rating: 660 Watts, 250 Volts

RECEPTACLE.—3-blade, for use with three-blade attaching plugs Nos. 6762 and 6764. Has base of high heat molded insulating material.

THREE-BLADE PLUG.—Not furnished unless specified. Has cast brass body with insulating parts of molded composition. Gasketed swivel ring makes water-tight connection.

COVER.—No. 6924, brass only.

Junction box, outlets for conduit, gasket, finish same as for Nos. 6708 and 6709.

Cat. No.	Kind of Box	Description	Wt., Lbs. Each	Price Each
6712	Brass	Complete " " " "	2 7/8	\$4.35
6713	Iron	" " " "	2 7/8	3.65
6762	.....	{ Plug Only, for No. 14 B & S Ga. PWP. }	3/4	2.25
6764	.....	{ Plug only, for No. 14 B & S Ga. Basket Weave Armored Cable. }	3/4	2.25

Benjamin Edison Screw Base Water-tight Plug Receptacles

In Standard Water-tight Junction Boxes
Rating: 660 Watts, 250 Volts

RECEPTACLE.—Plunger key or keyless receptacles with base of high heat molded insulating material, regularly supplied with one set of binder screws. Two sets supplied if specified.

JUNCTION BOX.—Standard, No. 6900, brass, or No. 6901, iron, are keyless; No. 6902, brass, or No. 6903, iron, are key type.

TAPPING.—Box is regularly furnished not tapped for conduit. No charge is made for tapping when specifications are given with order.

FINISH.—Brass parts are regularly unfinished, but can be supplied in dead black finish when specified. Iron parts are dead black.

Cat. No.	Kind of Box	Type of Receptacle	Description	Wt., Lbs. Each	Price Each
6716	Brass	Keyless	Complete, Less Plug . . .	2 3/4	\$4.00
6717	Iron	"	" " " " . . .	2 3/4	3.30
6718	Brass	Key	" " " " . . .	2 7/8	5.40
6719	Iron	"	" " " " . . .	2 7/8	4.70
6766	.....	.....	Plug Only, for No. 14 B & S Gauge PWP.	3/4	2.50
6767	.....	.....	Plug Only, for No. 14 B & S Gauge Basket Weave Armored Cable	3/4	2.50



No. 6719 with No. 6766 Plug

Benjamin Twin Keyless Screw Base Water-tight Receptacles

In Standard Water-tight Junction Boxes
Rating: 660 Watts, 250 Volts Per Outlet



No. 6720

Receptacle has one set of binding screws.

Cover, No. 6926 brass only. Junction box (keyless only), outlets, gasket and finish as above.

Cat. No.	Kind of Box	Wt., Lbs. Each	Price Each
6720	Brass	3 3/8	\$6.00
6721	Iron	3 3/8	5.30

Benjamin 2-pole Water-tight Receptacles and Plugs

With Standard Water-tight Junction Boxes
Rating: 15 Amperes, 125 Volts



No. 7751

RECEPTABLES.—Are keyless for use with attaching plugs Nos. 7863 and 7864. Have base of high heat molded insulating material.

ATTACHING PLUGS.—Regularly furnished with No. 7863; No. 7864 supplied if specified.

Have cast brass body and base of molded insulating material with copper sheath. Gasketed swivel ring makes water-tight connection.

JUNCTION BOX.—Standard water-tight brass No. 6900 or iron, No. 6901.

TAPPING.—Boxes are regularly furnished not tapped for conduit.

COVER.—Brass cover, No. 7880.

GASKET.—Rubber gasket makes water-tight connection, No. 6945.

FINISH.—Brass parts are regularly unfinished, but can be supplied in dead black when specified. Iron boxes are dead black.

Cat. No.	Kind of Box	Description	Wt., Lbs. Each	Price Each
7750	Brass	Complete, Less Plug	2 7/8	\$4.00
7751	Iron	" " " "	2 7/8	3.30
7863	.....	Plug Only, 2-pole, for No. 12 B. & S. Gauge PWP.	1/2	2.00
7864	.....	Plug Only, 2-pole, for 1/2-inch Conduit	1/2	1.80

Benjamin 2 and 3-pole Water-tight Plug Receptacles

With Standard Water-tight Junction Boxes
Rating: 30 Amperes, 250 Volts D.C. or 440 Volts A.C.



No. 7766 with No. 7861 Plug

RECEPTABLES.—Keyless, with high heat molded composition base, has double spring contacts, arranged for 3-pole connection. The same receptacle is made 2-pole by omission of one contact.

ATTACHING PLUGS.—Polarized, have cast brass body and molded composition base with copper sheath. Not designed to break circuit under full load. Gasketed swivel ring makes water-tight connection. Plug No. 7861 will be arranged for No. 10 or No. 8 rubber covered portable cable if specified.

TAPPING AND FINISH.—Same as above.

COVER.—Brass cover, No. 7880.

GASKET.—Rubber gasket makes water-tight connection, No. 7879.

Cat. No.	Kind of Box	Type of Receptacle	Description	Wt., Lbs. Each	Price Each
7765	Brass	3-pole	Complete, Less Plug	3 1/4	\$5.95
7766	Iron	3 "	" " " "	3 1/4	5.25
7717	Brass	2 "	" " " "	3 1/4	5.95
7718	Iron	2 "	" " " "	3 1/4	5.25
7861	.....	3 "	Plug for No. 12 Cable.	3/4	5.00
7886	.....	3 "	" " 1/8-inch O. D. Flexible Conduit	7/8	5.00
7862	.....	2 "	Plug for No. 12 Cable.	3/4	5.00
7887	.....	2 "	" " 1/8-inch O. D. Flexible Conduit	7/8	5.00

Benjamin 2 and 3-pole Water-tight Plug Receptacles

With 45° Angle Water-tight Junction Boxes
Rating: 30 Amperes, 250 Volts D.C. or 440 Volts A.C.



No. 7719 with No. 7862 Plug

RECEPTACLES.—Keyless with base of molded composition. Has double spring contacts for 3-pole connection. Same receptacle is made 2-pole by omission of one contact.

ATTACHING PLUGS.—Polarized, have cast brass body and molded composition base with copper sheath. Not designed to break circuit under full load. Gasketed swivel ring makes water-tight connection. Plug No. 7681 will be arranged for No. 10 or No. 8 rubber covered portable cable if specified.

JUNCTION BOX.—4½-inch iron, 45 degree angle.

TAPPING.—Box is tapped for ½-inch pipe connection at top and may also be tapped for ½-inch connection at rear, if specified.

COVER.—Brass, with screw cap and chain.

GASKET.—Rubber gasket makes water-tight connection.

FINISH.—Brass parts are regularly unfinished, but can be supplied in dead black when specified. Iron parts are dead black.

Cat. No.	Kind of Box	Type of Receptacle	Description	Wt. Each	Lbs. Each	Price Each
7767	Iron	3-pole	Complete Less Plug	4 3/8		\$6.80
7719	"	2 "	"	4 3/8		6.80
7861	"	3 "	Plug for No. 12 Cable	3 3/4		5.00
7886	"	3 "	" 1/8-in. O. D. Flexible Conduit	3 3/4		5.00
7862	"	2 "	" " No. 12 Cable	3 3/4		5.00
7887	"	2 "	" " 1/8-in. O. D. Flexible Conduit	3 3/4		5.00

Benjamin Screw Base Water-tight Plug Receptacles

Plunger Key Control

With 2-gang Water-tight Junction Boxes

RECEPTACLE.—Device includes 2 key, medium screw base receptacles with base of high heat molded insulating material.

ATTACHING PLUGS.—Nos. 6766 and 6767 are not included unless specified. Have cast brass body with insulating parts of molded composition. Gasketed swivel ring makes water-tight connection.

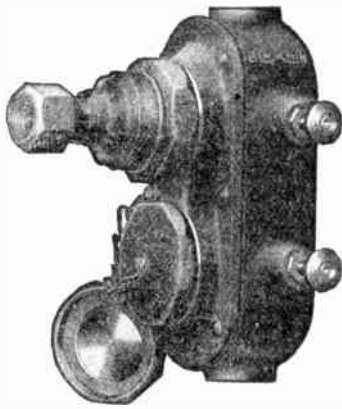
JUNCTION BOXES.—Brass only. Will also accommodate Benjamin Keyless Receptacles and Single and Double-pole Switches.

TAPPING.—Box is not tapped for conduit but has 2 bosses which may be tapped for ½-inch or ¾-inch conduit. No charge for tapping when sizes and number of outlets are given with order.

COVER.—Brass, with screw caps and chains.

GASKET.—Rubber gasket makes water-tight connection.

FINISH.—Same as for Nos. 7767-7887 above.



No. 6740 with No. 6766 Plug

Cat. No.	Kind of Box	Type of Box	Description	Wt. Lbs.	Price Each
6740	Brass	Key	Complete Less Plug	3 3/4	\$10.40
6766	"	"	Plug Only, for No. 14 B. & S. Gauge PWP	3/4	2.50
6767	"	"	Plug Only, for No. 14 B. & S. Gauge Basket Weave Armored Cable	3/4	2.50

Benjamin 2-pole Water-tight Connectors

For Heavy Duty Industrial and Marine Use

15 Amperes, 125 Volts



No. 7743

CONSTRUCTION.—Receptacle has brass casing threaded to fit swivel ring on 15-ampere 2-pole plugs.

Plugs are 2-pole type, supplied in 2 sizes Nos. 7863 or 7864.

WATER-TIGHT CONNECTION.—Rubber packing ring seals cord entrance and rubber gasket seals joint between plug and connector.

CORD STYLES AND SIZES.—No. 7743 Connector accommodates No. 12 B. & S. Gauge PWP. No. 7742 Connector accommodates ½-inch rigid conduit.

FINISH.—Brass parts are regularly unfinished, but can be finished in dead black when specified.

Cat. No.	Description	Wt. Lbs.	Price Each
7742	No. 7869 Receptacle with No. 7864 Plug.	1	\$3.60
7743	" 7868 " " 7863 "	1 3/8	4.00
7868	Receptacle for No. 12 B. & S. Gauge PWP.	3/8	2.00
7869	" " ½-inch Conduit	1/2	1.80
7871	" Base Only	3/4	.59

Benjamin 2-pole Water-tight Connectors With Standard Water-tight Junction Boxes

Rating: 10 Amperes, 125 Volts; 5 Amperes, 250 Volts

SWITCH.—Positive in action, quick make and break type with plunger key control and breaks on both sides of circuit at two points. Inner and outer terminals with extra binding screws permit taking off branch circuits. Can be made single-pole by jumper connection. Base is of high heat molded insulating material.

JUNCTION BOX.—Standard.

TAPPING.—Boxes are regularly furnished not tapped for conduit.

COVER.—Brass or iron as specified.

GASKET.—Rubber gasket, No. 6945, makes water-tight connection.

FINISH.—Brass boxes and covers are regularly unfinished, but can be supplied in dead black when specified. Iron boxes and covers are dead black.



No. 6711

Cat. No.	Kind of Box	Description	Wt. Lbs.	Price Each
6710	Brass	Device Complete	2 5/8	\$3.95
6711	Iron	"	2 5/8	2.95

Benjamin 2-pole Water-tight Switches With Water-tight Oblong Junction Boxes

Rating 10 Amperes, 125 Volts; 5 Amperes, 250 Volts

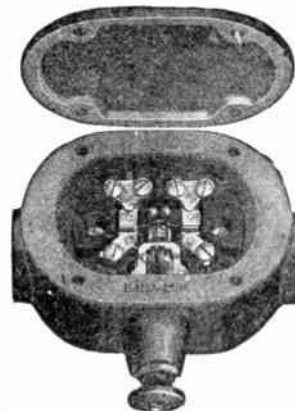
SWITCH.—Same as above. JUNCTION BOX.—Brass, oblong; 1½ inches deep, 4 inches long and 2¾ inches wide outside dimensions.

TAPPING.—Box is not tapped for outlets but has two bosses which may be tapped for ½-inch conduit 1-way or 2-way, as specified.

COVER.—Brass.

GASKET.—Rubber gasket, No. 6944, makes water-tight connection.

FINISH.—Same as above.



No. 6746

Cat. No.	Wt. Lbs. Each	Price Each
6746	1 3/4	\$4.45

Benjamin Water-tight Gas, Vapor and Fume-proof Fixtures

With Screw Globe and Guard

Ceiling Fixtures

For 40-75 and 100-watt Lamps



No. 6800

STRUCTURE.—Standard junction box of cast brass or iron as specified, with a brass globe holding ring, with removable heavy brass guard and heavy clear screw globe, navy standard thread. Lamp socket is high heat molded material. Roughed inside, ruby or blue glass globe may be specified. Box with key receptacle has water-tight stuffing box with plunger key. Outlet box is not tapped for conduit unless specified. Receptacle is two-binder screw type. Rubber gaskets make fixture water-tight.

FINISH.—Brass parts are regularly unfinished but can be finished in dead black when specified. Iron parts and guard are dead black.

Cat. No.	Size Lamp Watts	Kind of Box	Description	Wt., Lbs. Each	Price Each
6800	40-75	Brass	Keyless Fixture	4 1/8	\$6.75
6801	40-75	Iron	"	4 1/8	6.05
6802	40-75	Brass	Key Fixture	4 1/4	8.15
6803	40-75	Iron	"	4 1/4	7.45
6804	100	Brass	Keyless Fixture	5 1/2	8.40
6805	100	Iron	"	5 1/2	7.70
6806	100	Brass	Key Fixture	5 5/8	9.80
6807	100	Iron	"	5 5/8	9.10

Prices do not include wires or lamps.

Drop Fixtures

For 40-75-watt Lamps

STRUCTURE.—Brass fixture body, tapped at top for 1/2-inch iron pipe, has removable heavy brass guard and heavy, clear screw globe, navy standard thread. Roughed inside, ruby or navy blue glass globe may be specified. Fixture body for key receptacle furnished with water-tight stuffing box and plunger key. Receptacle and gasket as above.

FINISH.—Brass parts are regularly unfinished but can be finished in dead black when specified. Iron parts and guard are dead black.

Cat. No.	Size Lamp Watts	Type of Receptacle	Wt., Lbs. Each	Price Each
6830	40-75	Keyless	3 1/8	\$6.10
6832	40-75	Key	3 1/4	7.50

Prices do not include wires or lamps.

Angle Wall Fixtures

With Two-piece 90-degree Angle Brackets



No. 6824

The 90-degree angle brackets, two-piece type, of brass or iron as specified, with standard 4 1/2-inch outlet box as shown. Fixture body for key receptacle furnished with water-tight stuffing box and plunger key. Lamp not furnished, but fixtures are for lamps up to 75-watt Mazda C size.

Rubber gaskets make fixture water-tight.

FINISH.—Brass parts are regularly unfinished but can be finished in dead black when specified. Iron parts are dead black.

Cat. No.	Bracket Body	Type of Receptacle	Wt., Lbs. Each	Price Each
6820	Brass	Keyless	5 5/8	\$9.20
6821	Iron	"	5 5/8	7.80
6824	Brass	Key	5 3/4	10.60
6825	Iron	"	5 3/4	9.20

Benjamin Water-tight Angle Wall Fixtures

With Screw Globe and Guard—Key or Keyless



No. 6818

STRUCTURE.—One-piece 90-degree angle bracket body of brass, with two mounting lugs, removable heavy brass guard and heavy, clear screw globe, navy standard thread. Roughed inside, ruby or navy blue glass globe may be specified. Body for key receptacle furnished with water-tight stuffing box and plunger key. Bracket body is not tapped for outlets but has three bosses which can be tapped for 1/2-inch conduit entrance from either side or from above. A 1/2-inch outlet may be tapped in back of body. No charge for tapping when locations and number of outlets are given with order. Receptacle is two binder screw type. Lamp is not furnished but lamps up to 75-watt Mazda C size may be used.

FINISH.—Brass parts are regularly unfinished, but can be finished in dead black when specified. Iron parts and guard are dead black.

Cat. No.	Size Lamps, Watts	Type of Receptacle	Wt., Lbs. Each	Price Each
6808	40-75	Keyless	3 1/2	\$7.45
6818	40-75	Key	3 3/4	8.85

Benjamin Water-tight Hand Portables

With Screw Globe and Guard—Key or Keyless Receptacle

STRUCTURE.—Cast brass body has removable heavy brass guard with detachable cast brass hook, and heavy clear screw globe, navy standard thread. Roughed inside, ruby, or navy blue glass globe, may be specified. Finished hardwood handle with heavy brass ferrules encloses water-tight stuffing gland for cable. Body for key receptacle furnished with water-tight stuffing box and plunger key. Receptacle is two binder screw type with lamp grip.

FINISH.—Finish is dead black.



No. 6842

Cat. No.	Size Lamps Watts	Type of Receptacle	Wt., Lbs. Each	Price Each
6841	40-75	Keyless	3 5/8	\$9.10
6842	40-75	Key	3 5/8	10.50

Prices do not include wire or lamps.

Benjamin Water-tight Reflector Fixtures

Gas, Vapor and Fume-proof



No. 6848

HOOD.—Heavy cast iron hood is furnished tapped for 1/2-inch iron pipe.

REFLECTOR.—One-piece steel non-discoloring white porcelain enameled inside.

GASKETS.—Two gaskets make fixture tight.

HOLDER.—Copper holder is threaded to receive globe.

GLOBE.—Heavy clear glass screw globe.

RECEPTACLE.—Easy-to-wire type with base of high grade porcelain. Receptacle is furnished with Benjamin Lamp Grip. LAMPS.—Lamps are not furnished.

With 90-degree Angle Reflector

FINISH.—Reflector is black porcelain enameled outside, white inside. Iron hood is dead black.

Cat. No.	Description	Reflector Diam., In.	Lamp Size, Watts	Wt. Lbs. Each	Price Each
6848	Fixture Complete	16	100, 150	6 1/4	\$9.25

With Dome Reflector

FINISH.—Reflector is green porcelain enameled outside, white inside. Iron hood is dead black.

Cat. No.	Description	Reflector Diam., In.	Lamp Size, Watts	Wt. Lbs. Each	Price Each
6845	Fixture Complete	14	100, 150	6 1/4	\$7.75
6846	"	16	200	6 1/2	9.15
6847	"	18	300, 500	8	10.50

Benjamin Industrial Bells
Vibrating and Single Stroke Types

CONSTRUCTION.— Brass casing 4½ inches in diameter tapped for ½-inch pipe connection with three lugs for attaching to wall. Cover is brass. Gong is bell metal. Tapper rod has water-tight stuffing box. Mechanism is insulated from casing. Contacts are coin silver, ½-inch in diameter. Contact springs are of spring bronze. Contact adjusting screw is self locking. Connectors are binding screw type. Bells will operate on a very small current flow. For use on battery and D. C. circuits, 120 volts. Special voltages up to 120 D. C. supplied on order.



No. 8379

FINISH.—Bell is black nickel. Case is dead black.

Cat. No.		Size Gong In.	Type	Wt. Lbs. Each	Price Each
Water-tight					
8378	3		Vibrating	4¼	\$13.20
8379	6		"	4¾	15.10
8380	8		"	6¼	18.50
8381	3		Single Stroke	4¼	12.60
8382	6		"	4¾	14.50
8384	8		"	6¼	17.90

Non-water-tight

CONSTRUCTION.—Non-water-tight bells are exactly like water-tight bells above, except that gasket between casing and cover and the water-tight stuffing box for tapper rod are omitted.

Cat. No.		Size Gong In.	Type	Wt. Lbs. Each	Price Each
8484	3		Vibrating	4¼	\$11.20
8485	6		"	4¾	13.10
8486	8		"	6¼	16.50
8487	3		Single Stroke	4¼	10.60
8488	6		"	4¾	12.50
8489	8		"	6¼	15.90

NOTE.—Specify voltage when ordering.

Benjamin Industrial Bells
Monitor Type
Non-water-tight



No. 8491

CONSTRUCTION.—Iron casing, tapped for ½-inch conduit, with three attaching lugs. Gong is bell metal. Mechanism is adjustable for slow or rapid vibration and is insulated from case. Contacts are coin silver, ½ inch in diameter. Contact springs are of spring bronze. Contact screw is self-locking. Connectors are binding screw type. Bells will operate on a very low current flow. For battery or D. C. circuit, 120 volts. Special voltages up to 120 D. C. supplied on order.

FINISH.—Bell is black nickel. Case is dead black.

Cat. No.	Size Gong Inches	Wt. Lbs.	Price Each
8490	3	4½	\$7.85
8491	6	5	9.35
8492	8	6½	12.95

Specify voltage when ordering.

Benjamin Single Water-tight Push Buttons
High Voltage



No. 8493

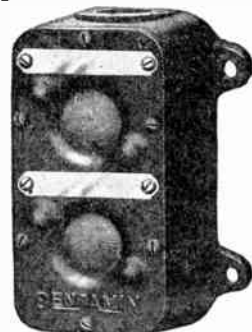
CONSTRUCTION.— Brass casing, with two mounting lugs, is supplied tapped for ½-inch conduit one-way, side or rear entrance. Side entrance buttons may be furnished tapped ½ or ¾-inch one or two-way when specified. Brass cover threaded for connection to box furnished with unmarked name plate. Plates with standard marking will be furnished at an advance of 18 cents each.

Prices for special markings on request. Positive acting quick make and break mechanism, is for high or low voltage circuits carrying inductive loads. Connectors are binding screw type. Waterproof raw-hide gasket covers button completely. Dead black finish.

Cat. No.	Description	Wt. Lbs. Each	Price Each
8493	Open Circuit Type	1½	\$3.60
8874	Closed " "	1½	3.60

Benjamin Two-gang Water-tight Push Buttons
High Voltage

CONSTRUCTION.—Brass casing, with four mounting lugs supplied tapped for ½-inch conduit, one-way. Will be tapped ½ or ¾-inch one or two-way if specified. Supplies with unmarked name plates which may be marked with any standard marking at an advance of 18 cents each. Prices for special markings on request. Other specifications same as for Nos. 8493 and 8432 above. Dead black finish.



No. 8495

Cat. No.	Description	Wt. Lbs. Each	Price Each
8495	Both Buttons Open Circuit	1¾	\$5.00
8884	One Button Opens Circuit, One Button Closes Circuit	1¾	5.00

Benjamin Marine Fittings
Standard Markings for Name Plates
Curved Name Plates

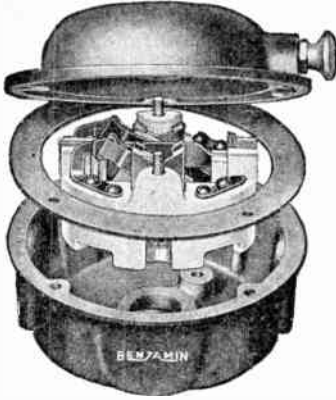
- | | |
|------------------------|----------------------|
| Aft Gun | Fire Room |
| Aft Steering Station | First Officer |
| Alarm | Flying Bridge |
| Bridge | Galley |
| Captain | Galley and Steward |
| Chief Engineer | General Alarm |
| Commanding Officer | Lookout |
| Crew | Officers |
| Crows Nest | Pantry |
| Emergency Alarm | Pilot House |
| Emergency Alarm, Crew | Porter |
| Emergency Alarm, Guard | Quartermaster |
| Emergency Exit | Radio Room |
| Engine Room | Steering Engine Room |
| Engineer's Room | Wheelhouse |

Straight Name Plate

- | | |
|-----------------------|-------------------|
| Aft Crows Nest | Fire Room |
| Aft Steering Station | First Officer |
| Bridge | Forw'd Crows Nest |
| Captain | Pilot House |
| Chief Engineer | Porter |
| Commanding Officer | Second Officer |
| Emergency Alarm, Crew | Steering Room |
| Engine Room | Wheelhouse |
| Engineer's Room | Wireless Room |

Prices for special markings upon request.

Benjamin Water-tight Toggle Switches
 With Standard 4 1/2-inch Water-tight Outlet Box
 Rating: 30 Amperes, 125 Volts; 20 Amperes, 250 Volts



No. 6877

This heavy duty water-tight toggle switch was developed for use in the oil industry, in fields, refineries, filling stations, etc., where exposed to strenuous service and weather conditions. Well suited for work in coal mines, power houses, and similar places.

DOUBLE POLE SWITCH.—Sturdily constructed with plunger key control. Porcelain base with screw holes spaced 2 3/8 inches on centers. Mechanism is positive acting, quick make and break type, which breaks on both

sides of the circuit at two points.

JUNCTION OR OUTLET BOX.—Standard keyless outlet box is regularly supplied in either brass No. 6900, or iron No. 6901, as specified.

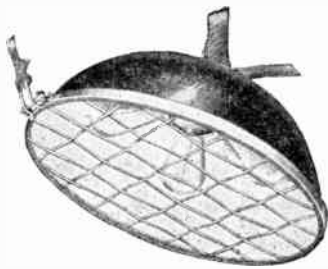
OUTLET BOX COVER.—Furnished with water-tight stuffing box and plunger key, in either brass or iron to match box.

WATER-TIGHT CONNECTIONS.—Seigelite gasket.

TAPPING.—Boxes regularly furnished not tapped for conduit. Specify tapping.

Cat. No.	Kind of Box	Description	Wt. Lbs.	Price Each
6878	Brass	Complete with Box	3 3/8	\$6.40
6877	Iron	"	5 1/4	5.70
6876	Brass	Cover, with Switch, Only	1 3/4	5.00
6873	"	" Plunger Key, Only	1 1/4	2.00
6874	Iron	"	"	"
6879	....	Double Pole Switch, Less Key	5/8	3.00
6872	....	Seigelite Gasket, Only	1/32	.10

Benjamin Cargo Lights



No. 3093

FITTINGS.—Fixture has heavy fittings, for suspending fixture by rope, and is provided with water-tight stuffing box for cable.

REFLECTOR.—Extra heavy 1-piece bowl reflector of steel.

GUARD.—Strong galvanized wire guard is held in position by an adjustable galvanized iron band which fits over bead of reflector.

Guard has wire loop to which a light rope may be attached for purpose of tipping fixture to throw light at any angle.

RECEPTACLE.—Benjamin wireless cluster body.

LAMPS.—Mazda B lamps 25 to 60-watt may be used.

FINISH.—Reflector is paint enameled black outside, white inside. Fittings and guard are heavily galvanized.

Cat. No.	Number of Lights	Kind of Reflector	Size Reflector Inches	Wt., Lbs. Each	Price Each
3093	4	Steel	16	5	\$14.50
3094	5	"	16	5	14.80
3095	6	"	16	5	15.10

Prices do not include wire or lamps.

R&S Marine Switches and Receptacles

10 Amperes, 125 Volts



This device is a combination of two marine switches, one receptacle and plug.

Size of box, 6x2 3/4 inches. Furnished in brass box only.

No. 1490, Complete, each \$8.25
 " 452, Plug Only, " 1.25

R & S Pendant Type Vapor Proof Fixtures
 Fitted with R.L.M. Dome Type Porcelain Enameled Steel Reflectors



Pendant Type

FINISH.—Standard finish, excluding reflector, black oxidized throughout. Special finishes on request.

GLOBES.—Prices include clear globes. Additional charge for Frosted, Opal, Ruby or Green Globes on request.

GUARDS.—Guards are of heavy gauge round brass wire with threaded cast brass ring.

REFLECTORS.—Can be furnished without reflectors. For maximum efficiency use Type C Mazda Lamp.

50 Watts

Cat. No.	1/2-inch Conduit	Nos. 3/4-inch Conduit	Guard	Material	Ht. In.	Diam. In.	Approx. Wt. Lbs.	Price Each
2700	2710	With	Brass	8 1/2	12	4 1/2	\$10.00	
2701	2711	Without	"	8	12	3 5/8	8.25	

100 Watts

2702	2712	With	Brass	11	14	8	\$12.00
2703	2713	"	Iron	11	14	8	11.75
2704	2714	Without	Brass	10	14	6 1/4	10.00
2705	2715	"	Iron	10	14	6 1/4	9.50

200 Watts

2706	2716	With	Brass	11 1/2	16	10 3/4	\$16.25
2707	2717	"	Iron	11 1/2	16	10 3/4	15.50
2708	2718	Without	Brass	10 3/4	16	8 3/4	13.50
2709	2719	"	Iron	10 3/4	16	8 3/4	13.00

Junction Box Type

Any combination of outlets can be furnished. Complete bulletin describing the line will be sent upon request.

R & S Conduit Type Steam Tight Fixtures

With Screw Globe

All brass, black oxidized finish, with top outlet tapped for either 1/2 or 3/4-inch conduit. 40-watt sizes fitted with flat wire guards No. 706.

100-watt sizes fitted with round wire guards No. 700.

These fixtures consist of a threaded base or box into which is screwed a threaded glass globe.



Cat. No.	Description	Max. Size Lamp Watts	Price Each
411	Plain Conduit	40	\$2.75
1411	"	100	5.50
430	" with Switch	40	4.40
1430	"	100	7.15

R & S Junction Box Type Steam Tight Fixtures

With Screw Globe

All brass, black oxidized finish, mounted on No. 333 iron or No. 332 brass 4-inch junction box.

Boxes drilled and tapped for 1/2 and 3/4-inch conduit as directed without extra charge.

40-watt sizes fitted with flat wire guards No. 706.

100-watt sizes fitted with round wire guards No. 700.



No. 405

Cat. No.	Description	Max. Size Lamp Watts	Price Each
405	Without Switch on Iron June. Box	40	\$3.75
1405	" " " " " " " " " " " "	100	6.60
431	With " " " " " " " " " " " "	40	5.40
1431	" " " " " " " " " " " "	100	8.15



R & S Wall Bracket Type Steam Tight Fixtures With Screw Globe

All brass, black oxidized finish, mounted on our No. 333 iron or No. 332 brass, 4-inch junction box.

Boxes drilled and tapped for 1/2 and 3/4-inch conduit as directed without extra charge.

40-watt sizes fitted with flat wire guards No. 706.

100-watt sizes fitted with round wire guards No. 700.

Cat. No.	Description	Max. Size Lamp Watts	Price Each
404	Without Switch on Iron June. Box . . .	40	\$5.00
1404	" " " " " "	100	8.25
434	With " " " " " "	40	6.60
1434	" " " " " "	100	9.90

R & S Marquise Type Steam Tight Fixtures

With Screw Globe

This type of fixture is suitable for all outdoor lighting, in damp, moist or dusty places, and is used in marine work, warehouses, etc. It is however, not recommended for use where exposed to explosive or highly inflammable gases or vapors, or for continued submersion in fluids.

The fixture consists essentially of a threaded base or box, into which is screwed a threaded glass globe which seats on a rubber gasket.

Weatherproof, with opal, ground or clear glass screw globe, especially made for illuminating the borders of Hotel and Theatre Marquise.

Made for 40-watt size lamp only.

Boxes drilled and tapped for 1/2 and 3/4-inch conduit as directed, without extra charge.

Nos. 610, 611 and 612 have iron box for conduit with brass base and lamp receptacle.

Nos. 613, 614 and 615 have brass base, no box, no receptacle, intended for use where wiring and receptacle are in channel iron of marquise.

Nos. 616, 617 and 618 have brass base, no box, but with back connected lamp receptacle for use where wiring in channel iron of marquise.

In ordering Nos. 610, 611 or 612 specify size and number of outlets.



No. 610

Cat. No.	Globe	Price Each	Cat. No.	Globe	Price Each	Cat. No.	Globe	Price Each
610	Opal	\$2.75	613	Opal	\$1.65	616	Opal	\$2.10
611	Ground	2.75	614	Ground	1.65	617	Ground	2.10
612	Clear	2.65	615	Clear	1.55	618	Clear	2.00

R & S Marine Connectors

10 Amperes, 125 Volts

Watertight connector, fitted with marine plug. Non-reversible plug will also fit 10-ampere marine receptacles.

No. 93, Two-wire, Complete each \$6.60

No. 94, Three-wire, Complete each 9.35



R & S Marine Switches

10 Amperes, 125 Volts

Special, composition base, single-pole snap switch, in 2 3/4-inch brass box. For one outlet only.

No. 448, Tapped 1/2 inch each \$3.85
 " 1448, " 3/4 " " 3.85

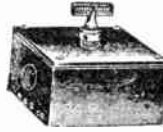


R & S Marine Switches

10 Amperes, 600 Volts

Double-pole snap switch with high voltage insulation, mounted in 4 1/4-inch square box.

No. 156, in Iron Box each \$5.50
 " 356, " Brass " " 6.60



R & S Marine Switches

10 Amperes, 125 Volts

Special, single-pole snap switch, composition base, mounted in brass box. For straightway conduit.

No. 627, Two-gang, 4x2 3/4 x 1 5/8 Inches each \$6.10
 " 628, Three-gang, 6 1/8 x 2 3/4 x 1 5/8 Inches " 7.70
 " 629, Four-gang, 4 3/4 x 4 1/8 x 2 3/8 Inches " 10.50



R & S Marine Switches

10 Amperes, 125 Volts

Snap switch, mounted in 3 3/4-inch box; tapped for 1/2 or 3/4-inch conduit, as required.

No. 520, Iron Box, Double-pole each \$4.40

No. 1520, Brass Box, Double-pole each 5.50

No. 1521, Iron Box, Three-way. " " 4.40
 " 1522, Brass " " " 5.50



R & S Marine Switches

125 Volts

Snap switch, single-pole, double-pole, or three-way, mounted in a brass or iron box.

Suitable for straightway conduit. Provided with special moisture-proof insulation.

Cat. No.	Description	Size Box Inches	Price Each
496	Single-pole, Brass Box	4 x 2 3/4	\$4.40
1493	Double-pole " "	4 x 3	6.60
1496	Three-way " "	4 x 3	6.60

Cat. No.	Description	Size Box Inches	Price Each
521	Double-pole, Iron Box	4 3/4 x 4 1/8	\$8.80
621	" Brass "	4 3/4 x 4 1/8	10.50

Cat. No.	Description	Size Box Inches	Price Each
625	Double-pole, Iron Box	6 x 5 1/4	\$15.40
626	" Brass "	6 x 5 1/4	18.70

R&S Marine Receptacles and Plugs

10 Amperes, 125 Volts

Composition receptacle, non-reversible plug, in 4x2 3/4-inch brass box. Suitable for straightway conduit.

No. 479, 2-wire Complete each \$5.00
 " 1479, 3 " " " 6.60
 " 452, 2 " Plug " 1.25
 " 1453, 3 " " " 2.50



R&S Marine Receptacles and Plugs

5 Amperes, 125 Volts

Small size receptacle and non-reversible plug, mounted in polished brass 1 3/4-inch round box, for 1/4, 3/8 or 1/2-inch pipe. For one outlet only. Suitable for yachts and small boats.

No. 458, Complete each \$4.40
 " 1458, Plug only " 1.10



R&S Marine Receptacles and Plugs

5 Amperes, 125 Volts

Receptacle and non-reversible plug, mounted in 1 3/4-inch square box, polished brass, for 1/4, 3/8, or 1/2-inch pipe. For one outlet only.

No. 459, Complete each \$4.40
 " 1459, Plug only " 1.10



R&S Marine Receptacles and Plugs

10 Amperes, 125 Volts

Extra strong composition receptacle and non-reversible plug, two or three wires, as listed, mounted in a brass box.

Suitable for one outlet box.

Two-wire box is 2 3/4 inches in diameter; three-wire box, 3 3/4 inches.

Two-wire

- No. 447 For 1/2-inch Conduit, Complete.....each \$4.40
- " 1447 " 3/4 " " " " 4.40

Three-wire

- No. 484 For 3/4-inch Conduit, Complete.....each \$6.10
- " 1484 " 1 " " " " 6.10

Plugs Only

- No. 452, Two-wire.....each \$1.25
- " 1453, Three-wire..... " 2.50



R&S Watertight Junction Boxes

Cast iron or brass junction box with plain cover. Cover is provided with gasket and fastened with brass screws.

Suitable for 1/2 or 3/4-inch conduit.

Tapping, 5 cents net extra per outlet.

Iron boxes are finished in black japan, unless otherwise specified.



Iron Boxes

- No. 1481, 3-inch Complete.....each \$.65
- " 382, 3 " Box only..... " .40
- " 1432, 4 " Complete..... " .80
- " 333, 4 " Box only..... " .50

Brass Boxes

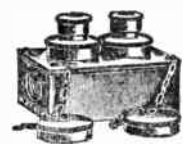
- No. 481, 3-inch Complete.....each \$1.25
- " 381, 3 " Box only..... " 1.00
- " 432, 4 " Complete..... " 1.60
- " 332, 4 " Box only..... " 1.30

R&S Marine Receptacles and Plugs

10 Amperes, 125 Volts

Composition receptacle, non-reversible plug, in brass box. Suitable for straightway conduit.

- No. 495, 2-gang, 4 x 2 3/4 in. each \$6.60
- " 638, 3 " 6 x 2 3/4 " " 8.80
- " 639, 4 " 4 3/4 x 4 " " 12.10
- " 452, Plug only..... 1.25



R&S Marine Receptacles and Plugs

Extra heavy 25 and 50-ampere receptacle and non-reversible plug, mounted in a brass box. Suitable for straightway conduit.

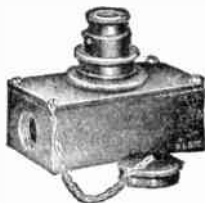
Size of 25-ampere box, 3x5 inches; 50-ampere box, 3x6 inches.

25 Amperes

- No. 1485, Marine Type for Exposed Conduit Work..... each \$15.40
- " 1486, With Brush Brass Finished, Beveled Overhang Plate for Flush Work.....each 17.00
- No. 1488, Plug only..... " 5.50

50 Amperes

- No. 480, Marine Type For Exposed Conduit Work.....each \$16.50
- No. 1480, With Brush Brass Finished, Beveled Overhang Plate for Flush Work.....each 18.15
- No. 1489, Plug only..... " 5.50



R&S Watertight Junction Boxes

Cast iron or brass junction box with screw cap; 4-inch diameter only. Cover threaded into box and provided with gasket. Suitable for 1/2 or 3/4-inch conduit.

- No. 1433, Iron, Complete ea. \$2.00
- " 433, Brass, Complete.....each 2.50



R&S Watertight Junction Boxes

Cast iron, 4 inches square with side pads for two outlets, cover with gaskets and brass screws.

- 1 1/2 Inches Deep
- No. 190, Complete, each \$.90
- 2 Inches Deep
- No. 199, Complete, each 1.00



R&S Marine Switches and Receptacles

This device is a combination of a marine switch, receptacle and plug, mounted in a brass box. Suitable for straightway conduit.

10 Amperes, 125 Volts

- No. 478, Complete, 2 3/4 x 4-inch Box.....each \$6.60
- " 452, Plug only..... " 1.25
- 10 Amperes, N. Y. Board of Education Type
- No. 1478, Complete.....each \$9.90
- " 1452, Plug only..... " 2.75

25 Amperes, 125 Volts

- No. 1483, Complete, 7 x 4 1/2-inch Box.....each \$22.00
- " 1488, Plug only..... " 5.50

50 Amperes, 125 Volts

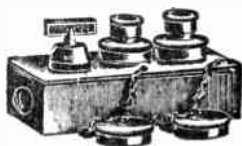
- No. 1487, Complete, 9 x 5 1/4-inch Box.....each \$28.60
- " 1489, Plug only..... " 5.50

R&S Marine Switches and Receptacles

10 Amperes, 125 Volts

This device consists of two marine receptacles, one switch and plugs. Size of box, 6x2 3/4 inches. Furnished in brass box only.

- No. 498, Complete...each \$8.80
- " 452, Plug only... " 1.25



R&S Receptacles and Plugs

10 Amperes, 250 Volts

Porcelain receptacle, cast bronze spring contacts, mounted in 3 1/2 x 2 1/2 x 2 3/4-inch brass or iron box or 4x4x 1 3/4-inch brass or iron box. Composition plug, polished maple handle.

- No. 456 in Brass Box.....each \$5.00
- " 490 " Iron "..... " 6.35
- " 489, Plug only..... " 1.65



R&S Receptacles and Plugs

10 Amperes, 125 Volts

Waterproof type, composition receptacle, round iron box, brass cover and cap. Cover, 4 1/8-inch diameter; depth, 3 1/2 inches.

- No. 2, Two-wire, Complete, each \$6.60
- " 42 " Plug only, " 1.65
- " 23, Three-wire, Complete " 11.00
- " 44, Plug only..... " 2.75



R&S Receptacles and Plugs

10 Amperes, 125 Volts

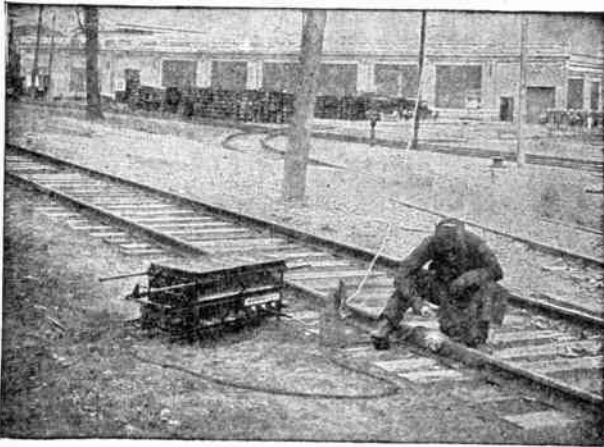
Waterproof type, composition receptacle square iron box, brass cover and cap. Cover, 4 1/4 inches; depth, 3 1/2 inches.

- No. 22, Two-wire, Complete, each \$6.60
- " 42 " Plug only, " 1.65
- " 24, Three-wire, Complete " 11.00
- " 44 " Plug only " 2.75



Rail Bonds

Selection of Bonds



Welding Steel-faced Rail Bonds with Arc Welder

In construction where the rails are exposed the concealed type of bond is desirable as its location prevents it from outside injury and possibility of theft. The short "U" shape arc weld type bond attached to the head or ball of the rail is quite frequently used on account of its ease of installation and ready inspection. This type of bond is not recommended for "T" rails under 55 pounds. Theft of this bond is discouraged owing to the difficulty of removing it from the rail and the small amount of copper obtainable.

Operating conditions, section of rail and other elements form such an important part in the selection of the proper type and form of bond to be used that recommendations cannot be made without complete information covering the conditions to be met. In a general way the following suggestions may be helpful in determining the selection of bonds to meet standard conditions.

For city track construction where the rails are embedded in the pavement, the concealed type stud terminal bond is preferable, providing there is ample space under the joint plate to permit its use. Under circumstances where this type of bond is impracticable, a long single conductor arc weld or stud terminal type is recommended. For rebonding or bonding track which has been laid, the arc weld or acetylene type of bond, designed to be attached to the head of the rail, may be used to advantage as it can be installed without disturbing the pavement or removing the splice bars.

The manufacturer will gladly submit recommendations with drawings showing how best to meet any bonding conditions. Its engineering department is always at the service of customers to give expert advice on this important subject.

Mine Bonding

The bonds often used in mines, consisting of channel pins and short lengths of copper wire, are frequently found to be in such poor condition and of such high resistance that the return current leaves the rails and follows adjacent pipe lines and streams of water on its way back to the power house.

Where the rails are usually light in section and the nature of the roadbed permits excessive movement of the joints, cable bonds of either the stud terminal or arc weld type, long enough to span the splice bar, should be used.

For small rails when the full current capacity is to be utilized Forms D, SF-4 or SF-6 bonds installed around the plates, are recommended, and, if given proper care in installation, give excellent results.

The bonds should be installed on the inside of the rail as close under the heads of the track bolts as possible. This reduces to a minimum the possibility of damage to the bonding when cars are derailed. Actual observation shows that bonds installed in this manner have been run over by the wheels of derailed cars without material injury to the bonds.

Form SF Arc Weld Bonds



Form SF-1 Bond

Form SF1 single conductor and Form SF2 double conductor bonds are for application to the ball, or head of the rail. These bonds have concave steel terminals designed to form the proper angle between the bond and the rail to secure the best results.

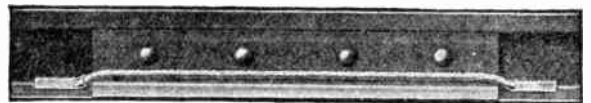


Form SF-2 Bond



Form SFA-3 Bond

Form SFA3 ribbon conductor bonds are attached to the ball or head of the rail. These bonds are furnished in two standard lengths, $7\frac{1}{2}$ inches for bolt spacings 5 inches and over and 6 inches when bolt spacing is 5 inches and under. Other lengths can be furnished when required.



Form SF-4 on T Rail

Form SF4 bonds are designed with terminals to fit the angle between the base and the web of the rail, the weld being made to the rail web along the top and end of the terminal. This bond can be furnished with either solid wires or stranded conductor.



Form SF-5 Bond

Form SF-5 bonds are applied to the head of the rail and used in connection with Weber Joints.



Form SF-6 Bond

Form SF-6 bonds are intended for application around the splice bar, the terminals being welded to the top of the rail flange. The terminals of these bonds are semi-circular in section and by placing the flat side against the rail the welding process can be carried along both sides as well as the end of the terminals. This bond can be furnished with either solid wire or stranded conductor.

Form SF7 bonds are designed for application to the underside of the rail base with the T portion of the terminal projecting about two-thirds of its width beyond the rail base, the weld being made on the top side of the terminal and lower flange of rail. As this type of bond is attached to the underside of the rail, it may be used to advantage where exposed type of bonds are subject to theft. This form of bond is also well adapted for cross bonding and can be welded to either the top or bottom of the base of the rail.



Form SF-7 Bond

In ordering arc weld bonds specify: the type, capacity, solid or flexible conductor and the over all length, measured from the outer edge of the terminals when the conductor is straight and extended.

Steel electrodes are not furnished with bond orders.

Form SF Arc Weld Bonds

Continued

Form of Bond	Conductor Section	Over All Length	DIMENSIONS, IN.			Schedule Length	Wt., Lbs. per 100	Price per 100
			Terminal Contact Area	by				
SF-1	0	7 1/2	1 3/4		7/16	7 1/2	40.0	\$45.25
	00	7 1/2	1 3/4	"	7/16	7 1/2	52.5	50.60
	000	7 1/2	2 1/4	"	1/2	7 1/2	72.0	62.60
	0000	7 1/2	2 1/4	"	1/2	7 1/2	81.0	65.25
SFA-3	0000	6 1/2	2 1/2	"	1/2	6 1/2	76.0	62.75
	0000	7 1/2	2 1/2	"	1/2	7 1/2	81.0	65.25
SF-4	0	23	2	"	3/8	23	81.5	69.60
	00	23	2	"	3/8	23	104.0	77.50
	00	27	2	"	3/8	27	117.6	84.70
	000	23	2 1/2	"	5/8	28	160.0	111.90
	0000	23	2 1/2	"	5/8	28	192.0	125.50
	0000	32	2 1/2	"	5/8	32	213.6	136.30
SF-5	000	10	2	"	3/4	10	82.0	68.60
	000	10 1/2	2	"	3/4	10 1/2	84.5	69.85
	0000	10	2	"	3/4	10	94.0	72.50
	0000	10 1/2	2	"	3/4	10 1/2	97.0	74.05
SF-6	0	†	1 1/2	"	5/8	†	.....	.....
	00	†	1 1/2	"	5/8	†	.....	.....
	000	†	2	"	3/4	†	.....	.....
	0000	†	2	"	3/4	†	.....	.....
SF-7	00	7 1/2	1 3/4	"	7/16	7 1/2	53.0	50.60
	00	8	1 3/4	"	7/16	8	54.0	51.40
	00	36	1 3/4	"	7/16	36	148.0	100.90
	00	55	1 3/4	"	7/16	55	213.0	135.10
	0000	7 1/2	2 1/4	"	1/2	7 1/2	81.0	65.25
	0000	8	2 1/4	"	1/2	8	84.0	66.50
	0000	10	2 1/4	"	1/2	10	94.0	72.50
0000	55	2 1/4	"	1/2	55	338.0	198.40	

†To determine the proper straight and extended length of bond it is generally recommended that a bond 7 inches longer than the joint plate for the 0 and 00 sizes and a bond 8 inches longer than the joint plate for 000 and 0000 sizes be used. The formed length will be 1 inch shorter than the straight and extended length.

Form SF-8



The Form SF-8 Arc Weld Bond is intended for application around the splice bar, the terminal being welded to the top of the rail flange. The terminal is flattened out and tapered down to a thin edge at the end which design affords a large welding surface.

With the tapered terminal the process of welding is simplified and it is much easier for an operator to secure a satisfactory weld than with terminal having more abrupt angle.

In ordering arc weld bonds specify the type, capacity, solid or flexible conductor and the over all length, measured from the outer edge of the terminals when the conductor is straight and extended.

Steel electrodes are not furnished with bond orders.

Forms H and HS Oxy-acetylene Weld Bonds



Form H-5 Bond

The Form H-5 bonds are for use on Weber Joints. The terminals and conductor are arranged so as to permit installation on the head of the rail with the conductor lying on top of the joint block.

Forms HS-1 and HS-2 bonds have steel terminals and are less expensive than those having forged copper terminals. If care is used in installing they give satisfactory results.

The terminals have sloping surfaces providing a groove to permit building up the weld from the lowest possible point on the rail head.



Form HS-1 Bond

The bonds may be used on Weber Joints by straightening out the loop and welding the terminal to the rail in an inverted position.

Form HS-1 is single conductor, if double conductor is desired, order should specify Form HS-2.



Form HS-2 Bond



Forms H-1 and H-2 Bonds

Form H-1 bonds are for standard four-bolt joints having at least 5 inches between center track bolts.

These bonds can be used as cross bonds or for bonding around special work.



Form H-3 Bond

Form H-1 is single conductor; if double conductor is desired, order should specify Form H-2.

The Form H-3 bonds are for use on rail joints having small clearance between the center track bolts.

Compressed Stud Terminal Bonds

The studs of these bonds are of solid copper of exact size and have a depression on the center of the bottom surface for centering the compressor screw when installing.

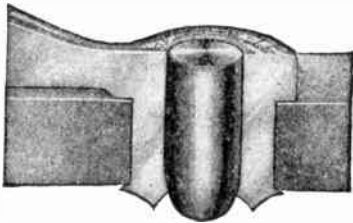
This type of bond is installed by use of a screw compressor exerting a pressure of approximately 20 tons. The compressing portion of the inner screw of the compressor is so designed that a rivet head cannot be formed on the terminal until the hole has been completely filled, even to the pores of the steel. The rivet or button head seals the union, and insures practically a moisture-proof joint. A solution of red lead and linseed oil may be applied to the terminal and adjacent steel, after compression. This will effectually seal the joint against the entrance of moisture.

To effect radial expansion of the copper in the hole equally in all directions, the inner screw of the bond compressor should be centered in the depression in the end of the terminal.

Holes should be drilled with well sharpened tools so that the walls and edges of the hole will be smooth and free from burrs and other irregularities. Bond holes should be of the exact diameter of the bond stud to be inserted.

Oil should not be used in the drilling of holes, as all traces of it cannot readily be removed from the hole, and oil will prevent proper contact between the copper and the steel. A solution of soda and water or plain water may be used, but care should be exercised to see that the hole is wiped perfectly dry before the terminal is inserted. Bonds should not be installed in damp weather. If these simple precautions be disregarded, the efficiency of the bonding will be greatly affected.

Tubular Stud Terminal Bonds



These bonds are like compressed stud terminal bonds except that the studs are drilled for expanding radially in the holes in the rails. The illustration shows a sectional view of a tubular terminal expanded into a steel block representing the web of a rail. The effects of the expansion by the taper punch and drift pin are clearly shown.

The same general precautions in regard to drilling the rail and preparing the terminals should be taken as with compressed terminals. Greater care should be used, however, in having the hole drilled to size to insure the best results. After inserting the terminal in the hole, a long taper punch, well lubricated with oil or grease, is driven entirely through the terminal. The diameter of the punch is $\frac{1}{16}$ inch larger than the hole in the terminal and it therefore forces the copper in the terminal radially against the walls of the hole. A short drift pin $\frac{1}{32}$ inch larger than the maximum diameter of the taper punch is then driven home in the terminal, thus completing the expansion. In driving in the drift pin the copper of the terminal is slightly further expanded and a portion lying close to the pin is forced along by the pin out through the hole in the rail and expanded into a bell mouth. The diameter of the hole through the terminal is increased about $\frac{1}{8}$ inch by the action of the taper punch and drift pin, forcing the copper into intimate contact with the steel rail. Tubular terminal bonds are particularly advantageous in rebonding on paved streets and around special work where dense traffic forbids the somewhat longer operation of installing compressed terminal bonds.

Steel drift pins are included in all shipments of tubular terminal bonds. Taper punches are supplied when ordered.

Ribbon Bonds

Form A, Solid Terminals—Form AT, Tubular Terminals

The ribbon bond is particularly adapted to use under joint plates where the restricted space demands extreme compactness of design. The conductor of this bond is composed of thin copper ribbons with the greatest width in the horizontal plane, thus affording maximum flexibility in the vertical plane or in the direction of the greatest movement of the joint. The tucking of the conductor provides flexibility for the longitudinal movement of the rails.



Form A-5 Solid Terminal Ribbon Bond



Form AT-5 Tubular Terminal Ribbon Bond

Forms A-5 and AT-5 bonds have conductors equally divided in upper and lower branches and the tucking is located in the center of the bond. They are particularly adapted for single bonding large, girder and T-rails. The balanced bond can also be used on ordinary T-rails having special joint plates or on many of the patented joints. In double bonding large girder rails with two rows of track bolts, tee balanced bond will usually be found to give greater clearances.



Form A-6 Solid Terminal Ribbon Bond



Form AT-6 Tubular Terminal Ribbon Bond

Forms A-6 and AT-6 bonds have the conductor equally divided in upper and lower branches and the tucking is offset from the center of the bond. They are used in double bonding large girder and high T-rails. The bond holes are located at unequal distances from the ends of the rail making it necessary to offset the tucking so as to avoid interfering with the insertion of the track bolts or the terminals of the second bond. Unless otherwise specified the tucking is offset 1 inch from the center of the bond as this is suitable for most conditions.



Form A-7 Solid Terminal Ribbon Bond



Form AT-7 Tubular Terminal Ribbon Bond

Forms A-7 and AT-7 unbalanced, center-tucked bonds having unequally divided conductors and the tucking located in the center of the bond are especially suitable for bonding T-rails having greater space below the track bolt than above.



Form A-8 Solid Terminal Ribbon Bond



Form AT-8 Tubular Terminal Ribbon Bond

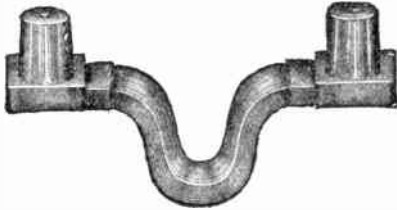
Forms A-8 and AT-8 have conductors unequally divided and tucking is offset from the center.

Form B Ribbon Bonds



Form B bonds may be used on rails where the inner track bolts are located so as to permit drilling of the bond holes between the ends of the rails and the first bolt holes.

Form C Ribbon Bonds



The Form C beveled head bond is adapted to use on the foot of T-rails having suspended joints. It is particularly suited to bonding third rails.

The terminal heads are beveled to correspond with the angle of the rail foot. As in the other ribbon bonds the conductor laminations are so disposed as to give maximum flexibility in the vertical plane. To determine the correct length of terminals for Form C bonds, inquiries and orders should be accompanied by a sketch of the rail cross section with measurements.

Forms F and FT Cable Bonds



Form F-5 Solid Terminal Cable Bond



Form FT-5 Tubular Terminal Cable Bond

Forms F-5 and FT-5 bonds have conductors equally divided in upper and lower branches and the tucking is located in the center of the bond. The conductor consists of many fine strands all wound in the same direction with a short pitch. This form of bond is adapted to single bonding large girder and T-rails or the medium sizes of T-rails with special joint plates.



Form F-6 Solid Terminal Cable Bond



Form FT-6 Tubular Terminal Cable Bond

The conductors of Forms F-6 and FT-6 bonds are equally divided in the upper and lower branches and the tucking is offset from the center of the bond. These bonds are used in double bonding large girder rails and high T-rails when the bonds are placed one on each side of the rail and the terminals are staggered necessitating the offsetting of the tucks so as to avoid interference with the insertion of the track bolts or the terminal of the second bond.



Form F-9 Solid Terminal Cable Bond



Form FT-9 Tubular Terminal Cable Bond

The Forms F-9 and FT-9 bonds have conductors equally divided in the upper and lower branches pressed into approximately a triangular shape, thereby affording proper clearances for medium sizes of T-rails having restricted space above the track bolts. The tucking is located at the center of the bonds.

Forms F and FT Cable Bonds



Form F-10 Solid Terminal Cable Bond



Form FT-10 Tubular Terminal Cable Bond

Forms F-10 and FT-10 bonds are similar to Forms F-9 and FT-9 except that the tucking is offset for double bonding. For the standard track bolt drillings, offsetting one inch from the center of the bond will locate the tucking at a point opposite the ends of the rails, and avoid interfering with the track bolts.

Forms D and DT Cable Bonds



Form D Solid Terminal Cable Bond



Form DT Tubular Terminal Cable Bond

Forms D and DT cable bonds have terminals with offset shanks. The sleeve portion diverges from the web of the rail at an angle of 20 degrees thereby avoiding any sharp bends in the conductor in spanning a joint plate. The shanks of bonds to be used under the plate are at right angles to the terminal studs.

Forms D and DT cable bonds should be at least 6 inches longer than the joint plate which they are to span. The length is measured between centers of terminals when the bond is straight and extended.



Form D Solid Terminal Stud End Bond



Form DT Tubular Terminal Stud End Bond

Stub end cable bonds are useful in bonding the various parts of special track work to the main bond around such special work. A stub end bond has but one terminal and a short length of conductor usually 12 inches long, but can be supplied in any length.

Orders should specify length from center of terminal to end of bond.

Forms E and ET Solid Wire Bonds



Form E-2 Solid Terminal Wire Bond



Form ET-2 Tubular Terminal Solid Wire Bond

The Form E-2 and ET-2 bonds are formed so as to provide proper clearance around the joint plate. A bond having a formed length of 6 inches longer than the joint plate should be used.

Forms E and ET Solid Wire Bonds

Cross Bonding



Form E-1 Solid Terminal Solid Wire Bond



Form ET-1 Tubular Terminal Solid Wire Bond

Cross bonds should be at least 10 inches longer than the track gauge. This length permits burying the conductor in the ground, reducing the liability of loss by theft.

The length is measured between centers of terminals when the conductor is straight and extended.

Stub End Solid Wire Bonds



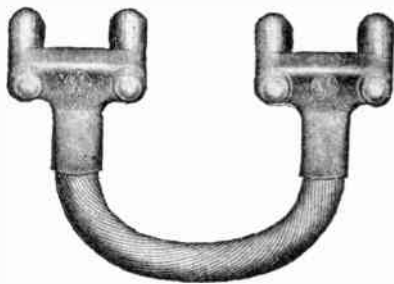
Form E Solid Terminal Stub End Bond



Form ET Tubular Terminal Stub End Bond

Stub end solid wire bonds also are used for bonding the various parts of special track work to the main bond around such special work.

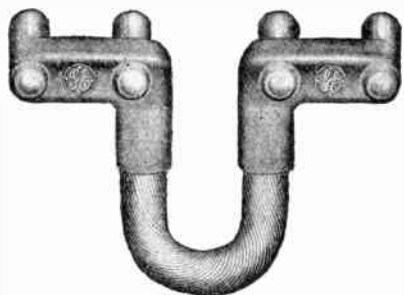
Form M Twin Stud Terminal Bonds



Form M-1 Twin Terminal Cable Bond

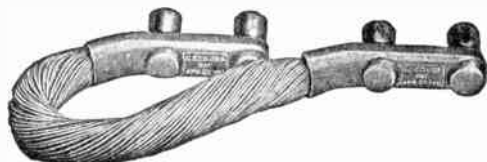
Form M-1 bonds may be used on all joints where the distance between the two inner track bolts is such as will not interfere with the U-shaped conductor.

The Form M-2 bond has terminals like those of the Form M-1 bond and is made in any required length of conductor. It is used for cross bonding and spanning long distances.



Form M-3 Twin Terminal Cable Bond

The conductor of the Form M-3 bond emerges from one side of the terminal and is used on joints having very short spacing between the inner track bolts.



Form M-5 Twin Terminal Cable Bond

The Form M-5 bond is used on Weber Joints.

Rail Bond Prices

Stud Terminal Bonds with Solid Copper Terminals Arc and Gas Weld Bonds. Soldered Bonds with Either Ribbon, Cable or Solid Wire Conductors, Except Bevel Head Foot Bonds or Bonds with Tinned Studs. Welded or Soldered Type Bonds Take Prices of Smallest Size Terminals

Conductor	Diam. Terminal Inches	SCHEDULE LENGTHS AND PRICES PER 100 BONDS					
		4-in. Bonds	5-in. Bonds	6-in. Bonds	7-in. Bonds	8-in. Bonds	9-in. Bonds
0	1/8	\$40.90	\$41.50	\$43.00	\$44.50	\$46.00	\$47.50
0	3/16	41.50	44.00	45.50	47.00	48.50	50.00
00	1/4	45.00	46.60	48.20	49.80	51.40	53.00
00	5/16	50.50	52.10	53.70	55.30	56.90	58.50
000	3/8	56.20	56.60	59.00	61.40	63.80	66.20
000	7/16	56.20	58.60	61.00	63.40	65.80	68.20
0000	1/2	56.50	59.00	61.50	64.00	66.50	69.00
00000	5/8	59.00	61.50	64.00	66.50	69.00	72.00
250,000	3/4	62.00	65.00	68.00	71.00	74.00	77.50
250,000	1	67.00	70.00	73.00	76.00	79.00	82.50
275,000	1 1/8	65.10	68.80	72.50	76.30	80.00	84.00
275,000	1 1/4	70.10	73.80	77.50	81.30	85.00	89.00
300,000	1 1/2	68.80	72.80	76.80	80.80	84.80	89.00
300,000	1 3/4	73.80	77.80	81.80	85.80	89.80	94.00
325,000	2	77.00	81.50	86.00	90.50	95.00	99.00
325,000	2 1/8	82.00	86.50	91.00	95.50	100.00	100.00
350,000	2 1/4	80.00	85.00	90.00	95.00	100.00	100.00
350,000	2 1/2	85.00	90.00	95.00	100.00	105.00	105.00
375,000	2 3/4	88.60	93.80	99.00	104.30	109.50	109.50
375,000	3	93.60	98.80	104.00	109.30	114.50	114.50
400,000	3 1/8	97.00	103.00	108.00	113.00	118.00	115.00
400,000	3 1/4	102.00	108.00	113.00	118.00	123.00	120.00
425,000	3 1/2	101.00	107.00	112.00	117.00	122.00	119.00
425,000	3 3/4	106.00	112.00	117.00	122.00	127.00	124.00
450,000	4	105.00	111.00	116.00	121.00	126.00	123.00
450,000	4 1/8	110.00	116.00	121.00	126.00	131.00	128.00
500,000	4 1/4	120.00	127.50	135.00	142.50	150.00	142.50
500,000	4 1/2	123.00	130.50	138.00	145.50	153.00	145.50
1,000,000	4 3/4	200.00	215.00	230.00	245.00	260.00	250.00

Conductor	Diam. Terminal Inches	SCHEDULE LENGTHS AND PRICES PER 100 BONDS				
		10-in. Bonds	11-in. Bonds	12-in. Bonds	13-in. Bonds	14-in. Bonds
0	1/8	\$49.00	\$50.60	\$52.20	\$53.80	\$55.40
0	3/16	51.50	53.10	54.70	56.30	57.90
00	1/4	54.60	56.30	58.00	59.70	61.40
00	5/16	60.10	61.80	63.50	65.20	66.90
000	3/8	68.60	71.10	73.60	76.10	78.60
000	7/16	70.60	73.10	75.60	78.10	80.60
0000	1/2	72.50	75.00	77.50	80.00	82.50
00000	5/8	75.00	78.10	81.20	84.30	87.40
250,000	3/4	81.00	84.50	88.00	91.50	95.00
250,000	1	86.00	89.50	93.00	96.50	100.00
275,000	1 1/8	88.00	92.00	96.00	100.00	104.00
275,000	1 1/4	93.00	97.00	101.00	105.00	109.00
300,000	1 1/2	93.50	98.00	102.50	107.00	111.50
300,000	1 3/4	98.50	103.00	107.50	112.00	116.50
325,000	2	100.00	105.00	110.00	115.00	120.00
325,000	2 1/8	105.00	110.00	115.00	120.00	125.00
350,000	2 1/4	105.50	111.00	116.50	122.00	127.50
350,000	2 1/2	110.50	116.00	121.50	127.00	132.50
375,000	2 3/4	115.30	121.00	126.80	132.50	138.30
375,000	3	120.30	126.00	131.80	137.50	143.30
400,000	3 1/8	121.00	127.50	134.00	140.50	147.00
400,000	3 1/4	126.00	132.50	139.00	145.50	152.00
425,000	3 1/2	125.00	131.50	138.00	144.50	151.00
425,000	3 3/4	130.00	136.50	143.00	149.50	156.00
450,000	4	129.00	136.00	143.00	150.00	157.00
450,000	4 1/8	134.00	141.00	148.00	155.00	162.00
500,000	4 1/4	150.00	157.50	165.00	172.50	180.00
500,000	4 1/2	153.00	160.50	168.00	175.50	183.00
1,000,000	4 3/4	245.00	260.00	275.00	290.00	305.00

For Each Additional Inch Over 18 Inches

Conductor	Diam. Terminal Inches	SCHEDULE LENGTHS AND PRICES PER 100 BONDS				Add to Price of 18-in. Bonds
		15-in. Bonds	16-in. Bonds	17-in. Bonds	18-in. Bonds	
0	1/8	\$57.00	\$58.70	\$60.40	\$62.00	\$1.50
0	3/16	59.50	61.20	62.90	64.60	1.50
00	1/4	63.10	64.90	66.70	68.50	1.80
00	5/16	68.60	70.40	72.20	74.00	1.80
000	3/8	81.10	83.70	86.30	88.90	2.30
000	7/16	83.10	85.70	88.30	90.90	2.30
0000	1/2	88.00	91.50	95.00	98.50	2.70
00000	5/8	90.50	94.00	97.50	101.00	2.70
250,000	3/4	99.00	103.00	107.00	111.00	3.20
250,000	1	104.00	108.00	112.00	116.00	3.20
275,000	1 1/8	108.50	113.00	117.50	122.00	3.40
275,000	1 1/4	113.50	118.00	122.50	127.00	3.40
300,000	1 1/2	116.50	121.50	126.50	131.50	3.80
300,000	1 3/4	121.50	126.50	131.50	136.50	3.80
325,000	2	125.50	131.00	136.50	142.00	4.40
325,000	2 1/8	130.50	136.00	141.50	147.00	4.40
350,000	2 1/4	133.50	139.50	145.50	151.50	4.60
350,000	2 1/2	138.50	144.50	150.50	156.50	4.60
375,000	2 3/4	144.50	150.80	157.00	163.30	4.90
375,000	3	149.50	155.80	162.00	168.30	4.90
400,000	3 1/8	153.50	160.00	166.50	173.00	5.30
400,000	3 1/4	153.50	165.00	171.50	178.00	5.30
425,000	3 1/2	158.00	165.00	172.00	179.00	5.70
425,000	3 3/4	163.00	170.00	177.00	184.00	5.70
450,000	4	164.50	172.00	179.50	187.00	6.00
450,000	4 1/8	169.50	177.00	184.50	192.00	6.00
500,000	4 1/4	187.50	195.00	202.50	210.00	7.00
500,000	4 1/2	190.50	198.00	205.50	213.00	7.00
1,000,000	4 3/4	320.00	335.00	350.00	365.00	14.00

Rail Bond Prices

Stud Terminal Bonds Not Listed

Intermediate sizes of conductor cross section in price schedule take price of next larger conductor cross section having smallest diameter terminal listed.

Intermediate diameters of terminals, other than those covered by the following schedule, take price of next larger diameter terminals.

Standard List Prices and Standard Weights for Terminal Stud Bonds Having Larger Intermediate Diameter Terminals Than Shown in Previous Column

When Diam of Terminals in Inches Desired Is	ADD TO STANDARD PRICES For Terminals in Inches	Per 100 Bonds Class Y	ADD TO STANDARD WEIGHTS For Terminals in Inches	Wt., Lbs. per 100 Bonds
9/16	1/2	\$1.30	1/2	2.6
1 1/16	5/8	1.60	5/8	3.2
1 3/16	3/4	2.00	3/4	4
1 5/16	7/8	2.50	7/8	5
1 1/8	1	6.00	1	12

Additions for Rail Bonds Having Terminals Longer Than Standard Lengths

Diam of Terminal	DIMEN., IN. Standard Length Not over	Additions to Standard Price per 100 Bonds for Each 1/8 In. Class Y	
		per 100 Bonds	Standard Wt., Lbs. per 100 Bonds for Each 1/8 In.
1/2	3/4	\$.75	1.5
5/8	3/4	1.25	2.5
3/4	3/4	1.75	3.5
7/8	3/4	2.50	5.0
1	3/4	3.15	6.3
1 1/8	3/4	3.20	6.4

Twin Stud Terminal Bonds

Twin terminal bonds are measured from a point in the center of a line drawn through the center of the two studs to the same point in the other terminal when bond is straight and extended.

The list price of twin terminal bonds is based on the largest size terminal scheduled for bond or equivalent cross section and length.

Conductor Section	Length In.	Wt., Lbs. per 100	Price per 100
00	7	61	\$55.30
0000	7	85	66.50
0000	7 1/2	87 1/2	67.75
0000	8	90	69.00
0000	9 1/2	97 1/2	73.50
250,000	8	118	79.00
300,000	8	128	89.80
350,000	7 1/2	138 1/2	97.50
350,000	8	143	100.00

Bonds with Tinned Studs

For tinning any standard type stud terminal bond, including twin stud, add \$3.00 per 100 bonds.

Bonds with Extra Large Terminal Cap

Providing for soldering in addition to compression, add \$7.00 per 100 bonds for stud of 7/8-inch diameter and smaller; for those having terminal diameters, larger than 7/8 inch, add \$10.00.

Form R-1 Removable Mine Bonds

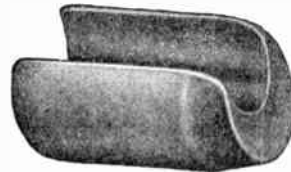


Form R-1 bonds are for use on temporary tracks only. The conductor is made of flexible copper strand, soldered into steel terminals. These bonds are installed or removed very easily, being merely driven in or out with a hammer. This does not injure the bond terminals and they can be reinstalled when tracks are moved.

Conductor Term.	Diam. In.	PRICE PER 100 BONDS					
		23-in.	24-in.	25-in.	26-in.	27-in.	28-in.
0	5/8	\$72.10	\$73.60	\$75.10	\$76.60	\$78.10	\$79.60
00	5/8	77.50	79.30	81.10	82.90	84.70	86.50
000	5/8	100.40	102.70	105.00	107.30	109.60	111.90
0000	5/8	112.00	114.70	117.40	120.10	122.80	125.50

Conductor Term.	Diam. In.	PRICE PER 100 BONDS					
		29-in.	30-in.	31-in.	32-in.	33-in.	34-in.
0	5/8	\$81.10	\$82.60	\$84.10	\$85.60	\$87.10	\$88.60
00	5/8	88.30	90.10	91.90	93.70	95.50	97.30
000	5/8	114.20	116.50	118.80	121.10	123.40	125.70
0000	5/8	128.20	130.90	133.60	136.30	139.00	141.70

Channel Pins



Made with a straight groove deep enough to avoid cutting the wire in driving. Taper pointed and slightly larger than the hole so, when driven, they make a solid joint. The pins are made of soft steel, copper coated. For temporary work.

Cat. No.	Diam. of Pin, In.	Diam. of Pin Hole In.	Size of Wire	Wt., Lbs. per 100	Price per 100
134175	5/16	3/8	6	20	\$16.00
17225	3/8	1/2	4	25	16.00
17224	1/2	3/4	0	46	24.00
134176	21/32	5/8	0	50	24.00
134177	25/32	3/4	0	108	30.00
134178	19/32	9/16	00	40	24.00
134179	21/32	5/8	00	50	24.00
17315	3/4	23/32	00	100	30.00
134180	25/32	3/4	00	108	30.00
134181	21/32	5/8	000	40	24.00
17553	3/4	23/32	0000	70	30.00
134182	25/32	3/4	0000	78	30.00

Taper Punches and Drift Pins for Tubular Terminal Bonds



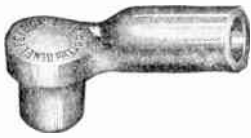
Taper Punch

Drift Pin

Cat. No.	Size of Bond	TERMINAL DIAM. of Hole, In.		DRIFT PIN		TAPER PUNCH		Price Each
		Diam. In.	Diam. In.	Diam. In.	Length In.	Max. Diam. In.	Length In.	
126429	Above 4/0	1	9/16	2 1/2	1 3/8	5/8	5	\$.35
126426	4/0	7/8	13/32	1 1/2	1 3/8	15/32	4	.35
126427	3/0	3/4	11/32	7/8	1 3/8	13/32	4	.35
126428	2/0	5/8	11/32	1 1/4	1 3/8	5/8	3 1/2	.35
126430	1/0	1/2	1/5	1 1/4	1 3/8	15/32	3 1/2	.35

Separate Bond Terminals

Rail Bonding Tools
Lovejoy Track Drills



Form K-1 Solid Separate Terminal



Form KT-1 Tubular Separate Terminal



Form K-2 Solid Separate Terminal



Form KT-2 Tubular Separate Terminal

Separate bond terminals are furnished drilled and tinned for soldering to the conductor, which may be scrap trolley wire or feeder cable. They are useful in bonding special work where many different distances are to be spanned. Form K-1 terminals have shanks parallel to the web of the rail while the shanks of the Form K 2 terminals are at right angles to the web of the rail.



Cat. No.	Description	Wt., Lbs. Each	Price Each
103415	Lovejoy Track Drill for T-Rail	60	\$22.00
133416	" " " Girder Rail	100	22.00

Buda Hyduty Paulus Track Drills



Cat. No.	Description	Wt., Lbs. Each	Price Each
156508	Paulus Track Drill for T-Rails	75	
156509	" " " Girder Rails	80	

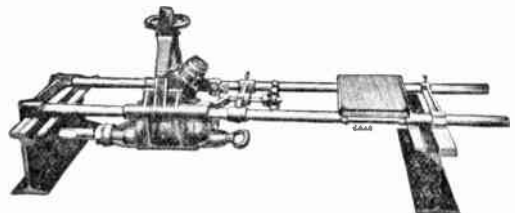
Prices upon application.

Round Straight Shank Drills
For Lovejoy and Paulus Drills



Cat. No.	Diam. In.	Price Each	Cat. No.	Diam. In.	Price Each
126218	1 1/2	.....	103441	2 3/8	.....
103434	1 1/2	.....	103442	3 1/4	.....
103436	9/16	.....	103446	7/8	.....
103438	5/8	.....	103450	1	.....

Little Giant Electric Drills
High Speed—Single Spindle



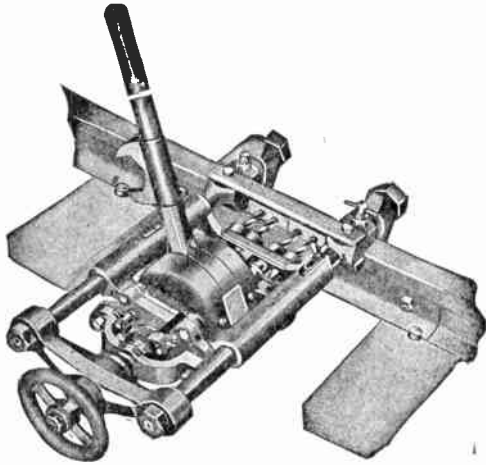
Cat. No.	Volts	Drill. Cap. in In. Dia. of Hole in Steel	Morse Round Taper Socket	Wt., Lbs. Each	Price Each
245353	600 d.c.	3 1/4	No. 2	90	\$250.00
245354			" 3	140	305.00
245355			No. 3 or 4	185	380.00

Conductor	DIMEN., IN.			TERMINALS				Price per 100
	Diam. of Stud	Length of Stud in Shank	Stand. of Drilling	K-1	KT-1	K-2	KT-2	
0	1/2	11/16	25/64	a27	a23	*	d23	\$20.00
00	1/2	..	..	a26	a22	*	d23	20.00
0	5/8	..	..	a29	a25	*	d25	25.00
00	5/8	11/16	29/64	a28	a24	*	d24	25.00
000	5/8	11/16	1/2	b53	b48	e56	e50	.....
0	3/4	..	..	a33	a28	*	d28	30.00
00	3/4	3/4	29/64	a32	a27	*	d26	30.00
000	3/4	3/4	1/2	b56	b51	e58	e53	37.50
0000	3/4	3/4	9/16	b54	b49	e56	e51	37.50
250,000 C.M.	3/4	..	..	b52	b47	e54	e49	37.50
0	7/8	..	..	..	..	..	..	35.00
00	7/8	..	..	..	..	..	..	35.00
000	7/8	3/4	1/2	b61	b54	f83	f56	42.50
0000	7/8	3/4	9/16	b59	b52	f61	f54	42.50
250,000 C.M.	7/8	3/4	5/8	b57	b50	f59	f52	42.50
300,000 C.M.	7/8	3/4	11/16	e91	e85	g112	g99	50.00
350,000 C.M.	7/8	..	..	e87	e81	g109	g95	50.00
400,000 C.M.	7/8	13/16	49/64	e87	e81	g110	*	55.00
450,000 C.M.	7/8	13/16	63/64	e84	e77	g105	*	55.00
500,000 C.M.	7/8	13/16	3/4	e79	e73	g100	*	.....
000	1	..	..	..	..	..	..	47.50
0000	1	..	..	..	..	..	..	47.50
250,000 C.M.	1	..	..	c104	e96	g125	g110	47.50
300,000 C.M.	1	..	..	e96	e88	g118	g103	55.00
350,000 C.M.	1	13/16	3/4	e92	e85	g114	g99	55.00
400,000 C.M.	1	13/16	45/64	e92	e85	g114	*	60.00
450,000 C.M.	1	13/16	33/32	e88	e81	g110	*	60.00
500,000 C.M.	1	13/16	7/8	e83	e76	g106	*	75.00

*No tools.

†Terminals made from the same dies are indicated by the alphabetical letters a, b, c, d, e, f, g, opposite the weights. The discrepancy in weight for the same terminal is due to the larger drilling for the conductor.

Rail Bonding Tools
Double-twin Spindle Drills



This machine drills all four holes at one time in the head of T-rails for the Twin Stud Terminal Bond. The drills are operated by a hand lever, or motor driven if desired.

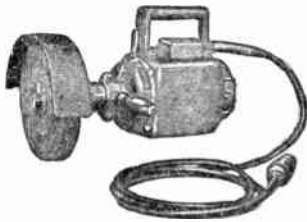
Each spindle is provided with an adjusting sleeve so that each drill may be set independently of the others. Each machine is equipped with a gauge for determining the depth of the holes.

The levers by which the machines are operated are detachable so that the tools may be moved easily from place to place.

Each drilling machine is equipped with one set of drills.

Cat. No.	Description	Wt., Lbs. Each	Price Each
103470	Hand-operated Double-twin Spindle Drill	125	\$360.00

Little Giant Portable Electric Grinders

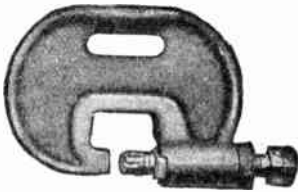


It carries an emery wheel 8 inches in diameter, is equipped with connecting cable and switch for 460 to 600-volt circuits.

Cat. No.	Wt., Lbs. Each	Price Each
103477	82	\$105.00

Hand Screw Compressors

The compressor has a cylindrical sleeve which, in any position, is free to slide in or out of the frame with a single thrust, permitting quick adjustment. A quarter turn sets the sleeve, and the inner screw ram makes the compression on the terminal.



All compressors are designed for 7/8-inch diameter terminals.

Cat. No.	Description	Wt., Lbs. Incl. Wrench Each	Price Each
218276	T-Rails up to 45 Lb., 3 1/2 In.	28	\$43.50
217028	T " " 80 " 5 1/8 "	65	60.00
217029	T " " under 6 1/4 In.	80	65.00
217030	T- and Girder Rails under 7 1/4 In.	105	90.00
217031	T " " " up to 9 In.	140	90.00
217032	T " " " 9 In. and over	165	100.00

Hydraulic Screw Compressors

This tool compresses the terminals of bonds in the web of T- or girder rails.

Cat. No.	Description	Wt., Lbs. Each	Price Each
108051	Hydraulic Web Bond Compressor for T-Rails up to 100 lb. per Yard.	115	\$175.00
108482	Hydraulic Web Bond Compressor for Girder Rails up to 7 Inches high.	160	250.00
108483	Hydraulic Web Bond Compressor for Girder Rails up to 9 Inches High.	190	255.00

Rail Bonding Tools
Hand Tools for Twin Stud Terminal Bonds



Cat. No.	Description	Wt.	Price Each
103475	Dulling Punch	3 Oz.	\$.30
103476	Riveting Hammer	2 1/2 Lb.	2.25
156197	Drift Punch	7 "	1.50

Hand Milling Cutters



Cat. No.	Description	Wt., Lbs. Each	Price Each
103473	Milling Cutter with Handle	1 1/2	\$.45
103474	Extra Cutter Only for Cat. No. 103473	1/4	.25
156750	Cutter with Shank for Use with Carpenter's Brace	1/4	*

*Price upon application.

Rail Bond Clamps

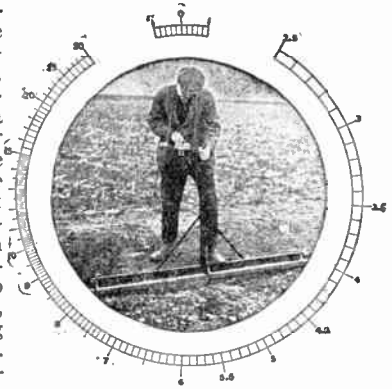


Cat. No.	Description	Wt., Lbs. Each	Price Each
103483	Clamp for Soldered or Arc Weld Bonds	4	*
103484	" " Forms BS and GS Soldered Bonds	6	*
No. 103483	230943 Clamp for Arc and Flame Weld Bonds	3 1/2	\$3.50

*Prices upon application.

Portable Bond Testers
Direct Reading

Two types, Standard Sensibility Type SBT and High Sensibility Type HBT, which include the instrument proper and a folding contact bar with handle and flexible connecting leads. The case of the instrument is arranged with a double hinged cover which opens downward forming, with a leather strap passed around the neck, a means of supporting the instrument in use.

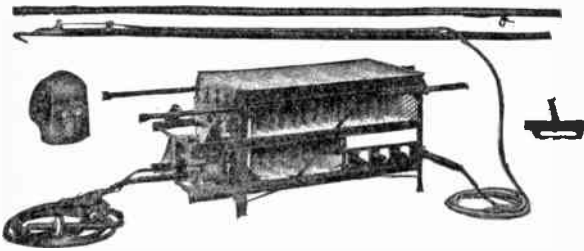


The contact bar carries renewable hacksaw blade contacts.

For places where current in rails is small or intermittent or for new construction, High Sensibility Type HBT is recommended, current being obtained from portable storage batteries or from the portable storage battery equipment listed below.

Cat. No.	Description	Wt., Lbs. Each	Price Each
142949	Type SBT, Complete with Bar and Leads	6	\$115.00
246703	HBT, " " " " " "	6	144.00
246704	Portable Storage Battery Equipment, Complete for Use with Type HBT Bond Tester	45	144.00

**Rail Bonding Tools
Type AW Resistor Arc Welders**



400/650-volt Resistor Arc Welder with Remote Control

This equipment consists of a spirally wound resistance wire, assembled in a light, durable frame from which it is thoroughly insulated.

The unit operates directly from the trolley circuit and is particularly applicable to the welding of rail bonds and fish plates, the building up of low spots on rails, etc.

It is light in weight and is equipped with handles for carrying. The current is regulated by single-pole knife switches, four in number, so that the welder can easily adjust the current to the requirements of the work.



200/275-volt Resistor Arc Welder with Trolley Hook

The 200/275-volt resistor is supplied with a short trolley hook of sufficient length to reach the overload trolley wire in mines. It is equipped with 10 feet of 37/35-0.007 extra flexible cable. Where a longer pole is required, the resistor can be supplied with a jointed 15-ft. pole and 22 feet of the same cable. A 200-ampere knife switch disconnects the welding lead from the line.

The 400/650-volt resistor can be supplied either with or without remote control. When remote control is furnished a contactor or magnetic switch and normally open foot-operated push-button stations are connected in the welding circuit so that in case the operator "freezes" the electrode to the work, he can break the welding circuit by releasing the push-button, and free his electrode. To close the circuit again, the operator presses the push-button with his foot.

When remote control is not furnished, the resistor is supplied with a single pole knife switch which opens the electrode circuit.

All units employ a special resistance wire and insulation which will operate at high temperatures and will withstand repeated heating and cooling without injurious effect. Exposure to the weather will not injure the insulation or resistance wire. When used indoors the floor should be protected from the radiated heat.

A metallic electrode holder, Cat. No. 224291, is furnished with each unit. It is equipped with 20 feet of 37/35-0.007 extra flexible cable.

Cat. No.	Voltage Range	Current Range	No. of Voltage Taps	Wt., Lbs. Each	Price Each
1950832G1	200-275	60-200	2	60	\$250.00
1950832G2	200-275	60-200	2	70	280.00
*1950813G1	400-650	60-200	1	220	610.00
1950813G2	400-650	60-200	1	200	560.00

*Furnished with remote control.

Electrode Holders

Electrode holders are of two general types, one for metallic electrode and one for carbon electrode welding. The metallic holder can be used with wire up to and including 1/4-in. in diameter and the carbon holders with 1/2 and 1-in. carbon electrodes.



Cat. No.	Description	Wt., Lbs. Each	Price Each
224289	For 1-in. Carbon Electrode.....	12	\$26.00
224290	" 1/2-in. Carbon Electrode.....	7	19.00
2648860G1	" 1/4-in. Metallic ".....	2 1/2	5.00

Railway Line Material

The standard line material listed in the following pages is the result of wide experience in the design and manufacture of devices to meet every haulage requirement.

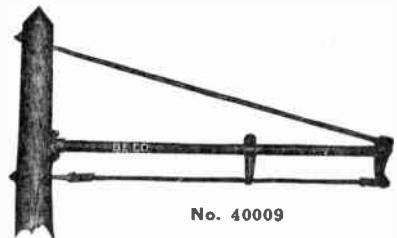
The insulating material used in the various suspensions, strain insulators, etc., is suitable for use under special conditions of high temperatures and is beyond the possibility of injury from any service temperatures.

The rust-resisting finish given these devices, unless otherwise stated in the tables, is applied by the electric oven sherardizing process.

In mines where acids are found in the mine water, sufficient in strength to cause a deterioration of a zinc coating, the japanned finish is preferred. It is recommended that a coat of heavy asphaltum paint be applied from time to time after installation.

Every effort has been made to include in the standard lists all the devices required in approved railway line construction.

Form A1 Brackets for Wood Poles



No. 40009

Pole brackets listed represent some of the standard forms called for in modern railway line construction and include the three styles of tube, the use of which has been approved in the best practice. The wrought iron pipe referred to in the table is standard welded gas and water pipe, and the structural tubing is a special high carbon steel tube with butt joint, which, because of the great stiffness of the material, does not require a welded seam.

Material	Nom. Diam. Inches	Inside Act. Diam. Inches	Outside Diam. Inches	Thickness of Wall Inches	Wt. Lbs. per Ft.
Wrought Iron Pipe.....	1 1/4	1.66	0.140	2.2	
" " ".....	1 1/2	1.90	0.145	2.6	
" " ".....	2	2.375	0.154	3.6	
"A" Tubing.....	1 1/4	1.66	0.095	1.5	
"A" ".....	1 1/2	1.90	0.095	1.87	
"A" ".....	2	2.375	0.107	2.5	
"C" ".....	1 1/4	1.66	0.140	2.2	
"C" ".....	1 1/2	1.90	0.145	2.5	
"C" ".....	2	2.375	0.154	3.5	

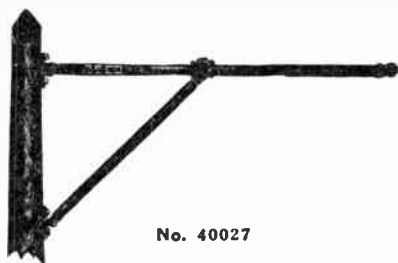
Cat. No.	Description	Length Feet	Approx. Wt., Lbs. per 100	Price per 100
40009	1 1/2 in. A Tubing.....	9	3250	\$700.00
40010	1 1/2 " C ".....	9	3800	730.00
40011	1 1/2 " Wrought Iron Pipe..	9	3900	730.00
40012	2 " A Tubing.....	9	3450	870.00
40013	2 " C ".....	9	4000	900.00
40014	2 " Wrought Iron Pipe..	9	4100	900.00
156159	1 1/2 " A Tubing.....	10	3500	770.00
156170	1 1/2 " C ".....	10	4125	800.00
156171	1 1/2 " Wrought Iron Pipe..	10	4225	800.00
156172	2 " A Tubing.....	10	3775	970.00
156173	2 " C ".....	10	4425	1000.00
156174	2 " Wrought Iron Pipe..	10	4525	1000.00

All brackets listed are finished in black japan and are furnished complete including tube, guy rod, set of castings, cable, eyebolts and lag screws for wood poles or pole clamps for iron pole construction.

Brackets with cable, eyebolts and lag screws omitted may be furnished when desired.

Prices and information on other forms and lengths of brackets for wood poles and all forms of brackets for standard pipe poles furnished on request.

Form C Rigid Brackets



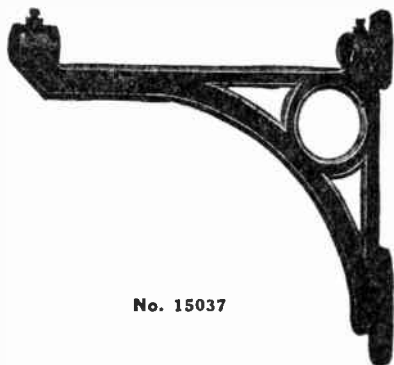
No. 40027

Cat. No.	Tubing	Arm In.	Strut In.	Wt., Lbs. per 100	Length Feet	Price per 100
40027	A	1½	1¼	2850	9	\$950.00
40028	C	1½	1¼	3700	9	980.00
40029	Wrought I. Pipe	1½	1¼	3800	9	980.00
40030	A	2	1½	3800	9	1130.00
40031	C	2	1½	5000	9	1170.00
40032	Wrought I. Pipe	2	1½	5100	9	1170.00
156188	A	1½	1¼	3040	10	1035.00
156189	C	1½	1¼	4025	10	1065.00
156190	Wrought I. Pipe	1½	1¼	4139	10	1065.00
156191	A	2	1½	4065	10	1215.00
156192	C	2	1½	5425	10	1245.00
156193	Wrought I. Pipe	2	1½	5550	10	1245.00

For brackets for pipe poles, and other lengths, prices will be quoted upon application.

Cast Iron Pole Brackets

For Supporting Pipe Bracket Arms



No. 15037

Cat. No.	Description	Wt. Lbs.	Price per 100
15026	Short Bracket for 1½-in. Pipe, Length 22¾ in., Height 28½ in., Diam. of Hole 2½ in.....	2400	\$670.00
15037	Long Bracket for 1½-in. Pipe, Length 30¾ in., Height 28½ in., Diam. of Hole 2½ in.....	3100	770.00

Pole Bracket Castings

Outer End



Cat. No.	Form of Bracket	Size Tubing Inches	Approx. Wt., Lbs. per 100	Price per 100
125988	A-1	1½	175	\$110.00
125989	A-1	2	225	130.00
125990	A-2	1½	185	110.00
125991	A-2, B-2	2	240	130.00

Center Casting

Cat. No.	Form of Bracket	Size Tubing Inches	Approx. Wt., Lbs. per 100	Price per 100
125992	A-1, A-2	1½	75	\$60.00
125993	A-1, A-2	2	85	70.00
125996	B	1½	425	180.00
125997	B	2	490	220.00
125998	C	1½	310	150.00
125999	C	2	340	175.00



Pole End Casting



Cat. No.	Form of Bracket	Size Tubing Inches	Approx. Wt., Lbs. per 100	Price per 100
125994	A-1, A-2, B	1½	125	\$60.00
125995	A-1, A-2, B	2	140	80.00
126000	B and C	1½	110	75.00

Form H Suspensions

Form H suspensions consist primarily of malleable iron shells into which the insulation holding the studs is permanently moulded. A load of over five tons is required to pull the stud from this form of suspension in the large size and about three tons in the small size.



Straight Line

600 Volts

These are made in two sizes, 3¼ inches and 3½ inches in diameter, each of which is furnished with either 5/8-inch or ¾-inch stud. The 3½-inch suspension has extra heavy shell and arms and is designed for the heaviest construction.



No. 25980

Each of these suspensions, being in one piece, is held against turning by the span wire, and cannot, therefore, become unscrewed as a result of vibration in service. Special leather washers to permit adjustment in seating the ear boss against the suspension are listed. All metal parts including the stud have standard sherardized finish.

Over all length, 6½ inches; arm yoke accommodates 3/8-inch span wire.

Cat. No.	SHELL		Diameter Stud In.	Approx. Wt., Lbs. per 100	Price per 100
	Diameter In.	Height In.			
25980	3¼	2	5/8	210	\$105.00
39690	3½	2¼	5/8	265	120.00
25979	3½	2¼	¾	270	130.00
143559	Leather Washer for 5/8-inch Stud			5	4.00
143560	" " " ¾ " "			6	4.00

Form H Straight Line Suspensions

1200 Volts



These suspensions and the 3½-inch straight line 600-volt suspensions are identical, except that the arms are replaced by clevises to which giant or wood strain insulators are shackled.

Form H suspensions consist primarily of malleable iron shells into which the insulation holding the studs is permanently moulded. A load of over five tons is required to pull the stud from this form of suspension in the large size and about three tons in the small size.

Each of these suspensions, being in one piece, is held against turning by the span wire, and cannot, therefore, become unsewed as a result of vibration in service. Special leather washers to permit adjustment in seating the ear boss against the suspension are listed. All metal parts including the stud have standard sherardized finish.

With 2-inch Giant Strain Insulators

Over all length between centers of outer eyes, 12¼ inches; diameter of shell, 3½ inches.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt., Lbs. per 100	Price per 100
66624	2	5/8	460	\$316.00
66622	2	3/4	465	326.00

With Wood Strain Insulators

Over all length between centers of outer eyes, 23¼ inches; diameter of shell, 3½ inches.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt., Lbs. per 100	Price per 100
66620	1	5/8	565	\$270.00
66618	1	3/4	570	280.00
89475	1¼	5/8	635	290.00
89473	1¼	3/4	640	300.00

Form H Single Curve Suspensions

Has a clevis on one side to which the pull off arm is attached by means of a ½-inch steel pin and cotter. For 1200-volt work, a strain insulator is shackled to the pull off arm.

All metal parts including stud have standard sherardized finish.



No. 68953

600 Volts

Length between center line of stud and center of pull off eye, 4½ inches. Height above center of pull off eye, 3½ inches. Diameter of pull off eye, 5/16 inch. Thickness of pull off arm at eye, ½ inch; diameter of shell, 3½ inches.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt., Lbs. per 100	Price per 100
68953	...	5/8	310	\$145.00
68955	...	3/4	315	155.00

1200 Volts

With 2-inch Giant Strain Insulator

Length between center line of stud and center of outer eye, 8½ inches.

68965	2	5/8	415	\$243.00
68967	2	3/4	420	253.00

1200 Volts

With Wood Strain Insulator

Length between center line of stud and center of outer eye, 14¾ inches.

68945	1	5/8	470	\$235.00
68947	1	3/4	475	245.00
89485	1¼	5/8	495	245.00
89487	1¼	3/4	500	255.00

Form H Double Curve Suspensions



No. 68957

Similar to Single Curve Suspension except that there are two clevises and arms.

600 Volts

Length between centers of pull off eyes, 9 inches.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt. Lbs. per 100	Price per 100
68957	...	5/8	395	\$180.00
68959	...	3/4	400	190.00

1200 Volts

With 2-inch Giant Strain Insulators

Length between centers of pull off eyes, 17¾ inches; height above centers of pull off eyes, 3½ inches; diameter of shell, 3½ inches. All metal parts including stud have standard sherardized finish.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt. Lbs. per 100	Price per 100
68969	2	5/8	605	\$376.00
68971	2	3/4	610	386.00

1200 Volts

With Wood Strain Insulators

Length between centers of pull off eyes, 28¾ inches.

Cat. No.	DIAMETER, INCHES Insulator	Stud	Approx. Wt. Lbs. per 100	Price per 100
68949	1	5/8	715	\$360.00
68951	1	3/4	720	370.00
89489	1¼	5/8	765	380.00
89491	1¼	3/4	770	390.00

Form H Suspension Bodies with Pins

For 600 and 1200-volt Single Curve

Form H Suspension

Distance between center line of stud and center of clevis hole, 2¾ inches; diameter of shell, 3½ inches; height of shell, 2¼ inches; diameter of pin, ½-inch. All metal parts including stud have standard sherardized finish.



Cat. No.	Diameter of Stud Inches	Approx. Wt. Lbs. per 100	Price per 100
68961	5/8	255	\$115.00
68963	3/4	260	125.00

Form H Suspension Bodies with Pins

For 1200-volt Straight Line and 600 and 1200-volt Double Curve Form H Suspensions



Length between centers of clevis holes, 4¾ inches; diameter of shell, 3½ inches; diameter of pins, ½-inch. All metal parts including stud have standard sherardized finish.

Cat. No.	Diameter of Stud Inches	Approx. Wt. Lbs. per 100	Price per 100
66330	5/8	285	\$120.00
66326	3/4	290	130.00

Form H Suspension Arms



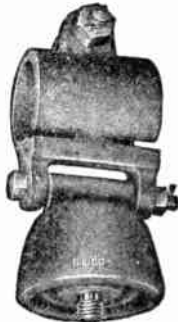
Arm is removable, malleable iron, sherardized. Approximate weight, 110 pounds per 100.

Price, No. 128424.....per 100 \$30.00

Form H Bracket Suspensions

Consists of the standard 3¼-inch shell to which the bracket arm clamp is hinged, thus providing the flexibility required to care for vibration in the trolley wire.

For suspensions for 2-inch pipe the height from car seat to bracket arm clamp is 5⅞ inches; for 1½-inch pipe the height is 4⅞ inches; diameter of shell, 3¼ inches. All metal parts including stud have standard sherardized finish.



No. 25992

Cat. No.	Description	Wt., Lbs. per 100	Price per 100
25992	Bracket Suspension Complete, ⅝-in. Stud for 2-in. Pipe.....	510	\$250.00
25993	Bracket Suspension Complete, ⅝-in. Stud for 1½-in. Pipe.....	530	225.00
25994	Bracket Suspension, ⅝-in. Stud, without Clamp.....	275	115.00
25996	Clamp for 2-in. Pipe, for Use with Cat. No. 25992.....	265	135.00
25997	Clamp for 1½-in. Pipe, for Use with Cat. No. 25993.....	255	110.00

Form H Bridge or Ceiling Suspensions

600 Volts



This suspension is used when the head room is unlimited. The diameter of the stud is ⅝-inch.

Approximate weight, 230 pounds per 100. Price, No. 27370.....per 100 \$110.00

Form H Low Ceiling Suspensions

600 Volts



Distance between centers of screw slots, 4 inches; thickness of slotted ears, ⅜ inch; diameter of shell, 3 inches; height, 1⅞ inches.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
1431861	Low Ceiling Suspension ⅝-inch Stud, Sherardized.....	125	\$85.00

Form H Flat Top Suspensions



These suspensions may be attached directly to the mine roof by means of expansion bolts or to timbers by means of special lag screws.

The expansion bolts are not forced above the mine roof and are therefore easily recovered.

Cat. No.	Diam. Stud In.	Material	Approx. Wt., Lbs. per 100	Price per 100
125330	⅝	Malleable Iron, Sherardized	210	\$110.00

Form H Low Suspensions

With Boss

A triple petticoat suspension which affords extra long creepage surface.

Approximately 8500 pounds downward pull or 2000 pounds side pull is required to remove stud from shell.

Suitable for mines having limited head room.

Approximate weight, 125 pounds per 100.

Price, No. 1436318.....per 100 \$85.00



Form H Low Flat Top Suspensions



No. 165189

This suspension is only 1⅞ inches high from car seat to top of flange. The large top bearing surface is particularly advantageous in meeting the side strains on curves and grades.

Diameter of top flange, 4 inches; diameter of shell, 3¼ inches; length from car seat to top of flange, 1⅞ inches.

Cat. No.	Diameter of Stud Inches	Material	Approx. Wt., Lbs. per 100	Price per 100
165189	⅝	Malleable Iron, Sherardized	175	\$110.00

Form H Flat Top Suspensions

Shallow Groove

Can be furnished with compound moulded in one shallow groove as shown or with triple petticoat same as Cat. No. 1436318.

Furnished with shallow groove unless otherwise specified.

All metal parts have standard sherardized finish.



Cat. No.	Flange Diameter, Inches	Shell Diameter, Inches	Stud	Approx. Wt., Lbs. per 100	Price per 100
1431862	3½	3	⅝	165	\$90.00

Form H3 Straight Line Suspensions

600 Volts



These suspensions are made in one size, 3 inches in diameter and with 5/8-inch studs. Length over all, 6 1/2 inches.

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
11220	Straight Line Suspension, 5/8-in. Stud, Malleable Iron Sherardized.	170	\$105.00

Form H3 Single Curve Suspensions

600 Volts



Has the same interior construction as the straight line. The shell is provided with a clevis into which the removable arm is fastened by a pin.

The length between center line of pull-off eye, 4 1/2 inches; height above center of pull-off eye, 2 7/8 inches; diameter of pull-off eye, 9/16-inch. Thickness of arm at eye, 1/2-inch; diameter of shell, 3 inches. Shell and stud have standard sherardized finish.

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
128651	Single Curve, 5/8-in. Stud, Malleable Iron Sherardized.	230	\$135.00

Form H3 Double Curve Suspensions

600 Volts

Length between centers of pull-off eyes, 9 inches; height above center of pull-off eyes, 2 7/8 inches; diameter of pull-off eyes, 9/16-inch; thickness of arm at the eyes, 1/2-inch; diameter of shell, 3 inches.



Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
128652	Double Curve Suspension, 5/8-in. Stud, Malleable Iron Sherardized.	230	\$170.00

Form H3 Bridge or Ceiling Suspensions

600 Volts



No. 105705

For use under bridges and elevated structures where head room is limited. The top of Cat. No. 64560 is designed to be countersunk in the supporting timber, bringing the top of the ear hub 1/4 inch below the bottom of the timber.

Cat. No. 105705 has the supporting arms at its top so that it may be attached to the overhead structure without countersinking. 1/2-inch screws are required for the supporting arms. Sherardized finish; 5/8-inch stud.

Cat. No.	Location of Arms	Approx. Wt. Lbs. per 100	Price per 100
64560	Bottom	140	\$90.00
105705	Top	140	\$90.00

Form H3 Low Mine Suspensions

This mine suspension is like the low bridge suspension in its internal design and will be found useful in places of limited head room.

The low mine suspension is adapted to use with the standard roof bolt and wedges or with expansion bolts.

Made of malleable iron, sherardized.



Cat. No.	Ht. from Ear Seat to Shell Top, Inches	Diam. Shell at Top, In.	Height Boss Above Shell, In.	Diam. Stud, In.	Approx. Wt. Lbs. per 100	Price per 100
64561	1 1/4	3	5/8	5/8	150	\$90.00

Form HJ Flat Top Suspensions

Deep Groove



Compound is moulded in one deep groove which gives it a greater creepage surface between the stud and sheet.

Recommended for use in mines having excessive moisture or dust.

Height from ear seat to top of flange, 2 1/4 inches.

Cat. No.	Flange	DIAMETER, INCHES Shell	Stud	Approx. Wt. Lbs. per 100	Price per 100
261737	3	3	5/8	190	\$90.00

Form H5 Combination Suspensions

Designed so that it may be attached direct to mine roof by use of standard expansion bolt, or in case there is considerable variation in height of mine roof same suspension may be attached to lower end of 1 1/4-inch pipe, the upper end of which has been wedged into a hole drilled into the mine roof. A simple and effective method of attaching the pipe to the mine roof is to slot the pipe with hack saw for a distance of 3 inches, the wedging effect being obtained by driving the pipe into a hole in the roof over a tapered wooden plug.



Cat. No.	Ht. In.	DIAMETER, INCHES Shell	Top Flange	Approx. Wt. Lbs. per 100	Price per 100
261777	2 3/8	3	2 1/4	175	\$105.00
269770	3 5/8	3 1/2	2 1/4	225	130.00

Roof Fastenings Expansion Bolts



The expansion bolts consist primarily of a malleable iron shell 1 1/4 inches in diameter, a 5/8-inch roof bolt and a conical nut by means of which the shell is expanded when in position. Sherardized finish.

The roof drilling should be 1 1/4 inches in diameter.

Cat. No.	Length In.	Wt., Lbs. per 100	Price per 100
63334	4	100	\$42.00
68397	4	105	48.00
66336	6	110	55.00
116070	6	115	61.00

Roof Fastenings

Roof Plugs and Lag Screws



No. 34137



No. 36310

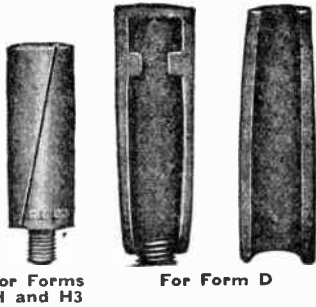
The Forms H and II3 suspensions may be attached to the mine roof by means of the wooden plug and gimlet point lag screw threaded to fit the suspension and projecting 3 inches above it. The plug is drilled axially for the screw and is driven into the hole in the mine roof.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
34137	Wooden Plug (3 in. by 1½ in.)	10	\$6.00
36310	Lag Screw (⅝ in. by 3⅞ in. special) Sherardized	25	9.00

Roof Wedges and Bolts

The bolt is slotted near the top and the upper wedge is arranged to engage it so as to prevent turning of the bolt in screwing up the suspension.

When the suspension is removed from the bolt the whole device is loosened in the hole by a blow with a hammer and may thus be readily recovered.



For Forms H and H3

For Form D

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
35691	Lower Roof Wedge, Sherardized	35	\$14.00
35690	Upper " "	45	16.00
35689	Roof Bolt (⅝ in. -11, 5-in.) Sherardized	40	11.00
41069	" " (⅝ in. -11, 5-in., with Nut) Sherardized	50	14.00

Roof Fastenings

Extension Supports and Combination Clamps with ⅝-inch Stud



Pipe Clamp

Suspension may be attached to either a 1¼-inch standard pipe fastened vertically in the mine roof or a 1½-inch pipe held horizontally from a side wall or as in outside construction when a 1½-inch pipe cross span or bracket arm is used. Where 1¼-inch standard pipe only is used for supporting the trolley wire from the mine roof the 1¼-inch pipe clamp will be found particularly useful with the flat top suspension.

All are of sherardized finish.



Pipe Clamp



Expansion Case

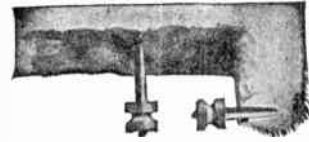
Cat. No.	Description	Wt., Lbs. per 100	Price per 100
135755	Pipe Clamp	125	\$72.00
125328	Expan. Case	250	70.00
125332	Pipe Clamp	200	60.00
119828	Comb. Clamp	225	85.00



Combination Clamp

Roof Fastenings

Insulator Pins



No. 178893

The mine insulator pins are designed for supporting feed wires in and about mine and industrial haulage plants. They consist of a malleable iron bayonet pointed pin and porcelain knob.

The pin is 8½ inches long; the knob is 2 inches high by 2½ inches in diameter with a ¼-inch groove.

The mine feeder wire insulator is designed for supporting feeder wire cables in and about mines where cable is supported from mine roof. Catalogue numbers cover complete insulator with 6-inch expansion bolt.

Small size for 300000 c. m. and under. Distance from top of clevis to lower edge of spool, 4½ inches. Clearance between bolt head and bottom of groove in insulator, 1¼ inches.

Large size for 1000000 c. m. and under. Distance from top of clevis to lower edge of spool, 6¾ inches. Clearance between bolt head and bottom of groove in insulator, 2¾ inches.



Nos. 224006 and 224007

Cat. No.	Description	Wt., Lbs. per 100	Price per 100
178891	Insulator and Pin Complete	50	\$27.50
178893	Pin Only	50	15.45
178892	Porcelain Insulator Only	100	10.75
224007	Insulator for 300000 C. M. Cable	200	97.50
224006	" " 1000000 C. M. "	220	140.00

Form S Straight Line Suspensions

600 Volts

With 2-inch Giant Strain Insulators



Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
66648	5/8	410	\$306.00
66646	3/4	415	321.00

With Wood Strain Insulators



Length between centers of outer eyes, 27 inches. All metal parts including stud have standard sherardized finish.

Cat. No.	DIAMETER, INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Wood Strain Insulator	Stud		
66640	1	5/8	515	\$260.00
66638	1	3/4	520	275.00
89483	1¼	5/8	585	280.00
89481	1¼	3/4	590	295.00

These suspensions consist of liberally designed malleable iron yokes fitted with 2-inch giant strain insulators or wood strain insulators either 1 inch or 1¼ inches in diameter.

If other insulators are desired, bodies and insulators should be ordered separately.

Form S Single Curve Suspensions

600 Volts

With 2-inch Giant Strain Insulator



Cat. No.	Diameter Stud, In.	Wt., Lbs. per 100	Price per 100
25987	5/8	240	\$188.00
25983	3/4	245	203.00

With Wood Strain Insulator



Cat. No.	DIAMETER, INCHES		Approx. Wt. Lbs. per 100	Price per 100
	Wood Strain Insulator	Stud		
33958	1	5/8	295	\$165.00
33954	1	3/4	300	180.00
64252	1 1/4	5/8	330	175.00
64251	1 1/4	3/4	335	190.00

Form S Double Curve Suspensions

600 Volts

With 2-inch Giant Strain Insulators



Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
25988	5/8	410	\$341.00
25986	3/4	415	356.00

With Wood Strain Insulators



Cat. No.	DIAMETER, INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Wood Strain Insulator	Stud		
33960	1	5/8	515	\$295.00
33956	1	3/4	520	310.00
64254	1 1/4	5/8	585	315.00
65253	1 1/4	3/4	590	330.00

Form S Bodies for Straight Line Suspensions.



Length between pin centers 8 inches; clevis opening 3/8-inch; diameter of pins 1/2-inch. All metal parts including stud have standard sherardized finish. Complete with bolts, washers and pins.

Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
66632	5/8	235	\$110.00
66630	3/4	240	125.00

Form S Suspensions

Bodies for Single Curve Suspensions

With Bolts, Washers and Pins



Length between center line of stud and center of pin 5 1/4 inches; clevis opening 3/8-inch; diameter of pin 1/2-inch. Standard sherardized finish throughout.

Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
64244	5/8	155	\$90.00
64243	3/4	160	105.00

Length between center line of stud and center of eye 4 5/8 inches; diameter of eye 3/8-inch. Standard sherardized finish throughout.



Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
114170	5/8	150	\$80.00
114171	3/4	160	95.00

Bodies for Double Curve Suspensions

With Bolts, Washers and Pins



Length between centers of pins 10 1/2 inches; clevis opening 9/16-inch; diameter of pins, 1/2-inch. Standard sherardized finish throughout.

Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
64246	5/8	235	\$145.00
64245	3/4	240	160.00

Length between centers of eyes 8 5/8 inches; diameter of eyes 3/8-inch; standard sherardized finish throughout.



Cat. No.	Diameter of Stud Inches	Approx. Wt., Lbs. per 100	Price per 100
110931	5/8	225	\$135.00
111099	3/4	230	150.00

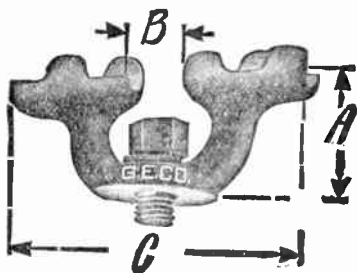
Form T Feeder Tap Suspensions
Straight Line



Overall length, 6 inches; yokes accommodate 3/8-inch span wire.

Cat. No.	Diameter of Stud Inches	Material	Approx. Wt., Lbs. per 100	Price per 100
11294	5/8	Bronze	85	\$90.00
150313	5/8	Malleable Iron, Sherardized	85	42.00
11296	3/4	Bronze	90	100.00

Form T Suspensions
Bronze Feeder Clamp



Cat. No.	Diam. Stud In.	Size of Wire	DIMENSIONS, INCHES			Approx. Wt., Lbs. per 100	Price per 100
			A	B	C		
16380	3/8	0	1 15/16	1 1/8	5 1/2	90	\$140.00
48807	3/4	0	1 15/16	1 1/8	5 1/2	95	*
61567	5/8	0000	2 1/2	1 3/8	5 3/4	225	144.00
48808	3/4	0000	2 1/2	1 1/8	5 3/4	230	*

*Prices on application.

Form D Suspensions

Straight Line

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
37979	5/8	195	\$132.00
37981	3/4	200	140.00
39700	Body Only	100	48.00

Single Curve

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
37983	5/8	245	\$140.00
37984	3/4	250	148.00
39701	Body Only	150	56.00

Double Curve

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
37986	5/8	295	\$168.00
37988	3/4	300	176.00
39702	Body Only	200	84.00

Ceiling

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
37991	5/8	350	\$184.00
37993	3/4	355	192.00
39703	Body Only	250	100.00

Strain

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
37997	5/8	245	\$154.00
60015	3/4	250	162.00
39705	Body Only	150	70.00

Bracket

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
38005	5/8	400	\$250.00
60016	3/4	405	258.00
38008	5/8	375	234.00
60017	3/4	380	242.00
39706	Body Only, for 2-in. Pipe	305	166.00
39707	Body Only, for 1 1/2-in. Pipe	280	150.00

The Form D Suspensions are recommended only for voltages up to and including 600.

All metal parts have standard sherardized finish.

Form D Mine Suspensions



No. 37995

Height from top of ear seat to top of body, 4 5/8 inches. For roof bolt and wedges the roof drilling should be 1 3/8 inches in diameter, and for 4-inch expansion bolt, 1 1/2 inches in diameter; the depth of the hole at least 4 inches in either case.

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
*37995	5/8	510	\$253.00
†68939	3/4	495	265.00
39704	Body Only	285	125.00

*With roof bolt and wedges.
†With 4-inch expansion bolt.

Cap and Cone Insulators



Cap



Cone



Lock Washer

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
16925	Screw Cap Insulator, 5/8-in. Stud	70	\$56.00
16926	Cone for No. 16925	25	28.00
26143	Screw Cap Insulator, 3/4-in. Stud	75	64.00
26144	Cone for No. 26143	25	28.00
19480	Lock Washer for Form D Suspensions	3	7.50
113978	Screw Cap Insulator, 5/8-in. Stud	70	On Appl.
113979	Cone for No. 113978	25	" "

Form G Suspensions

Insulated Bolts

Cat. No.	Diam. Stud In.	Head	Approx. Wt., Lbs. per 100	Price per 100
17207	5/8	Standard	90	\$56.00
62561	3/4	"	95	58.00
13980	5/8	"	90	70.00
1431708	3/8	Large	105	60.00

Standard head: Dimension A, 1 3/8 inches; B, 3/4-inch.
Large Head: Dimension A, 1 7/8 inches; B, 1 1/8-inch.



Straight Line

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
25976	5/8	245	\$148.00
66019	3/4	250	150.00
25977	Body Only	120	72.00
25978	Cap	35	20.00

Single Curve

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
25981	5/8	270	\$156.00
66022	3/4	275	158.00
25982	Body Only	145	80.00
25978	Cap	35	20.00



The Form G Suspensions consist of malleable iron castings and insulated bolts. The insulated bolt is held firmly in place by a cap casting threaded to the body casting.

Form G Suspensions



		Double Curve		
Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100	
25984	5/8	310	\$172.00	
66025	3/4	315	174.00	
25985	Body Only	185	96.00	
25978	Cap	35	20.00	

Ceiling

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
25998	5/8	225	\$166.00
66034	3/4	230	168.00
25991	Body Only	75	75.00
25999	Cap	60	35.00



		Socket Ceiling		
Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100	
38690	5/8	170	\$98.00	
68399	3/4	175	100.00	
38691	Body Only	80	42.00	

Bracket

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
*25989	5/8	480	\$301.00
*66028	3/4	485	303.00
†25990	5/8	460	276.00
†66030	3/4	465	278.00
25991	Body Only	75	75.00
25995	Cap	40	35.00
25996	Clamp for 2-in Pipe	275	135.00
25997	Clamp for 1 1/2-in. Pipe	255	110.00



*For 2-inch pipe.
†For 1 1/2-inch pipe.

Form G2 Suspensions



		Single Curve		
Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100	
179287	5/8	375	\$176.00	
189163	3/4	380	178.00	
189166	Body Only	250	100.00	
25978	Cap	35	20.00	

Double Curve

Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
179286	5/8	400	\$186.00
189162	3/4	405	188.00
189165	Body Only	275	110.00
25978	Cap	35	20.00

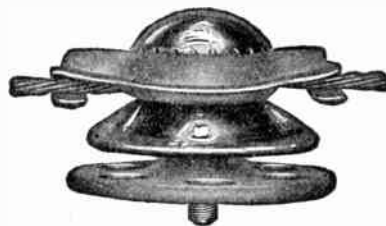
Double Trolley Double Curve



Cat. No.	Diam. Stud In.	Approx. Wt., Lbs. per 100	Price per 100
179288	5/8	650	\$322.00
189164	3/4	660	326.00
189167	Body Only	450	190.00
25978	Cap	35	20.00

Form P Straight Line Suspensions

Span Wire



Recommended for use on 1200 and 2400-volt, direct current, direct suspension installations and is particularly suitable for changing present 600-volt lines to the higher voltages. All metal parts have sherardized finish throughout.

Cat. No.	Description	Size Stud In.	Approx. Wt., Lbs. per 100	Price per 100
106824	Suspension, Complete	5/8	500	\$195.00
106825	"	3/4	505	200.00
106826	" without Guard	5/8	375	145.00
106827	"	3/4	380	150.00
106823	Porcelain Body, Only	5/8	305	120.00
106822	"	3/4	300	125.00
106828	Suspension Yoke, "	5/8	125	25.00
106829	Wheel Guard, Only	5/8	75	50.00
106830	"	3/4	75	50.00

Form P3 Suspensions

Has a porcelain body, malleable iron yoke, sherardized.



Cat. No.	Size Stud In.	Approx. Wt., Lbs. per 100	Price per 100
246709	5/8	225	\$100.00

Form J3 Economy Ears



Economy Ears are made by a new process whereby the natural hardness and fine grain of the cast surface, both inside and outside of the lips, are retained.

These ears have extra deep grooves and 3/8-inch thick lips which almost meet when peened around the wire, providing extra metal for wear under the center of the ear. The bottom edges of the lips are gradually tapered up at the ends for a distance of about 1/2 of the length of the ear, which design, together with the machine grinding for an equal distance on the sides, practically eliminates any pounding or hammer blows from the trolley wheel, resulting in prolonged life.

These ears conform to the A. E. R. A. standard.

Cat. No.	Form	Size Wire No.	Tap Inches	Length Ear Inches	Approx. Weight Pounds per 100	Class Z Price per 100
270117	J-3	0	5/8	9	48	\$65.00
270118	J-3	0	5/8	12	65	75.00
270810	J-3	0	5/8	15	74	86.00
286490	J-3	00	5/8	9	58	70.00
286491	J-3	00	5/8	12	71	81.00
286492	J-3	00	5/8	15	87	93.00
286493	J-3	000	5/8	9	71	75.00
292211	J-3	000	3/4	9	65	75.00
286494	J-3	000	5/8	12	83	88.00
292212	J-3	000	3/4	12	80	88.00
286495	J-3	000	5/8	15	94	102.00
292213	J-3	000	3/4	15	98	102.00
270812	J-3	0000	5/8	12	79	95.00
270120	J-3	0000	5/8	15	95	110.00
289798	J-3	0000	3/4	15	104	110.00

Form J Improved Clinch Ears



This ear is designed to be used without solder. The wire is held by peening the lips over the wire at the bottom and by the two lugs over the ends of the wire at the top. This ear is used with grooved wire. The lips run the full length of the ear.

Cat. No.	Length In.	Size Wire	Tap In.	Material	Approx. Wt., Lbs. per 100	Price per 100
222244	15	00	5/8	Bronze	150	\$180.00

Form J3 Clinch Ears

Economy Type—For Round Wire



These ears have extra deep grooves and 3/32-inch thick lips which almost meet when peened around the wire providing extra metal for wear under center of the ear. A gradual taper in thickness toward the ends and a side tapered grinding, extending from the ends, eliminates any pounding or hammer blows from the trolley wheel.

Cat. No.	Length Inches	Size Wire	Tap Inches	Approx. Wt., Lbs. per 100	Price per 100
270117	9	0	5/8	48	\$65.00
270118	12	0	5/8	65	75.00
270810	15	0	5/8	74	86.00
286490	9	00	5/8	58	70.00
286491	12	00	5/8	71	81.00
286492	15	00	5/8	87	93.00
286493	9	000	5/8	71	75.00
286494	12	000	5/8	83	88.00
286495	15	000	5/8	94	102.00
270812	12	0000	5/8	79	95.00
270120	15	0000	5/8	95	110.00
289798	15	0000	3/4	95	110.00

Form A Screw Clamp Ears

5-inch Plain



No. 41047

Form A ears are especially adapted for use with grooved or Fig. 8 wires and are suitable for high speed operation.

For Round Wire

Cat. No.	Size of Wire	Tap In.	Material	Approx. Finish per 100	Price per 100
41047	0 and 00	5/8	Mal. Iron	Sher. 70	\$50.00
41443	0 " 00	5/8	Bronze...	" 80	100.00
66042	0 " 00	3/4	Mal. Iron	" 70	50.00
41049	000 " 0000	5/8	" "	" 75	50.00
41444	000 " 0000	5/8	Bronze...	.... 85	100.00
66043	000 " 0000	3/4	Mal. Iron	Sher. 75	50.00

For Grooved Wire

37804	00,000 and 0000	5/8	Mal. Iron	Sher. 66	\$50.00
27627	00,000 " 0000	5/8	Bronze...	.... 75	100.00
59564	00,000 " 0000	3/4	Mal. Iron	Sher. 66	50.00
30310	00,000 " 0000	3/4	Bronze...	.... 75	100.00

For Fig. 8 Wire

109898	00,000 and 0000	5/8	Mal. Iron	Sher. 70	\$50.00
109899	00,000 " 0000	3/4	" "	" 70	50.00

The lips of the ears are so shaped as to give a four-point bearing in the grooves which prevents any tendency of the wire to roll out of the ear as a result of torsional or transverse stress.

All malleable iron parts and screws have standard sherardized or japanned finish.

Form A Screw Clamp Ears

7-inch Plain



No. 37805

The 7-inch plain ears, being designed especially for use with Nos. 00, 000 and 0000 wire, are extra heavy throughout.

For Grooved Wire

Cat. No.	Size of Wire	Tap In.	Material	Finish	Approx. Wt., Lbs. per 100	Price per 100
37805	00, 000 and 0000	5/8	Mal. Iron	Sher.	88	\$58.00
34124	00, 000 " 0000	5/8	Bronze	"	100	120.00
37806	00, 000 " 0000	3/4	Mal. Iron	"	88	58.00
27628	00, 000 " 0000	3/4	Bronze	"	100	120.00

For Fig. 8 Wire

114878	00, 000 and 0000	5/8	Mal. Iron	Sher.	94	\$58.00
114879	00, 000 " 0000	3/4	" "	"	94	58.00

8 1/2-inch Plain—5 Screw For Grooved Wire Only

247231	00, 000 and 0000	5/8	Mal. Iron	Sher.	105	\$65.00
247232	00, 000 " 0000	3/4	" "	"	105	65.00

10-inch Curve



No. 37808

For Grooved Wire

37808	00, 000 and 0000	5/8	Mal. Iron	Sher.	125	\$84.00
37685	00, 000 " 0000	3/4	" "	"	125	84.00

For Fig. 8 Wire

114882	00, 000 and 0000	5/8	Mal. Iron	Sher.	130	\$84.00
114883	00, 000 " 0000	3/4	" "	"	130	84.00

14-inch Curve for Grooved Wire



59568	00, 000 and 0000	5/8	Mal. Iron	Sher.	185	\$110.00
43716	00, 000 " 0000	3/4	" "	"	185	110.00

Form A Screw Clamp Strain Ears

12-inch

For Nos. 00, 000 and 0000 Wires



No. 34127

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
34127	For Grooved Wire, 5/8-in. Tap, Bronze	165	\$225.00
114880	" Fig. 8 " 5/8 " " "	170	225.00
114881	" " 8 " 3/4 " " "	170	225.00

12-inch Extra Heavy



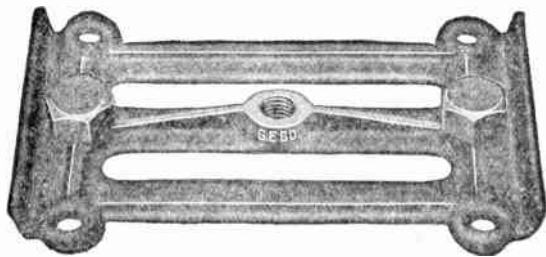
59567	For Grooved Wire, 3/4-in. Tap. Bronze	165	\$225.00
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7-inch Half Strain



114907	For Fig. 8 Wire, Bronze	90	\$100.00
61232	" Grooved Wire, Bronze	90	100.00

Strain Plates



Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
62537	Strain Plate, 5/8-in. Tap, 5/8-in. Studs	300	\$180.00
62536	" " 3/4" " 3/4" "	310	210.00

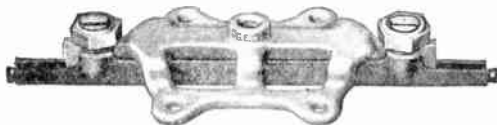
13 1/4-inch Double Boss Strain Ears for Use with Strain Plates



Cat. No.	Form	Size Wire	Tap In.	Approx. Wt., Lbs. per 100	Price per 100
88955	J2	0	5/8	130	\$230.00
88899	J2	00	5/8	150	240.00
88898	J2	000	5/8	200	250.00
59206	J2	000	3/4	200	250.00
88897	J2	C000	5/8	245	265.00
59205	J2	0000	3/4	245	265.00
88896	P2	00	5/8	170	285.00
88894	P2	000	5/8	225	300.00
59203	P2	000	3/4	225	300.00
88895	P2	0000	5/8	270	320.00
59204	P2	0000	3/4	270	320.00

Form S Strain Ears

For Round or Grooved Wire



Form S Strain Ears are installed without soldering. The plate is made of malleable iron and may be wired permanently into the overhead construction. The renewable shoes are made in both malleable iron and bronze.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
189091	For Nos. 0 and 00 Wires, 5/8-inch. Tap, Malleable Iron, Sher.	450	\$300.00
189092	For Nos. 0 and 00 Wires, 3/4-inch. Tap, Malleable Iron, Sher.	450	300.00
189093	For Nos. 0 and 00 Wires, 5/8-inch. Tap, Bronze Shoe	450	350.00
189094	For Nos. 0 and 00 Wires, 3/4-inch. Tap, Bronze Shoe	450	350.00
224430	For Nos. 000 and 0000 Wires, 5/8-inch Malleable Iron, Sher.	475	325.00
245537	For Nos. 000 and 0000 Wires, 3/4-inch Tap, Malleable Iron, Sher.	475	325.00
189096	Malleable Iron Shoe Only, for Nos. 0 and 00 Wires.	225	110.00
189097	Bronze Shoe Only, for Nos. 0 and 00 Wires.	225	240.00
224938	Malleable Iron Shoe Only, for Nos. 000 and 0000 Wires.	250	130.00

Soldered Clinch Strain Ears



15-inch—For Round Wire

Cat. No.	Size Wire	Tap In.	Approx. Wt., Lbs. per 100	Price per 100
68446	0	5/8	100	\$165.00
60348	00	5/8	110	175.00
60349	000	5/8	150	200.00
60350	0000	5/8	190	210.00

15-inch—For Grooved Wire

60351	00	5/8	130	\$210.00
60352	000	3/4	190	240.00

19-inch—For Grooved Wire

39886	00	5/8	170	\$220.00
39887	000	5/8	238	265.00
39888	000	3/4	240	265.00
39889	0000	5/8	290	280.00
39890	0000	3/4	290	280.00

Single End Strain Ears

For Round Wire



Cat. No.	Length In.	Size Wire	Approx. Wt., Lbs. per 100	Price per 100
30459	8	0	40	\$96.00
30460	8	00	50	100.00
34121	9	000	60	104.00
34122	9	0000	70	108.00

For Grooved Wire



Cat. No.	Length In.	Size Wire	Approx. Wt., Lbs. per 100	Price per 100
68442	8	00	60	\$120.00
68444	9	000	75	125.00
68445	9	0000	90	130.00

Soldered Clinch Feeder Ears



15-inch—For Round Wire

Cat. No.	Size Wire	Tap In.	Material	Approx. Wt., Lbs. per 100	Price per 100
15120	0	5/8	Bronze	95	\$156.00
15121	00	5/8	"	100	164.00
34115	000	5/8	"	145	180.00
26152	000	3/4	"	145	.....
34116	0000	5/8	"	155	190.00
26153	0000	3/4	"	155	.....

15-inch—For Grooved Wire

39892	000	5/8	Bronze	185	\$216.00
39893	000	3/4	"	180	216.00
39894	0000	5/8	"	200	228.00
39895	0000	3/4	"	200	228.00
151374			Set Screw for Feeder Lug, 11-21, 1/2-in. Head	4	5.60

15-inch—For Round Wire



236231	0	5/8	Bronze	90	\$156.00
236232	00	5/8	"	95	164.00
236233	000	5/8	"	130	180.00
236234	0000	5/8	"	145	190.00

Form R3 Ears



These ears are made of bronze and are provided with large drop-forged steel wedges for holding the wire. The tensile strength of the ear is greater than the largest size wire it is designed for, and with standard wedges will hold a wire worn 50 per cent of its original size.

Cat. No.	Length In.	Size Wire	Tap In.	Approx. Wt. Lbs. per 100	Price per 100
224595	21	0 and 00	5/8	240	\$440.00
245538	21	000 " 0000	5/8	287	530.00
1488131	Adapter Only			28	40.00
469240	Wedges			12 1/2	30.00

Mechanical Splicing Ears

For Grooved Wire



Cat. No.	Length In.	Size Wire	Tap In.	Material	Approx. Wt. Lbs. per 100	Price per 100
41187	19	00 and 000	5/8	Bronze	400	\$450.00
41188	19	00 " 000	3/4	"	400	450.00
30458	19	0000	3/4	"	585	460.00
41186	19	0000	3/4	"	585	460.00

Form Q Splicing Ears



Cat. No.	Length In.	Size Wire	Tap In.	Material	Approx. Wt. Lbs. per 100	Price per 100
141335	15	00	5/8	Bronze	185	\$240.00
141336	15	000	5/8	"	252	250.00
145825	15	000	3/4	"	240	285.00
141337	15	0000	5/8	"	235	260.00
145826	15	0000	3/4	"	250	300.00

Form Q2 Splicing Ears



Cat. No.	Length In.	Size Wire	Tap In.	Material	Approx. Wt. Lbs. per 100	Price per 100
248435	20 1/4	0 and 00	5/8	Bronze	268	\$346.00
248436	20 1/4	000 " 0000	5/8	"	287	406.00

Form B Clamping Ears for Mines



This ear is provided with a thin metal sheath surrounding the wire.

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
16379	Clamping Ear, Form B, 5/8-in. Tap, Nos. 0 and 00 Wire, Mal. Iron, Sherardized	85	\$140.00
15901	Clamping Sheath, for Cat. No. 16379, Bronze	15	70.00
15902	Clamping Block, for Cat. No. 16379, Bronze	12	9.00
116144	Clamping Screw for Cat. No. 16379...	6	3.00

Form M Clamping Ears for Mines



Form M mechanical clamping ears are for use in mine trolley construction.

The clamp permits the single operation of turning the nut to fasten the ear onto the suspension and grip the trolley wire. It is made of malleable iron and is 2 3/8 inches high, 3 1/2 inches long with excellent wheel clearance.

It has a 5/8-inch tap. Sherardized finish. For 00, 000, 0000 wires.

The feeder ear is similar to the plain ear except that a bronze feeder boss suitable for 4/0 feeder cable is added.

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
141292	For Round Wire	100	\$66.00
*150342	" " "	120	132.00
141296	" Grooved	95	66.00
*150341	" " "	115	132.00
141294	" Fig. 8	105	66.00
*150340	" " 8	125	132.00

*Has bronze feeder boss.



Form L Clamping Ears



These ears are made with 5/8-inch tap only. They are made of malleable iron sherardized, and allow perfect wheel clearance.

The special wrenches No. 193540 are included, free, in each shipment.

Cat. No.	Description	Wt. Lbs. per 100	Price per 100
217963	For Nos. 00, 000 and 0000 Round Wires	40	\$48.00
217964	" " 00, 000 " 0000 Fig. 8	"	40 48.00
216945	" " 00, 000 " 0000 Grooved	38	48.00
269831	" " 00, 000 " 0000	45	52.00

Form L2 Clamping Ears for Mines

Are of malleable iron, and are 1 1/4 inches high and 3 inches long. Tapped 5/8-inch.

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
245444	For Grooved Wire	41	\$43.00
*269759	For Grooved Wire	46	60.00
261257	For Grooved Wire	41	52.00

*Length, 4 1/2 inches. No. 261257 is a universal ear suitable for either Fig. 8 or grooved wire.



Form W Clamping Ears for Mines

The Form W ear offers no obstruction to the passage of the trolley wheel. It will take round grooved and Fig. 8 wire up to 4/0 capacity when it is desired to string such wire.



Cat. No.	Tap In.	Wt. Lbs. per 100	Price Per 100
246968	5/8	70	\$60.00

**Mechanical Splicing Sleeves
Form E**



Designed for use without solder.
Made of brass with tempered steel wedges.

Cat. No.	Size Wire	Length In.	Wt., Lbs. per 100	Price per 100	For Round Wire	
					For Round	For Grooved Wire
64441	0	10	75	\$130.00		
64442	00	11	90	\$140.00		
64443	000	12	115	\$160.00		
64444	0000	12	125	\$188.00		
For Figure 8 Wire						
42448	00	10	90	\$140.00		
42449	000	10	115	\$160.00		
42450	0000	12	130	\$170.00		
Extra Wedges						
140073	0-00		12 1/2	\$6.00		
140074	000-0000		12 1/2	6.00		

Form E2



Cat. No.	For No.	Description	Wt., Lbs. per 100	Price per 100
246693	00	.....	125	\$170.00
246966	000	.....	150	200.00
246967	0000	.....	165	230.00
1460452	Extra Wedges	.....	12	30.00

**Form J Improved
For Round or Grooved Wire**



Cat. No.	Length In.	Size Wire	Material	Wt., Lbs. per 100	Price per 100
245526	15	00	Bronze	135	\$160.00
245527	15	000	"	165	190.00
245528	15	0000	"	175	220.00

**Form Q Improved
For Round or Grooved Wire**



Cat. No.	For No.	Description	Wt., Lbs. per 100	Price per 100
133343	0, 9 Inches Long	.....	125	\$150.00
133344	00, 9 " "	.....	160	170.00
133345	000, 12 " "	.....	225	180.00
133346	0000, 12 " "	.....	275	200.00
For Figure 8 Wire				
151678	0, 9 Inches Long	.....	130	\$165.00
151679	00, 9 " "	.....	165	187.00
151680	000, 12 " "	.....	240	200.00
151681	0000, 12 " "	.....	300	216.00

**Form R Splicing Sleeves
For Pantograph Trolley**



Cat. No.	Description	Wt., Lbs. per 100	Price per 100
141184	For No. 0000 Round or Grooved Wire, Sher.	450	\$400.00
141201	Renewable Shoe for No. 141184	200	70.00

**Form R3 Splicing Sleeves
For Round or Grooved Wire**



245535	For No. 0 and 00	240	\$400.00
245536	" " 000 " 0000	287	490.00
1460452	Extra Wedges for No. 245535	12 1/2	30.00
	" " " " 245536	12 1/2	30.00

Spherical Strain Insulators



Made in two sizes having diameters 2 1/4 inches and 2 3/4 inches. Smaller size is suitable for a working load of 1000 pounds, the average tensile strength is 3000 pounds. The 2 3/4-inch size has an average tensile strength of 5000 pounds, and is suitable for a working load up to 2000 pounds. Both sizes are subjected to a potential test of 5000 volts.

Cat. No.	Diam. In.	DIAMETER INCHES		Distance Between Center of Eyes or Clevis Holes Inches	Wt. per 100	Price per 100
		Eye	Clevis			
27379	2 1/4	1 7/8	1 7/8	4	130	\$85.00
27381	2 3/4	1 7/8	1 7/8	4 7/8	155	105.00
With Two Eyes						
27378	2 1/4	1 7/8	..	3 9/8	85	\$80.00
27380	2 3/4	1 7/8	..	4	125	90.00

**Wood Strain Insulators
With Two Eyes**



Cat. No.	DIMENSIONS, INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Length	Diameter		
16727	9 1/2	1	140	\$75.00
37488	9 1/2	1 1/4	175	85.00
61563	12 1/4	1 3/4	400	180.00
1200 Volts				
148353	14 3/8	1	160	\$80.00
148354	14 3/8	1 1/4	205	95.00
148355	15 5/8	1 3/4	575	195.00
2400 Volts				
37489	20	1	180	\$105.00
36313	20	1 1/4	235	120.00
148356	20 5/8	1 3/4	700	225.00

With Eye and Clevis



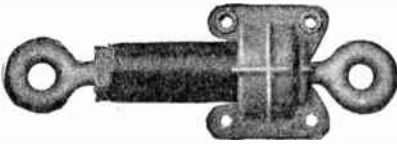
600 Volts				
43229	9 3/8	1	160	\$90.00
43230	9 3/8	1 1/4	185	100.00
126140	12 5/8	1 3/4	500	195.00
1200 Volts				
148378	14 1/8	1	190	\$95.00
148379	14 1/8	1 1/4	250	110.00
148380	16 3/8	1 3/4	640	215.00
2400 Volts				
43231	20 5/8	1	225	\$120.00
43232	20 5/8	1 1/4	295	135.00
148383	21 5/8	1 3/4	780	245.00

With Two Clevises



600 Volts				
105349	10 1/8	1	180	\$105.00
105348	10 1/8	1 1/4	210	115.00
105350	13	1 3/4	560	240.00
With Eye and Tapped Boss				
600 Volts				
17030	9 3/8	1	110	\$95.00
100126	9 3/8	1 1/4	150	105.00
126138	12	1 3/4	375	220.00

Insulated Turnbuckles



Insulated turnbuckles, sometimes called Brooklyn Strain Insulators, are provided with drop-forged steel eyebolts. Turnbuckles have malleable iron casting with eyebolts sherardized to prevent rusting. The casting is made in two halves which fit around the head of the insulated portion fastened together with hollow set screws, thus affording a resistance to tensile strain limited only by the ultimate breaking point of the solid metal.

Cat. No.	Diam. Bolt, In.	Finish	Wt., Lbs. per 100	Price per 100
289258	5/8	Sherardized	325	\$250.00
40802	3/4	"	350	360.00

Form N Trolley Frogs

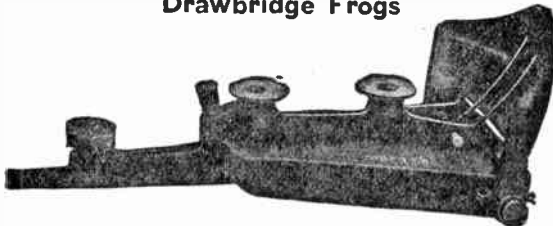
15 Degree—For Round or Grooved Wire



The Form N frog is equipped with renewable wearing pan. Furnished with malleable iron bodies, sherardized. Used for Nos. 00, 000 and 0000 wires.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
200291	Left-hand Frog	775	\$480.00
200292	" " "	775	700.00
200293	Right " " "	775	480.00
200294	" " " "	775	700.00
200295	V Frog	800	480.00
200296	V " "	800	700.00
200297	Left-hand Renewable Pan for No. 200291	400	200.00
200298	Right-hand Renewable Pan for No. 200293	400	200.00
200299	V Renewable Pan for No. 200295	400	200.00
200300	Left-hand Renewable Pan for No. 200292	400	420.00
200301	Right-hand Renewable Pan for No. 200294	400	420.00
200302	V Renewable Pan for No. 200296	400	420.00

Drawbridge Frogs



Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
16395	Nos. 00, 000 and 0000 Wire, Bronze.	875	\$1800.00

Frogs similar to the above but for No. 0 wire are furnished if desired.

Forms G and G2 Trolley Frogs

Forms G and G2 frogs are made with different divergent angles. The following table gives the range of distance from track switch point to track frog with which each set of frogs may be most satisfactorily used:

Frog Distance	Divergence Angle	Trolley Frog
Up to 22 Feet	20°	
From 20 to 30 Feet	15°	
Above 28 Feet	8°	

The minimum frog distance given in the table with which the 15 degree frogs may be used to best advantage corresponds to a turnout radius of 40 feet, but when suburban cars, using high speed trolley wheels, run over city tracks it is advisable to use 15 degree rather than 20 degree frogs throughout the city construction.

To insure smooth transition of the wheel between tongue and pan, the pans of all Form G frogs have, at each end, an inclined plane rising at a very acute angle from the horizontal, which receives the flange of the wheel.

Form G Trolley Frogs

For Round, Grooved or Figure 8 Wire
20-degree



20-degree V Frog
For Nos. 0 and 00 Wire

Cat. No.	Description	OVERALL DIMEN. INCHES Length Width	Approx. Wt. Lbs. per 100	Price per 100
29133	Right-Hand Frog	17 6 1/2	710	\$840.00
29134	Left " "	17 6 1/2	710	840.00
29132	V Frog	17 6 1/2	725	840.00
29135	3-way Frog	17 7 3/8	1000	1250.00
114166	Left-hand Frog	17 6 1/2	710	420.00
114167	Right " "	17 6 1/2	710	420.00
103779	V Frog	17 6 1/2	725	420.00

For Nos. 000 and 0000 Wire

46645	Right-Hand Frog	17 6 1/2	710	\$900.00
46646	Left " "	17 6 1/2	710	900.00
46644	V Frog	17 6 1/2	725	900.00
46647	3-way Frog	17 7 3/8	1000	1500.00
114168	Left-hand Frog	17 6 1/2	710	450.00
114169	Right " "	17 6 1/2	710	450.00
105780	V Frog	17 6 1/2	725	450.00

15-degree



15-Degree Left-hand Frog



15-degree 3-way Frog

For Nos. 00, 000, 0000 Wire

29130	Right-hand Frog	18 5 9/16	875	\$1050.00
29131	Left " "	18 5 9/16	875	1050.00
29129	V Frog	18 5 9/16	875	1050.00
37487	3-way Frog	18 7 3/8	1150	1600.00
114164	Left-hand Frog	18 5 9/16	875	520.00
114165	Right " "	18 5 9/16	875	520.00
103781	V Frog	18 5 9/16	890	520.00

8-degree



8-Degree Right-hand Frog

29127	Right-hand Frog	21 7/8 6	1300	\$1300.00
29128	Left " "	21 7/8 6	1300	1300.00
29126	V Frog	21 7/8 6	1350	1300.00
103782	Right-hand Frog	21 7/8 6	1300	650.00
103783	Left " "	21 7/8 6	1300	650.00
103784	V Frog	21 7/8 6	1350	650.00

Form G2 Trolley Frogs
For Round or Grooved Wire
20-Degree



20-Degree Left-hand Frog
For Nos. 0 and 00 Wire

Cat No	Description	OVERALL DIMEN. INCHES		Approx. Wt. Lbs. per 100	Price per 100
		Length	Width		
110745	Right-hand Frog.....	19 1/2	6 1/2	710	\$710.00
110746	Left ".....	19 1/2	6 1/2	710	710.00
110747	V Frog.....	19 1/2	6 1/2	725	710.00
110748	3-way Frog.....	19 1/2	7 3/8	1000	1150.00
For Nos. 000 and 0000 Wire					
60302	Right-hand Frog.....	19 1/2	6 1/2	710	\$710.00
60301	Left ".....	19 1/2	6 1/2	710	710.00
60303	V Frog.....	19 1/2	6 1/2	725	710.00
60307	3-way Frog.....	19 1/2	7 3/8	1000	1150.00

15-Degree



15-Degree Left-hand Frog
For Nos. 0 and 00 Wire

110749	Right-hand Frog.....	19 1/2	6 1/2	875	\$760.00
110750	Left ".....	19 1/2	6 1/2	875	760.00
110751	V Frog.....	19 1/2	6 1/2	890	760.00
110752	3-way Frog.....	19 1/2	7 3/8	1150	1200.00
For Nos. 000 and 0000 Wire					
60228	Right-hand Frog.....	19 1/2	6 1/2	875	\$760.00
60226	Left ".....	19 1/2	6 1/2	875	760.00
60229	V Frog.....	19 1/2	6 1/2	890	760.00
60234	3-way Frog.....	19 1/2	7 3/8	1150	1200.00

8-Degree



8-Degree Left-hand Frog
For Nos. 0 and 00 Wire

110753	Right-hand Frog.....	23 3/8	6 5/8	1300	\$850.00
110754	Left ".....	23 3/8	6 5/8	1300	850.00
110755	V Frog.....	23 3/8	6 5/8	1350	850.00
For Nos. 000 and 0000 Wire					
60131	Right-hand Frog.....	23 3/8	6 5/8	1300	\$850.00
60132	Left ".....	23 3/8	6 5/8	1300	850.00
60133	V Frog.....	23 3/8	6 5/8	1350	850.00

For Figure 8 Wire
20-Degree

For Nos. 0 and 00 Wire					
246588	Right-hand Frog.....	19 1/2	6 1/2	710	\$710.00
246589	Left ".....	19 1/2	6 1/2	710	710.00
246590	V Frog.....	19 1/2	6 1/2	725	710.00

For Nos. 000 and 0000 Wire

246695	Right-hand Frog.....	19 1/2	6 1/2	710	\$710.00
246696	Left ".....	19 1/2	6 1/2	710	710.00
246697	V Frog.....	19 1/2	6 1/2	725	710.00

15-Degree

For Nos. 0 and 00 Wire					
246591	Right-hand Frog.....	19 1/2	6 1/2	875	\$760.00
246592	Left ".....	19 1/2	6 1/2	875	760.00
246683	V Frog.....	19 1/2	6 1/2	890	760.00
110752	3-way Frog.....	18	7 3/8	1150	1200.00

For Nos. 000 and 0000 Wire

60234	3-way Frog.....	18	7 3/8	1150	\$1200.00
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Form G2 Trolley Frogs
End Tongues



CAT. No.	For Grooved Wire	For Fig. 8 Wire	OVERALL DIMEN. INCHES		Approx. Wt. Lbs. per 100	Price per 100
			Length	Width		
*110756		*247601	4 5/8	1	75	\$80.00
†65856		†246702	4 5/8	1	75	80.00

*For 0 and 00 wires.
†For 000 and 0000 wires.

Trolley Frogs, Special
For Round or Grooved Wire
8-Degree

For line work where both wheel and sliding collectors are used. Used for Nos. 00, 000 and 0000 wires. Material, bronze.



8-Degree Right-hand Frog

Cat. No.	Description	OVERALL DIMEN. INCHES		Approx. Wt. Lbs. per 100	Price per 100
		Length	Width		
49054	Right-hand Frog.....	22	6 1/4	1375	\$2000.00
59825	Left ".....	22	6 1/4	1375	2000.00
59826	V Frog.....	22	6 1/4	1375	2000.00

15-Degree



15-Degree Right-hand Frog

66673	Right-hand Frog.....	17 5/8	6 1/8	1375	\$960.00
66674	Left ".....	17 5/8	6 1/8	1375	960.00
66675	V Frog.....	17 5/8	6 1/8	1375	960.00

8-Degree, High Speed

Complete with guard plate and clamping ears for Nos. 00, 000 and 0000 wires. Material, bronze.



8-Degree High Speed Frog

58720	Right-hand Frog.....	23 7/8	6 5/8	1900	\$3500.00
58721	Left ".....	23 7/8	6 5/8	1900	3500.00
58722	V Frog.....	23 7/8	6 5/8	1900	3500.00

All pull off eyes are 1/2-inch in diameter.

Form K Trolley Frogs
For Round or Grooved Wire
12-Degree



This frog has extra long approaches with renewable end tongues. The body is malleable iron sherardized and the end tongues bronze. The bolts for fastening the wire into the frog are 1/4-inch in diameter and have square heads.

For Nos. 0 and 00 Wire

Cat. No.	Description	Approx. Wt. Lbs. per 100	Price per 100
140110	Right ".....	2000	1100.00
129977	V Frog.....	2100	1100.00
150562	Renewable End Tongue.....	80	100.00

For Nos. 000 and 0000 Wire

140107	Left-hand Frog.....	2000	\$1100.00
140108	Right ".....	2000	1100.00
136004	V Frog.....	2100	1100.00
150563	Renewable End Tongue.....	100	100.00

Form G Crossings, Uninsulated
For Round and Grooved Wire
Right Angle

The principle of the inclined plane to insure smooth transition of the trolley wheel between tongue and pan has been embodied in the design of all Form G crossings.



Cat. Nos. 11297 and 103972

heavy extension flanges offer a smooth under-run for sliding collectors.



Cat. No. 64170

Cat. No.	OVERALL DIMEN. INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Length	Width		
11297	15 3/8	15 3/8	910	\$1000 00
103972	15 3/8	15 3/8	910	600 00
64170	.....	.....	1000	1250 00

Crossings similar to the above, but for No. 0 wire can be furnished.

Adjustable



Can be set at any angle between 30 and 90 degrees. For Nos. 00, 000 and 0000 wires. Overall length of each runway is 20 3/8 inches.

Cat. No.	Material	Wt., Lbs. per 100	Price per 100
11298	Bronze.....	1075	\$1400 00
103973	Malleable Iron, Sherardized.....	1075	875 00

Crossings similar to the above, but for No. 0 wire can be furnished.

35-Degree

For Nos. 00, 000 and 0000 wires. Cat. No. 42413 is bronze and No. 103974 malleable iron, sherardized.



Cat. No.	OVERALL DIMEN. INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Length	Width		
42413	16	5 1/2	865	\$1160 00
103974	16	5 1/2	865	600 00

15-Degree



Cat. No. 19490 is of bronze, and No. 103975 of malleable iron, sherardized.

19490	21 1/4	5 3/8	1025	\$1320 00
103975	21 1/4	5 3/8	1025	725 00

8-Degree



Cat. No. 64445	24 1/4	6 1/4	1400	\$1020 00
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Forms K and K2 Crossings, Uninsulated
For Round and Grooved Wire



Adjustable, with Deflector Bars

Form K adjustable crossings are adjustable for any angle between 30 and 90 degrees.

The body parts are malleable iron and the end tongues are of bronze.

When crossings having deflector bars are required additional clamp castings and longer bolts are supplied so that the bars and end tongues are tightened into place in one operation.



Adjustable, with-out Deflector Bars

For Nos. 0 and 00 Wire

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
177881	Without Deflector Bars, Mal. Iron, Sher.....	1400	\$1200 00
141692	With Deflector Bars, Mal. Iron, Sher.....	2100	1300 00
245890	Right Angle, Mal. Iron, Sher.....	1300	900 00
150562	Renewable End Tongue, Bronze..	80	100 00
For Nos. 000 and 0000 Wire			
177882	Without Deflector Bars, Mal. Iron, Sher.....	1400	\$1200 00
141691	With Deflector Bars, Mal. Iron, Sher.....	2100	1300 00
245891	Right Angle, Mal. Iron, Sher.....	1350	900 00
150563	Renewable End Tongue.....	100	100 00

Form L Crossings, Insulated
For Round or Grooved Wire

The Form L insulated crossing consists of a beam of selected second growth hickory thoroughly impregnated with preservative oils to exclude moisture, finished with black japan, and castings of bronze, with a replaceable white fiber runway. The fiber runways as listed include fiber plates with screws.

Right Angle



Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
46184	Crossing for Nos. 00,000 and 0000 Wire.....	1750	\$2400 00
100935	Fiber Runway, for Cat. No. 46184	18	200 00

Adjustable
For Nos. 0 and 00 Wire



19406	Crossing for Nos. 0 and 00 Wire..	1275	\$2400 00
180741	Fiber Runway for Cat. No. 19406	18	200 00
104589	Cross Tongue " " " 19406.	310	480 00

For Nos. 00, 000 and 0000 Wire



26150	Crossing for Nos. 00, 000 and 0000 Wire, Bronze..	1400	\$2400 00
115815	" " " " 00, 000 and 0000 Wire Mal. Iron, Sher.	1400	1890 00
180741	Fiber Runway, for Cat. Nos. above	18	200 00
104590	Cross Tongue for Cat. No. 26150..	365	560 00
115816	" " " " " 115815..	365	340 00

Crossings similar to above, but for No. 0 wire can be furnished.

Form L Crossings, Insulated

Acute Angle—For Round or Grooved Wire

For Nos. 00, 000, 0000 Wire

Right-hand



Cat. No.	Description	OVERALL DIMEN. INCHES		Approx. Wt. per 100	Price per 100
		Length	Width		
30615	34 Deg. Right-hand Crossing	39	9½	1725	*
30616	White Fiber Runway, for No. 30615	.....	.....	25	*
30613	27 Deg. Right-hand Crossing	39	9⅛	1700	*
30614	White Fiber Runway, for No. 30613	.....	.....	25	*
30611	20 Deg. Right-hand Crossing	46½	6¾	1685	*
30612	White Fiber Runway for No. 30611	.....	.....	25	*
30609	15 Deg. Right-hand Crossing	46½	6⅝	1685	*
30610	White Fiber Runway, for No. 30609	.....	.....	25	*
46181	8 Deg. Right-hand Crossing	56½	5	1675	*
100919	White Fiber Runway, for No. 46181	.....	.....	25	*

Left-hand



100181	35 Deg. Left-hand Crossing	39	9½	1725	*
100924	White Fiber Runway, for No. 100181	.....	.....	25	*
100180	27 Deg. Left-hand Crossing	39	9⅛	1700	*
100923	White Fiber Runway, for No. 100180	.....	.....	25	*
64167	20 Deg. Left-hand Crossing	46½	6¾	1685	*
100922	White Fiber Runway, for No. 64166	.....	.....	25	*
64166	15 Deg. Left-hand Crossing	46½	6⅝	1685	*
100921	White Fiber Runway, for No. 64166	.....	.....	25	*
100179	8 Deg. Left-hand Crossing	56½	5	1675	*
100920	White Fiber Runway, for No. 100179	.....	.....	25	*

*Prices upon application.

Form M Crossings, Insulated

For Round and Grooved Wire

Adjustable



Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
134743	For Nos. 0 and 00 Wire	1400	\$3000.00
134744	For Nos. 000 and 0000 Wire	1400	3000.00
150562	End Tongue for 0 and 00 Wire	80	100.00
150563	" " " 000 and 0000	100	100.00
180741	White Fiber Runway, for Nos. 134743 and 134744	.....	200.00

Right Angle



155022	For Nos. 0 and 00 Wire	1050	\$3000.00
155023	" " " 000 and 0000 Wire	1575	3000.00
150562	Renewable End Tongue for No. 155022	80	100.00
150563	" " " 155023	100	100.00
100935	White Fiber Runway, for Nos. 155022 and 155023	18	200.00

The body castings are malleable iron, sherardized and the end tongues, bronze.

Form L Section Insulators

Single Beam for Round and Grooved Wire
600-1200 Volts



For Nos. 0 and 00 Wires

Cat. No.	Description	Approx. Wt., Lbs. per 100	Overall Length In.	Price per 100
19410	7-in. Break, 600-volt, Bronze	31½	975	\$1280.00
For Nos. 00, 000 and 0000 Wires				
19491	7-in. Break, 600-volt, Bronze	31½	1010	\$1280.00
115817	7 " " 600 " Mal. Iron, Sher.	31½	1010	880.00
168519	Wooden Runway for No. 19410	.....	15	120.00
46190	12-in. Break, 1200-volt, Bronze	36½	1200	1300.00
100176	Wooden Runway, for No. 46190	.....	20	240.00

600 Volts



For Nos. 0 and 00 Wires

46740	5/8-in. Tap, 7-in. Break	31½	1025	\$1400.00
46741	3/4 " " 7 " " "	31½	1025	1400.00
For Nos. 00, 000 and 0000 Wires				
60434	5/8-in. Tap, 7-in. Break	31½	1060	\$1400.00
60435	3/4 " " 7 " " "	31½	1060	1400.00
168519	Wooden Runway, for above Cat. Nos.	.....	15	120.00

Form L3 Section Insulators

Single Beam for Round, Grooved and Fig. 8 Wires
600-2400 Volts

For Nos. 00, 000 and 0000 Wires



Cat. No.	Description	Wt., Lbs. per 100	Price per 100
134613	7-in. Break, 600-volt, Mal. Iron Sher.	1100	\$1200.00
139267	12 " " 1200 " " " "	1500	1300.00
137629	24 " " 2400 " " " "	2500	1600.00
152493	Renewable Runway, for No. 134613	200	385.00

With Tapped Boss

600 Volts

For Nos. 00, 000 and 0000 Wires

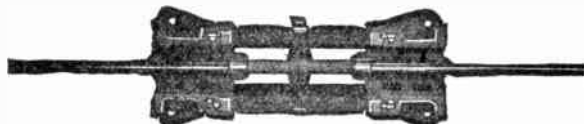
150948	7-in. Break with 5/8-in.-11 Tapped Boss	1075	\$1320.00
150949	7-in. Break with 3/4-in.-10 Tapped Boss	1075	1320.00
152493	Renewable Runway for above Cat. Nos.	200	385.00

Form L4 Section Insulators

Double Beam for Round and Grooved Wire



Side View



Bottom View

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
134896	For Nos. 000 and 0000 Wire, 7-in. Break, 600-volt, Mal. Iron, Sher.	1500	\$1800.00
140952	For Nos. 0 and 00 Wire, 7-in. Break 600-volt, Mal. Iron, Sher.	1500	1800.00
139266	For Nos. 000 and 0000 Wire, 12-in. Break, 1200-volt, Mal. Iron, Sher.	2000	2000.00
156995	Renewable Runway, Complete, Including End Tongues, for Nos. 134896 and 140952	300	250.00
156996	Renewable Runway, Complete, Including End Tongues, for No. 139266	325	275.00

Form L Section Insulators
For Round and Grooved Wire
Nos. 00, 000 and 0000

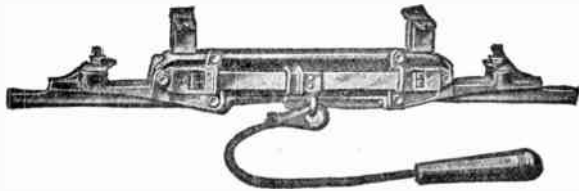


This device is designed especially for use in mines, but may also be used to advantage on spur tracks in surface work.

Cat. No.	Description	Wt., Lbs. per 100	Price per 100
34870	Automatic Section Insulator, Bronze	1650	\$1920.00
34871	Switch Clips with Screws	12	24.00
34872	Locking Spring	5	5.60

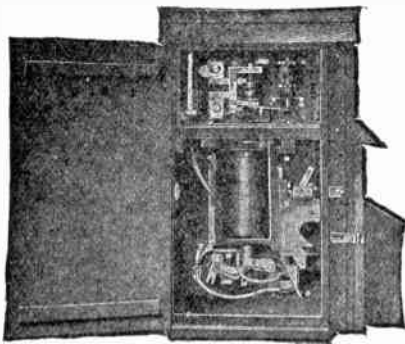
Section insulators similar to the above for No. 0 wire can be furnished.

Form L5 Section Insulators
Hand Operated—600 Volts
For Nos. 00, 000 and 0000 Wires



Cat. No.	Description	Wt., Lbs. per 100	Price per 100
155024	Mal. Iron, Sherardized	2200	\$1900.00
133903	Switch Contacts for Cat. No. 155024	125	96.00
134626	" Blade for Cat. No. 155024	175	250.00
217129	Runway for Cat. No. 155024	200	500.00

Automatic Sectionalizing Switches
Type SW-6, Form A-1



Automatic sectionalizing switches improve the efficiency of direct current feeder systems by permitting all section feeders to be placed in multiple. This is accomplished by connecting the switch directly across the section insulators which, while giving all the advantages of the non-sectionalized system, does not in consequence of the automatic operation of the switch, do away with the beneficial results gained from a sectionalized system.

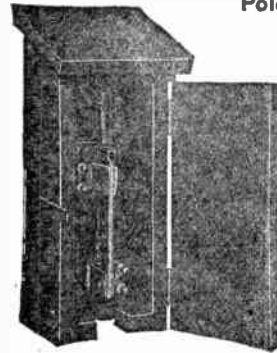
The Type SW-6 Form A1 switch has a continuous capacity of 800 amperes with an overload adjustment of from 600 to 1200 amperes.

This switch is recommended to customers wishing to improve their operating conditions without the large outlay for feeder copper generally necessary. Recommended for use in the original layout of a feeder system, since by its adoption, a smaller cross-section of feeder copper can be utilized.

Price, No. 1917172, Weight, 235 Pounds each \$250.00

Section Switches

Pole Type



Cat. No.	With Box		Price Each
	Ampere Capacity	Net Wt. Lbs.	
259311	200	11	\$16.25
259313	400	15	20.00
259315	600	28	27.50
259317	800	35	30.00
259319	1200	44	45.75

Cat. No.	Without Box		Price Each
	Ampere Capacity	Net Wt. Lbs.	
259310	200	5	\$10.50
259312	400	7	12.75
259314	600	18	19.10
259316	800	22	20.25
259318	1200	29	34.40

Feeder Insulators
600 Volts

Feeder Tap Insulators

For use in pole bracket construction for insulating taps run from the feeder to the trolley wire. Opening in insulating bushing is 1 inch. Malleable iron, sherardized.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per 100
40207	For 1 1/4-in. Pipe	160	\$70.00
40208	" 1 1/2 " "	180	80.00
40209	" 2 " "	200	90.00



Feeder Wire Insulators

An all compound insulator with a 1-inch pin hole. For Nos. 0000 to 500000 C. M. conductors.



Cat. No.	Approx. Wt., Lbs. per 100	Price per 100
64259	170	\$140.00

Tie Top Insulators

Cat. Nos. 46013 and 46007 for Nos. 0000, Nos. 46012 and 46006 for 500000 C. M. No. 46005 for 800000 C. M. and No. 46004 for 1500000 C. M., respectively.

Cat. No.	Diam. Pin Hole In.	Approx. Wt., Lbs. per 100	Price per 100
46013	1	415	\$150.00
46012	1	445	160.00
46007	1 3/8	410	150.00
46006	1 3/8	440	160.00
46005	1 3/8	520	170.00
46004	1 3/8	450	180.00



Clip Top Insulators

Cat. Nos. 46011 and 46003 for No. 0000. Nos. 46010 and 46002 for 500000 C. M. No. 46000 for 800000 C. M. and No. 46001 for 1500000 C. M., respectively.



Cat. No.	Diam. Pin Hole In.	Approx. Wt., Lbs. per 100	Price per 100
46011	1	390	\$150.00
46010	1	415	150.00
46003	1 3/8	385	150.00
46002	1 3/8	410	150.00
46000	1 3/8	495	190.00
46001	1 3/8	520	190.00

Feeder Insulators

600 Volts

Wedge Top Insulators

Cat. No. 61108 takes 600000 to 1500000 C. M. conductors.



Cat. No.	Diam. Pin Hole In.	Approx. Wt., Lbs. per 100	Price per 100
61108	1 3/8	605	\$250.00

Corner Insulators

Cat. Nos. 46014 and 46008 take No. 0000 and 500000 C. M. and Cat. No. 46009 takes 600000 to 1500000 C.M. conductors, respectively.



Cat. No.	Diam. Pin Hole In.	Approx. Wt., Lbs. per 100	Price per 100
46014	1	390	\$140.00
46008	1 3/8	385	140.00
46009	1 3/8	440	170.00

Strain Clamps

Wedge Grips with Clevis



Cat. No. 138280 for 1/16-inch and 1/2-inch, and No. 147273 for 1/4-inch and 3/8-inch, diameter cables, respectively.

Cat. No.	Approx. Wt., Lbs. per 100	Price per 100
*138280	215	\$92.00
†147243	90	80.00

*Clevis has 3/16-inch spread and 5/8-inch diameter pin.

†Clevis has 1/16-inch spread and 1/2-inch diameter pin.

Feeder Strain Clamps



Cat. No. 100077 for No. 0000, Cat. No. 100076 for No. 250000-300000 C.M., Cat. No. 100075 for No. 400000-650000 C.M. and Cat. No. 100074 for No. 700000-1000000 C.M. cables, respectively.

Cat. No.	Approx. Wt., Lbs. per 100	Price per 100
100077	190	\$80.00
100076	220	91.50
100075	275	120.00
100074	350	132.00

Trolley Terminal Clamps

For dead ending trolley wire.



Cat. No.	Approx. Wt., Lbs. per 100	Price per 100
27437	355	\$120.00

Overhead Line Tools



19457 Tongs for Tightening Cap and Cone Suspensions 315 \$2.50



Cat. No. 35799

Cat. No. 147784

35799 Wrench for Form II Mining Suspensions 200 \$.95
147784 Combination Mine Wrench 130 .70

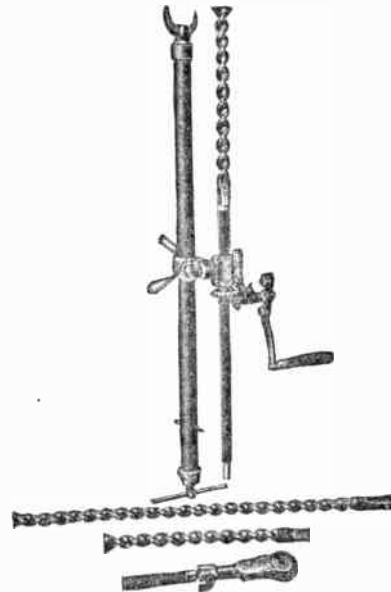


46765 Wrench for Forms H, D, and G, Straight Line Suspensions 325 \$1.25



16915 Trolley Wire Hauling Clamp 615 \$5.35

Mine Roof Drills



This machine, though light in weight, is of strong design and capable of fast work. It can be set for drilling holes at any angle by simple adjustments. The standard posts give a long range of extension and meet all ordinary mine conditions. The drill can readily be carried, set up, and operated by one man. It can be furnished with any length post and with feed bar having 8, 10, 12 or 14 threads per inch as required.

An ordinary ratchet handle or a double-action ratchet handle can be furnished if desired.

Cat. No.	Description	Approx. Wt., Lbs. per 100	Price per Each
167960	Drill, Complete, with 4-foot Post, Three 1 1/4-inch Augers and Operating Handle	65*	.....

*Price upon application.

Wrenches for Ears and Suspensions

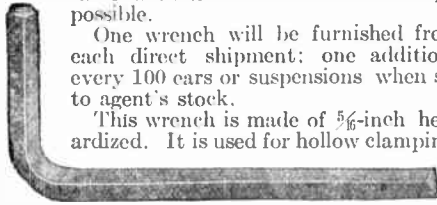


Fig. 1 Combination Wrench

This wrench is of malleable iron, sherardized. Specify same wrench for both ear and suspension wherever possible.

One wrench will be furnished free of charge with each direct shipment; one additional wrench with every 100 ears or suspensions when shipment is made to agent's stock.

This wrench is made of 5/16-inch hexagon steel, sherardized. It is used for hollow clamping screws in forms L and L2 ears.



One wrench will be furnished

free of charge with each shipment and one additional wrench with every 25 ears.

Cat. No.	Description
278192	Fits Forms M and W Ears; Suspensions, Nos. 125330, 165189, 204245, 261737, 1431862, 1436318.
285585	Fits Forms M and W Ears; Suspensions, Nos. 125330, 261737, 421992, 484789, 1431862, 1436318.
280159	Fits Forms M and W Ears; and Suspensions, Nos. 125330, 165189, 204245, 261737, 1431862.
257659	Fits Forms M and W Ears and Suspensions, Cat. Nos. 125330, 261737, 1431862, 1436318.
147784	Fits Forms M and W Ears and Suspensions, Cat. Nos. 125330, 165189, 204245, 261737, 1431862.
248227	Fits Hexagonal Nuts and Hollow Screws in Forms L and L2 Ears; Suspensions, Nos. 421992, 484789.
194522	Fits Nuts and Screws in Forms L and L2 Ears.

Cat. No.	Lgth. In.	Fig. No.	DIMENSIONS, INCHES				Approx. Weight Pounds per 100	Class Z Price per 100
			A	B	C	D		
278192	12	1	1 11/16	2 7/16	1 5/16	1 7/16	155	\$80.00
285585	12	1	2 11/16	2 1/16	1 5/16	1 7/16	155	80.00
280159	12	..	2 7/16	2 3/16	..	1 5/16	150	80.00
257659	12	..	2 3/4	..	..	1 5/16	150	80.00
147784	12	..	2 1/2	..	..	1 5/16	130	70.00
248227	8 1/2	..	2 1/8	..	..	..	100	60.00
194522	6 1/2	..	1 1/8	..	..	..	90	60.00

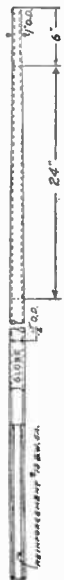
Globe Cold Drawn Seamless Steel Trolley Poles

These poles are made in two designs, A and B. A has a reinforcement 16 inches long and B has a longer reinforcement to meet varying and severe conditions.

They are made of the best grade of basic open hearth steel of the following analysis:

Carbon10-18% Phosphorus . .not over .045%
Manganese .30-50% Sulphur " .045%

Elastic limit is from 60,000 to 70,000 pounds per square inch.



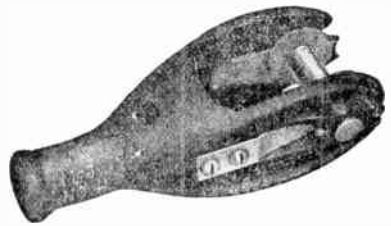
Style A

Lgth. Feet	Av. Weight Pounds	Lgth. of Reinforcement Feet	Load at End of Pole Elastic Limit Pounds	Deflection at Elastic Limit Due to Load and Weight of Pole, In.	Price Each
12	18.4	1 1/3	48	13 1/4	.....
13	20.3	1 1/3	44	15 1/4	.....
14	22.3	1 1/3	40	17 3/4	.....
15	24.3	1 1/3	36	19 1/2	.....

Style B

Lgth. Feet	Av. Weight Pounds	Lgth. of Reinforcement Feet	Load at End of Pole Elastic Limit Pounds	Deflection at Elastic Limit Due to Load and Weight of Pole, In.	Price Each
12	22.7	4 1/2	75	22 1/2	.....
13	24.7	4 9/16	69	26 1/2	.....
14	26.7	5 1/4	62	30	.....
15	28.7	5 3/8	55	33	.....

No. 4 More-Jones Trolley Harps



M-J No. 4 Trolley Harps accommodate 4 to 5-inch wheels; 1 1/2 inches between contact washers and regularly furnished with 1/2 and 5/8-inch solid cold rolled steel axles. Harps of malleable iron.

Prices upon application.

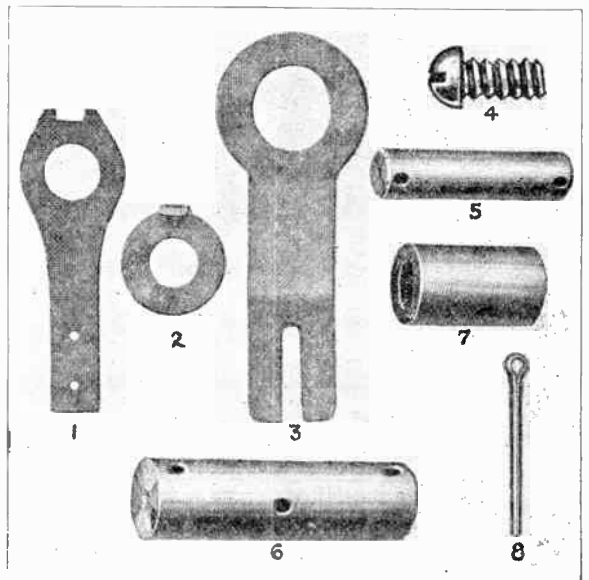
No. 6 More-Jones Trolley Harps



M-J No. 6 Trolley Harps, the latest and most improved design, on the bottle principle, to prevent catching or fouling the overhead. For 6-inch wheels, 1 3/4-inch length of hub; equipped with 3/4 or 7/8-inch hollow lubricating shaft. Harps of malleable iron, very light, strong and efficient.

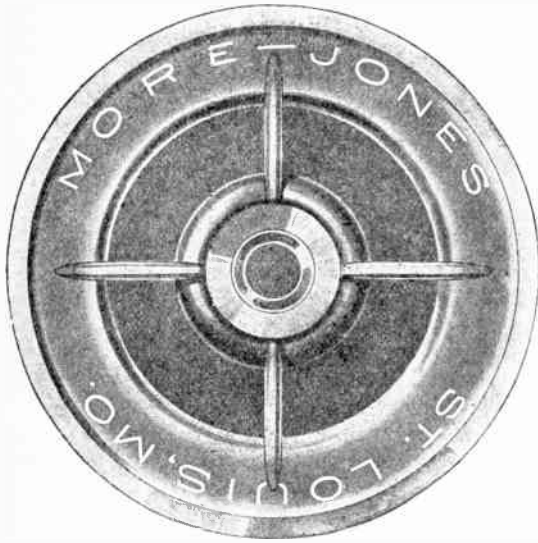
Prices upon application.

M-J Wheel and Harp Parts



- No. 1—Contact Spring for No. 4 Harp.
 - No. 2—Contact Washer for No. 4 Harp.
 - No. 3—Contact Spring for No. 6 Harp.
 - No. 4—Contact Screw.
 - No. 5—Solid C. H. Steel Shaft.
 - No. 6—Hollow C. H. Steel Lubricating Shaft.
 - No. 7—Graphite Bushing.
 - No. 8—Cotter Pin.
- Contact spring and washer of phosphor-bronze.

More-Jones 6-inch Trolley Wheels
 With Graphite Bushing
 Designed for City and Suburban Service



Cat. No.	1	2	3	4	39
Wheel Diameter	6 1/4	6 1/4	6 1/4	6 1/4	6
Length of Hub	1 1/2	1 1/2	2	2	1 1/2
Graphite Bushing	5/8	5/8	5/8	5/8	5/8
Flange Width	1 7/16	1 7/16	1 7/16	1 7/16	1 7/16
Groove Depth	23/32	23/32	23/32	23/32	23/32
“ Style	V	U	V	U	V
Cat. No.	40	41	42	18	19
Wheel Diameter	6	6	6	6	6
Length of Hub	1 1/2	2	2	2	1 1/2
Graphite Bushing	5/8	5/8	5/8	5/8	5/8
Flange Width	1 7/16	1 7/16	1 7/16	1 5/8	1 5/8
Groove Depth	23/32	23/32	23/32	7/8	7/8
“ Style	U	V	U	Special wide & deep	

Please order by number. Prices upon application.

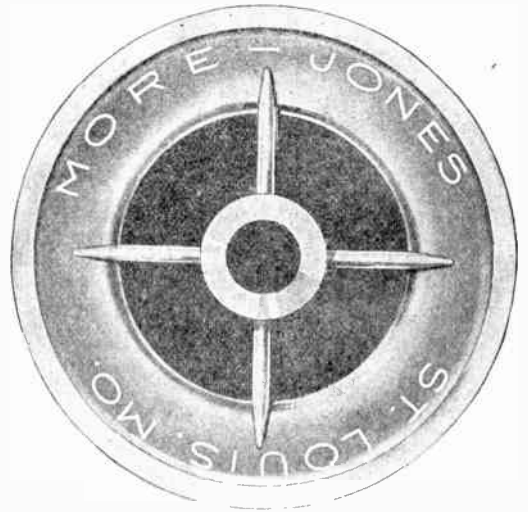
More-Jones 5-inch Trolley Wheels
 With Graphite Bushing—For City Service



Cat. No.	24	25	26	27	28	29
Wheel Diameter	5	5	5	5	5	5
Length of Hub	1 1/2	1 1/2	1 1/2	1 1/2	2	2
Graphite Bushing	5/8	5/8	1/2	1/2	5/8	5/8
Flange Width	1 7/16	1 7/16	1 7/16	1 7/16	1 7/16	1 7/16
Groove Depth	11/16	11/16	11/16	11/16	11/16	11/16
“ Style	V	U	V	U	V	U

Please order by number. Prices upon application.

More-Jones 6-inch Trolley Wheels
 Without Graphite Bushing
 Designed for City and Interurban Service



Cat. No.	5	6	7	8	9
Wheel Diameter	6	6	6	6	6
Length of Hub	1 1/2	1 1/2	1 3/4	1 3/4	1 3/4
Plain Bore	3/4	3/4	3/4	3/4	7/8
Flange Width	1 7/16	1 7/16	1 7/16	1 7/16	1 7/16
Groove Depth	23/32	23/32	23/32	23/32	23/32
“ Style	V	U	V	U	V
Cat. No.	10	11	12	13	14
Wheel Diameter	6	6	6	6	6
Length of Hub	1 3/4	1 1/2	1 1/2	2	2
Plain Bore	7/8	7/8	7/8	7/8	7/8
Flange Width	1 7/16	1 7/16	1 7/16	1 7/16	1 7/16
Groove Depth	23/32	23/32	23/32	23/32	23/32
“ Style	U	V	U	V	U

Please order by number. Prices upon application.

More-Jones 4-inch Trolley Wheels
 With Graphite Bushing and Oil Chamber
 For Mines, Industrial Plants and Electric Roads



Cat. No.	34	35
Wheel Diameter	4 1/4	4 1/4
Length of Hub	1 1/2	1 1/2
Graphite Bushing	1/2	1/2
Flange Width	1 7/16	1 7/16
Groove Depth	11/16	11/16
“ Style	V	U

Please order by number. Prices upon application.

More-Jones 4½-inch Trolley Wheels

With Graphite Bushing—No Oil Chamber



Cat. No.	47	48
Wheel Diameter..... in.	4½	4½
Length of Hub.....	1½	1½
Graphite Bushing.....	½	½
Flange Width.....	1⅞	1⅞
Groove Depth.....	⅞	⅞
“ Style.....	V	U

Please order by number.

Prices upon application.

More-Jones 4-inch Trolley Wheels

With Graphite Bushing—No Oil Chamber

For Mines, Industrial Plants and Electric Roads



Cat. No.	36	37
Wheel Diameter..... in.	4¼	4¼
Length of Hub.....	1½	1½
Graphite Bushing.....	½	½
Flange Width.....	1⅞	1⅞
Groove Depth.....	⅞	⅞
“ Style.....	V	U

Please order by number.

Prices upon application.

More-Jones 5-inch Sleet Wheels

With Graphite Bushing



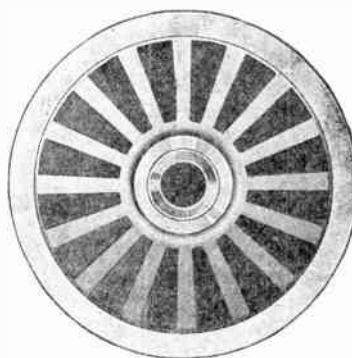
Cat. No.	51	52
Wheel Diameter..... in.	5	5
Length of Hub.....	1½	1¾
Graphite Bushing.....	⅝ Plain Bore	¾-⅞ or 1
Flange Width.....	Rough	Rough
Groove Depth.....	⅞	⅞

Mention Cat. No. and diameter of bore in ordering.

Prices upon application.

More-Jones 4-inch Sleet Wheels

With Graphite Bushing



Cat. No.	49	50
Wheel Diameter..... in.	4¼	4¼
Length of Hub.....	1½	1½
Graphite Bushing.....	½	⅝
Flange Width.....	Rough	Rough
Groove Depth.....	⅞	⅞

Mention Cat. No. and diameter of bore in ordering.

Prices upon application.

Wood Poles

Selection of poles for outside wire lines is based on three determining factors:

- 1—Species of wood to meet specific requirements;
- 2—Quality of the poles;
- 3—Service on shipments.

Species

The first factor—that a certain species of wood is best fitted for one kind of installation to the exclusion of other species—is fully recognized by the Western Electric Company. In recognition of this we have available in various pole yards throughout the country one or more of the five species that are generally used for poles—(1) western red cedar, (2) northern white cedar, (3) creosoted yellow pine, (4) chestnut, (5) cypress, (6) juniper.



Logs Cut in the Interior of the Woods Are Hauled to the Lumbering Railroad Track by Oxen

Pole Quality

Poles sold by Western Electric Co. are quality products in the best sense of the term. All conform to nationally accepted standards. Inspections are thorough. Poles are inspected and measured on the ground immediately after felling and stripping. Another inspection is made before they are placed in stock. A third inspection takes place before shipping.

All poles that are delivered are guaranteed to be in accordance with the specifications under which they are ordered.

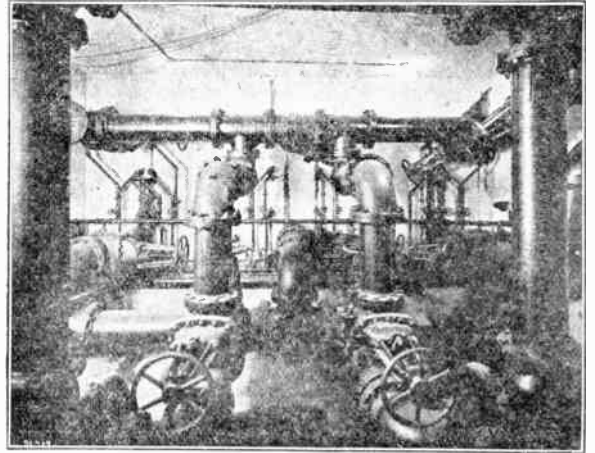
Service on Shipments

At Minneapolis, and Everett, Washington, cedar poles are concentrated, handled by steam equipment, etc. The stock runs fifty thousand poles and more.

The many bases of supply for pine, chestnut and cypress are so situated throughout the regions in which these woods are grown that shipments can be made in any quantity and at any time.

Emergency service is always available to supply needs when the unforeseen happens.

Preservative Treatment for Wood Poles



Showing piping arrangement in pump room in National Pole Cedar Treating Plant at Minneapolis. They are so flexible that they can be put into any tank either through the top or the bottom and so arranged that a continuous circulation of oil can be maintained. In this room are two 2500GPM pumps operated by 240 h. p. motors. The oil can be changed from hot to cold in any one of these treating vats within three minutes.

Description

Fifteen years of scientific observation of experimental lines, by engineers of the largest pole users in the United States has demonstrated that the life of poles can be increased by the proper butt-treatment. A prominent engineer, after making a careful study, made this statement: "If a satisfactory penetration is obtained in the ground line area, I am convinced that the life of a pole, butt-treated in creosote, will depend upon the mechanical wear of the pole above."

Another prominent engineer says, "The depth of penetration of the preservative exercises the controlling influence on the durability of poles. At least ninety per cent of the chestnut, western red cedar and northern white cedar poles butt-treated with creosote by the open-tank process were sound after eleven to fourteen years' service. The slight decay in the relatively small number of the poles affected was usually in small pockets and occurred in checks through the treated wood."

This additional expenditure for treating poles with preservative is a sound investment because the initial investment for the pole itself and cost of erection has been amortized at the end of its natural life as an untreated pole. The percentage of increased life depends largely on the soil and climatic conditions existing in the locality in which they are set, the size of the pole and the kind of treatment given.

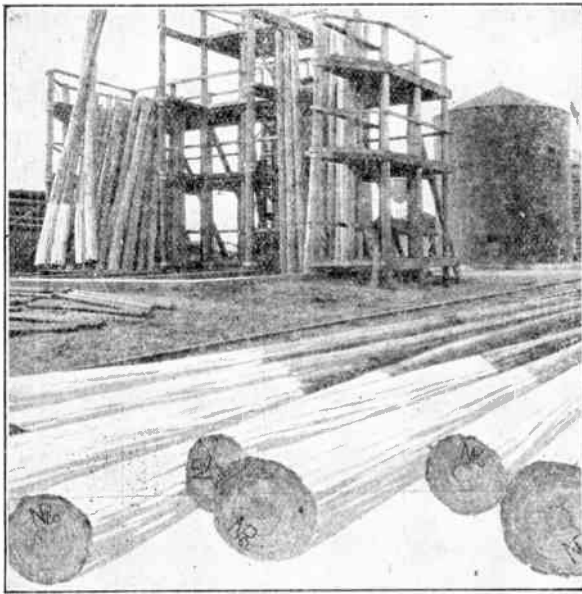
Users are assured by results obtained in experimental lines in all parts of the country, that a good penetration at the ground line will greatly increase the life of a pole. This more than doubles its value, as the original factor of safety is maintained far beyond the replacement date of the untreated pole.

Six standard ways of treating poles have been accepted:—

1. Brush treatment at individual pole yards.
2. AA treatment with open tanks (15 minutes hot creosote).
3. A treatment with open tanks (15 minutes hot carbolineum). More expensive, but no more efficient than the AA treatment. We do not supply this treatment.
4. B treatment with open tanks (4 hours hot—2 hours cold creosote).
5. Pressure treatment throughout the entire length of the pole.
6. Puncturing treatment guaranteeing penetration.

If the best material and workmanship are used, any one of these methods is beneficial but varies in degree of success with the grade of material and workmanship. The first four methods can be used profitably only with seasoned poles. Authorities agree that penetration and oil stability are essential to lasting results. Any method selected insures greater line life if pure distillate of coal tar is used. The purity of the distillate is of paramount importance.

Preservative Treatment for Wood Poles



One of the Butt Treating Vats Showing View of 130,000 Gallon Reserve Creosote Tank at Minneapolis Plant

Brush Treatment

Brush treatment of poles consists in applying hot preservative to the surface of a pole with a brush. This method is not in general use among pole dealers, but is used by operating companies for local treatment.

For effective brush treatment the highest boiling point coal tar distillate obtainable is essential. High boiling creosote oils penetrate the wood readily. They are free from black and sticky tars that do not penetrate but concentrate on the outer wood cells. Western Electric "Sozol" was developed for this work.

Sozol

Sozol is for brush application for poles and all line construction woods including chestnut, cedar, pine and fir.

From a quality standpoint there is nothing on the market comparable with it. It is pure distillate of coal tar, that is, it is a product obtained directly by distilling off the volatile products of coal tar, and when obtained it is not adulterated by adding any other substances. It is not a by-product, that is, the distillation process is primarily for the purpose of securing this particular oil—not for some other distillate of coal tar in which this oil or a modification of it would come off in the distilling process. All creosote wood preserving oils have two faults in a greater or less degree. Either they are so thin and volatile that when applied with a brush or by open tank method, they partially evaporate or leak out and their preservative qualities are thus impaired; or, they are adulterated with heavier coal tar oils and these heavier constituents clog up other cells of the wood and prevent the penetration required for effective treatment.

This new oil, Sozol, is of much higher specific gravity and greater body and, in consequence, is more stable than ordinary pure creosote oils sold for wood preserving. It is not as volatile as these oils; at the same time, it has absolutely no viscous properties which interfere with effective penetration as in the case of mixed oils. In short, it has absolute permanency with maximum penetration. It is more than a creosote oil, it is a special wood preservative.

Sozol is supplied in drums, barrels and cans.

Preservative Treatment for Wood Poles

Treatment B

Treatment B provides for submersion of pole butts in hot creosote for several hours, after which the bath is changed to cold creosote, the duration of each immersion depending upon several factors, but principally upon the degree of seasoning. The intent of treatment B is to give poles as near a full sap penetration as possible but there is no guarantee penetration of one-half of the sap wood on B treatments. This method has a recognized place in the industry.

Pressure Treatment

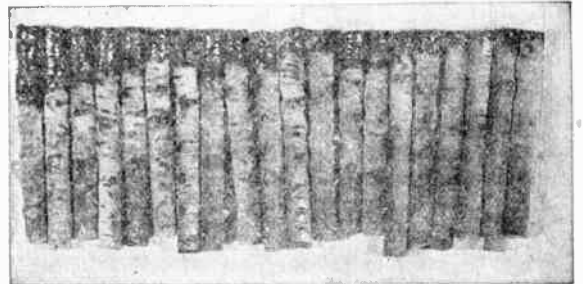
Pressure treatment, or cylinder treatment impregnating the entire length of the pole, is not required for the preservation of the more durable species of wood, such as chestnut, northern white cedar and western red cedar, as these are subject to rapid decay only at the ground line. Pressure treatment is applied, however, to the different species of Southern pine. This we cover fully under pine poles.

Puncturing Treatment

Scientific Pentrex Method Worth More Money

The perforating process of Pentrex treatment of cedar poles is the logical result of the development of the open-tank or non-pressure process treatment of timber with creosote.

The preservative value of creosote has been recognized for many years and, as a treatment for cedar poles, was first applied with a brush. However, it was found that the painting did not get the creosote into the smaller and deeper season checks and cracks, so the poles were dipped into the creosote. This treatment was named AA and was specified as a continuous immersion for fifteen minutes in creosote heated to not less than 212° F., and not more than 230° F.



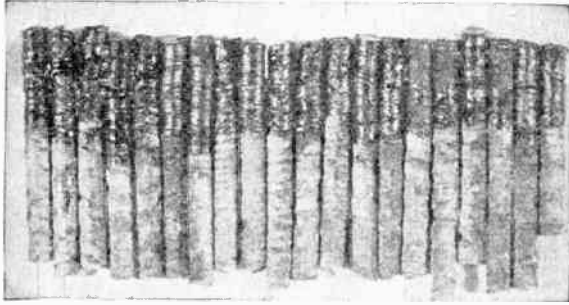
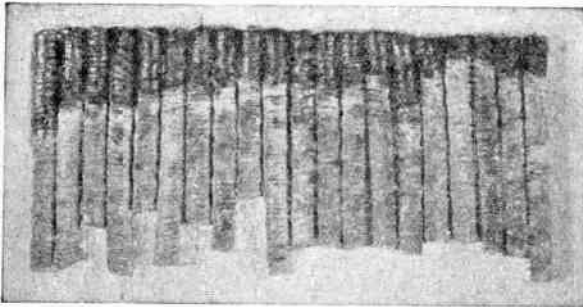
Scientific B Treatment, Average Penetration, $\frac{1}{32}$ -inch

The penetration secured by the AA treatment was so shallow and unreliable that the time of treatment was lengthened to a period of from four to six hours in creosote ranging from 212° F. to 230° F. and an immediately succeeding bath in cold creosote for two hours at not more than 110° F. This treatment was called B. By this process a much deeper penetration was secured and better results in service were obtained, but it was found that the absorption was very irregular. In fact, in seasoned timber of apparently the same condition, so no poles absorbed the creosote readily and showed a good penetration while others gave evidence of no more than a surface treatment. Likewise, in the same pole there might be a full sapwood penetration at one point, whereas, in an area but a few inches away there might be no penetration. This uneven absorption naturally led to very uncertain results in service because, after the poles were set in line and were subjected to the various conditions of the seasons with the resultant checking and parting of the fibres, the cracks descending from the upper untreated portion of the pole entered the treated area and where they ran through the shallow treatment they opened up and exposed untreated timber. This permitted the fungi to come in direct contact with untreated fibres with the resultant infection and rotting of the wood within the pole behind the layer of treated timber. This action proved that any treatment was only as effective as the protection given by the shallowest penetration at any point in the ground line area.

This conclusion necessitated the development of a uniformly deep penetration. Much research and experimental work was done to develop a treating process which would give this result.

Puncturing Treatment for Wood Poles

Continued

Average Penetration of Punctured Section, $2\frac{1}{32}$ -inch, by our Scientific MethodAverage Penetration, $1\frac{1}{32}$ -inch, Unscientific Hand Punctured Treatment

A microscopic study of cedar shows the wood to be very porous. It is made up of long, hollow longitudinal fibres which are spindle-shaped cells, arranged in rings from the pith to the bark. These rings of cells form the annular rings. These fibres, besides furnishing support for the tree, provide means for the movement of the sap. Other than the longitudinal fibres are the medullary rays or cells which extend radially from the pith into the bark. There are no passages in the timber other than the cells within these longitudinal fibres and medullary rays and the sap moves from cell to cell through minute pits or pores which connect adjoining cells at their points of contact.

Although cedar fibre will absorb from 12 per cent to 15 per cent of its oven dry weight in water it will not absorb creosote. Examination, under the microscope, of treated cedar discloses creosote within the cells but shows no absorption in the fibre. Consequently, in order to obtain penetration in cedar the movement of creosote must be by means of the openings in the cells and not through the cell fibre.

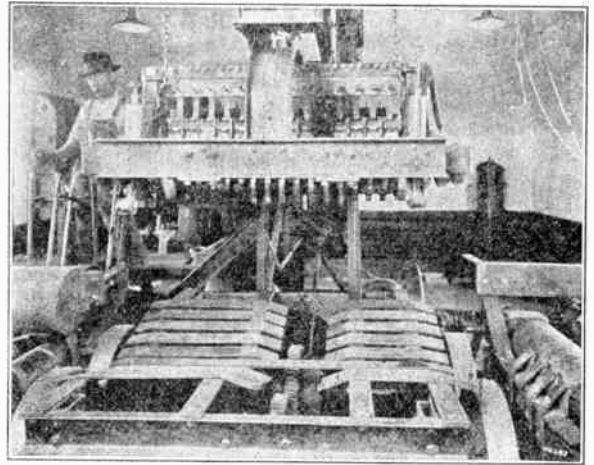
If the conditions within the timber remain unchanged after being cut, not so much difficulty would be experienced in treating it, but such is not the case. The sap is a watery solution of sugars, starches, resins, etc., and, while the tree is alive, is constantly in solution and circulating, but, when the timber is cut, peeled and begins to season, some of the water from the sap evaporates and concentrates the sugars and resins which seal up most, if not all, of the minute pits or pores between the adjoining cells.

This accounts for the difficulty in impregnating so-called seasoned cedar and the facility in treating green, water driven, or weathered cedar. In the green timber the sap is still in solution and all passages are open. With water-driven timber some of the sap has been dissolved and leached from the cells. While in weathered timber, although the water has evaporated from the sap and left the sugars and resins obstructing the pits and pores, yet the extreme seasoning has caused minute checks which have opened up the fibres between the adjoining cells and thus permitted the movement of creosote through the cells.

Consequently, as it is impracticable to treat only weathered, green or water-driven timber, it became necessary to devise a mechanical means for opening radial passages into seasoned timber to permit the movement of creosote in the cells.

Puncturing Treatment for Wood Poles

Continued



Showing Pentrex Machine Ready to Receive Pole Coming In from Left for Perforating. Note Carriage in Low Position, which is Afterwards Raised to Head of Machine

No external pressure is applied. The movement of creosote in the cells is entirely dependent on the action of capillary attraction. This is created by first applying heated creosote ranging from 212° to 223° F. for a continuous period of eight hours, thereby vaporizing the moisture in the sapwood, causing it to expand $1\frac{1}{273}$ times its volume for every degree of heat through which it passes and partially expelling it from the timber and then applying an immediately succeeding bath in cold creosote from 110° F. to 150° F. The cold treatment contracts the vapors, forms a partial vacuum within the cells and draws the surrounding creosote into the timber. This action creates an appreciable longitudinal creep or movement but does not produce much penetration radially or tangentially.

The loss in strength to a pole through perforation has been determined to be in direct proportion to the percentage of the circumference cut away in a horizontal plane and to the depth of the incision.

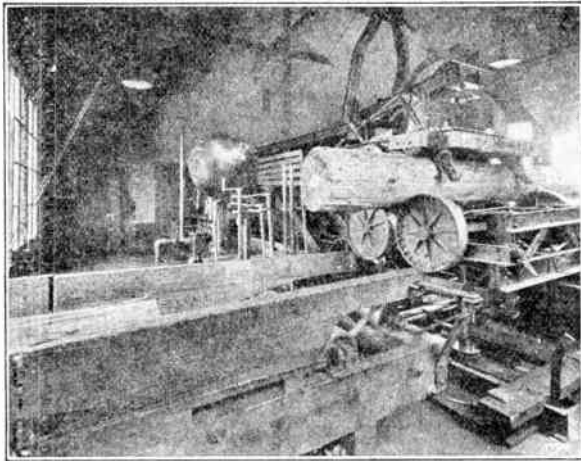
A scientific machine for perforating, therefore, meets the existing structural conditions in cedar. It was designed to cut radial passages through the fibre just to the depth of the required penetration. The incisions cut the fibres, opened the ends of the longitudinal cells, and provided passage for the movement of creosote so that with the least amount of timber cut in a horizontal plane and with perforations only to the depth of the required penetration, a complete saturation of the fiber was obtained between all perforations.

There are many other perforating machines in operation, but they have been designed with no consideration of the conditions of cedar with the result that their perforations are made deeper than necessary and are spaced so close that the timber is weakened to a great extent and, in many cases, the sapwood is so mutilated that it is made no more than a loosely adhering shell. Even though such perforating may produce the required penetration, it is detrimental to the pole, inasmuch as the strength of the pole is greatly reduced and the sapwood is made a weakened shell which will not withstand the abuses of service.

Some apply perforating by means of a studded belt or plate. These belts, or plates, are about eighteen inches long by six inches wide and contain from seventy-five to one hundred and twenty-five teeth. A mallet is used to pound the teeth into the timber. When the plate is removed, the teeth, which are binding the timber between them, tear the fibres and in many cases loosen the outer sapwood from the heartwood. This produces a very weak and unsatisfactory condition. Furthermore, it is impossible to obtain uniform depth of perforation and impregnation by using belts or plates because the body holding the teeth is not flexible and cannot follow the crevices and irregularities of the timber. On the other hand, the teeth of our machine are inserted into the timber in such a way as to insure a uniform depth of perforation regardless of the uneven surface over which it has to work.

Puncturing Treatment for Wood Poles

Continued



Pentrex Machine with Pole in Position Ready for Puncturing. The Oil Lift that Raises the Lower Carriage into the Head of the Machine and Acts as a Cushion while the Machine Is in Operation

It was thought at first that if the same penetration could be obtained in a cedar pole without perforating as with perforating, that better service results could be obtained. Experience has proven the contrary to be true. If creosote were not volatile, and if its preservative value were of indefinite existence and if the layer or treated timber around the outside of the pole were never broken, then a creosoted area on the surface, regardless of depth of penetration, would be sufficient to preserve the pole indefinitely. It has been found, however, in green and even in seasoned poles, that season checking occurs after the poles are set in line. But in perforated poles, these checks descending from the upper untreated section run out when they reach the treated, perforated area. Thus the perforating protects the poles, not only in securing a deeper, more uniform impregnation, but also in providing means of relieving the stresses which cause checking in treated ground line section thereby insuring constant and complete protection against infection of the timber.

Two of these proper method Pentrex machines are at the Minneapolis transfer yard where the National Pole Company maintains an average stock of 80000 poles. Thus, one machine can handle 3/8-inch orders, and the other 1/2-inch orders without stopping to change the knives or change substitution of the order. A third machine is operated by the National Pole Company at Everett, Washington. These yards handle this work for us.

It is felt that studies by means of an increment borer could well be made by pole users. One large Central Station, whose engineers make such studies independent of the operating department, reported informally, that our Pentrex Treatment was 30 per cent more efficient than some others on their yards. In making increment borings, the oil in the outside of the boring is naturally smeared by the augur indicating a deeper penetration than the actual.

For a real test, therefore, take a sharp knife, such as a razor blade, and split the boring in half and examine the penetration on the inside. Rest the boring on a smooth clean board when doing this.

There is also much opportunity for the use of Lufkin special pole tapes in checking circumferences at the six-foot point on poles purchased under "Class" specifications.

Wood Poles					
Ground Line and Minimum Length of Treated Section			Minimum Length of Treated Section		
Length of Pole Feet	Distance of Ground-line Above Butt Feet	Distance of Section Measured from Butt of Pole, Feet	Length of Pole Feet	Distance of Ground-line Above Butt Feet	Distance of Section Measured from Butt of Pole, Feet
20 or less	4	5 1/2	50	7	8
25	5	6	55	7 1/2	8 1/2
30	5 1/2	6 1/2	60	8	9
35	6	7	65	8 1/2	9 1/2
40	6	7 1/2	70	9	10
45	6 1/2	7 1/2	..	..	..

Price List for Butt Treating Cedar Poles

Lgth. Ft.	Size In.	SPEC. B		GUARANTEED		SPEC. AA		
		ALTERNATE HOT AND COLD LONG TIME BUTT TREATMENT		PENETRATION PROCESS 3-FOOT PUNCTURED AREA		CREOSOTE		
		White Cedar Poles	Red Cedar Poles	Northern White Cedar Poles	WESTERN RED CEDAR Poles PENETRATION INCHES	Northern White Cedar Poles	Western Red Cedar Poles	
16	4	\$.42	\$.35	\$.52	\$.43	\$.44	\$.26	\$.23
	5	.49	.46	.60	.55	.58	.30	.26
18	4	.53	.46	.68	.55	.58	.30	.26
	5	.63	.53	.80	.63	.67	.38	.30
20	4	.70	.63	.88	.76	.79	.49	.34
	5	.67	.53	.84	.63	.66	.34	.30
25	4 1/2	.70	..	.92	..	..	.38	..
	5	.77	.67	.96	.80	.83	.45	.38
30	5 1/2	.84	..	1.08	..	..	.49	..
	6	.91	.77	1.16	.93	.97	.53	.45
35	7	1.16	1.05	1.48	1.27	1.32	.71	.56
	8	..	1.26	2.24	1.52	1.60	..	.79
40	4	.77	.70	.96	.84	.88	.45	.38
	5	.98	.77	1.24	.93	.97	.53	.45
45	5 1/2	1.16	..	1.48	..	..	.60	..
	6	1.40	1.09	1.80	1.31	1.36	.79	.60
50	6 1/2	1.50	..	1.90	..	..	.85	..
	7	1.75	1.35	2.25	1.60	1.65	.95	.80
55	8	2.10	1.60	2.90	1.90	1.95	1.15	1.00
	5	1.45	..	1.90	..	..	.80	..
60	5 1/2	1.70	..	2.10	..	..	.90	..
	6	1.90	1.50	2.40	1.80	1.90	1.00	.80
65	6 1/2	2.05	..	2.55	..	..	1.15	..
	7	2.30	1.75	2.90	2.10	2.20	1.25	1.00
70	8	2.50	2.10	3.20	2.50	2.65	1.45	1.15
	5	1.95	..	2.40	..	..	1.05	..
75	6	2.30	1.80	2.90	2.10	2.25	1.35	1.05
	6 1/2	2.35	..	3.00	..	..	1.60	..
80	7	2.50	2.15	3.20	2.60	2.70	1.65	1.20
	8	3.35	2.40	4.25	2.90	3.00	2.05	1.45
85	9	..	2.75	..	3.30	3.45	..	1.60
	6	2.75	..	3.45	..	..	1.70	..
90	6 1/2	3.00	..	3.85	..	..	1.90	..
	7	3.35	2.50	4.25	3.05	3.15	2.25	1.45
95	8	4.20	2.80	5.30	3.35	3.50	2.70	1.60
	9	..	3.15	..	3.80	3.95	..	1.80
100	6	3.55	..	4.50	..	..	2.50	..
	7	4.20	..	5.30	..	..	2.90	..
105	8	5.45	3.05	6.90	3.65	3.80	3.85	1.90
	9	..	3.35	..	4.05	4.20	..	2.20
110	6	5.60	..	7.05	..	..	4.30	..
	7	6.30	..	8.00	..	..	4.75	..
115	8	6.60	3.35	8.40	4.05	4.20	4.95	2.20
	9	..	4.20	..	5.05	5.30	..	2.50
120	7	6.60	..	8.30	..	..	5.20	..
	8	8.45	4.20	10.60	5.05	5.30	5.65	2.50
125	9	..	5.05	..	6.05	6.30	..	3.00
	6	8.65	..	10.90	..	..	5.85	..
130	8	9.35	5.05	11.75	6.05	6.30	6.30	3.00
	9	..	5.55	..	6.70	6.95	..	3.60
135	8	..	5.55	..	6.70	6.95	..	3.60
	9	..	6.70	..	8.10	8.45	..	4.80
140	8	..	6.70	..	8.10	8.45	..	4.80
	9	..	7.85	..	9.40	9.85	..	5.95
145	8	..	7.85	..	9.40	9.85	..	5.95
	9	..	8.95	..	10.70	11.20	..	7.20
150	8	..	8.95	..	10.70	11.20	..	7.20
	9	..	9.75	..	11.70	12.25	..	8.10
155	8	..	9.75	..	11.70	12.25	..	8.10
	9	..	10.60	..	12.70	13.30	..	9.00
160	8	..	10.60	..	12.70	13.30	..	9.00

Prices for Class B Western same as 8-inch top. Prices for Class B Northern same as 7-inch top.

Red or Western Cedar Poles

National Electric Light Association Specifications

Same as A. T. & T. Co. Specification

The material desired under these specifications consists of poles and guy stubs of the best quality of either seasoned or live green cedar of the dimensions hereinafter specified. The poles covered by these specifications are of Western white cedar, otherwise known as red cedar, Western cedar or Idaho cedar. Seasoned poles shall have preference over green poles, provided they have not been held for seasoning long enough to have developed any of the timber defects hereinafter referred to. All poles shall be reasonably straight, well proportioned from butt to top, shall have both ends squared, sound tops, the bark peeled, and all knots and limbs closely trimmed.

When the dimension at the butt is not given, the poles shall be reasonably well proportioned throughout their entire length. No pole shall be over six inches longer or three inches shorter than the length of which it is accepted. If any pole is more than six inches longer than is required, it shall be cut back.

Minimum Dimensions of Poles in Inches

Length of Poles Feet	MINIMUM TOP CIRCUMFERENCE			
	Class A	Class B	Class C	Class D
	28	25	22	18½
	CIRCUMFERENCE 6 FEET FROM BUTT			
20	30	28	26	24
25	34	31	28	26
30	37	34	30	28
35	40	36	32	30
40	43	38	34	32
45	45	40	36	..
50	47	42	38	..
55	49	44	..	..
60	52	46	..	..
65	54	48	..	..
70	55	50	..	..
75	56	52	..	..
80	57	54	..	..
85	59	56	..	..
90	61	58	..	..

Quality of Timber

DEAD POLES.—No dead poles and no poles having dead streaks covering more than one quarter of their surface shall be accepted. Poles having dead streaks covering less than one quarter of their surface shall have a circumference greater than otherwise required. The increase in the circumference shall be sufficient to afford a cross-sectional area of sound wood equivalent to that of sound poles of the same class.

TWISTED, CHECKED OR CRACKED POLES.—No poles having more than one complete twist for every twenty feet in length, no cracked poles and no poles containing large season checks shall be accepted.

CROOKED POLES.—No poles having a short crook or bend, a crook or bend in two planes or a reverse crook or bend shall be accepted. The amount of sweep measured between the six foot mark and the top of the pole, shall not exceed one inch to every six feet in length.

"CAT FACES."—No poles having "cat faces," unless they are small and perfectly sound and the poles have an increased diameter at the "cat face," and no poles having "cat faces" near the six foot mark or within ten feet of their tops shall be accepted.

SHAVED POLES.—No shaved poles shall be accepted.

WIND SHAKES.—No poles shall have cup shakes (checks in the forms of rings) containing heart or star shakes, which enclose more than 10 per cent of the area of the butt.

BUTT ROT.—No poles shall have butt rot covering in excess of 10 per cent of the total area of the butt. The butt rot, if present, must be located close to the center in order that the pole may be accepted.

KNOTS.—Large knots, if sound and trimmed close, shall not be considered a defect. No poles shall contain hollow or rotten knots.

MISCELLANEOUS DEFECTS.—No poles containing sap rot, woodpecker's holes or plugged holes, and no poles showing evidence of having been eaten by ants, worms or grubs, shall be accepted.

MARKING.—Every pole shall be scored with a cross at a point ten feet from the butt.

Red Cedar Poles

Western Red Cedar Association Official Specifications

Top Measure Poles

Table No. 1—Minimum of Measurement

Top Designation, In.	Circumference, In.	Top Designation, In.	Circumference, In.
6	18½	9	28
7	22	10	31
8	25	..	..

Table No. 2

Poles 35 feet and longer shall have a minimum circumference measurement at extreme butt as follows:

Length	7 Inch Top	8 Inch Top	9 Inch Top	Length	7 Inch Top	8 Inch Top	9 Inch Top
35 ft.	33 in.	36 in.	39 in.	65 ft.	45 in.	48 in.	50 in.
40 "	34 "	37 "	40 "	70 "	47 "	50 "	53 "
45 "	39 "	42 "	45 "	75 "	48 "	51 "	54 "
50 "	41 "	44 "	47 "	80 "	50 "	53 "	56 "
55 "	42 "	45 "	48 "	85 "	51 "	54 "	57 "
60 "	44 "	47 "	50 "	90 "	52 "	55 "	58 "

Table No. 3

Length of Pole, Ft.	Maximum Sweep Between Top and Ground Line, In.	Length of Pole, Ft.	Maximum Sweep Between Top and Ground Line, In.
20	3	60	9
25	3	65	10
30	4	70	10½
35	5	75	11
40	5½	80	12
45	6	85	13
50	7	90	14
55	8	..	..

Minimum Carloads

Minimum weights required to make carload lots of poles:
 Cars loaded with 35' or shorter poles..... 40,000 lb.
 Cars loaded with 40' poles or 40' and shorter poles. 50,000 lb.
 Loads containing any 45' or longer poles (double or overhand loads)..... 66,000 lb.
 Triple loads..... 99,000 lb.

The above minimum weights will be used in all instances excepting as follows:

Sales covering shipments to be made from Eastern yards will be figured on minimum weights shown in tariffs under which the shipment moves.

Sizes Inches	Length Feet	Weight Pounds	Size Inches	Length Feet	Weight Pounds
4	20	100	7	40	675
5	20	135	8	40	800
6	20	190	9	40	1000
7	20	250	8	45	1000
8	20	325	9	45	1200
5	25	200	8	50	1200
6	25	250	9	50	1400
7	25	325	8	55	1400
8	25	400	9	55	1600
6	30	325	8	60	1600
7	30	400	9	60	1850
8	30	550	8	65	1850
6	35	450	9	65	2200
7	35	550	8	70	2200
8	35	650	9	70	2600
9	35	800	8	75	2600

Class	Length Feet	Weight Pounds	Class	Length Feet	Weight Pounds	Class	Length Feet	Weight Pounds
D	20	190	B	35	650	B	60	1600
C	20	250	A	35	800	A	60	1850
B	20	325	D	40	550	B	65	1850
A	20	400	C	40	675	A	65	2200
D	25	250	B	40	800	B	70	2200
C	25	325	A	40	1000	A	70	2600
B	25	400	C	45	800	B	75	2600
A	25	550	B	45	1000	A	75	3000
D	30	325	A	45	1200	B	80	3600
C	30	400	C	50	1000	A	80	4200
B	30	550	B	50	1200	B	85	4200
A	30	650	A	50	1400	A	85	4800
D	35	450	B	55	1400	B	90	4800
C	35	550	A	55	1600	..	..	..

Poles under tentative N. E. L. A. Western Red Cedar specifications 1922 will be priced on application.

Cedar Poles

Tentative Specification Western Cedar Poles Studied by the N.E.L.A. in 1922

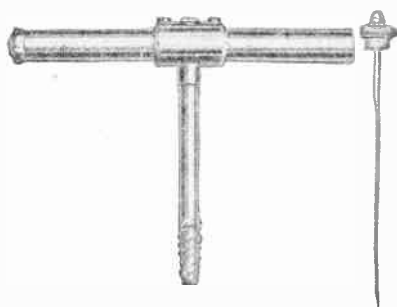
To make available complete specification information on all species of poles, the following specification known as tentative N.E.L.A. Standard is published.

This specification for Western red cedar poles was before the Association in the year 1922-23 and has been adopted as standard by a few of the operating companies.

Lgth Ft.	Ground Line Distance from Butt Ft.	AAA		AA		A		B	
		Top	6 Ft. from Butt	Top	6 Ft. from Butt	Top	6 Ft. from Butt	Top	6 Ft. from Butt
16	3.5	..	..	..	..	..	..	..	..
18	4.0	..	..	..	..	..	..	..	..
20	4.5	28	36	26	34	24	32	22	30
25	5.0	28	38	26	36	24	34	22	32
30	5.5	28	40	26	38	24	36	22	34
35	6.0	28	42	26	40	24	38	22	36
40	6.5	28	44	26	42	24	40	22	38
45	7.0	28	47	26	44	24	42	22	40
50	7.0	28	49	26	47	24	44	22	42
55	7.5	28	52	26	49	24	47	22	44
60	7.5	28	54	26	52	24	49	22	47
65	8.0	28	56	26	54	24	52	22	49

Lgth. Ft.	Ground Line Distance from Butt Ft.	C		D		EE	
		Top	6 Ft. from Butt	Top	6 Ft. from Butt	Top	6 Ft. from Butt
16	3.5	..	..	19	23	18	21
18	4.0	20	26	19	24	18	22
20	4.5	20	27	19	25	18	23
25	5.0	20	30	19	27	18	25
30	5.5	20	32	19	30	18	27
35	6.0	20	34	19	32	..	..
40	6.5	20	36	19	34	..	..
45	7.0	20	38	..	..	..	..
50	7.0	20	40	..	..	..	..
55	7.5	20	42	..	..	..	..

Increment Borers



By turning this instrument it is forced to any desired depth into the pole being examined, and a core, the boring, may be withdrawn from it, which is a complete cross section of the wood.

The depth of penetration of the creosote is determined by its color; the condition of the wood, the annular rings, etc. are clearly visible.

This is the recognized method of determining creosote penetration. The holes do no harm if they are carefully plugged with tight-fitting creosoted plugs.

Prices upon application.

Northern White Cedar Poles

Otherwise Known as Maine Cedar, Michigan Cedar or Canadian Cedar

Northern White Cedar Association Specifications Top Measure Poles

All posts and poles shall have been cut from live, green, growing Northern White Cedar timber.

PERCENTAGES OF MAXIMUM DEFECT.—Not more than 10 per cent. of the number of pieces of any lot or shipment shall contain the maximum crook or butt rot.

VARIATION IN SIZES.—If not to exceed 2 per cent. of the pieces in any lot or shipment are below the minimum size, and there is an equal number of pieces as large as the minimum of the next larger size, the shipment shall be considered as conforming to these specifications so far as size is concerned.

LENGTHS.—Any post or pole 7 feet to 18 feet inclusive may be either two inches longer or two inches shorter than its specified length. Any pole 20 feet and longer may be short of its specified length one-half an inch for each five feet of its length, or it may be six inches longer than its specified length.

MANUFACTURE.—All posts and poles shall be peeled and knots closely trimmed.

KNOTS.—Knots are permitted if sound, smoothly trimmed and do not plainly impair the strength of the pole or post.

SHORT KINKS.—Short kinks not permitted.

ROT.—

- (a) Sap or skid rot not permitted.
- (b) Poles 16 feet and longer having minimum top sizes, of the dimensions required, must have sound tops. Poles 16 feet and longer having tops one inch or more in circumference above the minimum top sizes, may have one pipe rot not more than one-half inch in diameter. Posts or poles 7 feet to 14 feet inclusive, pipe rot is permitted.
- (c) Butt and ring rot combined shall not exceed 10 per cent. of the area of the butt.

TWIST.—Winding twist permitted unless very unsightly and exaggerated.

CAT FACES.—Cat faces permitted if sound, and if their distance from the top of the pole is not less than 20 per cent. of the length of the pole in 30 feet and shorter poles, and 25 per cent. on 35 feet and longer poles.

DISCOLORATION.—Discoloration not considered a defect under these specifications.

CROOK OR SWEEP.—1. Posts or poles 7 feet to 14 feet inclusive. One-way sweep not exceeding maximum shown in Table No. 2 is permitted.

2. Poles 16 feet and longer.
(a) BELOW GROUND LINE.—Sweep not to exceed diameter of butt.

(b) ABOVE GROUND LINE.—Reverse sweep, and two-way sweep, meaning a sweep in two planes allowed providing line drawn from center of pole at top to center of pole at ground line (see Table No. 2) does not leave the pole at any point. One-way sweep allowed not to exceed maximum shown in Table No. 2.

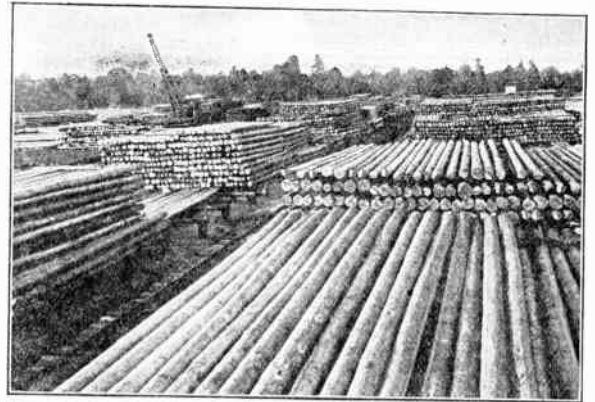
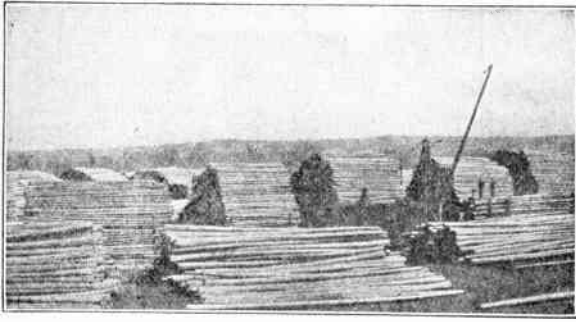
BUTT ROT.—The Association Specifications admit butt rot to the extent of 10 per cent. of the total area of the butt.

CROOK.—The rules admit a crook one way of 5 inches on a 25-foot pole, 6 inches on 30-foot pole, 7 inches on a 35-foot pole, measuring the crook from a point 6 feet from the butt to the top of the pole.

Lengths, Ft.	Maximum Sweep, In.	Between Points		Ground Line
		Top to butt	4 ft. from butt	
7 to 14, Inc.	4	..	..	..
16, 18 and 20	4	..	..	..
25	5	..	..	6
30	6	..	..	6
35	7	..	..	6
40	8	..	..	6
45	9	..	..	6
50	10	..	..	6
55	11	..	..	6
60	12	..	..	6
65	13	..	..	6
70	14	..	..	6

Northern White Cedar Poles

Cresoted Yellow Pine Poles



Pine Poles Ready for Quick Shipment Stock Length, 16 to 75 Feet

Northern White Cedar Association Specifications

Diam. Top Inches	Length Feet	Approx. Weight Lbs.	No. to From	CARLOAD To	Diam. Top Inches	Length Feet	Approx. Weight Lbs.	No. to From	CARLOAD To
4	16	85	340	400	6	30	350	90	125
5	16	105	300	400	6½	30	350	75	100
6	16	135	230	300	7	30	450	75	100
7	16	165	200	250	8	30	600	50	75
8	16	200	150	225	5	35	400	75	100
9	16	300	100	130	5½	35	400	75	100
4	18	95	325	400	6	35	450	75	100
5	18	125	250	300	6½	35	450	60	80
6	18	155	200	250	7	35	600	50	75
7	18	200	150	225	8	35	850	40	60
8	18	325	95	125	6	40	625	50	75
9	18	425	90	125	6½	40	625	45	60
4	20	100	300	400	7	40	850	40	60
5	20	130	230	300	8	40	1100	30	45
5½	20	130	230	300	Following sizes require two cars for shipping.				
6	20	190	150	225	6	45	900	60	80
7	20	250	125	150	7	45	1100	50	70
8	20	350	90	125	8	45	1350	45	60
9	20	450	75	100	6	50	1150	50	70
5	22	175	175	250	7	50	1350	45	60
4	25	150	200	250	8	50	1700	35	45
5	25	200	150	225	6	55	1400	40	50
5½	25	200	135	190	7	55	1700	35	45
6	25	250	125	150	8	55	2200	25	35
6½	25	250	100	130	7	60	2200	25	35
7	25	350	90	125	8	60	2500	22	30
8	25	425	90	125	7	65	2500	22	30
5	30	275	110	175	8	65	3000	18	25
5½	30	275	100	130					

Prices on application.

A. T. & T. Co., Western Union and National Electric Light Association Specifications Class Poles

Class	Length Feet	Circum. Top Inches	Circum. 6 Feet from Butt Inches	Approx. Weight Lbs.	Class	Length Feet	Circum. Top Inches	Circum. 6 Feet from Butt Inches	Approx. Weight Lbs.
G	20	12½	..	100	A	35	24	43	850
F	20	15½	..	130	E	40	18¾	..	625
D	20	17¼	..	130	D	40	18¾	..	625
C	20	18¾	27	190	C	40	18¾	40	625
E	22	15½	..	175	B	40	22	43	850
D	22	17¼	..	175	A	40	24	47	1100
C	22	18¾	28½	250	Following sizes require two cars for shipping.				
B	22	22	30	275	E	45	22	..	1100
G	25	12½	..	150	D	45	22	..	1100
F	25	15½	..	200	C	45	18¾	43	900
E	25	17¼	..	200	B	45	22	47	1100
D	25	18¾	..	250	A	45	24	50	1350
C	25	18¾	30	250	D	50	22	..	1350
B	25	22	32	350	C	50	18¾	46	1150
A	25	24	36	425	B	50	22	50	1350
D	30	18¾	..	350	A	50	24	53	1700
C	30	18¾	33	350	B	55	22	53	1700
B	30	22	36	450	A	55	24	56	2200
A	30	24	40	600	B	60	22	56	2200
D	35	18¾	..	450	A	60	24	59	2500
C	35	18¾	36	450					
B	35	22	38	600					

Prices on application.

The creosoted pine pole has many natural advantages which account for its wide-spread use and popularity. Probably the greatest single incident that has ever occurred to confirm the judgment of engineers in the selection of this pole was the terrific sleet storm of December 1924. The most notable feature of the whole storm was the remarkable manner in which creosoted pine poles withstood the great ice and wind loads.

The creosoted pine pole has a long life because it is permanently fortified against decay by the high grade creosote oil injected under heavy pressure. The uniformly deep penetration of the preservative into the wood is due to the use of highly developed Western Electric specifications both for the manner of treatment and for the creosote oil.

Creosoted pine is the strongest of the pole woods. Hence it is standard practice in pine line construction to use smaller poles or fewer poles per mile, thus reducing costs.

The strength of the creosoted pine pole does not decrease during years of service. Long after installation the factor of safety of a pine line is as great as when it was first built.

Specifications permit the use of only the best creosote produced in either America or Europe and the use of this high grade oil explains the cleanliness and non-bleeding qualities of Western Electric poles.

The natural taper of the yellow pine, which can be counted on as 1 inch in 8 to 10 feet, explains its symmetry, uniformity and attractiveness in the line.

Quick delivery of these poles can be made, for large quantities of all sizes are maintained at the plant ready for immediate shipment. At any time our representative will gladly call on a customer personally for a discussion of his requirements. Technical data will be supplied upon request.

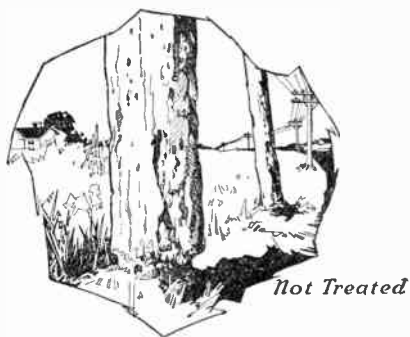
Pine Pole Conductivity

The question as to whether treated poles have less resistance than untreated poles and for that reason are a source of danger to line men called upon to work on them, has been a subject of considerable discussion, particularly where poles treated throughout their full length are used. A committee of the American Wood Preservers' Association reporting at its 1922 convention had the following to say on the subject:

1. The distribution engineer is concerned with insulator and cross-arm resistance, the pole resistance forming but a small fraction of the circuit to the ground.

Creosoted Yellow Pine Poles

Continued



2. Creosote and gas oil are the preservatives in general use for pole preservation, and the experimental data show that they increase resistivity of timber.

3. Steel poles and cross-arms are in common use on transmission lines.

The N.E.L.A. agrees that pole conductivity does not enter seriously into transmission or distribution line construction.

**Wood Preservation
Development of the Art**

As long ago as fifty years the term "Commercial Creosote Oil" could be referred to, with confidence in what the term meant; but in recent years the term has been abused. "Commercial Creosote Oil" as the term is used today, more generally refers to a much inferior substance to that defined by this term in years gone by. The "Commercial Creosote Oil" of today can be, and generally is, a mixture of low grade, inferior Creosote Oil and tar. Despite the fact that the specifications are usually written to limit the tar content, this percentage sometimes runs all the way up to ninety-five per cent and is used under the indefinite term "Commercial Creosote Oil."

Real coal tar Creosote Oil is a pure distillate, free from admixture of any kind. A mixture of Creosote Oil and tar is not in reality a Creosote Oil. It is therefore necessary for the buyer to be extremely careful not to be misled by a reference to a mixture as "Creosote Oil" whether termed "Commercial" or otherwise.

Pure creosote oil, of high gravity—means stability. The same gravity can be falsely made up by adding coal tar to a light volatile creosote oil.

At cutting, wood contains a high percentage of moisture which must be eliminated to allow the entrance of the preservative.

Removing this moisture is called seasoning. This can be accomplished by natural seasoning, or seasoning in air, requiring proper piling for a period of 2½ to 4½ months. It may also be accomplished by artificial, or seasoning by steam. This requires only a few hours and has the advantage of sterilizing and opening the pores of the wood rendering it receptive to the preservative.

The difference in these two processes when properly handled is small but no other single item of the preservation process requires closer attention than seasoning. Poles at this stage of manufacture must be perfectly sound and in the best possible condition, otherwise an internal rot is set up which may prove most insidious and destructive to line life.

Creosoted Yellow Pine Poles

Continued

Wood Preservation

Developments of the Art

Continued

We always recommend the best creosote oil in the empty cell process, which where a minimum quantity of oil is used, is the most stable; a pure coal tar distillate will have more oil left in the pole in five years with 6 pounds used in the original treatment, than would be found in the pole treated with 12 pounds of the adulterated creosote oil.

Selected white wood and the best Oil unite in forming the efficient Creosoted Yellow Pine Pole.

The Western Electric Company guards, by scientific specifications written in detail, against both inferior products and the manipulation of the best products by man. It selects its poles and it selects, with equal care, its Creosote Oil.

The best grade of wood preservative known to science—Creosote Oil, a pure distillate of coal tar—in combination with the best wood, makes the best Creosoted Yellow Pine Pole.

We advocate full cell process, 12 pounds of Western Electric Specification No. 4227 Oil per cubic foot of wood, for heavy duty and approximate life of forty years.

We advocate same oil, empty cell treatment 8 pounds final retention, for a cheaper and less important pole, probably good for twenty-five years.

American Telephone & Telegraph Co.

Specifications No. 4229 for Creosoted Yellow Pine Poles

Adopted in 1924 as Revising and Replacing Specification No. 4209

These specifications cover poles of creosoted southern pine, divided into classes with respect to dimensions and framed for various purposes as hereinafter described. All orders should state the length and the circumference class desired.

General

Poles shall be of southern yellow pine (long leaf, short leaf, Cuban or loblolly), well proportioned from butt to top, scund, straight and free from defects, except as hereinafter set forth.

Quality of Timber

GENERAL.—All poles shall be free from decay, rot, dote, red heart, dead streaks, brashy wood, cracks, and bird holes. Poles shall be free from all other defects exceeding in amount the allowances hereinafter specified. (See requirements below in reference to knots and holes.)

TIMBER.—All poles shall be cut from live timber. Poles may be cut from trees which have been worked for turpentine, but no part of any section of the tree which has been exposed in this operation shall extend above a plane 3 feet below the ground line as hereinafter set forth in the table entitled Minimum Dimensions of Poles in Inches—Circumference.

INSECT DAMAGE.—The scoring or channeling of the pole surface by insects working under the bark shall not be classed as insect damage. Holes or tunneling entering the body of the poles and indicating attack by ants, worms, grubs or other insects, shall be considered insect damage. Insect damage is permitted to the following extent: pin-holes, circular in outline, less than ¼ inch in diameter, not greater in number than 15 per 4 square inches shall be permitted in unseasoned poles. Similar holes in seasoned poles shall also be permitted in case their depth does not exceed 1 inch.

GRAIN.—No pole shall have more than 1 complete twist of grain in any 20 feet of length.

American Telephone & Telegraph Co.

Specifications No. 4229 for Creosoted
Yellow Pine Poles

Continued

SHAKES AND CHECKS (Before Treatment).—The tops of poles shall be free from shakes. Shakes in the butt surface not over 1 foot in depth and extending over more than $\frac{1}{4}$ of the circumference are permitted, provided they are at least 1 inch distant from the edge of the butt. Shakes over 1 foot in depth or shakes extending over more than $\frac{1}{4}$ of the circumference shall be permitted only when they fall inside a circle whose center is the pitch center of the piece and whose diameter is one half the diameter of the butt. Checks starting from the pitch center of the butt shall not extend to the edge of the butt surface. The top and side surfaces of the pole shall be free from large or injurious checks.

SCARS.—No pole shall have had a catface or other form of scar located within 2 feet of the ground line. The distance of the ground line from the butt shall be as hereinafter set forth under the heading Table of Dimensions. Scars located in other sections of the pole shall be smoothly trimmed so as to remove all bark and all surrounding or overhanging wood not completely intergrown with the wood of the body of the pole. Such trimming shall not result in abrupt changes in the contour of the pole surface or have a depth of more than 1 inch, except that where the diameter of the pole at the location of the scar is more than 10 inches, the depth may be $\frac{1}{10}$ of the diameter.

The distance to the axis of the pole from trimmed surfaces located between 2 feet below the ground line and the butt shall not be less than the radius of the pole at a point 2 feet above the ground line.

KNOTS AND HOLES.—Knots over 1 inch in diameter, showing discoloration or softness of fibre, indicating possible decay, shall be neatly gouged to a depth of not more than $\frac{1}{2}$ of the diameter of the pole at the point where the knot is located to permit determination of the character and extent of decay. Sound wood shall not be unnecessarily removed. The gouging should be done in such a manner as to insure drainage of water from the hole when the pole is set. Where such gouging reveals the presence of heart rot or punk rot, the pole shall be rejected. Knots under 1 inch in diameter need not be gouged. Knots showing hollow pith centers shall be reamed to a diameter of $\frac{3}{8}$ inch and plugged with the creosoted wooden plugs shown in the drawing appended to these specifications. All poles shall be free from nails, spikes and other metal. Holes over 1 inch deep left by the withdrawal of nails or spikes, which will not drain water, shall be completely filled with the creosoted wooden plugs shown in the drawing.

BUTTS AND TOPS.—The tops of poles shall be free from pith holes. Pith holes shall be permitted in the butts of poles. Buttsilvering due to felling shall be permitted if the distance from the outside circumference is not less than $\frac{1}{4}$ of the butt diameter and the height is not more than 1 foot.

Preparation for Treatment

BARK.—Outer bark shall be completely removed from the surface of all poles. No patch of inner bark left on the pole surface shall be more than $\frac{1}{4}$ inch wide or 4 inches long. No 2 patches of inner bark shall be separated from each other by less than 6 inches.

TRIMMING AND SAWING.—All knots shall be trimmed close. Completely overgrown knots, where the covering wood does not rise more than 1 inch above the main surface of the pole, need not be trimmed. All poles shall be neatly sawed at the butt along a plane which shall not be out of square with the axis of the pole by more than 2 inches per foot of butt diameter. Beveling at the edge of the sawn butt surface not over $\frac{1}{2}$ of the diameter in width or an equivalent area, if unsymmetrically located, shall be permitted.

American Telephone & Telegraph Co.
Specifications No. 4229 for Creosoted Yellow
Pine Poles

Continued

FRAMING.—Before poles are subjected to the creosoting process they shall be framed in accordance with the terms of the order. When the order calls for a guy stub the pole shall only be roofed as indicated in appended drawing. When the order calls for a cable pole the pole shall be roofed and fitted with 1 bolt hole as indicated in the appended drawing. When the order calls for a brace the upper end of the pole shall be shaped and framed in accordance with the details shown in the appended drawing. Braces shall satisfy specification requirements for the dimensions of the class ordered before framing is begun. The 14, 28, 33 and 38-inch braces shall satisfy at 4 feet from the butt the dimensional requirements specified at 6 feet from the butt for poles 2 feet longer.

When the order calls for a pole the pole shall be roofed and gained in accordance with the details shown in the appended drawing.

The number of gains applied shall be as shown in the following table for the class and length of the pole.

Required No. of Gains	No. OF FEET						Class D	Class E	Class F
	Class AAA	Class AA	Class A	Class B	Class C	Class D			
6	25 or Over	26 or Over	25 or Over	25 or Over	25 or Over	....	....	....
5	22	22	22	22 or Over	....	....
4	20	20	20	20	20 or Over	....
3	18	18	18	....
2	16	16	16 or Over	

No gains shall be cut in class G.

Each gain shall be of the dimensions shown in the drawing appended hereto. The distance between gains and the distance between the uppermost gain and the ridge of the roof shall be as shown in this drawing. A $2\frac{1}{2}$ -inch hole shall be bored through the pole at the center of each gain. This hole shall be perpendicular to the face of the gain. The removal of wood between the upper edge of the top gain and the roof is permitted, provided the surface is at no point below the level of the face of the top gain.

Differences in level between gains on the same pole shall be such that straight edges 30 inches long are placed on the faces of the finished gains so as to extend 15 inches on either side from the center line of the pole and are sighted in the direction of the length of the pole, the straight edges in any 2 gains will not depart from parallelism by more than $\frac{1}{16}$ -inch at their ends.

The gains on poles showing sweep or curvature shall be located on the concave side of the pole. In case the pole shows sweep or curvature in more than 1 direction, the concave side with the greatest curvature shall be gained.

When the order specifies a lesser or a greater number of gains than is required for poles above or is accompanied by drawings describing framing different from that shown on the appended drawings, the instructions of the order shall be followed in framing the pole.

Dimensions and Shape

DIMENSIONS—LENGTH.—Poles under 50 feet in length shall not be over 3 inches shorter or 6 inches longer than their nominal length. Poles 50 feet or over in length shall not be over 6 inches shorter or 12 inches longer than their nominal length.

CIRCUMFERENCE.—Poles shall be classified with respect to their circumference at 6 feet from the butt and at their top in accordance with the table set forth below. This table gives the minimum allowable circumference at 6 feet above the butt and at the top for poles of each class and length listed and shall not preclude the acceptance of poles having greater circumferences at these points of measurement than those given in the table. The top dimensional requirement shall be understood to apply at a point corresponding to the minimum length permitted for the pole.

American Telephone & Telegraph Co.

American Telephone & Telegraph Co.
Specifications No. 4229 for Creosoted
Yellow Pine Poles

Specifications No. 4229 for Creosoted
Yellow Pine Poles

Continued

Continued

Minimum Dimensions of Poles in
Inches—Circumference

Handling and Storage

Continued

Dist. of Ground Line Lgth. from Pole Butt Ft. Feet	DIMENSIONS POLE, INCHES									
	CLASS AAA		CLASS AA		CLASS A		CLASS B		CLASS C	
	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top
16 4									17	23 1/2
18 4					20	28	18 1/2	26 1/2	17	24 1/2
20 4					20	29	18 1/2	27	17	25 1/2
22 4 1/2					20	30	18 1/2	28	17	26 1/2
25 5	23	33 1/2	21 1/2	31	20	30	18 1/2	30	17	28
30 5 1/2	23	35	21 1/2	33 1/2	20	32	18 1/2	30	17	28
35 6	23	37	21 1/2	35	20	33 1/2	18 1/2	32	17	30
40 6	23	38 1/2	21 1/2	37	20	35	18 1/2	33 1/2	17	32
45 6 1/2	21 1/2	40	23	38 1/2	21 1/2	37	20	35	18 1/2	33 1/2
50 7	24 1/2	41 1/2	23	40	21 1/2	38 1/2	20	37	18 1/2	35
55 7 1/2	24 1/2	43	23	41 1/2	21 1/2	40	20	38 1/2	18 1/2	37
60 8	24 1/2	45	23	43	21 1/2	41 1/2	20	40	18 1/2	38 1/2
65 8 1/2	21 1/2	46 1/2	23	45	21 1/2	43	20	41 1/2	...	...
70 9	21 1/2	48	23	46 1/2	21 1/2	45	20	43	...	...
75 9 1/2	21 1/2	49 1/2	23	48	21 1/2	46 1/2	20	45	...	...
80 10	21 1/2	51	23	49 1/2	21 1/2	48	...	...	...	...
85 10 1/2	24 1/2	52 1/2	23	51	21 1/2	49 1/2	...	...	...	...
90 11	24 1/2	54	23	52 1/2	21 1/2	51	...	...	...	...

STORAGE.—When poles treated under these specifications have for any reason to be held in storage, they shall be stacked in close piles (either parallel or crosswise) on treated or other non-creosoting skids. The skids shall be of such dimensions and so arranged as to support the poles without producing noticeable distortion of any of them. The skids shall be so placed that no part of any pole shall be in permanent water, or in contact with the underlying soil.

Appendix A

Definitions

The following terms are defined for the purpose of these specifications and the definition given for each term shall apply wherever the term is used.

LIVE TIMBER AND DEAD STREAKS.—Live timber is that cut from trees which were standing and living at the time of cutting. Dead streaks start from the butt and are portions of the sap-wood in which the life processes had ended prior to the cutting of the tree, differing therein from wounds, such as catfaces, scars and turpentine cuttings where the growth of new wood and the accumulation of resin show that life processes are still acting to repair the injured part.

SHAKES.—Shakes are splits or openings which cause a separation of the wood between annual rings.

CHECKS.—Checks are splits or openings which cause a separation of the wood in a radial direction.

CRACKS.—Cracks are breaks or fractures in the grain of the wood.

CATFACES OR SCARS.—Catfaces or scars are surface depressions in the body of the pole, generally elliptical in shape, resulting from tree wounds where healing has not re-established the normal cross section of the pole.

SWEEP.—Sweep is the deviation of a pole from straightness. Sweep shall be measured as indicated in diagram No. 1.

SHORT CROOKS.—Short crooks are localized deviations from straightness which within any section of 5 feet or less in length reach an amount of more than 5 inches.

KNOT DIAMETER.—The diameter of a knot is its diameter measured at the surface of the pole in a direction at right angles to the lengthwise axis of the pole.

GROUND SECTION.—The ground section of the pole is that part lying between its butt and the plane perpendicular to its longitudinal axis at a point 2 feet above the ground line.

ABOVE-GROUND SECTION.—The above-ground section of a pole is the part lying between its top and the upper end of the ground section.

BRASHY WOOD.—Wood fibre is brashy when it has become brittle and lifeless through weathering or decay or is deficient in density through peculiarity of tree growth.

WATER DRAINAGE.—Holes, hollows and notches required to drain water shall be so shaped that they will retain water when the pole is set.

DISTANCE FROM BUTT.—Where distance from butt is specified, the measurements shall be made from a plane whose distance from the butt is equal to the nominal length of the pole.

Dist. of Ground Line Lgth. from Pole Butt Ft. Feet	DIMENSIONS POLE, INCHES									
	CLASS D		CLASS E		CLASS F		CLASS G			
	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top
16 4	16	20 1/2	15	18 1/2	14			12		
18 4	16	21 1/2	15	19 1/2	14	No		12	No	
20 4	16	22 1/2	15	20 1/2	14	Butt		12	Butt	
22 4 1/2	16	23 1/2	15	21 1/2	14	Re-		12	Re-	
25 5	16	24 1/2	15	22 1/2	14	quire-		12	quire-	
30 5 1/2	16	26 1/2	15	24 1/2	14	ment		..	ment	
35 6	16	28	15	26 1/2	..			..
40 6	16	30	15	28	..			..
45 6 1/2	17	32	..	..	..			..
50 7	17	33 1/2	..	..	..			..

SHAPE.—Poles shall be free from short crooks. Poles may have sweep in 2 planes or sweep in 2 directions in 1 plane provided that a straight line connecting the center of the butt with the center of the top does not at any intermediate point pass through the external surface of the pole. When sweep is in 1 plane and 1 direction only, the amount between the top and the butt shall not be greater than that specified for the length of the pole in the following table.

Length Pole Feet	Maximum Sweep Inches	Length Pole Feet	Maximum Sweep Inches	Length Pole Feet	Maximum Sweep Inches
16 & 18	3 1/2	40	8	70	14
20	4	45	9	75	15
22	4 1/2	50	10	80	16
25	5	55	11	85	17
30	6	60	12	90	18
35	7	65	13		

Treatment

All poles before being treated shall satisfy all requirements set forth above applying to poles in the white.

Unless otherwise ordered, poles shall be impregnated with not less than 12 pounds of dead oil of coal tar per cubic foot of wood or its equivalent, in accordance with the requirements of the specifications for creosoting timber hereinafter referred to. (See oil specification No. 4227.)

Creosoted Yellow Pine Poles

Continued

The dimension measurements of Southern Yellow Pine Poles below are old A.T. & T. 4209 and used by N. E. L. A. prior to 1925.

Dimensions Class AA

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 20-90.

Class A

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 20-90.

Class B

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 20-75.

Class C

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 18-60.

Class D

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 16-50.

Class E

Table with columns: Length of Pole Feet, Top Inches, 6 Feet from Butt Inches, Shipping Wt., 12 Lb. Treatment Lbs., ESTIMATED NO. IN CARLOAD Maximum Minimum, Lgth. Pole Feet. Rows 16-40.

Top Specification Poles—Top Measurement Only

These Poles Furnished as Specified: In Either 8-pound Empty Cell, (Rueping), 12-pound Empty Cell, (Rueping) or 12-pound Full Cell, (Bethel) Treatment

Large Stocks of All Lengths Maintained Ready for Immediate Treatment and Shipment

8 Pounds Final Retention

Table with columns: Lgth. Pole Feet, 4, 5, 6, 7, 8, 9, 10. Sub-headers: ESTIMATED WEIGHTS IN POUNDS, TOP DIAMETER, INCHES. Rows 16-75.

12 Pounds Final Retention

Table with columns: Lgth. Pole Feet, 4, 5, 6, 7, 8, 9, 10. Sub-headers: ESTIMATED WEIGHTS IN POUNDS, TOP DIAMETER, INCHES. Rows 16-75.

Number of Poles Required to Make a Minimum Carload—Lengths 40 Feet and Less, or a Minimum Twinload—Lengths 45 Feet and Over

8-pound Treatment

Table with columns: Lgth. Pole Feet, 4, 5, 6, 7, 8, 9, 10. Rows 16-75.

12-pound Treatment

Table with columns: Lgth. Pole Feet, 4, 5, 6, 7, 8, 9, 10. Rows 16-75.

Creosoted Yellow Pine Poles

Specifications for the Preservative Treatment of Creosoted Pine Poles

Continued
Factors for Computing Cubic Contents

8-pound Rueping Empty Cell Process

Butt Diam. Inches	TOP DIAMETER IN INCHES					
	4.5	5	5.6	6	6.5	7
6.5	.167	.181	.197	.213	.230	....
7	.183	.198	.214	.231	.249	.267
7.5	.200	.216	.232	.250	.268	.287
8	.219	.235	.251	.269	.288	.307
8.5	.238	.254	.271	.290	.309	.329
9	.258	.275	.292	.311	.330	.351
9.5	.279	.296	.314	.333	.353	.374
10	.300	.318	.337	.356	.377	.398
10.5	.323	.341	.360	.380	.401	.423
11	.347	.365	.385	.405	.427	.449
11.5	.371	.390	.410	.431	.453	.476
12	.397	.416	.437	.458	.480	.504
12.5	....	....	....	.486	.509	.532
13	....	....	....	.515	.538	.562
13.5	....	....	....	.544	.568	.592
14	....	....	....	.575	.599	.624
14.5	....	....	....	.606	.630	.656
15	....	....	....	.638	.663	.689
15.5	....	....	....	.671	.697	.723
16	....	....	....	.705	.731	.758
16.5	....	....	....	.740	.767	.794
17	....	....	....	.776	.803	.831
17.5	....	....	....	.813	.840	.869
18	....	....	....	.851	.879	.907
18.5	....	....	....	.890	.918	.947
19	....	....	....	.929	.958	.987
19.5	....	....	....	.969	.999	1.029
20	....	....	....	1.011	1.040	1.071
20.5	....	....	....	1.053	1.083	1.114
21	....	....	....	1.096	1.127	1.158
21.5	....	....	....	1.140	1.171	1.203
22	....	....	....	1.185	1.217	1.249
22.5	....	....	....	1.231	1.263	1.296
23	....	....	....	1.278	1.310	1.344

Butt Diam. Inches	TOP DIAMETER IN INCHES					
	7.5	8	8.5	9	9.5	10
6.5	.307	....	....	....	....	....
7	.328	.349	....	....	....	....
7.5	.350	.371	.394	....	....	....
8	.372	.395	.418	.442	....	....
8.5	.396	.419	.442	.467	.492	....
9	.420	.444	.468	.493	.519	.545
9.5	.446	.470	.494	.520	.546	.573
10	.472	.496	.521	.547	.574	.602
10.5	.500	.524	.550	.576	.603	.631
11	.528	.553	.579	.605	.633	.662
11.5	.559	.582	.609	.636	.664	.693
12	.587	.613	.640	.667	.696	.725
12.5	.618	.644	.671	.700	.729	.759
13	.650	.676	.704	.733	.762	.793
13.5	.682	.710	.738	.767	.797	.828
14	.716	.744	.772	.802	.832	.864
14.5	.750	.779	.808	.838	.869	.900
15	.786	.815	.844	.875	.906	.938
15.5	.822	.851	.881	.912	.944	.977
16	.860	.889	.920	.951	.983	1.016
16.5	.898	.928	.959	.990	1.023	1.057
17	.937	.967	.999	1.031	1.064	1.098
17.5	.977	1.008	1.039	1.072	1.106	1.140
18	1.018	1.049	1.081	1.114	1.149	1.184
19.5	1.059	1.091	1.124	1.158	1.192	1.228
20	1.102	1.134	1.168	1.202	1.237	1.273
20.5	1.146	1.179	1.212	1.247	1.282	1.319
21	1.190	1.224	1.258	1.293	1.329	1.365
21.5	1.236	1.269	1.304	1.339	1.376	1.413
22	1.282	1.316	1.351	1.387	1.424	1.462
22.5	1.329	1.364	1.399	1.436	1.473	1.511
23	1.378	1.413	1.449	1.485	1.523	1.562

The following specification is intended to obtain an empty cell treatment for the poles; if the material to be treated is in a different condition as to moisture and seasoning, material for each retort charge shall be selected as to condition of moisture so that there will be no great difference in degree of seasoning in any one charge. Only perfectly sound poles shall be treated and all framing shall be done before treatment. The treating plant shall be equipped with indicating and recording gauges and other necessary apparatus for accurately observing and recording the treating process. Above the level of the creosoting cylinder there shall be an overhead drum for the purpose of determining that the cylinder is full of preservative and free from air and the gauge reading indicating a full cylinder shall not be taken until the preservative is seen to overflow through the valve on top of this drum. There shall also be a sap drum below the level of the cylinder by means of which sap and condensation shall be removed continuously. The treating plant must have all the necessary chemicals, a laboratory and laboratory apparatus to enable the quality of preservative to be determined.

Air-seasoning

In air-seasoning, the poles shall be stacked in such a manner as to provide free air circulation and minimum contact between individual pieces in each stack. These stacks shall be placed on treated or otherwise permanent skids at least 6 inches above the ground on a well drained storage yard free from vegetation and decaying wood, so located that prevailing winds strike them freely. Alleys between the stacks shall be wide, continuous and straight. The material shall remain until in the judgment of the inspector it is sufficiently seasoned to obtain the maximum benefit from the treatment.

Seasoning by Steam

When time for air-seasoning is not available, steam-seasoning shall be used. Live saturated steam shall be admitted to the treating cylinder taking care that all air is swept from the cylinder before the outlet valve is closed. Pressure shall then be raised gradually to the maximum temperature desired, this maximum being determined by the treating inspector. It should not be less than 259 degrees F. nor more than 270 degrees F. The duration of the steaming process is dependent upon the degree of seasoning of the poles in the cylinder charge but shall in no case be carried to such an extent as to injure the timber.

Initial Vacuum

After the steaming process has been completed the steam shall be blown off and the treating cylinder exhausted as quickly as possible to as high a vacuum as possible which must be at least 24 inches at sea level or proportionately less at higher altitudes. This vacuum shall be maintained for at least 1 hour or for whatever longer period is necessary, so that the wood may be as dry and free from air as practicable. During the exhaustion process the temperature within the treating cylinder shall be maintained by means of steam under pressure in the closed coils. The cylinder shall be relieved of sap and condensation continuously.

Initial Air Pressure

In the case of air-seasoned poles, initial air pressure is the first step in the treating process. With steam-seasoned poles this step immediately follows the initial vacuum.

The poles shall be subjected to air pressure of sufficient intensity and duration (usually 40 to 70 pounds) to provide under a quick high vacuum the ejection of surplus preservative, and to insure a retention and proper distribution of the stipulated number of pounds of preservative per cubic foot of wood.

To obtain the volume of a Yellow Pine Pole or Stub, record the length in feet, and the butt and top diameters in inches; multiply the length in feet by the factor opposite the butt diameter and under the top diameter.

EXAMPLE: Length of pole, 40 feet. Factor, 1.273.

Butt diameter, 20 inches. $40 \times 1.273 = 50.920$ cu. ft.

Top diameter, 10 inches.

Specifications for the Preservative Treatment of Creosoted Pine Poles

8-pound Rueping Empty Cell Process

Continued Treatment

The creosote shall be introduced between 165 degrees F. and 200 degrees F., the cylinder pressure being maintained constant until the cylinder is filled. The oil must be seen by the inspector to flow from the over-head drum on top of the treating cylinder, thus assuring him that the cylinder is completely filled with the preservative. The pressure shall then be gradually raised to and maintained at a minimum of 150 pounds per square inch until there is obtained the largest gross absorption that can be reduced to the stipulated final retention (i. e. 8 pounds per cubic foot) calculation being based on readings of the working tank gauges and the weight of the creosote at 100 degrees F. During treatment the creosote temperature shall average 180 degrees F. For the purpose of obtaining maximum sapwood penetration this gross absorption shall average not less than 16 pounds of creosote per cubic foot of wood. The quantity of oil for final retention shall be based on the cubic content of wood in the treating cylinder as determined by actual measurement of the top and butt of each pole in each charge. Under no conditions may shortage of oil in one charge be offset by an excess in another; the minimum final retention in each case must be 100 per cent of the quantity of creosote specified.

Final Vacuum

After pressure is completed and the cylinder is emptied of oil a sufficient vacuum shall be promptly created and maintained until the timber can be removed from the cylinder free from dripping oil.

Preservative

Creosote used in the treatment of these poles to comply with each of the following: A. T. & T. Co. Creosote Specification No. 4229 which includes No. 4227 Oil; American Wood Preserver's Association Standard, Creosote specifications for grade 1; American Railway Engineering Association Standard, Creosote Specification for grade 1.

12-pound Bethel Full Cell Process

The following specification is intended to obtain a full cell treatment for the poles; and if the material to be treated is in a different condition as to moisture and seasoning, material for each retort charge shall be selected as to condition of moisture so that there will be no great difference in degree of seasoning in any one charge. Only perfectly sound poles shall be treated and all framing shall be done before treatment. The treating plant shall be equipped with indicating and recording gauges and other necessary apparatus for accurately observing and recording the treating process. Above the level of the creosoting cylinder there shall be an overhead drum for the purpose of determining that the cylinder is full of preservative and free from air and the gauge reading indicating a full cylinder shall not be taken until the preservative is seen to overflow through the valve on top of this drum. There shall also be a sap drum below the level of the cylinder by means of which sap and condensation shall be removed continuously. The treating plant must have all the necessary chemicals, a laboratory and laboratory apparatus to enable the quality of preservative to be determined.

Air Seasoning

In air-seasoning, the poles shall be stacked in such a manner as to provide free air circulation and minimum contact between individual pieces in each stack. These stacks shall be placed on treated or otherwise permanent skids at least 6 inches above the ground on a well drained storage yard free from vegetation and decaying wood so located that prevailing winds strike them freely.

Specifications for the Preservative Treatment of Creosoted Pine Poles

12-pound Bethel Full Cell Process

Continued

Air-seasoning Continued

Alleys between the stacks shall be wide, continuous and straight. The material shall remain until in the judgment of the inspector it is sufficiently seasoned to obtain the maximum benefit from the treatment.

Seasoning by Steam

When time for air-seasoning is not available, steam-seasoning shall be used. Live saturated steam shall be admitted to the treating cylinder taking care that all air is swept from the cylinder before the outlet valve is closed. Pressure shall then be raised gradually to the maximum temperature desired, this maximum being determined by the treating inspector. It should not be less than 259 degrees F. nor more than 270 degrees F. The duration of the steaming process is dependent upon the degree of seasoning of the poles in the cylinder charge but shall in no case be carried to such an extent as to injure the timber.

Initial Vacuum

After the steaming process has been completed the steam shall be blown off and the treating cylinder exhausted as quickly as possible to as high a vacuum as possible which must be at least 24 inches at sea level or proportionately less at higher altitudes. This vacuum shall be maintained for at least 1 hour or for whatever longer period is necessary so that the wood may be as dry and free from air as practicable. During the exhaustion process the temperature within the treating cylinder shall be maintained by means of steam under pressure in the closed coils. The cylinder shall be relieved of sap and condensation continuously.

In the case of air-seasoned poles initial vacuum will be the first step in the treating process.

Treatment

The creosote oil shall be introduced without breaking the vacuum, at a temperature of not less than 165 degrees F. and not more than 200 degrees F. until the cylinder is filled to overflowing. The oil must be seen by the inspector to flow from the overhead drum on top of the treating cylinder, thus assuring him that the cylinder is completely filled with the preservative. During treatment the temperature shall average 180 degrees F. The pressure on the preservative shall be applied gradually until such an amount of oil has been injected into the poles as to provide maximum penetration and a final retention of 12 pounds of creosote per cubic foot, calculation being based on readings of the working tank gauges and the weight of the creosote at 100 degrees F. Also, cubic contents of the poles shall have been determined by actual butt and top measurements of each pole in each charge and the quantity of oil injected shall be based on the cubic content figure obtained from these measurements. Under no conditions may shortage of oil in one charge be off-set by an excess in another; the minimum final retention in every case must be 100 per cent of the quantity of creosote specified.

Final Vacuum

After the pressure period is completed and the cylinder is emptied of oil, a sufficient vacuum shall be maintained until the timber can be removed from the cylinder free from dripping oil.

Preservative

Creosote used in the treatment of these poles to comply with each of the following: A. T. & T. Co. Creosote specification No. 4229 which includes No. 4227 Oil; American Wood Preserver's Association Standard, Creosote Specification for Grade 1; American Railway Engineering Association Standard, Creosote Specification for Grade 1.

**American Telephone and Telegraph Co.,
Specifications No. 4227 for Coal Tar
Creosote**

**For Use Only in Supplying
A. T. & T. and Associated Cos.
General**

The material desired under these specifications is that known as dead oil of coal tar or coal tar creosote. It shall consist wholly of distillates of gas tar produced by the destructive distillation of bituminous coal either in the manufacture of coal gas or in the manufacture of coke by the by-product process. It shall be without adulteration.

Information shall be furnished on request as to the origin of the oil and the names of the parties through whose hands it may have passed. A copy of any analysis of the oil that may have been made prior to its use shall also be furnished.

The right is reserved to take representative samples of the oil and test the same wherever desired.

Requirements

All coal tar creosote furnished under these specifications shall conform to the following requirements:

1st. The oil shall have a specific gravity at 38 degrees Centigrade, as compared with water at 15.5 degrees Centigrade of not less than 1.03.

2nd. The oil shall be thoroughly liquid at a temperature of 38 degrees Centigrade.

3rd. When 100 grams of the oil are distilled in accordance with the requirements of the specifications for the analysis of dead oil of coal tar or coal tar creosote hereinafter referred to.

(a) Not more than 5 per cent shall distill off up to 205 degrees Centigrade.

(b) Not more than 40 per cent shall distill off up to 235 degrees Centigrade.

(c) Not more than 80 per cent shall distill off up to 315 degrees Centigrade.

(d) Not less than 60 per cent shall distill off up to 360 degrees Centigrade.

(e) The oil shall not contain more than 2 per cent of water.

(f) The quantity of tar acids present in the fractions distilling below 300 degrees Centigrade shall not exceed 10 per cent, measured by volume, of the total sample distilled.

(g) The subphonation residue from the fraction distilling between 300 degrees Centigrade and 360 degrees Centigrade shall not exceed 2 per cent, measured by volume, of the said fraction.

4th. The constituents of the oil insoluble in benzol shall not exceed 0.50 per cent by weight.

5th. When oil is intended for use in the treatment of wood duct it shall be free from acids of the acetic series and their salts.

Analysis

The oil shall be analyzed in accordance with the methods outlined in the specifications for the analysis of dead oil of coal tar or coal tar creosote hereinafter referred to.

Handling and Storage

HANDLING.—The prevention of decay is dependent upon the continuity of the external treated layer of wood. Care shall be taken in handling poles to preserve the continuity of the treated layer. Pole tongs, cant-hooks and other pointed tools capable of producing indentations of more than 1 inch in depth shall not be used on poles treated under these specifications. Pole tongs shall be handled as to preclude their tearing away from any pole. Treated poles shall not be dragged along the ground.

Standard Specifications for Creosote Oil

American Wood Preserver's Association No. 1 Oil

Creosote used in treatment of Western Electric pine poles complies with this specification, also with A. T. & T. creosote specification No. 4227, also with A. R. E. A. creosote specification for grade 1. This specification was formerly published as A. T. & T. No. 3713.

(1) The oil shall be a distillate of coal-gas tar or coke-oven tar. It shall comply with the following requirements:

(2) It shall not contain more than 3 per cent of water.

(3) It shall not contain more than 0.5 per cent of matter insoluble in benzol.

(4) The specific gravity of the oil at 38 degrees C. compared with water at 15.5 degrees C. shall be not less than 1.03.

(5) The distillate, based on water-free oil, shall be within the following limits:

Up to 210 degrees C., not more than 5 per cent.

Up to 235 degrees C., not more than 25 per cent.

(6) The residue above 355 degrees, if it exceeds 5 per cent, shall have a float-test of not more than 50 seconds at 70 degrees C.

(7) The oil shall yield not more than 2 per cent coke residue.

(8) The foregoing tests shall be made in accordance with the standard methods of the American Wood-preservers' Association. (See manual—creosote, analysis.)
Approved, 1917; adopted, 1921; amended and adopted, 1923.

Owing to the complexity of the chemical composition and physical properties of coal-tar creosote oil, and to the fact that some of the same compounds and properties which characterize coal-tar creosote are found in certain petroleum derivatives, the determination of the purity of creosote oil is difficult. When there is not certain assurance that the oil is a pure product, the following tests will aid in arriving at an opinion as to its coal-tar origin:

(a) Fraction distilling between 210 and 235 degrees C. is usually solid or contains some solids when cooled to 25 degrees C.

(b) All of the fractions up to 315 degrees C. contain tar acids in varying amounts, usually at least 1 per cent, calculated on the amount of the fraction tested. (See manual—creosote, analysis, tar acids.)

(c) The specific gravity of the fraction 235 and 315 degrees C. is usually not lower than 1.025 and specific gravity of the fraction between 315 and 355 degrees is usually not lower than 1.085 and 38 degrees C. compared with water at 15.5 degrees C. However, some pure-tar distillates fall slightly below these limits.

If the oil does not comply with at least one of the foregoing tests it is undoubtedly not a pure coal-tar creosote.

**Specification No. 3782 for Dead Oil of Coal Tar for
Brush and Open Tank Treatments**

Extract

This oil is standard stock with us for open tank work.

GENERAL.—The material desired under these specifications is that known as dead oil of coal tar or coal tar creosote, obtained through the distillation of coal tar produced by the destructive distillation of bituminous coal at a temperature high enough to yield a tar consisting mainly of compounds of the aromatic series. It shall be without adulteration.

Information shall be furnished on request as to the origin of the oil and the names of all parties through whose hands it may have passed. A copy of any analysis of the oil that may have been made prior to its offering shall also be furnished. The right is reserved to take representative samples of the oil and test the same wherever desired.

NOTE.—When unseasoned timber is being treated by the cylinder pressure process using steam for seasoning, the oil may contain not more than five (5) per cent of water. But in case more than two (2) per cent of water is present in the oil, the quantity of the preservative added to the timber shall be increased by an amount sufficient to ensure that the required amount of oil computed on a water-free basis has been taken up by the timber.

Specifications No. 3782 for Dead Oil Coal Tar for Brush and Open Tank Treatment

Continued

REQUIREMENTS.—All dead oil of coal tar furnished under these specifications shall conform to the following requirements:

1ST.—The oil shall have a specific gravity of at least one and three-hundredths (1.03) at thirty-eight degrees Centigrade (38° C.).

2ND.—The oil shall be thoroughly liquid at a temperature of thirty-eight degrees Centigrade (38° C.).

3RD.—When one hundred grams of the oil are distilled in accordance with the requirements of the specifications for the Analysis of Dead Oil of Coal Tar or Coal Tar Creosote hereinafter referred to—

(a) Not more than eight (8) per cent shall distill off up to 210° C.

(b) Not more than thirty-five (35) per cent shall distill off up to 235° C.

(c) Not more than eighty (80) per cent shall distill off up to 315° C.

(d) The oil shall not contain more than two (2) per cent of water.

(e) The quantity of tar acids present in the fractions distilling below 300° C. shall not exceed ten (10) per cent (measured by volume) of the total sample distilled.

(f) The sulphonation residue from the fraction distilling between 300° C. and 360° C. shall not exceed one and one-half (1½) per cent of the said fraction.

4TH.—The constituents of the oil insoluble in benzol shall not exceed five-tenths (0.5) per cent by weight.

Specification No. 3783 for Liquid Grade Dead Oil of Coal Tar (Extract)

Some prefer this specification over No. 3782 for use in winter. It is about 15½% more expensive than No. 3782.

GENERAL.—The material desired under these specifications is a liquid grade of dead oil of coal tar or coal tar creosote, to be obtained through the distillation of a coal tar produced by the destructive distillation of bituminous coal at a temperature high enough to yield a tar consisting mainly of compounds of the aromatic series. It shall be without adulteration.

Information shall be furnished on request as to the origin of the oil and the names of all parties through whose hands it may have passed. A copy of any analysis of the oil that may have been made prior to its offering shall also be furnished. The right is reserved to take representative samples of the oil and test the same wherever desired.

REQUIREMENTS.—All dead oil of coal tar furnished under these specifications shall conform to the following requirements:

1ST.—The oil shall have a specific gravity of at least one and eight-hundredths (1.08) at fifteen degrees Centigrade (15° C.).

2ND.—The oil shall be thoroughly liquid at a temperature of five degrees Centigrade (5° C.).

3RD.—When one hundred grams of the oil are distilled in accordance with the requirements of the specifications for the Analysis of Dead Oil of Coal Tar or Coal Tar Creosote hereinafter referred to—

(a) Not more than one (1) per cent shall distill off up to 210° C.

(b) Not more than ten (10) per cent shall distill off up to 235° C.

(c) Not less than twenty-five (25) per cent and not more than sixty (60) per cent shall distill off up to 300° C.

(d) The oil shall not contain more than one (1) per cent of water.

(e) The quantity of tar acids present in the fractions distilling below 300° C. shall not exceed eight (8) per cent (measured by volume) of the total sample distilled.

(f) The sulphonation residue from the fraction distilling between 300° C. and 360° C. shall not exceed one and one-half (1½) per cent of the said fraction.

4TH.—The constituents of the oil insoluble in benzol shall not exceed five-tenths (0.5) per cent by weight.

Chestnut Poles

Chestnut is recommended for poles that are intended for lines where the service conditions call for strength and durability.

The long close fibre of chestnut will successfully withstand severe storm. Chestnut poles for heavily loaded lines in exposed districts have a good degree of permanency.

Chestnut poles have exceptionally large butts. Thus chestnut poles will last longer than others when attacked by butt rot.

Western Electric Chestnut Poles are selected poles—selected with unusual care by a corps of field men constantly covering the entire chestnut belt from Maine to Alabama.

Specifications 4166 for Chestnut Poles—Adopted by A. T. & T. Co. Year 1921

Replacing Specifications 1948 and 4138 Tentative Specification N. E. L. A. Year 1923

In 1924 the A. T. & T. adopted amendment No. 2 on following page.

All poles shall be of sound, live white chestnut, squared at both ends, reasonably straight, well proportioned, from butt to top, peeled and knots trimmed to the surface of the pole.

Blighted poles may be furnished, provided they satisfy the requirements of the specifications.

Shaved poles on which the sapwood has decayed are acceptable, provided all decayed sapwood is removed in such a manner as to avoid abrupt changes in the contour of the pole. Measurements of circumference shall not be made until all decayed sapwood has been removed.

If customers desire to buy on Top specification—

Use Class B for value and for weight of 8-inch top.

Use Class C for value and for weight of 7-inch top.

Eight-inch top is minimum of 25 inches around.

Seven-inch top is minimum of 22 inches around.

It would be more in keeping with fact to refer to A Measurement Poles or B Measurement Poles than to Class A or Class B.

Class AA is an A pole with 5 feet cut off the top. Class AAA is an AA pole cut back 5 feet.

Class A poles for four or more crossarms. Class C for two crossarms.

The dimensions of the poles are according to the following tables:

Length of Pole Ft.		6 Ft. from Butt In.		Wt. Lbs.	Class A		6 Ft. from Butt In.		No. to Car-load	
Top In.	Bottom In.	Top In.	Bottom In.		No. to Car-load	Top In.	Bottom In.	Wt. Lbs.	No. to Car-load	
20	24	33	33	600	65	45	24	44	2000	30
25	24	36	36	900	55	50	24	46	2400	25
30	24	38	38	1100	40	55	24	49	3000	22
35	24	40	40	1300	35	60	24	52	3500	20
40	24	42	42	1700	32	65	24	54	4000	18
Length of Pole Ft.		6 Ft. from Butt In.		Wt. Lbs.	Class B		6 Ft. from Butt In.		No. to Car-load	
Top In.	Bottom In.	Top In.	Bottom In.		No. to Car-load	Top In.	Bottom In.	Wt. Lbs.	No. to Car-load	
20	22	31	31	500	70	45	22	42	1800	28
25	22	33	33	700	65	50	22	41	2200	25
30	22	36	36	1000	50	55	22	46	2600	22
35	22	38	38	1200	40	60	22	49	3500	20
40	22	40	40	1550	25	65	22	52	4000	18
Length of Pole Ft.		6 Ft. from Butt In.		Wt. Lbs.	Class C		6 Ft. from Butt In.		No. to Car-load	
Top In.	Bottom In.	Top In.	Bottom In.		No. to Car-load	Top In.	Bottom In.	Wt. Lbs.	No. to Car-load	
20	20	29	29	500	75	40	20	38	1400	40
25	20	32	32	550	65	45	20	40	1700	32
30	20	34	34	900	60	50	20	42	2000	30
35	20	36	36	1100	50	..	..	..	..	..
Length of Pole Ft.		6 Ft. from Butt In.		Wt. Lbs.	Class D		6 Ft. from Butt In.		No. to Car-load	
Top In.	Bottom In.	Top In.	Bottom In.		No. to Car-load	Top In.	Bottom In.	Wt. Lbs.	No. to Car-load	
20	18	27	27	500	100	40	18	36	1300	48
25	18	29	29	600	90	45	18	33	1700	35
30	18	32	32	700	75	50	18	40	2000	30
35	18	34	34	1000	55	..	..	..	..	..

All Western Electric quotations will be made on basis this specification unless special arrangements are made otherwise in advance.

Chestnut Poles

Amendment No. 2 to Specifications No. 4166

The following changes in the requirements have been approved and were made effective in 1924 by the A. T. & T. Company.

For the clause headed Dimensions in the section covering Dimensions, Shape and Finish, the following clause has been substituted:

DIMENSIONS:—Length: Poles shall not be over six (6) inches shorter or twenty-four (24) inches longer than the length specified in the order.

Measurements of length shall be made from the average level of the faced part of the butt surface to the most distant part of the top surface.

Poles shall be classified with respect to their circumferences at six (6) feet above the butt, and at their top, in accordance with the table set forth below.

This table gives the minimum allowable circumference at six (6) feet above the butt and at the top for poles of each class and length listed and shall not preclude the acceptance of poles having greater circumferences at these points of measurement than those given in the table.

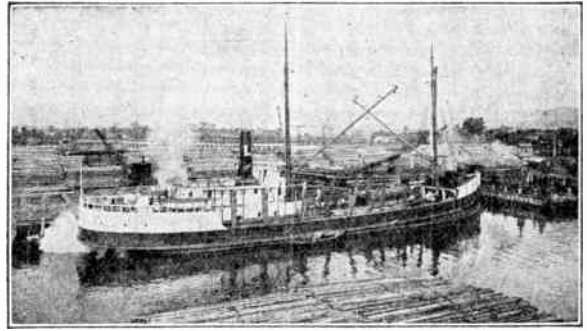
Top circumference requirements shall apply at a distance from the butt six (6) inches less than the nominal length of the pole.

Minimum Circumferences of Poles in Inches

Lgth. Feet	Ground Line Distance from Butt Feet	CLASS AAA		CLASS AA		CLASS A		CLASS B	
		Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt
16	4	..	..	..	..	..	..	..	..
18	4	..	..	..	..	..	..	..	..
20	4	27	35	25	33	23	32	21	30
25	5	27	37	25	35	23	34	21	32
30	5½	27	40	25	38	23	36	21	34
35	6	27	42	25	40	23	38	21	36
40	6	27	44	25	42	23	40	21	38
45	6½	27	47	25	44	23	42	21	40
50	7	27	49	25	47	23	44	21	42
55	7½	27	52	25	49	23	47	21	44
60	8	27	54	25	52	23	49	21	47
65	8½	27	56	25	54	23	52	21	49

Lgth. Feet	Ground Line Distance from Butt Feet	CLASS C		CLASS D		CLASS E		CLASS F
		Top	6 Feet from Butt	Top	6 Feet from Butt	Top	6 Feet from Butt	
16	4	..	..	17	23	15	21	15
18	4	19	26	17	24	15	22	15
20	4	19	27	17	25	15	23	15
25	5	19	30	17	27	15	25	15
30	5½	19	32	17	30	15	27	15
35	6	19	34	17	32	15	30	..
40	6	19	36	17	34	15	32	..
45	6½	19	38	..	..	..	..	..
50	7	19	40	..	..	..	..	..
55	7½	19	42	..	..	..	..	..
60	8	..	..	..	..	..	..	..
65	8½	..	..	..	..	..	..	..

Wood Poles



View of Seaport Pole Yard

Cypress Pole Specifications

QUALITY OF TIMBER.—The poles shall be the best quality black or red cypress, live, green wood, squared at both ends, reasonably straight, well proportioned from butt to top, peeled, and knots trimmed close. The timber shall be free from wind shakes, decayed or loose knots, worm holes, or other defects that would weaken its strength. The top and butt of the poles shall show no indication of rot.

DIMENSIONS.—The dimensions of the poles shall be according to the tables, the top measurement being the minimum heart diameter measurement at the top of the pole, and the butt the minimum heart diameter at the butt of the pole.

Length Feet	HEART DIAMETER, INCHES					
	CLASS B		CLASS C		CLASS D	CLASS E
	Top	Butt	Top	Butt	Top	Top
20	..	..	..	..	..	5
22	..	..	6	9	6	5½
25	7	11	6½	10	6	5½
30	7	12	6½	11	6½	6
35	7	13	6½	12	6½	6
40	7	15	6½	13	6½	6
45	7	16	6½	14	6½	6
50	7	17	6½	15	6½	..

Southern Bell Telephone and Telegraph Company Specifications for Juniper Poles

This timber, however, is adapted to top measure specification.

QUALITY OF TIMBER.—The poles shall be of the best quality, live, green wood, squared at both ends, reasonably straight, well proportioned from butt to top, peeled, and knots trimmed close. The timber shall be free from wind shakes, decayed or loose knots, worm holes, or other defects that would lessen its strength. The top and butt of the pole shall show no indication of rot.

Length Feet	CLASS A		CLASS B		CLASS C	
	Top In.	Butt In.	Top In.	Butt In.	Top In.	Butt In.
20	..	..	..	..	..	..
22	..	..	..	..	20	28
25	24	37	22	34	20	31
30	24	40	22	37	20	34
35	24	43	22	40	20	33
40	24	47	22	44	20	41
45	24	50	22	48	20	44
50	24	53	22	52	20	47
55	24	56	..	..	..	..
60	24	59	..	..	..	..
65	24	62	..	..	..	..

Length Feet	CLASS D		CLASS E	
	Top In.	Butt In.	Top In.	Butt In.
20	19	26	16	25
22	19	26	16	26
25	20	28	16	28
30	20	32	16	31
35	20	36	20	35
40	20	40	20	39
45	20	44	20	43
50	20	47	20	47

Depth of Pole Setting

In sandy or swamp ground, oil barrels or casks set in the ground will materially assist in securing substantial pole foundations. The following specifications are recommended for the depth in feet of holes:

Solid Ground			Soft Ground		
Line (Height)	Poles (Depth)	Corners	Line	Corners	Solid Rock
22	5	5	5	5	3
25	5	5½	5½	6	3
30	5	5½	6	6½	3½
35	6	6½	6½	7	4
40	6½	7	7	7½	4
45	6½	7	7	7½	4½
50	7	7½	7½	8	4½
55	7½	8	8	8½	5
60	8	8½	8½	9	5½
65	8½	9	9	9½	5½

Guy stubs should be set not less than 7 feet in any soil except solid rock.

Cedar Poles for Electric Light Work

Height Feet	Size Top Inches	Average Wt., Lbs. Each	No. of Poles to a Car	Height Feet	Size Top Inches	Average Wt., Lbs. Each	No. of Poles to a Car
25	5	200	150	35	7	650	90
25	5½	225	130	40	6	800	80
25	6	250	100	40	7	900	75
28	7	400	80	45	6	900	70
30	5	300	110	45	7	1000	65
30	6	350	90	50	6	1200	55
30	7	420	75	55	6	1400	45
35	6	550	100	..	..	....	..

Wind Pressures

Velocity	37	53	65	75	83	91	105	119	130
Pounds per Sq.									

Ft.	5	10	15	20	25	30	40	50	60
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The pressures given above are such as would be exerted against a flat surface set perpendicularly to the direction of the wind. For a cylindrical surface like a pole or wire, the effective pressure is two-thirds of what it would be for a square surface of the same area as the cylinder. It is considered that an allowance of from 20 to 30 pounds per square foot of area for pole lines is ample. The above table was calculated from Professor Langley's formula, $P = .0036V^2$, in which P is the pressure per square foot of surface in pounds, and V is the velocity of the wind.

General Construction Rules

SIZE OF HOLES.—The holes should be large enough to permit the free entrance of the poles, and should be full size at the bottom so as to admit of the use of tampers.

TAMPING POLE HOLES.—All pole holes, except those in very hard gravel or rock formations, should be tamped so thoroughly that the necessity for hauling away excess dirt is obviated.

PROTECTING POLES.—Where corner poles or other poles are exposed to injury from whittling, pole butt should be well painted and heavily sanded. If this is not sufficient in any special case, the pole butt should be wound with No. 10 galvanized wire, spaced ½ inch apart, painted and sanded.

PAINTING POLES.—The top and gans of all poles should be painted with one or more coats of approved paint. All poles which are protected by strain plates or shims from the cutting of messengers or guys, should be painted with one or more coats of approved paint on the space occupied by the strain plate.

FACING ARMS (CITY CONSTRUCTION).—At long spans the cross arms should be placed on the side of the poles away from the long spans. Arms on poles should face the originating source of the lead, or face to face, depending on the general condition, except corner pole: then it should face the corner. At the terminals of a lead, the last two poles should face away from the originating source. On corners, arms should face the point of intersection of curb lines, thus facing each other. First arm each side of the corner should ordinarily face the corner.

ON CURVES.—Arms each side of center of curve should face the center of curve.

LOCATION OF POLES AND ANCHORAGES.—Special attention should be given to location of poles, where the ground washes badly, where there are cuts or excavations, and along the banks of creeks or streams. Do not locate poles along the edges of cuts or embankments.

General Construction Rules

Continued

SPACING POLES.—In locating pole line, if it becomes necessary to either reduce or lengthen distance between poles on account of obstacles, objections of property holders, etc., the preference should be for the shorter spans.

LOCATION OF POLES AT STREET CROSSINGS.—In leading away from the originating end of the line when a cross street is reached, pole should not be located on the corners, but should be spaced to fall on the property line. In this connection, alleys may be regarded as street crossings.

ON STREETS.—Poles and stubs on streets should be set inside of and as near the curb line as possible.

IN ALLEYS.—Poles in alleys should be set as close as possible to the side lines of the alleys.

ON PROPERTY LINES.—Poles on streets should be located on or near property lines.

DISTRIBUTION OF POLES.—In distributing the poles, care should be taken to select the heaviest poles for corners and terminals and to place the straightest and best-looking poles on streets and in front of residences.

POLE FITTING AND SETTING—TRIMMING.—All poles that are rough in appearance should be smoothed, and knots should be trimmed close. Top of pole should be leveled with one cut of saw at right angles to length of pole, and edge should be beveled ¾ of an inch with a draw-knife.

FRAMING POLES.—Poles should be raised at the top and placed in a framing buck so that the heaviest sag or curve will be nearest the ground. If the pole be crooked or badly shaped it should be turned with cant hooks until the best side for framing is brought uppermost and the pole securely chocked. In this position it should first be roofed. Seven inches should be measured from the top of the pole, and this point should be the center of the top gans. The succeeding gans should be spaced 18 inches on centers. Gans should be leveled with a straight edge or sighting sticks.

NOTE.—In alleys, poles stepped in line with alley as high as 12 to 15 feet; then turn at right angles to alley and continue to the top. This is to prevent liability of danger to top wagons in narrow alleys.

BUTTING POLES.—Every pole should be squared across the bottom before setting. This should be done with a crosscut saw, and not with an ax.

BRACES AND CROSS-ARM FITTING.—Arms should be sighted and leveled at right angles to pole length, and not parallel with the ground. This includes all corner poles.

A spirit level should not be used for leveling arms.

CANTING ARMS ON CORNERS.—When a lead makes a double corner or changes from one side of the street to the other, the last arm should set at right angles to the line of direction leading to the corner, and the first arm leading away should set at right angles to the line of direction leading away from the corner.

If the change of direction forms an angle of less than forty-five degrees, one or both corner arms may be canted slightly to secure the greatest space between lines. This should not be permissible where the angle is forty-five degrees or over.

CANTING ARMS ON SINGLE-POLE CORNERS.—The arm should set in a line that will divide in half the angle formed by the two lines of direction of the route.

On curves the inside of the arms should point to the common center of a circle of which the lead curve forms the circumference.

Single pole corners are not desirable and should not be used when the pull is over 20 feet, unless it is an unavoidable case.

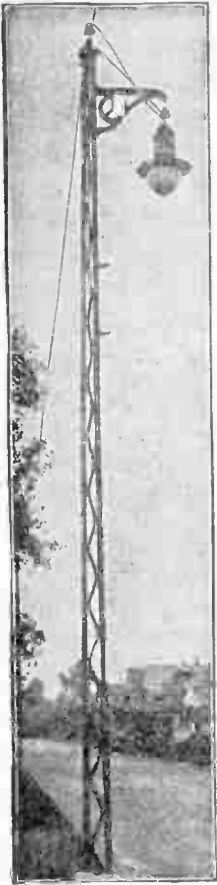
GUY STUBS.—A guy stub in no case should be smaller in diameter at butt or top than the pole it supports, and should be as straight as possible on account of the tendency to buckle. A stub at the head of heavy lines should be as massive as possible.

A guy stub should be raked to position before filling hole, and should not be set straight and raked with the anchor guys. In the proportion that stub is curved or buckled its strength is decreased. No stub should be raked less than 24 inches.

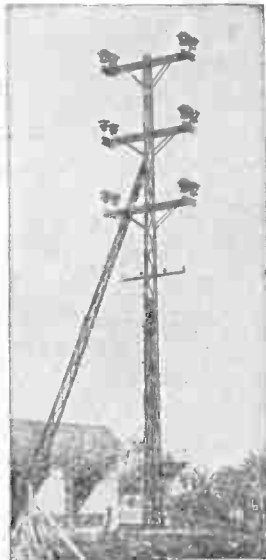
Guy stubs holding a strain greater than a one-arm lead should measure 12 inches across the top or more, if procurable

Bates Expanded Steel Poles

Wood Crossarms



Street Lighting Pole



One-piece Pole Used as a Strut

Bates One-piece Expanded Steel Poles are manufactured with specially designed, patented machinery at such a low manufacturing cost as to justify their universal adoption in permanent installations requiring stability and efficiency.

They contain all the advantages of riveted fabricated structures and eliminate the disadvantages.

Bates Poles are made of one piece of steel. They are not fabricated. They are made from specially rolled H sections of low carbon, open hearth steel.

The sections are first sheared cold, then expanded while hot in an expanding machine having a pulling capacity of 250 tons. By this method every pole is automatically tested in the process of manufacture; the slightest imperfection in the steel is promptly and positively exposed.

All of the surfaces of a Bates Pole are accessible for inspection, cleaning and painting. There are no pockets nor places in which water, dirt or other injurious materials may collect.

This condition also permits a smaller factor of safety to be used, as if the pole is properly maintained by painting, the opportunity for corrosion is not as great.

Accessibility insures not only a low maintenance expense, but also greater reliability.

Bates-Built Products

Transmission

- Bates One-piece Expanded Poles
- Bates Expanded Channel Poles
- Fabricated Towers
- Substations and Switch Racks

Railway

- Bates Street Railway Poles
- Bates Street Lighting Poles
- Tickler System Supports
- Floodlight Towers
- Signal Towers and Telegraph Poles
- Prices upon application.



Giant Rainier Fir Trees

The prime requisites in a crossarm are lightness, strength and durability: some engineers stress one quality and some another, but Rainier Fir is the best answer for all sorts of uses and conditions: however, we are equally able to furnish long leaf yellow pine crossarms, and creosoted arms, in either fir or yellow pine.

This is the arm most widely used and most generally preferred; its use is by no means confined to this country; for instance, this arm was selected for the lines of the American Expeditionary Forces in the world war.

The United States Forestry Service has made elaborate tests of different woods and with results almost uniformly favorable to fir for crossarms; certainly for lightness and strength, and continuing strength over a period of years, Rainier fir is in a class by itself. Exceptional cases are well established of a line life of these arms up to fifty years. Another advantage is that they need no treatment whatsoever, which subject is covered hereinafter.

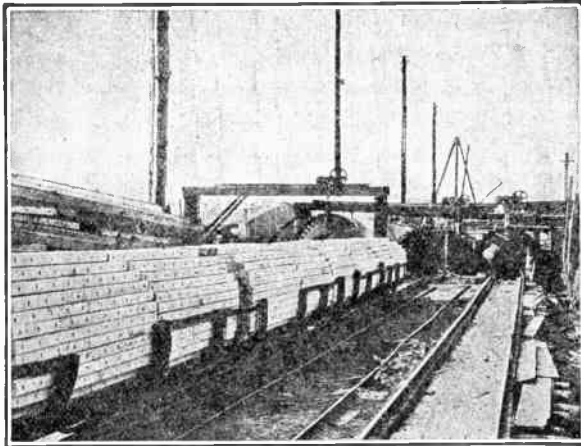
Rainier fir crossarms do not require painting or the use of any preservative; are more than double the necessary strength with a large "factor of safety"; they live in actual service for many years.

Long-leaf yellow pine crossarms are manufactured in the Gulf Region, and when they have a large heart content, are strong and durable.

Short-leaf yellow pine (and long-leaf sapwood) crossarms, should be creosoted (pressure treatment) before being put into service; this treatment prolongs the life of the arms for many years, but great care should be exercised that only pure distillate oil is used and the treatment given by a reliable creosoting company.

Creosoted yellow pine crossarms should be made from short-leaf yellow or long-leaf yellow pine; sapwood is no objection, as it has the necessary strength and takes oil readily. Only pure distillate creosote (dead oil of coal tar) should be used; this assures a clean surface, free from "goo"; the treatment consists, first of full seasoning by steam and vacuum; second, of impregnation with preservative under high pressure.

Wood Crossarms



A Load of Yellow Pine Arms Going into the Cylinder to be Creosoted

We maintain at each warehouse a liberal stock of the genuine Rainier fir arm, in order to give customers service when in need of arms quickly. Many central stations and crossarm users find it more satisfactory and economical to buy their entire supply from these stocks as they need arms rather than to take a carload at a time and carry the investment themselves over an uncertain period of time.

A good many public utilities require from time to time small lots of arms of special size and manufacture, that is, other than those hereinafter listed as standard. We will be glad at any time to stock any special arm for a customer under a special contract arrangement, and any of our representatives will be glad to go into this matter fully on request. We have also at Chicago, Minneapolis, Centraha, Wash., and New Haven, Conn., large stocks of blank arms, which can be cut to length and bored according to your special requirements. This is merely another link in the chain of Western Electric service on crossarms.

TREATMENT OF RAINIER ARMS.—In some localities it is occasionally found necessary to color crossarms, so as to distinguish them from arms used for other purposes. As previously stated the genuine Rainier fir arm does not require any preservative treatment, and we recommend that if a color is necessary the arms be dipped in the proper stain, which our Pacific Coast mills are prepared to do.

We recommend, however, that a Rainier arm be dipped in a hot solution of pure distillate creosote oil, if that will answer the purpose of color. This treatment tends to prevent an arm from checking and to protect it from woodpeckers, and from the inroads of termites, etc. Unless color is demanded, this is a useless expense.

All arms bored for one 5/8-inch center bolt and 3/8-inch brace bolts unless otherwise specified, except as shown in "Standard" table.

MINIMUM CARLOAD WEIGHTS.—Fir from Pacific Coast Mills, 38,000 pounds. Small cars are scarce and weight of at least 50,000 pounds should be figured on. Cars to contain as high as 90,000 pounds can be had. Smaller cars are available in the Southern Yellow Pine Regions—minimum weight, 34,000 pounds.

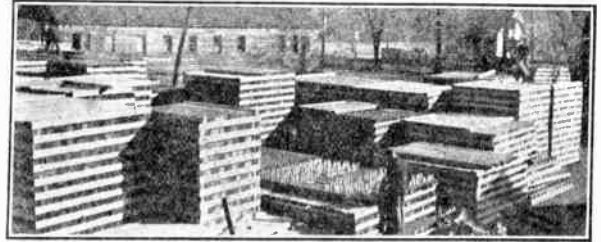
Standard arms are manufactured as shown in table; orders for special arms should be accompanied by sketch or blueprint showing exactly what is wanted, and are subject to delay in manufacture.

CREOSOTE OIL DIP TREATMENT.—Hot dip treatment (immersion for five minutes in hot creosote oil). This treatment can be given only at Pacific Coast Mills, Mississippi mills, Louisiana mills, Virginia mills, and Chicago and Minneapolis warehouses.

If board measure of arm is wanted, add one-half inch to height and width of finished arm; if length runs into inches take next higher foot length; multiply height by width in inches; divide by twelve, and multiply by length in feet.

All dimensions are subject to the usual manufacturing variations; crossarms long in stock show some shrinkage from original dimensions.

Wood Crossarms



Electric Light Arms

Cat. No.	PIN HOLES			Size In.	Center Bolt Hole In.	Brace In.
	Center	SPACINGS, IN. Sides	Ends			
1	28	..	4	1 1/2	5/8	25
2	16	12	4	1 1/2	5/8	28
3	18	17	4	1 1/2	5/8	28
4	22	21	4	1 3/2	5/8	32
5	16	12	4	1 1/2	5/8	32
6	18	17 1/2	4	1 1/2	5/8	32
7	16	12	4	1 1/2	5/8	32
8	16	9 3/4	4	1 3/2	5/8	32
9	17 1/2	15 3/4	4	1 3/2	5/8	42
10	16	12	4	1 3/2	5/8	42
11	16	9 5/8	3 7/8	1 3/2	5/8	42

R. S. A. (Railway Signal Association) Arms

21	20	22	4	9/16	1/16	..
22	19	17 1/4	4	9/16	1/16	..
23	19	15 1/2	4	9/16	1/16	..
24	16	12 3/8	2 1/2	9/16	1/16	..

Western Union Arms

25	20	11 1/2	3	9/16	2 1/2	..
26	21	11 1/2	3	9/16	2 1/2	..
27	22	11 1/2	3	9/16	2 1/2	..

Pony Telephone Arms

31	17	...	3 1/2	1 3/2	5/8	..
32	23	...	3 1/2	1 3/2	5/8	..
33	29	...	3 1/2	1 3/2	5/8	25
34	16	9 1/2	3 1/2	1 3/2	5/8	28
35	16	9 3/4	3 1/2	1 3/2	5/8	28
36	16	9 3/4	3 3/4	1 3/2	5/8	28
37	16	9 3/4	4	1 3/2	5/8	28
38	16	9 5/8	3 7/8	1 3/2	5/8	28

N. E. L. A. Arms

41	30	...	4	1 1/2	1/16	28
42	30	14 1/2	4	1 3/2	1/16	38
43	30	14 1/2	4	1 3/2	1/16	38
44	30	12	4	1 1/2	1/16	38

N. E. L. A. (Light) Arms

51	30	...	4	1 1/2	1/16	28
52	30	14 1/2	4	1 3/2	1/16	38
53	30	14 1/2	4	1 3/2	1/16	38
54	30	12	4	1 1/2	1/16	38

New England Arms

61	30	...	3	1 1/2	1/16	33
62	30	13 1/2	4 1/2	1 3/2	1/16	36
63	30	13 1/2	4 1/2	1 3/2	1/16	36
64	30	13 1/2	4 1/2	1 3/2	1/16	36

New England Power Arms

71	30	...	3	1 1/2	1/16	33
72	30	13 1/2	4 1/2	1 1/2	1/16	36
73	30	13 1/2	4 1/2	1 3/2	1/16	36
74	30	13 1/2	4 1/2	1 3/2	1/16	36

Pacific Arms

81	28	..	4	1 1/2	5/8	32
82	28	12	4	1 3/2	5/8	32
83	28	12	4	1 1/2	5/8	32
84	28	12	4	1 1/2	5/8	42
85	28	12	4	1 3/2	5/8	42

Any change required from standard spacings, pin holes or bolt holes as here given, must be distinctly specified on the order.

Wood Crossarms

Wood Crossarms

Electric Light Arms

Specifications

Cat. No.	Size and Length	Wt. Lbs. Per Arm, Fir	Wt. Lbs. Per Arm, Yellow Pine	Price per 100 Arms
1	3 1/4 x 4 1/4 in. 3 ft. 2 pin	10.2	13.2	\$39.375
2	4 ft. 4 pin	13.6	17.6	52.50
3	5 ft. 4 pin	17	22	65.625
4	6 ft. 4 pin	20.4	26.4	78.75
5	6 ft. 6 pin	20.4	26.4	78.75
6	8 ft. 6 pin	27.2	35.2	105.00
7	8 ft. 8 pin	27.2	35.2	105.00
8	8 1/2 ft. 10 pin	28.9	37.4	118.125
9	10 ft. 8 pin	34	44	131.25
10	10 ft. 10 pin	34	44	131.25
11	10 ft. 12 pin	34	44	131.25

R. S. A. (Railway Signal Association) Arms

21	3 x 4 1/4 in. 6 ft. 4 pin	19.2	24.6	\$73.125
22	8 ft. 6 pin	25.6	32.8	97.50
23	10 ft. 8 pin	32	41	121.875
24	10 ft. 10 pin	32	41	121.875

Western Union Arms

25	3 x 4 1/4 in. 6 ft. 6 pin	19.2	24.6	\$73.125
26	8 ft. 8 pin	25.6	32.8	97.50
27	10 ft. 10 pin	32	41	121.875

Pony Telephone Arms

31	2 3/4 x 3 3/4 in. 24 in. 2 pin	5	6.5	\$20.00
32	30 in. 2 pin	6.25	8.125	25.00
33	36 in. 2 pin	7.5	9.75	30.00
34	42 in. 4 pin	8.75	11.375	35.00
35	62 in. 6 pin	13	16.8	51.67
36	82 in. 8 pin	17	22.2	68.33
37	102 in. 10 pin	21.25	27.625	85.00
38	120 in. 12 pin	25	32.5	100.00

N. E. L. A. Arms

41	3 1/2 x 4 1/2 in. 3 ft. 2 in. 2 pin	12 2/3	15.83	\$59.37
42	5 ft. 7 in. 4 pin	22 1/3	27.92	89.06
43	8 ft. 6 pin	32	40	118.75
44	9 ft. 2 in. 8 pin	36 2/3	45.83	148.44

N. E. L. A. (Light) Arms

51	3 1/4 x 4 1/4 in. 3 ft. 2 in. 2 pin	10.77	13.93	\$52.50
52	5 ft. 7 in. 4 pin	18.98	24.57	78.75
53	8 ft. 6 pin	27.2	35.2	105.00
54	9 ft. 2 in. 8 pin	31 1/6	40 1/3	131.25

New England Arms

61	3 1/4 x 4 1/4 in. 3 ft. 2 pin	10.2	13.2	\$39.375
62	5 ft. 6 in. 4 pin	18.7	24.2	78.75
63	7 ft. 9 in. 6 pin	26.35	34.1	105.00
64	10 ft. 8 pin	34	44	131.25

New England Power Arms

71	3 3/4 x 4 3/4 in. 3 ft. 2 pin	13.5	17	\$50.00
72	5 ft. 6 in. 4 pin	24.75	31.17	100.00
73	7 ft. 9 in. 6 pin	34.87	43.92	133.33
74	10 ft. 8 pin	45	56.67	166.67

Pacific Arms

81	3 1/4 x 4 1/4 in. 3 ft. 2 pin	10.2	13.2	\$39.375
82	5 ft. 4 pin	17	22	65.625
83	7 ft. 6 pin	23.8	30.8	91.875
84	9 ft. 8 pin	30.6	39.6	118.125
85	11 ft. 10 pin	37.4	48.4	144.375

Weight creosoted crossarms—full cell—12 pounds treatment—add 15% to untreated weight.

Weight creosoted crossarms—empty cell—8 pounds—add 10% to untreated weight.

Any change required from standard spacings, pin holes or bolt holes as here given, must be distinctly specified on the order.

RAINIER FIR CROSSARMS:

MATERIAL— Sound, live, yellow Douglas fir; close-grained (at least eight rings per inch); straight grained (not out of parallel to edge of arm in central section more than five degrees).

PROHIBITED— Rot, dot, loose heart, loose or rotten knots, shakes and splits.

ALLOWED— Warp up to 1/8 inch off-set per lineal foot: sound knots up to one inch diameter, but not at pin holes or in clusters; pitch pockets up to 8 inches in length; season checks up to one inch in depth; sap-wood up to 25 per cent of volume of arm.

MANUFACTURE— Best commercial practice; kiln dried in sizes up to 3 3/4 x 4 3/4 finished; planed on all four sides; pin holes accurately centered, smooth and not badly broken out by bits in boring; dimensions as shown, with commercial variations.

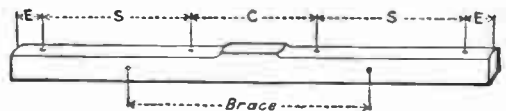
SELECT FIR: Sound lumber; well machined; free from loose or unsound knots: free from knots over one and one-half inch diameter; pitch pockets over twelve inches long, loose heart, rot or wormholes.

LONG-LEAF YELLOW PINE: Genuine Long-Leaf Yellow Pine, guaranteed every arm at least 1/8 heart in volume, and free from knots (except small, sound knots, not over one inch in diameter), or other defects that would impair the strength of the arm.

VIRGINIA YELLOW PINE: Free from loose or unsound knots or other defects which would impair the strength of the arm.

CREOSOTED CROSSARMS AND CONDUIT: Free from large, unsound or loose knots, or other defects which would impair strength: creosoted steam and vacuum treatment—dead oil of coal tar under pressure—either 12 lbs. per cu. ft. (full cell) or 8 lbs. per cu. ft. (empty cell) as ordered.

How to Describe a Crossarm (In Placing Your Order)



- STATE—A—Quantity wanted.
- B—Material and quality (or grade).
- C—Treatment (if any).
- D—Width, in inches (and fraction).
- E—Height, in inches (and fraction).
- F—Length, in feet and inches.
- G—Number pin holes.
- H—Size of pin holes.
- I—Spacing between pin holes (center - side - end).
- J—Size center bolt hole.
- K—Size brace bolt holes.
- L—Space between brace bolt holes.

For example, the standard Bell Telephone Crossarm is described—"Rainier Fir, unpainted, 3 1/4 x 4 1/4"-10', bored for 10, 1 3/32" pin holes, spaced 16" center, 12" sides, 4" end, one 5/8" center bolt hole, two 3/8" brace bolt holes 42" apart."

Important

In ordering crossarms, be very careful to specify just what is wanted, and, if other than standard boring, send sketch or blue print with order. Arms specially made are of no use for general stock, and cannot be taken back if mistake is made in ordering.

Wood Pins

Specifications

MATERIAL.—Pins shall be sound, reasonably straight grained, yellow or black locust (or Oak, as called for), free from knots, checks, sap wood, brash-wood, cracks, etc., except as hereinafter specified.

SAP WOOD.—Sap wood is permitted on the shoulder of the pin provided it does not extend into the tenon.

CHECKS.—Season checks not over 1/8 inch deep are permitted provided they do not appear elsewhere than in the shoulder and lower half of the tenon.

KNOTS.—Pins shall be free from loose or unsound knots; sound knots not exceeding 1/4 inch in diameter are permitted on the shoulder and lower half of the tenon.

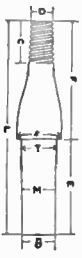
GRAIN.—The grain of the wood shall be reasonably parallel to the axis of the pin; irregularities in grain which are wholly confined to the section within one inch of the bottom of the tenon shall be permitted.

WORM HOLES.—Worm holes and channels not over 1/8 inch diameter are permitted provided they do not impair the holding power of the thread or the placing of the nail, in the pin, and provided that they shall not appear in over 10 per cent of pins in any shipment.

DIMENSIONS.—Pins are usually made from unseasoned wood due to difficulty of securing and manufacturing seasoned timber. Pins after seasoning shall be of the dimensions shown in drawing, or as ordered (with allowable variations as shown).

FLAT SHOULDERS.—One flat surface is permitted, provided the wood is not cut away to the depth of the shoulder at any point of the circumference; in the bottom one-fourth of the tenon irregularities in shape which do not involve the removal of more than one-quarter of the cross-section called for in the drawing are permitted; provided these defects do not occur in more than 10 per cent of the pins furnished.

THREADS.—All pins shall have four threads per inch; the thread shall be smooth and of uniform pitch; the thread shall taper 1/16 inch in diameter to 1 inch in length.



	1 1/4 x 8 Pins Inches	1 1/2 x 9 Pins Inches	Allowable Variation Inches
L = Length Pin.....	8	9	1/4
F = " Top.....	4	5	1/4
E = " Tenon.....	4	4	1/4
D = Diameter Thread.....	5/32	5/32	1/64
C = Length ".....	2 1/2	2 1/2	1/4
S = Diameter Shoulder.....	1 1/2	1 3/4	1/16
T = " Tenon on Top....	1 3/8	1 1/2	1/16
M = " " at Middle..	1 1/4	1 1/2	3/16
B = " " Bottom.	1 3/16	1 7/16	1/16

Standard Pins



DIMENSIONS			Locust	Oak	DIMENSIONS			Locust	Oak
M	L	D	Wt. Lbs. per 1000	Wt. Lbs. per 1000	M	L	D	Wt. Lbs. per 1000	Wt. Lbs. per 1000
1 1/4	8	1	325	300	1 1/2	9	1	450	400

Transposition Pins



1 1/4	9	1	400	350	1 1/2	10	1	500	450
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High Tension Pins



1 1/2	11	1 3/8	550	500	1 3/4	12	1 3/8	1300	1100
1 1/2	12	1	600	550	1 3/4	10 1/8	1	1000	850
1 1/2	12	1 3/8	650	600	1 3/4	10 1/8	1 3/8	1100	900
1 3/4	12	1	1200	1000	1 3/4	14	1 3/8	1400	1200

Duplex Pins



1 1/4	11 1/2	1	500	450	1 1/2	12	1	650	600
1 1/4	12	1	550	500					

Prices upon application.

Wood Brackets, Pole Steps and Cobs

Specifications

MATERIAL.—Sound, reasonably straight grained, Oak, free from knots, checks, sap wood, etc., except as hereinafter specified.

SAP WOOD.—Permitted up to 25 per cent of volume of bracket.

CHECKS.—Season checks not over 1/8 inch deep are permitted provided they do not appear within two inches of the thread.

KNOTS.—Brackets shall be free from loose or unsound knots; sound knots not exceeding 1/2 inch in diameter permitted below the shoulder, but not in lower 3-inch section of bracket.

GRAIN.—Grain of the wood shall be reasonably parallel to the axis of the bracket.

WORM HOLES.—And channels not over 1/8 inch diameter are permitted provided they do not impair the holding power of the thread, or the nail holes; and provided that they shall not appear in over 10 per cent of the brackets furnished in any shipment.

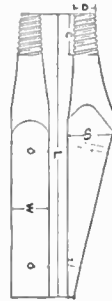
DIMENSIONS.—After seasoning, dimensions with allowable variations shall be as shown; Wane allowed in body of bracket not exceeding 1/4 inch; irregularities in body of bracket not to exceed 10 per cent of volume.

THREADS.—All brackets shall have four threads per inch; the thread shall be smooth and of uniform pitch; the thread shall taper 1/16 inch in diameter to 1 inch in length.

MANUFACTURE.—All workmanship shall be of best commercial grade.

STANDARD PACKAGE.—Nos. 1, 3, 4 and 5, 25 per bundle. Nos. 2 and 6, 20 per bundle.

It is the practice to furnish oak pins and brackets "dipped in red paint," without extra charge; this treatment is of little or no protective value, and we earnestly recommend instead, a dipping in hot Cresote Oil, at a slight additional charge; not only does this make a clean bracket, but gives a preservative value, and a lasting effect.



L = Length Bracket.....	As ordered	1/4
D = Diameter Thread.....	5/32	1/4
C = Length ".....	2 1/2	1/4
W = Width.....	As ordered	1/8
S = Height at Shoulder....	" "	1/8

Brackets

Standard No.	DIMENSIONS				Wt. Lbs. per 1000
	W	S	L	D	
4	1 1/2	2	10	1	500
" 1	1 1/2	2	12	1	600
" 3	1 1/2	2 1/4	12	1	700
" 5A.T.&T.	1 5/8	2	12	1	700
" 2	2	2 1/4	12	1	800
" 6 W.U.	2	2 3/8	12	1	850



Pole Steps

Standard	1 1/2	2	7	..	500
"	1 1/2	2 1/4	7	..	550
Western Union	1 3/4	2 3/4	7	..	700



Cobs

S	DIMENSIONS			Wt. Lbs. per 1000	S	DIMENSIONS			Wt. Lbs. per 1000
	L	D				L	D		
1 1/4	2 1/2	1	60	2 1/4	5 1/4	1 3/8	..		
1 7/8	4 1/2	1	..	2 1/4	6 1/2	1 3/8	..		
2 1/4	5 1/4	1	..	2 1/4	8	1 3/8	..		
2 1/4	4 1/2	1 3/8	..	2 1/4	9	1 3/8	..		



Prices upon application.

No. 9 Hemingray Glass Insulators

Pony

Height over all, 3 3/4 inches. Diameter over all, 2 1/4 inches. Groove, 3/8 inch.



Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
9	400	248	\$94.70

No. 42 Hemingray Glass Insulators

Double Petticoat

Height over all, 4 1/8 inches; diameter over all, 3 3/4 inches.



Cat. No.	Diam. Groove Inches	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
42	5/8	175	306	\$196.00

No. 12 Hemingray Glass Insulators

Double Groove Pony

Height over all, 3 5/8 inches. Diameter over all, 2 3/8 inches. Top groove, 3/8 inch; bottom groove, 1/4 inch.



Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
12	400	279	\$94.60

No. 14 Hemingray Glass Insulators

Deep Groove, Double Petticoat Pony

Height over all, 3 3/8 inches. Diameter over all, 2 3/8 inches. Groove, 3/8 inch.



Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
14	300	246	\$120.40

No. 16 Hemingray Glass Insulators

Long Distance

Height over all, 4 inches; diameter over all, 2 5/8 inches.



Cat. No.	Diam. Groove Inches	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
16	3/8	275	285	\$141.00

No. 19 Hemingray Glass Insulators

Deep Groove, Double Petticoat

Line Voltage, 4400

Height over all, 3 7/8 inches. Diameter over all, 3 1/4 inches. Groove, 1/2 inch.



Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
19	200	252	\$168.30

No. 20 Hemingray Glass Insulators

Street Railway or Extra Deep Groove Double Petticoat
Line Voltage, 4400

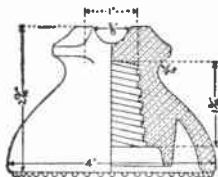
Height over all, 4 inches. Diameter over all, 3 1/4 inches. Groove, 3/4 inch.

Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
20	200	263	\$168.30



No. 23 Hemingray Glass Power Insulators

2300-6600 Volts



Cat. No.	VOLTAGES		Leakage Dist. In.	Wet Arcing Dist. In.	Wet Arcing Dist. In.	Approx. Gross Wt. Each	Approx. Gross Wt. per Bbl.	Std. Pkg.	Price per 1000
	Dry Arc Over	Wet Arc Over							
23	6600	55000	23000	5 1/4	1 3/8	16	265	200	....

No. 43 Hemingray Glass Insulators

Top Groove Western Union

Height over all, 4 1/4 inches; diameter over all, 3 3/8 inches.



Cat. No.	Diam. Groove Inches	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
43	1/2	160	285	\$225.00

No. 53 Hemingray Glass Insulators

Transposition—Old No. 14

Height over all, 4 1/2 inches. Diameter over all, 4 inches. Top groove, 3/8 inch; bottom groove, 3/8 inch.



Cat. No.	Std. Pkg.	Wt. Lbs. per Bbl.	Price per 1000
53	100	235	\$291.20

Nos. 60 and 60A Hemingray Cable Glass Insulators

No. 60.—Height over all, 5 inches. Diameter over all, 3 1/4 inches. Groove, 1 1/2 inches. No. 60A.—Same as No. 60 but with 2-inch groove.



Cat. No.	Line Voltage	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
60	6600	100	225	\$258.70
60A	6600	100	225	258.70

No. 61 Hemingray Glass Cable Insulators

Old No. 1

Height over all, 3 3/4 inches. Diameter over all, 3 1/4 inches. Groove, 1 inch.

Cat. No.	Line Voltage	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
61	6600	200	255	\$226.40

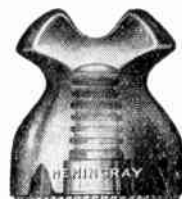


No. 62 Hemingray Glass Insulators

Cable—Old No. 2

Dimensions over all: height, 4 inches; diameter, 3 3/8 inches; groove, 1 1/4 inches. Voltage test, dry, 49000; wet, 21000; line, 6600. Standard package, 125.

Weight pounds per barrel, 236
Price, No. 62.....per 1000 \$258.70



No. 71 Hemingray High Voltage Glass Insulators

Line voltage, 10000.
Height over all, 3 3/4 inches.
Diameter over all, 4 3/4 inches.
Groove, 5/8 inch.



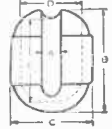
Cat. No.	Std. Pkg.	Wt., Lbs. per Bbl.	Price per 1000
71	100	261	\$232.90

No. 72 Hemingray High Voltage Glass Insulators

Line voltage, 11000.
Height, 4 inches; diameter, 4 3/4 inches; top groove, 1 1/2 inches; side groove, 3/4 inch.
Cat. No. 72 Std. Pkg. 100 Wt., Lbs. per Bbl. 260 Price per 1000 \$232.90



Thomas Porcelain Guy and Break Strain Insulators



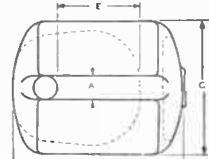
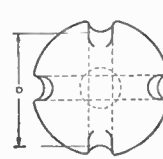
No. 361-2

No. 365-6

Brown glaze furnished unless otherwise specified.

Cat. No.	Ht. In.	Diam. In.	Groove In.	FLASH-OVER VOLTAGES		Ultimate Crushing Strength	Number in Bbl.	Gross Wt., Lbs. per 100
				Dry	Wet			
361	3	2 5/8	1 1/8	14000	7000	19000	500	78
362	4 1/8	3 1/4	1 7/8	17000	10000	25000	182	215
365	2 1/2	2 3/8	1 1/2	12000	5000	6500	625	70
366	3 1/4	2 5/8	5/8	15000	7000	15000	350	120

Thomas Porcelain Strain Insulators

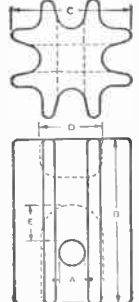
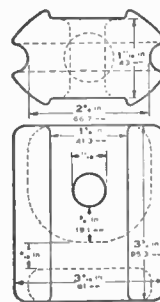


No. 500-6

Brown glaze furnished unless otherwise specified.

Cat. No.	Ht. In.	Diam. In.	Groove In.	FLASH-OVER VOLTAGES		Ultimate Crushing Strength	Number in Box	Gross Wt., Lbs. per 100
				Dry	Wet			
500	2 1/8	1 3/8	3/8	16000	9000	4000	200	25
502	3 1/2	2 1/2	1 1/2	23000	14000	15000	72	139
504	3 3/8	2 7/8	1 1/2	25000	15000	20000	72	171
506	5 1/2	3 3/8	3/4	31000	20000	45000	30	333

Thomas Porcelain Strain Insulators



No. 508

No. 510-12

Brown glaze furnished unless otherwise specified.

Cat. No.	Ht. In.	Diam. In.	Groove In.	FLASH-OVER VOLTAGES		Ultimate Crushing Strength	Number in Box	Gross Wt., Lbs. per 100
				Dry	Wet			
508	3 3/4	3 3/8	1 1/8	19000	8000	19000	300	165
*510	3 1/2	2 1/2	5/8	30000	15000	10000	72	114
*511	5 3/8	3 1/4	3/4	35000	20000	15000	30	300
*512	6 3/4	3 1/2	3/4	40000	25000	20000	25	428

*Insulators Nos. 510, 511 and 512 are manufactured of wet process porcelain and are suitable for moderate voltage "dead-ending." No. 508 packed in barrels.

No. 7012 Radio Antenna Insulators

Suitable for use in insulating the aerial of the amateur receiving station.
Length, 2 1/4"; diameter, 1 5/8"; diameter of holes, 3/8".
Packed 1500 per barrel.
500 per box or 100 per carton.
Bbl. Lots... per 1000 \$27.00



Nos. 75 and 76 Hemingray Glass Insulators

No. 75

Muncie type—7-inch.
Height, 4 7/8 inches; diameter, 7 inches; groove, 7/8 inch.
Made for standard 1-inch pins.

Line voltage, 15000.
Cat. No. 75 Std. Pkg. 30 Wt., Lbs. per Bbl. 185 Price per 1000 \$557.00



No. 76

Height, 5 7/8 inches; diameter, 9 inches; groove, 7/8 inch.

Cat. No. 76 Line Voltage 20000 Std. Pkg. 16 Wt., Lbs. per Bbl. 190 Price per 1000 \$928.30

No. 78 Hemingray Glass Insulators

With No. 77—(9-inch) Muncie Sleeves

Height, 13 7/8 inches; diameter, 9 inches; groove, 7/8 inch.

Line voltage, 33000.
Cat. No. 78 Std. Pkg. 8 Wt., Lbs. per Bbl. 160 Price per 1000 \$1603.00



No. 77—(9-inch) Muncie Sleeves only

Cat. No. 77 Std. Pkg. 32 Wt., Lbs. per Bbl. 180 Price per 1000 \$675.00

No. 95 Hemingray Glass Mine Insulators



Old No. 1.

Height over all, 3 1/2 inches; diameter, 2 7/8 inches; groove, 5/8 inch.

Cat. No. 95 Std. Pkg. 200 Wt., Lbs. per Bbl. 295 Price per 1000 \$291.30

No. 103 Hemingray Insulating or Break Knobs

Old No. 3.

Height over all, 2 inches; diameter, 2 inches; groove, 5/8 inch; hole, 3/8 inch.

Cat. No. 103 Std. Pkg. 500 Wt., Lbs. per Bbl. 230 Price per 1000 \$90.70



No. 107 Hemingray Insulating or Break Knobs

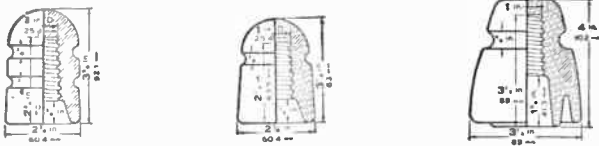
Old No. 7.

Height over all, 1 7/8 inches; diameter, 2 inches; groove, 3/4 inch; hole, 3/8 inch.

Cat. No. 107 Std. Pkg. 500 Wt., Lbs. per Bbl. 230 Price per 1000 \$90.70



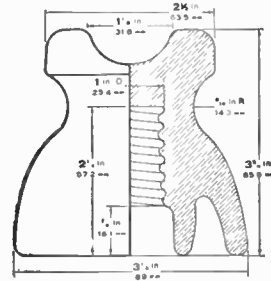
Thomas Porcelain Telephone and Telegraph Insulators



Cat. No.	Nominal Rating Volts	Leakage Distance Inches	Number in Barrel	Gross Wt., Lbs. per 100
1011	5000	2	400	80
1012	5000	2 3/4	500	67
1094	5000	6 1/4	50 in Box	190

Brown glaze furnished unless otherwise specified.

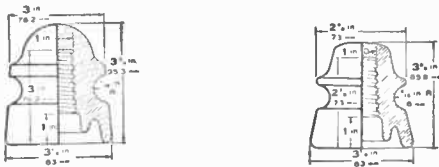
No. 1049 Thomas Porcelain Pin Type Insulators



Cat No	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Box	Gross Wt., Lbs. per 100
1049	5000	43000	4 3/4	1 3/4	50	153

Brown glaze furnished unless otherwise specified.

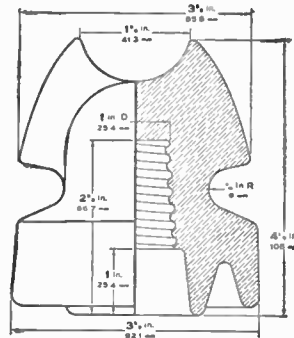
Thomas Porcelain Telephone and Telegraph Insulators



Cat. No.	Nominal Rating Volts	Leakage Distance Inches	Number in Box	Gross Wt., Lbs. per 100
1101	5000	3 1/2	50	154
*1110	5000	4 1/4	50	166
1111	5000	3 5/8	50	150

Brown glaze furnished unless otherwise specified.

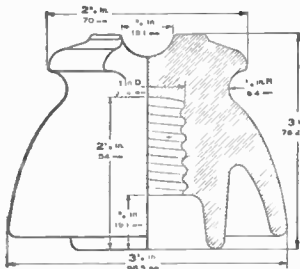
No. 1084 Thomas Porcelain Pin Type Insulators



Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Barrel	Gross Wt., Lbs. per 100
1084	5000	55000	4 1/4	1 3/4	225	150

Brown glaze furnished unless otherwise specified.

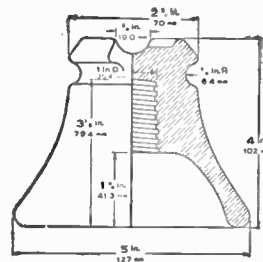
No. 1009 Thomas Porcelain Pin Type Insulators



Catalogue Number	1009
Nominal Rating, Volts.....	6600
Flash-over Voltage	55000
Leakage Dist. . . in.	5 1/2
Wet Arcing Dist. "	1 3/4
Number in Box. . .	50
Gross Wt., Lbs. per 100	160

Brown glaze furnished unless otherwise specified.

No. 1164 Thomas Porcelain Pin Type Insulators



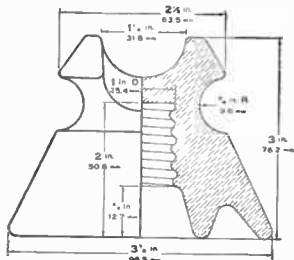
Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Barrel	Gross Wt., Lbs. per 100
1164	6600	57000	5 3/4	2 1/4	100	240

Brown glaze furnished unless otherwise specified.

Designed especially for use in localities where salt spray, fog, smoke, iron and coal dust are prevalent. Insulator is so constructed as to shed the majority of such deposits and in most every instance will give unusual service on 6600-volt lines or under.

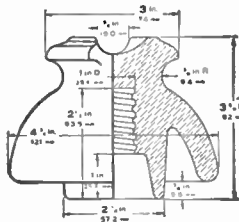
No. 1010 Thomas Porcelain Pin Type Insulators

Catalogue Number..	1010
Nominal Rating, Volts.....	6600
Flash-over Voltage..	54000
Leakage Dist. . . in.	4
Wet Arcing Dist. . . "	1 3/4
Number in Box.	50
Gross Wt., Lbs. per 100	180



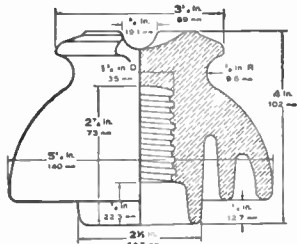
Brown glaze furnished unless otherwise specified.

Thomas Porcelain High Voltage Insulators

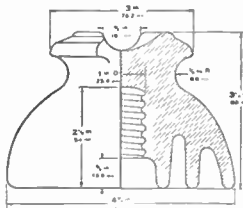


Brown glaze furnished unless otherwise specified.

Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Barrel	Gross Wt., Lbs. per 100
1177	13000	70000	7	2 1/4	75	290



No. 1151-2



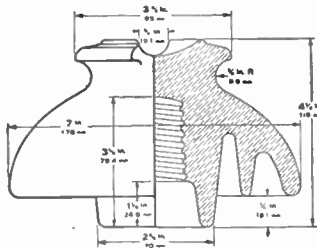
No. 1153

Brown glaze furnished unless otherwise specified.

Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Barrel	Gross Wt., Lbs. per 100
*1151-2	17000	74000	9 1/2	2 1/2	65	385
1153	13000	68000	8	2 1/8	75	355

*No. 1151 diameter of pin hole is 1 3/8 in.; No. 1152, 1 inch.

Thomas Porcelain Pin Type Insulators

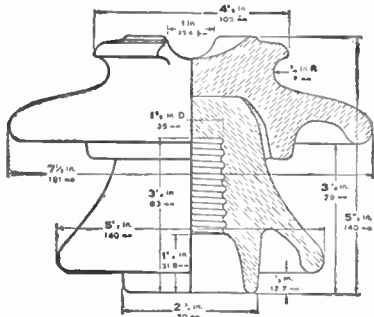


Brown glaze furnished unless otherwise specified.

Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	No. in Barrel	Gross Wt., Lbs. per 100
*1157-8	23000	88000	11 1/2	3 1/2	40	600
†1178-9	20000	80000	8 3/4	3 1/2	50	440

*No. 1157 diameter of pin hole is 1 in.; No. 1158, 1 3/8 in.

†No. 1178 diameter of pin hole is 1 in.; No. 1179, 1 3/8 in.

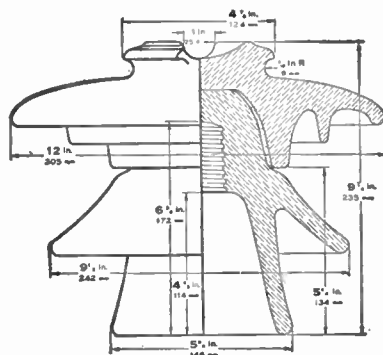


Brown glaze furnished unless otherwise specified.

Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Crates	Gross Wt., Lbs. per 100
2120	23000	87000	10 1/4	4 1/4	*30	635
2117	27000	89000	12	5	*20	800
2125	35000	112000	14 1/4	6	12	1175

*Insulators Nos. 2120 and 2117 are packed in barrels.

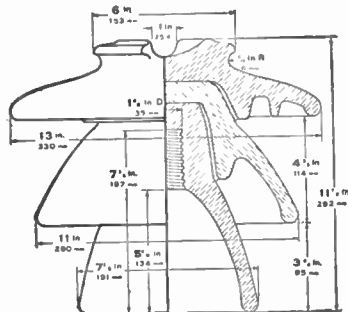
Thomas Porcelain Pin Type Insulators



Brown glaze furnished unless otherwise specified.

Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Crates	Gross Wt., Lbs. per 100
3058	35000	120000	19	6 1/4	6	1635
2124	45000	140000	21	7	6	1700
2126	55000	150000	26	8 1/2	3	3050

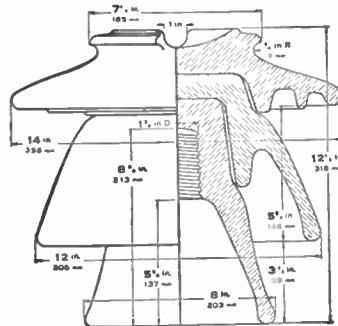
Thomas Porcelain Pin Type Insulators



Brown glaze furnished unless otherwise specified.

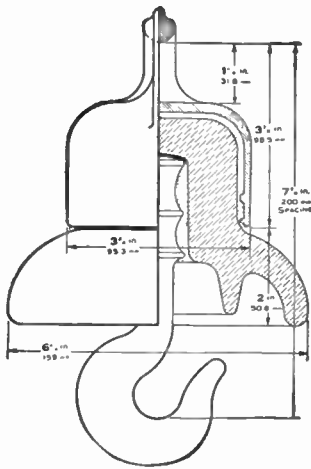
Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Crates	Gross Wt., Lbs. per 100
3059	45000	145000	23	7	6	2585
3055	50000	155000	28	7 1/2	6	2975
3057	55000	165000	30 1/2	9	3	3400
3060	66000	180000	32	9 3/8	3	4330
4034	70000	192000	39	10 1/4	3	5335
4035	80000	225000	43 1/4	11 1/2	2	7250

No. 3062 Thomas Porcelain Pin Type Insulators



Cat. No.	Nominal Rating Volts	Flash-over Voltage	Leakage Distance Inches	Wet Arcing Distance Inches	Number in Crates	Gross Wt., Lbs. per 100
3062	70000	200000	35	10 1/2	3	5400

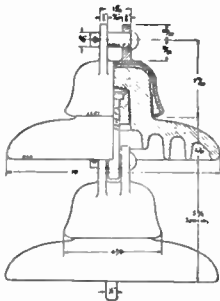
No. 1147 Thomas Porcelain Suspension and Strain Insulators



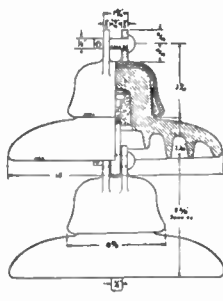
Brown glaze furnished unless otherwise specified.

Catalogue Number	1147		
Number Units in String	1	2	3
Length of String in.	$7\frac{7}{8}$	$15\frac{3}{4}$	$23\frac{5}{8}$
Flash-over, K. V.	65	120	170
Ultimate Mechanical Strength lbs.	9000		
Number Units in Crate	6		
Gross Wt., Lbs. per 100	1100		

Thomas Porcelain Suspension Type Insulators



No. 1166



No. 1167

Brown glaze furnished unless otherwise specified.

Specifications

Catalogue Numbers	1166	1167
Spacing of Units in.	$5\frac{3}{4}$	$5\frac{5}{8}$
Diameter of Disc	10	10
Width of Clevis Opening	$\frac{11}{16}$	$\frac{9}{16}$
Cotter Bolt Diameter	$\frac{5}{8}$	$\frac{1}{2}$
Ultimate Mechanical Strength lbs.	10000	10000
Leakage Distance in.	$12\frac{1}{2}$	13
Wet Arcing Distance	$3\frac{7}{8}$	4
Net Wt., Lbs. each	$11\frac{1}{4}$	11

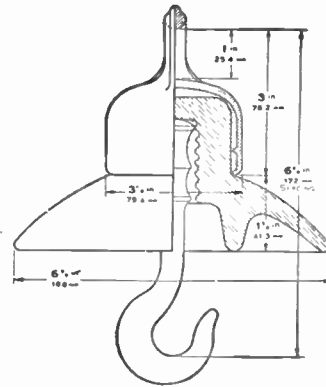
No. 1166 Insulators

Number of Units in String	1	2	3	4	5	6	7
Length of String	$5\frac{3}{4}$	$11\frac{1}{2}$	$17\frac{1}{4}$	23	$28\frac{3}{4}$	$34\frac{1}{2}$	$40\frac{1}{4}$
Flash-over Voltage, K. V.	85	148	204	255	303	351	400
Gross Wt., Lbs. each	19	29	44	57	69	81	96

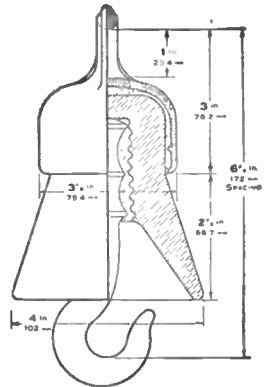
No. 1167 Insulators

Number of Units in String	1	2	3	4	5	6	7
Length of String	$5\frac{5}{8}$	$10\frac{3}{4}$	$16\frac{1}{8}$	$21\frac{1}{2}$	$26\frac{5}{8}$	$32\frac{1}{4}$	$37\frac{5}{8}$
Flash-over Voltage, K. V.	85	144	196	245	290	335	380
Gross Wt., Lbs. each	18	29	44	56	68	80	95

Thomas Porcelain Suspension and Strain Insulators



No. 1056



No. 1074

Brown glaze furnished unless otherwise specified.

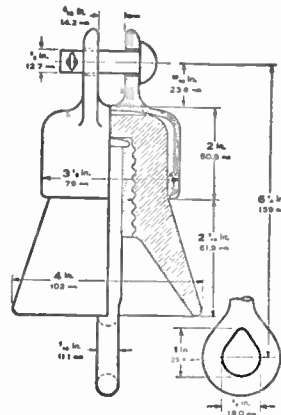
No. 1056 Insulators

Number Units in String	1	2	3
Length of String in.	$6\frac{3}{4}$	$13\frac{1}{2}$	$20\frac{1}{4}$
Flash-over K. V.	70	135	181
Ultimate Mechanical Strength lbs.	3800		
Number in Barrel	35		
Gross Wt., Lbs. per 100	575		

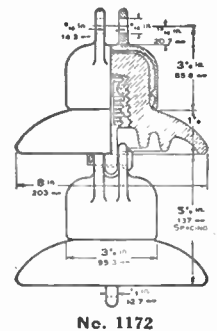
No. 1074 Insulators

Number Units in String	1	2	3
Length of String in.	$6\frac{3}{4}$	$13\frac{1}{2}$	$20\frac{1}{4}$
Flash-over K. V.	51	98	144
Ultimate Mechanical Strength lbs.	3800		
Number in Barrel	60		
Gross Wt., Lbs. per 100	435		

Thomas Porcelain Suspension and Strain Insulators



No. 1168



No. 1172

Brown glaze furnished unless otherwise specified.

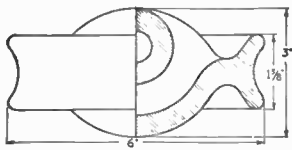
No. 1168 Insulators

Number Units in String	1	2	3
Length of String in.	$6\frac{1}{4}$	$12\frac{1}{2}$	$18\frac{3}{4}$
Flash-over K. V.	51	98	144
Ultimate Mechanical Strength lbs.	3800		
Number in Barrel	60		
Gross Wt., Lbs. per 100	450		

No. 1172 Insulators

Number Units in String	1	2	3
Length of String in.	$5\frac{5}{8}$	$10\frac{3}{4}$	$16\frac{1}{8}$
Flash-over K. V.	68	135	183
Ultimate Mechanical Strength lbs.	9000		
Number in Barrel	20		
Gross Wt., Lbs. per 100	1000		

No. 1163 Thomas Baby Link Type Hewlett Porcelain Insulators



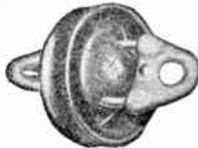
Porcelain disc only, without connecting hardware. Can be used for "dead ending" and for important electrical "guys" by serving wire directly through cableway and fastening.

Catalogue Number.....	1163
Number in Barrel.....	80
Gross Wt., Lbs.....	per 100 325

No. 11026 Thomas Link Type Hewlett Porcelain Insulators

Porcelain disc with connecting hardware, having a 1 1/4-inch eye at either end.

Can also be furnished in assembled strings of two units and should be ordered as Cat. No. 11026-Type-2.



Catalogue Number.....	11026
Number in Barrel.....	50
Gross Wt., Lbs.....	per 100 610

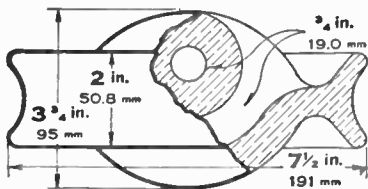
No. 11031 Thomas Link Type Hewlett Porcelain Insulators

Porcelain disc with connecting hardware, having a 1 1/4-inch eye at one end and an 1/16-inch clevis, fitted with 5/8-inch cotter bolt at the other.

This insulator can also be furnished in assembled strings of two units and should be ordered as Cat. No. 11031-Type-2.

Catalogue Number.....	11031
Number in Barrel.....	50
Gross Wt., Lbs.....	per 100 610

No. 1162 Thomas 7 1/2-inch Link Type Insulators



ASSEMBLIES.— Cat. No. 11010 — Clevis with 5/16 or 1/8 opening and fitted with 1/2 or 5/8-inch cotter pin at top and a 1/2-inch connector at bottom of string. Cat. No. 11011— A 1/16-inch eye having a 1 1/4-inch hole at one end and a 1/2-inch connector at bottom of string.

string. Cat. No. 11012 — A forged steel suspension hook at one end and a 1/2-inch connector at bottom of string. Cat. No. 11013-T2A clevis with 5/16 or 1/8-inch opening (fitted with 1/2 or 5/8-inch cotter pin) at top and a 1/16-inch eye having a 1 1/4-inch hole at bottom of string.



No. 11013-T2

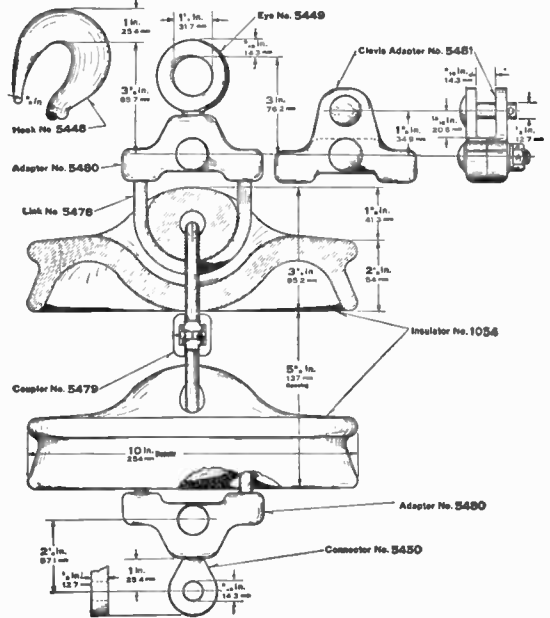
Type Number denotes number of units in string. Example: If 3 unit string is desired with hook at top and connector at bottom, order should read Cat. No. 11012-Type-3.

Packing Data for Catalogue Nos. 11010-11-12 and 13

Ultimate mechanical strength, 8000 pounds.

Type No.	How Packed	Gross Wt., Lbs. of Pkg.
1	18 per Barrel	240
2	4-strings per Crate	102
3	2 " " "	72
4	2 " " "	92
Catalogue Number.....		1162
Number in Barrel.....		40
Gross Wt., Lbs.....		per 100 750

No. 1054 Thomas 10-inch Porcelain Disc Link Type Hewlett Insulators

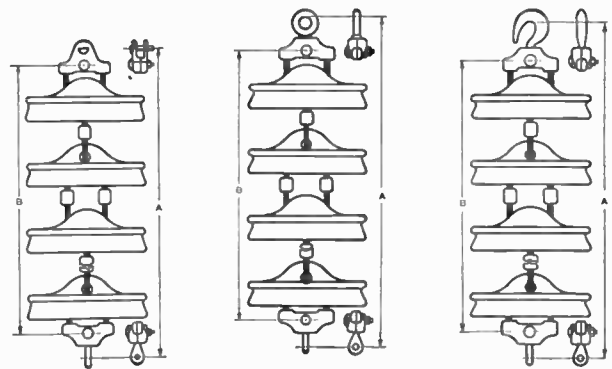


No. 1054

Note the adaptability and variety of fittings manufactured for use with the Thomas Link Type Hewlett Insulator. The terminal hooks, eyes and connectors are drop forged steel. The adapters are so constructed as to allow the terminal fittings to be set either parallel with the transmission line or at right angles. The connecting links are of soft copper and readily shape themselves to conform with the curvature of the cableway in the insulator, when put in tension. The couplers are of cast bronze and the locking spring clips are of a high grade of phosphor bronze. The clevis adapters are malleable cast iron and can be furnished in two sizes, namely; 5/16 opening fitted with 1/2-inch cotter pin or with an 1/8-inch opening and fitted with a 5/16-inch cotter pin.

When ordering, always mention both Catalogue and Type Number, Type Numbers indicate number of units in string. Catalogue Number..... 1054
Leakage Distance..... in. 12
Wet Arcing Distance..... " 3

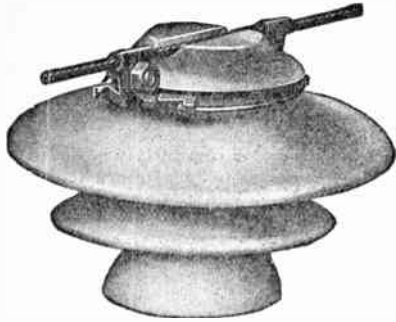
Standard Assemblies of Thomas Link Type Hewlett Insulators



Type No.	DIMEN., INCHES				Flash-over Voltages	Net Gross	
	11004	11005	11006	B		Wt., Lbs.	of Strings
1	9	10 5/8	11	5 3/8	75000	14 1/2	...
2	14 3/8	16	16 3/8	10 3/4	145000	25	...
3	19 3/4	21 3/8	21 3/4	16 1/8	205000	35 1/2	58
4	25 1/8	26 3/4	27 1/8	21 1/2	260000	46	70
5	30 1/2	32 1/8	32 1/2	26 7/8	305000	56 1/2	86
6	35 7/8	37 1/2	37 7/8	32 1/4	350000	67	102
7	41 1/4	42 7/8	43 1/4	37 3/8	390000	77 1/2	118

Standard packing, one string assembled per crate.

Type A Memco Clark Insulator Clamps



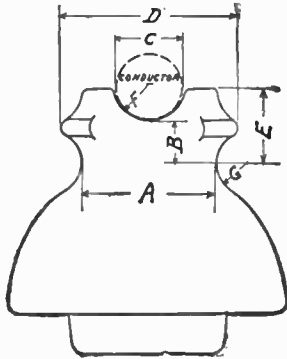
Replacing Tie Wires for Clamping Insulators to Conductors

The clamping jaws are bolted together with tie pieces of heavy solid copper with

button heads engaging holes in the clamps. Once the conductor is gripped by the clamping jaws, it serves as a part of the clamp itself.

When ordering, the following information should be supplied:

- 1.—Name and number of insulator, or fill in dimensions on sketch.
- 2.—Solid or stranded wire used.
- 3.—Conductor, bare or insulated.
- 4.—Exact outside diameter of conductor.



These clamps are supplied of either special high tensile strength compositions, or of malleable iron protected by a heavy coating of zinc and with steel bolts and nuts sherardized. Malleable iron clamps cannot be supplied in lots of less than 100.

Prices upon application.

Type C Memco Clark Insulator Clamps



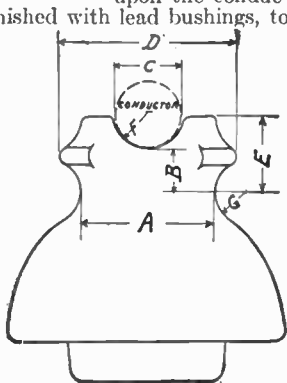
Especially Adapted for Small Heavy Insulators at Railroad Crossings

There are suitable bushings of soft copper or aluminum provided, depending upon the conductor.

It also provides when furnished with lead bushings, to amply protect the insulator, an excellent means of holding insulated conductors in place.

Type C clamp provides rigid construction and is recommended for use on lines strung under considerable tension, such as steel messenger lines, etc.

The clamp is also used with small insulators on the transmission line and also proves serviceable in the power house for attaching bus bars to insulators.



Prices upon application.

Pointed Bars



Bar is 4 feet long with sharp curved end of tool steel.

Shaving Tools



Has broad chisel edge attached to steel pipe handle, 5 feet long.

Hubbard Hub Guards and Pole Protection Strips
Hot Galvanized Hub Guards

Used on corner poles to protect them from the hubs of wagons.

Cat. No.	Dimensions Inches	Wt. Lbs. per 100	Price per 100
7100	14x18x1/8	700	\$156.60
7101	16x18x1/8	950	164.16
7102	14x30x3/16	2100	456.00
7103	16x30x3/16	2600	475.00



Hub Guard

Pole Protection Strips

Also known as cribbing guards and are used to prevent horses from gnawing poles.

Cat. No.	DIMENS. IN. Width Length	Gauge No.	Wt. Lbs. per 100	Price per 100
7110	2 48	24	60	\$21.50

Hubbard Ground Pipes

Hot Galvanized



Steel pipe, forged to a long sharp point.

Cat. No.	Nominal Size Pipe In.	Actual Out-side Diam., In.	Length Ft.	Shipping Wt., Lbs. per 100	Price per 100
9500	3/4	1.050	8	880	\$210.00
9502	2 1/2	2.875	6	3475	650.00

Hubbard Drive Caps and Points

Hot Galvanized

Standard 3/4-inch inside diameter pipe of conduit unthreaded, can be easily converted into an effective ground by the use of Hubbard Drive Caps and Points. Made of malleable iron and galvanized with pure zinc by the hot-dip process. The point is inserted into end of pipe, usually about 8 feet long, and seated by a few blows of hammer. Cap is placed over other end and pipe is ready for driving. By the time pipe has been driven to desired depth, cap will be firmly attached as shown. Connection is made by filling hole in cap with molten solder and inserting ground rod.



No. 9540



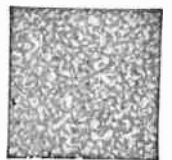
No. 9550

Caps				Points			
Cat. No.	Nom. Size Pipe In.	Wt. Lbs. per 100	Price per 100	Cat. No.	Nom. Size Pipe In.	Wt. Lbs. per 100	Price per 100
9540	3/4	90	\$82.66	9542	1 1/4	302	\$120.00
9541	1	196	88.80	...	...	...	...
9550	3/4	38	\$43.92	9552	1 1/4	128	\$48.00
9551	1	83	47.40	...	...	...	...

Hubbard Ground Plates

Hot Galvanized

The ground plate can be attached to the butt of pole before erection, or dropped in the hole before the earth is filled in. Made of 20-gauge sheet steel, 12 inches square.



Cat. No.	Description	Wt., Lbs. per 100	Price per 100
9545	Without Terminal	165	\$67.88
9546	With Terminal	170	82.66

Hubbard Copperweld Ground Rods



These rods do not rust. They assure a permanent low-resistance ground connection. Composed of a rigid steel core to which is welded a heavy layer of pure copper. The rods are pointed, ready for driving, no fittings required. Ground wire is easily soldered to copper surface of rod.

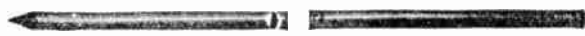
The following sizes are generally used for service shown:

	Diameter Inches	Length Feet
Signal Service	1/2 or 5/8	6 or 8
Telegraph Circuits	1/2 " 5/8	6 " 8
Telephone	3/8 " 1/2	5 " 8
Overhead Ground Wires	1/2, 5/8 or 3/4	6 " 10
Power Distribution Circuits	1/2, 5/8 " 3/4	8 " 10
Service Grounds	1/2, 5/8 " 3/4	8 " 10
Radio	3/8 or 1/2	5 " 8

Prices upon application.

Hubbard Ground Rods without Copper Wire

Hot Galvanized



Made of stiff, high carbon open hearth steel, with long sharp points. Unwired rods are provided with holes through the upper ends for attaching grounding wires. These holes are located one inch from ends of rods.

Cat. No.	Diam. Inches	Length Feet	Wt. Lbs. per 100	Price per 100
9555	3/8	5	152	\$25.72
9556	3/8	6	196	30.96
9565	1/2	5	300	38.62
9566	1/2	6	360	47.24
9567	1/2	7	420	55.86
9576	5/8	6	600	64.80
9577	5/8	7	700	75.60
9578	5/8	8	800	86.40
9598	1	8	2167	195.00

Hubbard Ground Rods with Copper Wire

Hot Galvanized



No. 12 wire soldered to rod; free end, five inches long.

Cat. No.	Diam. Inches	Lgth. Feet	Wt. Lbs. per 100	Price per 100	Cat. No.	Diam. Inches	Lgth. Feet	Wt. Lbs. per 100	Price per 100
9505	1/2	5	320	\$56.60	9516	5/8	6	595	\$84.60
9506	1/2	6	395	65.22	9538	1	7	2133	247.00

No. 2400 Peirce Terminals for Grounding Wires

Tinned Copper



The wire used for connecting the overhead ground wire to the earth is soldered to the tinned copper terminal which is slipped under the head or nut of the bolt fastening the lower end of the ground wire bayonet to the pole. This insures a good contact at a low cost of material and labor.

Weight, 4 pounds per 100. Size, 2x2 3/4 inches x 22 gauge.

Price, No. 2400 Terminals per 100 \$17.68

No. 7545 Hubbard Rock Guy Anchors

Hot Galvanized



Consists of 2 drop forged tapered sides 9 1/2 inches long, a wedge and a

5/8x2 1/4-inch machine bolt.

Shipping weight per 100, 496 pounds.

Price, No. 7545 per 100 \$116.00

Hubbard Anchor Rods

Hot Galvanized



The eyes are drop-forged. Rods, 3/4-inch diameter and under, have 3 1/2 inches of rolled threads. The 1 and 1 1/4-inch rods have 3 1/2 inches of cut threads. Rods with two eyes furnished at the same prices. All prices include square nut, but no washers. Rods with welded eyes supplied at same prices.

Cat. No.	Diameter Inches	Length Feet	Size Width	Eye Length	Wt. Lbs. per 100	Price per 100
7405	1/2	5	3/4	1	320	\$52.48
7406	1/2	6	3/4	1	375	61.50
7407	1/2	7	3/4	1	430	70.52
7415	5/8	5	1 1/2	2	540	69.12
7416	5/8	6	1 1/2	2	640	81.92
7417	5/8	7	1 1/2	2	740	94.72
7418	5/8	8	1 1/2	2	840	107.52
7426	3/4	6	1 1/2	2	910	112.84
7427	3/4	7	1 1/2	2	1060	131.44
7428	3/4	8	1 1/2	2	1210	150.04
7429	3/4	9	1 1/2	2	1475	168.64
7430	3/4	10	1 1/2	2	1510	187.24
7438	1	8	1 1/2	2	2230	267.60
7440	1	10	1 1/2	2	2760	331.20
7442	1	12	1 1/2	2	3290	394.80
7444	1 1/4	10	1 3/4	2 1/4	4400	528.00

Hubbard Clamp Type Anchor Rods

Hot Galvanized



Where stiff high strength guy wire is used it is not only a difficult job, but a costly one to make up and clamp the strand to the regular guy rod and wire rope thimble. With the clamp type anchor rod it is now possible to secure a stiff guy wire in less than one quarter of the time. The upper U-bolt is removed and hook of block inserted in bolt hole giving a direct pull on guy wire. Clamp is so designed that the greater the strain, the tighter the grip.

Cat. No.	Diam. In	Length Rod, Ft.	Price per 100	Cat. No.	Diam. In.	Length Rod, Ft.	Price per 100
7468	1	8	\$500.00	7472	1	12	\$700.00
7470	1	10	600.00				

Hubbard Steelwing Anchors

Hot Galvanized



An improved screw type anchor. Can be set without a wrench. Goes in more easily and disturbs the earth less.

Drop forged screw plate Edges ground sharp to cut the soil cleanly and easily.

Drop forged eye. No welds to break or burned metal to crystallize.

Length of rod, 5 1/2 feet.

Cat. No.	Diam. Wing In.	Diam. Rod In	Wt. Lbs. per 100	Price per 100
7526	6	3/4	1040	\$397.78
7528	8	1	1860	759.40
7530	10	1 1/4	2900	1121.00

Peirce Pole Struts

Hot Galvanized

Made of heavy steel channels, with a broad bearing against the pole, from which it extends 11 inches. Extension, 11 inches.



Cat. No.	DIMENSIONS, IN. Strut Channel	Brace Channel	Wt., Lbs. Each	Price per 100
1500	2x 5/8	1x 1/2	8 1/2	\$428.06

Peirce Guy Wire Protectors

Hot Galvanized



Where guying is done along city streets or highways, Peirce Guy Wire Protectors should be used. They act as a shield, preventing damage to the guy wire and give protection to the public.

The Peirce Protectors are made of 14-gauge steel galvanized after fabrication, and are furnished in 2 styles, 2-bolt and 3-bolt as listed.

Cat. No.	Length Feet	No. of U-bolts	Price per 100	Cat. No.	Length Feet	No. of U-bolts	Price per 100
7557	7	2	\$337.50	7559	8	3	\$400.00
7558	8	2	375.00				

Hubbard Strain Plates and Guy Shims

Hot Galvanized

Strain plates and guy shims are used to keep the guy strand from cutting into the pole, which not only injures the pole, but retains moisture about the strand and accelerates corrosion. From two to four plates are required per pole, depending on its diameter. Strain plates are made from 14-gauge galvanized steel plates. Guy shims are furnished either hot galvanized or plain.



No. 7570



No. 7575

Guy Shims

Cat. No.	Dimens. Inches	Wt., Lbs. per 100	Price per 100
7570	1 x 3 1/4 x 8	40	\$5.92
7571	1 1/4 x 3 1/8 x 8	48	6.84

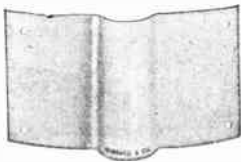
Strain Plates

7575	4x8	75	\$13.82
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No. 7576 Hubbard Moulding Strain Plates

Hot Galvanized

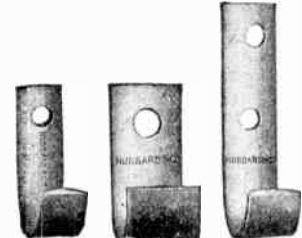
Used to prevent strand from cutting or crushing ground wire moulding. Will fit over N. E. L. A. standard 1-inch ground wire moulding.



Cat. No.	Dimen. In.	Ship. Wt., Lbs. per 100	Price per 100
7576	4x8x14-ga.	75	\$16.00

Hubbard Guy Hooks

Hot Galvanized



Cat. No.	Size Steel Inches	Length Inches	Diameter Holes, In.	Wt., Lbs. per 100	Price per 100
7583 1/2	1 1/4 x 1 1/4	3 1/2	9/16	39	\$6.50
7584	1 3/4 x 3/8	4	11/16	87	14.50
7585	1 1/2 x 3/8	3 1/2	9/16	59	9.50
7586	1 1/2 x 3/8	6	9/16	88	14.30

The No. 7584 guy hook is the N. E. L. A. and A. T. & T. Company's standard and is in general use, although the 2-bolt type is preferred by some construction men. For lighter work, the 3 1/2-inch hook gives very satisfactory results. All of the hooks are made of half oval steel, bent with the flat side to the pole.

Hubbard Guy Thimbles

Hot Galvanized

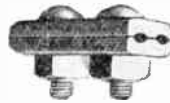
Cat. No.	Size of Strand Inches	Size of Guy Rod Inches	Wt., Lbs. per 100	Price per 100
7593	3/8	1/2 and 5/8	9 1/2	\$7.40
7594	1/2	5/8 " 3/4	22	9.50
7595	5/8	1	75	15.26



No. 7593

No. 7448 Hubbard 2-bolt Guy Clamps

Hot Galvanized



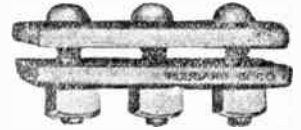
This clamp is made from hot rolled open hearth steel plates, 1 1/8-inch wide by 3/8-inch thick. Dimensions, 1 1/4 x 3/8 x 3 inches. Weight, 135 pounds per 100.

Price, No. 7448 2-bolt Clamps.....per 100 \$23.44

Hubbard Three-bolt Guy Clamps

Hot Galvanized

Hot rolled steel. The 6-inch clamp is the A. T. & T. Company's standard. Furnished with 1/2-inch track bolts.



Cat. No.	Dimens. Inches	Wt., Lbs. per 100	Price per 100
7445	1 1/8 x 3/8 x 4	155	\$32.10
7450	1 1/8 x 3/8 x 6	216	37.58

Hubbard Heavy Type Steel Guy Clamps

Hot Galvanized



This type of clamp has recently been adopted as the standard of the N. E. L. A. and A. T. & T. Co. It is a heavy clamp made of plates 2 inches wide by 3/8 inch thick

and is equipped with 5/8-inch special heat-treated steel bolts. Sides are punched so that bolts may be assembled either side.

This clamp has a combination of a long, smooth clamping surface and powerful bolts, giving it greater holding power than is found in other types. Heavy bolts will not twist off or strain when the nuts are tightened.

Cat. No.	No. of Bolts	Length Inches	Approx. Wt., Lbs. per 100	Price per 100
7461	3	6	263	\$45.10
7462	2	4	174	33.26

Hubbard Wire Rope Clips

Hot Galvanized or Plain



Cat. No.	Size Strand No.	Size In.	Wt., Lbs. per 100	Price per 100	Cat. No.	Size Strand No.	Size In.	Wt., Lbs. per 100	Price per 100
7480	1/4	25	\$62.50	7485	3/8	87	\$110.00		
7481	5/8	25	62.50	7486	3/4	175	117.00		
7482	3/8	37	80.00	7487	1/8	200	135.00		
7483	7/8	37	81.00	7488	1	300	153.00		
7484	1/2	75	90.00						

Hubbard Drop-forged Eye Nuts

Hot Galvanized



No. 7501

Drop-forged eye nuts were designed for use on the threaded ends of 1/2 or 5/8-inch machine bolts passed vertically through cross arms for attaching suspension type insulators. They are also useful for dead ending lines. By their use a second eye may be added to the 1/2 or 5/8-inch eye bolts, which permits the attachment of a back guy to the same bolt that supports the insulators to dead ended wire.

Cat. No.	Diam. Bolt Inches	Eye Width Inches	Eye Length Inches	Wt., Lbs. per 100	Price per 100
7500	1/2	1 1/8	1 1/8	49	\$45.60
7501	5/8	1 1/8	1 1/8	46	45.60
7502	5/8	1 1/2	1 1/8	60	60.00
7503	3/4	1 1/2	1 1/8	56	60.00
7504	3/8	1 1/8	1 1/8	36	35.38
7505	1/2	1 1/8	1 1/8	34	35.38
7506	5/8	1 1/8	1 1/8	32	35.38

Hubbard Drop-forged Bolt Clevises
Hot Galvanized



No. 7514

No. 7515

Used where eyes are necessary for supporting suspension type insulators to cross arms or for dead ending lines. They are attached to the cross arm or building by standard machine bolts with either the head or nut inside the eye.

No.	Length Inches	Width Inches	Diameter Bolt Inches	Weight Pounds per 100	Price per 100
7514	1 3/4	1 1/8	5/8	83	\$56.04
7515	3 1/4	1 3/8	5/8	103	56.04
7516	3 1/4	1 3/8	3/4	100	

Hubbard Steps for Wood Poles
Hook Head—Hot Galvanized



Cat. No.	DIMENSIONS, INCHES		Wt., Lbs. per 1000	Price per 100
	Diameter	Length		
7123	9/16	9	700	\$8.36
7124	5/8	9	870	10.40
7125	5/8	10	950	11.42

Hubbard Steps for Wood Poles
Button Head—Hot Galvanized



Cat. No.	DIMENSIONS, INCHES		Wt., Lbs. per 100	Price per 100
	Diameter	Length		
7128	5/8	9	91	\$10.80
7129	5/8	10	105	12.00

Peirce Detachable Pole Steps
Hot Galvanized



Lag Screw Type

Back Type

Two styles of detachable pole steps are made. The lag screw type and the back type.

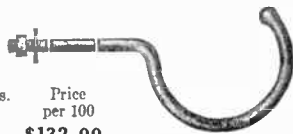
To install the former, slip the plate, which acts as a bearing surface for the step, over the lag and screw the lag in the pole until the plate bites into the wood. The step slides down in a groove on each side of the head of the lag. When the step is removed nothing but the well rounded head of the lag extends from the pole.

The back type is attached by two 1/2-inch lag screws. The step fits in a special slot in the back and is kept from turning by 2 projections thrown out on the back.

Cat. No.	Description	Extension from Pole Inches	Shp. Wt., Lbs. per 100	Price per 100
7231	Step	4 3/4	41	\$36.00
7232	Back	...	44	24.00
7235	Lag and Plate	...	34	16.80
7236	Step	5 1/8	54	36.00

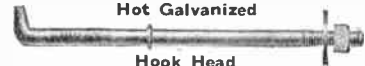
Hubbard Lamp Trimmers' Leg Rests
Hot Galvanized

Provides a dependable support and permits the freedom of both hands. Made with 3/4-inch steel.



Cat. No.	Diameter Inches	Length Over All Inches	Wt., Lbs. per 100	Price per 100
7139	3/4	23 1/2	352	\$132.00

Hubbard Steps for Concrete Poles
Hot Galvanized



DIAM., IN.	Length Shank In.	Cat. No.	HOOK HEAD		BUTTON HEAD			
			Wt., Lbs. per 100	Price per 100	Cat. No.	Wt., Lbs. per 100	Price per 100	
5/8	14	9	7131	160	\$51.50	7136	170	\$51.50
5/8	16	11	7132	170	53.50	7137	180	53.50
5/8	20	15	7133	190	57.75	7138	200	57.75

Hubbard Steps for Steel Poles and Towers
Button Head
Hot Galvanized



Cat. No.	DIMENSIONS, INCHES Diameter	Length	Length of Shank In.	Wt., Lbs. per 100	Price per 100
7140	5/8	6	1 1/4	84	\$25.50

Hubbard Solid Steps
For Tubular Poles
Hot Galvanized



Cat. No.	Size Steel Inches	DIAMETER OF POLE, IN.		Wt., Lbs. per 100	Price per 100
		Nominal	Actual Outside		
7204	1 1/2 x 3/16	4	4 1/2	195	\$58.50
7204 1/2	1 1/2 x 3/16	4 1/2	5	210	63.00
7205	1 1/2 x 3/16	5	5 1/2	225	67.50
7206	1 1/2 x 3/16	6	6 5/8	240	72.00
7207	1 1/2 x 3/16	7	7 5/8	275	82.50
7208	1 1/2 x 3/16	8	8 5/8	300	90.00
7209	1 1/2 x 3/16	9	9 5/8	325	97.50
7210	1 1/2 x 3/16	10	10 3/4	355	105.00

Hubbard Split Steps
For Tubular Poles
Hot Galvanized or Plain



Cat. No.	Size Steel Inches	DIAMETER OF POLE, IN.		Wt., Lbs. per 100	Price per 100
		Nominal	Actual Outside		
7304	1 1/2 x 3/16	4	4 1/2	220	\$66.00
7304 1/2	1 1/2 x 3/16	4 1/2	5	235	70.50
7305	1 1/2 x 3/16	5	5 1/2	250	75.00
7306	1 1/2 x 3/16	6	6 5/8	275	82.50
7307	1 1/2 x 3/16	7	7 5/8	300	90.00
7308	1 1/2 x 3/16	8	8 5/8	325	97.50
7300	1 1/2 x 3/16	9	9 5/8	350	105.00
7316	1 1/2 x 3/16	10	10 3/4	380	114.00

Hubbard Carriage Bolts
Hot Galvanized



Carriage bolts are used for attaching the braces to cross-arms on most overhead lines.

Cat. No.	LGTH., IN. Over All	In.	Approx. Shp. Wt., Lbs. Price per 100		Cat. No.	LGTH., IN. Over All	In.	Approx. Shp. Wt., Lbs. Price per 100	
			Wt., Lbs.	Price per 100				Wt., Lbs.	Price per 100
9633	3	1 3/4	12.9	\$2.76	9643	3	2 1/2	24.7	\$4.40
9633 1/2	3 1/2	1 3/4	14.3	2.98	9643 1/2	3 1/2	3	27.3	4.76
9634	4	1 3/4	15.8	3.20	9644	4	3	29.8	5.12
9634 1/2	4 1/2	1 3/4	17.2	3.42	9644 1/2	4 1/2	3	32.4	5.48
9635	5	1 3/4	18.7	3.64	9645	5	3	34.9	5.84
9635 1/2	5 1/2	1 3/4	20.1	3.86	9645 1/2	5 1/2	3	37.5	6.20
9636	6	1 3/4	21.6	4.08	9646	6	3	40	6.56

Hubbard Machine Bolts

Hot Galvanized



Hubbard Machine and Through Bolts, unless otherwise specified, are furnished with rolled threads which insure a perfect nut fit the full length of the thread.

3/8-inch Bolts

No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100	No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100
9601	1	1	7.3	\$2.76	9603 1/2	3 1/2	3	14.6	\$3.20
9501 1/4	1 1/4	1 1/4	8.3	2.76	*9604	4	3	16	3.40
9501 1/2	1 1/2	1 1/2	9.3	2.76	*9604 1/2	4 1/2	3	17.5	3.80
9602	2	2	10.3	2.99	*9605	5	3	18.9	4.02
9602 1/2	2 1/2	2 1/2	11.7	3.22	9605 1/2	5 1/2	3	20.4	4.24
9603	3	3	13.1	3.00	9606	6	3	21.8	4.46

1/2-inch Bolts

No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100	No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100
9701	1	1	16	\$4.25	*9705	5	3	36.3	\$6.44
9701 1/4	1 1/4	1 1/4	17.3	4.25	*9706	6	3	41.4	7.08
9701 1/2	1 1/2	1 1/2	18.5	4.25	*9707	7	3	46.5	8.00
9702	2	2	21	4.60	9708	8	4	51.6	8.60
9702 1/2	2 1/2	2 1/2	23.6	4.95	9710	10	4	61.8	9.80
9703	3	3	26.1	5.29	9712	12	4	72	11.00
9703 1/2	3 1/2	3	28.7	5.64	9714	14	6	82.2	12.20
9704	4	3	31.2	5.98	9716	16	6	92.4	13.40
9704 1/2	4 1/2	3	33.8	6.12	9718	18	6	102.6	14.60
9704 3/4	4 3/4	3	35	6.44	9720	20	6	112.8	15.80

5/8-inch Bolts

No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100	No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100
9801 1/2	1 1/2	1 1/2	32	\$6.33	*9810	10	4	98	\$12.88
9802	2	2	36	6.79	*9812	12	4	114	14.56
9802 1/2	2 1/2	2 1/2	40	7.25	*9814	14	6	130	16.24
9803	3	3	44	7.70	*9816	16	6	146	17.92
9803 1/2	3 1/2	3	48	8.16	*9818	18	6	150	19.60
9804	4	3	52	8.63	*9820	20	6	164	21.28
9805	5	3	59	9.55	*9822	22	6	178	22.96
9806	6	3	66	10.47	*9824	24	6	192	24.64
9807	7	3	74	11.39	9826	26	6	206	26.32
*9808	8	4	82	11.20	9828	28	6	220	28.00

3/4-inch Bolts

No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100	No.	Lgth. In.	Lgth. Thrd. In.	App. Wt. per 100 Lbs. Pcs.	Ship. Price per 100
9901 1/2	1 1/2	1 1/2	49	\$8.86	9910	10	4	134	\$18.08
9902	2	2	55	9.48	9912	12	4	156	20.40
9902 1/2	2 1/2	2 1/2	60	10.12	9914	14	6	178	22.72
9903	3	3	66	10.76	9916	16	6	200	25.04
9903 1/2	3 1/2	3	71	11.39	9918	18	6	222	27.36
9904	4	3	77	11.62	9920	20	6	244	29.68
9905	5	3	88	13.29	9922	22	6	266	32.00
9906	6	3	99	14.55	9924	24	6	288	34.32
9907	7	3	106	15.82	9926	26	6	300	36.64
9908	8	4	112	15.76	9928	28	6	322	38.96

*N.E.L.A. standard.

Hubbard Lag Screws

Hot Galvanized



Fetter Drive



Gimlet Point

Fetter drive lag screws have become practically standard for construction work because of their greater holding power. Threads do not tear the wood. Fetter drive screws will be furnished on all orders except for 1/4 and 5/8-inch, which are furnished with gimlet points only, unless otherwise specified.

5/8-INCH				3/8-INCH			
Cat. No.	Lgth. In.	Wt. Lbs. per 100	Price per 100	Cat. No.	Lgth. In.	Wt. Lbs. per 100	Price per 100
9732	2	4.7	\$2.28	9742 1/4	2 1/4	7.8	\$2.52
9732 1/2	2 1/2	5.6	2.52	9742 1/2	2 1/2	8.3	2.52
9733	3	6.5	2.76	9743	3	9.6	2.76
9733 1/2	3 1/2	7.4	3.00	9743 1/2	3 1/2	10.9	3.00
.....	.....	.....	.....	9744	4	12.2	3.24
.....	.....	.....	.....	9744 1/2	4 1/2	13.5	3.48
.....	.....	.....	.....	9745	5	14.8	3.72
.....	.....	.....	.....	9746	6	17.4	4.20
1/2-INCH				5/8-INCH			
Cat. No.	Lgth. In.	Wt. Lbs. per 100	Price per 100	Cat. No.	Lgth. In.	Wt. Lbs. per 100	Price per 100
9752 1/2	2 1/2	16.7	\$3.50	9764	4	35.1	\$5.92
9753	3	19	3.80	9764 1/2	4 1/2	38.9	6.30
9753 1/2	3 1/2	21.3	4.10	9765	5	42.7	6.68
9754	4	23.6	4.40	9765 1/2	5 1/2	46.5	7.06
9754 1/2	4 1/2	25.9	4.70	9766	6	50.3	7.44
9755	5	28.2	5.00	.....	.....	.....	.....
9755 1/2	5 1/2	30.5	5.30	.....	.....	.....	.....
9756	6	32.8	5.60	.....	.....	.....	.....
9756 1/2	6 1/2	35.1	6.70	.....	.....	.....	.....
9757	7	37.4	7.00	.....	.....	.....	.....

Hubbard Pole Dating Nails

Hot Galvanized

Used for indicating the year in which pole was set.



Cat. No.	Number	Ship. Wt. Lbs. per 100	Price per 100	Cat. No.	Number	Ship. Wt. Lbs. per 100	Price per 100
1926	26	4.4	.....	1925	25	4.4	\$2.64

Hubbard Hanger Screws

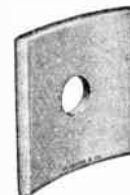
Hot Galvanized



Cat. No.	Diam. Inches	Length Inches	Wt. Lbs. per 100	Price per 100
8834	5/8	4	26	\$8.98
8834 1/2	5/8	4 1/2	30	9.46
8835	5/8	5	34	10.02

Hubbard Stubbing Washers

Hot Galvanized



The Stubbing Washer is used for attaching a pole, rotted off at the ground line, to a new stub. Used either on the ends of through bolts bolted through the pole and stub or for drawing up wires wrapped around the pole and stub.

Cat. No.	Dimens. Inches	Size of Hole, In.	For Bolt Size, In.	Wt. Lbs. per 100	Price per 100
7825	3 1/4 x 3 1/4 x 1/4	3/4	5/8	75	\$15.00

Hubbard Round Washers

Hot Galvanized



Washers are cleanly cut and are galvanized in such a manner as to insure a heavy, even coat of pure zinc with no large drops to interfere with the fit of the bolt or nut.

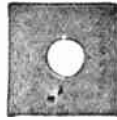
Cat. No.	Outside Diam., In.	Size of Hole, In.	Thickness Gauge	FOR BOLT SIZE		Wt., Lbs. per 100	Price per 100
				INCHES Mach.	CARRIAGE		
7801	1	7/16	14	3/8		16	\$.46
7802	1 1/4	1/2	14	3/8		30	.64
7803	1 3/8	9/16	12	1/2	3/8	42	.86
7805	1 3/4	1 1/8	10	5/8	1/2	75	1.36
7806	2	1 3/8	9	3/4	5/8	112	1.90

Hubbard Square Washers

Hot Galvanized

Washers are cleanly cut and are galvanized in such a manner as to insure a heavy, even coat of pure zinc with no large drops to interfere with the fit of the bolt or nut.

Square washer No. 7814 is the standard of the A.T. & T. Co. and N.E.L.A. for cross arm and double arming bolts and Nos. 7817 and 7820 for anchor rods.



Cat. No.	Dimensions Inches	Diam. of Hole, In.	For Bolt Size, In.	Wt., Lbs. per 100	Price per 100
7812	2 x 2 x 1/8	11/16	5/8	145	\$1.74
7814	2 1/4 x 2 1/4 x 3/16	13/16	3/4	240	2.88
7816	3 x 3 x 3/16	13/16	3/4	435	5.44
7817	3 x 3 x 1/4	13/16	5/8	585	6.97
7818	4 x 4 x 3/16	13/16	5/8	830	9.68
7819	4 x 4 x 1/4	13/16	5/8	1170	13.74
7820	4 x 4 x 1/2	1 1/8	1	2150	28.80

Hubbard Double Arming Bolts

Hot Galvanized



The double arming bolt, used with four square washers, represents a much more economical means of tying cross arms together than the old method of a wooden block with a hole through it and a long machine bolt.

The points are finished and prices include four square nuts but no washers.

1/2-inch				5/8-inch					
Cat. No.	LGTH., In. Over All	Approx. Wt., Lbs. per 100	Price per 100	Cat. No.	LGTH., In. Over All	Approx. Wt., Lbs. per 100	Price per 100		
9842	12	5	76	\$15.40	9862	12	5	128	\$22.06
9844	14	6	85	16.60	9864	14	6	143	23.74
9846	16	6	93	17.80	9866	16	6	158	25.42
9848	18	8	102	19.00	9868	18	8	178	27.10
9850	20	8	110	20.20	9870	20	8	198	28.78
9852	22	8	120	21.40	9872	22	8	218	30.46
9854	24	8	128	22.60	9874	24	8	238	32.14

Cat. No.	LENGTH, INCHES		Approx. Wt., Lbs. per 100	Price per 100
	Over All	Thd.		
9882	12	5	188	\$32.90
9884	14	6	212	35.22
9886	16	6	236	37.54
9888	18	8	260	39.86
9890	20	8	284	42.18
9892	22	8	308	44.50
9894	24	8	332	46.82

Hubbard Drop Forged Eye Bolts

Hot Galvanized



With drop forged oval eyes. All bolts rolled threaded 6 inches.

Prices include one square nut.

1/2-inch—Size of Eye, Inside 3/4-inch x 1-inch				Length to Center of Eye, Inside 1 1/2-inch x 2-inch			
Cat. No.	Length to Center of Eye, Inches	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Length to Center of Eye, Inches	Ship. Wt., Lbs. per 100	Price per 100
9936	6	55	\$21.40	9944	14	95	\$26.20
9938	8	65	22.60	9946	16	105	27.40
9940	10	75	23.80	9948	18	110	28.60
9942	12	85	25.00	9950	20	120	29.80
5/8-inch—Size of Eye, Inside 1 1/2-inch x 2-inch				Length to Center of Eye, Inside 1 1/2-inch x 2-inch			
9956	6	84	\$26.52	9964	14	148	\$33.24
9958	8	100	28.20	9966	16	164	34.92
9960	10	116	29.88	9968	18	180	36.60
9962	12	132	31.56	9970	20	196	38.28
3/4-inch—Size of Eye, Inside 1 1/2-inch x 2-inch				Length to Center of Eye, Inside 1 1/2-inch x 2-inch			
9976	6	116	\$35.44	9984	14	212	\$44.72
9978	8	140	37.76	9986	16	236	47.04
9980	10	164	40.08	9988	18	260	49.36
9982	12	188	42.40	9990	20	284	51.68
5/8-inch Double Arming Eye Bolts				Length to Center of Eye, Inside 1 1/2-inch x 2-inch			
9786	16	188	\$55.00	9790	20	220	\$63.00
9788	18	204	59.00				

Hubbard Flat Cross Arm Braces

Hot Galvanized



Made only from new open hearth steel.

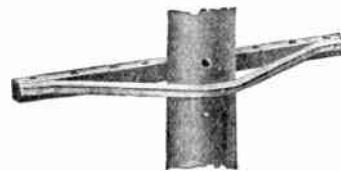
1 1/32 x 7/32-inch							
Cat. No.	Length Inches	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Length Inches	Ship. Wt., Lbs. per 100	Price per 100
8020	20	142	\$12.22	8028	28	198	\$17.04
8022	22	156	13.42	8030	30	212	18.24
8024	24	170	14.62	8032	32	226	19.44
8026	26	184	15.82				
1 1/4 x 1/4-inch							
8120	20	167	\$14.08	8128	28	233	\$19.68
8122	22	183	15.48	8130	30	250	21.08
8124	24	200	16.88	8132	32	266	22.48
8126	26	216	18.28				

Hubbard Vertical Braces

Cat. No.	No. of Arms	Length Over All, Inches	Spacing, Inches	Size Angle, Inches	Ship. Wt., Lbs. per 100	Price per 100
7976	2	20	18	1 1/2 x 1 1/2 x 3/16	300	\$35.62
7977	3	38	18	1 1/2 x 1 1/2 x 3/16	570	67.70
7978	4	56	18	1 1/2 x 1 1/2 x 3/16	840	99.74
7986	2	26	24	1 1/2 x 1 1/2 x 3/16	390	48.16
7987	3	50	24	1 1/2 x 1 1/2 x 3/16	750	92.62
7988	4	74	24	1 1/2 x 1 1/2 x 3/16	1110	137.08

Hubbard Cross Arm Back Braces

Hot Galvanized Angle Steel

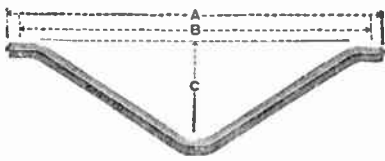


This brace is designed for back bracing cross arms at corners and terminal poles, in many cases eliminating the necessity for double arming. Fastened to cross arm by 1/2-inch carriage bolts and to the pole by 5/8-inch arm through bolt.

Cat. No.	Size, Steel, Inches	Length	Wt., Lbs. per 100	Price Each
7964	1 1/2 x 1 1/2 x 3/16	4 Ft.	500	\$83.60
7965	1 1/2 x 1 1/2 x 3/16	5 "	750	111.88
7966	1 1/2 x 1 1/2 x 3/16	6 "	1000	133.04
7967	1 3/4 x 1 3/4 x 3/16	7 " 10 In.	1300	198.76
7969	1 3/4 x 1 3/4 x 3/16	9 " 1 "	1740	218.20

Hubbard Angle Iron Braces

Hot Galvanized



Furnished to specifications. Give dimensions, A, B, C, as indicated on illustration, and state size of angle.

Cat. No.	Size, Angle Inches	DIMENSIONS, IN.			Wt., Lbs. per 100	Price per 100
		A	B	C		
7950	1 1/2 x 1 1/2 x 3/16	40	37	12	700	\$104.38
7952	1 1/2 x 1 1/2 x 3/16	51	48	14 3/4	860	117.36
7953	1 3/4 x 1 3/4 x 3/16	63	60	18	1250	149.64
7954	1 3/4 x 1 3/4 x 3/16	69	66	20	1360	159.23
7955	1 3/4 x 1 3/4 x 3/16	75	72	18	1460	165.36
7956	2 x 2 x 3/16	75	72	22	1640	188.88

N.E.L.A. Standard

7940	1 1/2 x 1 1/2 x 3/16	45	42	12	700	\$108.64
7941	1 1/2 x 1 1/2 x 3/16	51	48	18	860	123.62
7942	1 1/2 x 1 1/2 x 3/16	63	60	18	1060	134.16
7943	1 3/4 x 1 3/4 x 3/16	75	72	22	1260	171.36

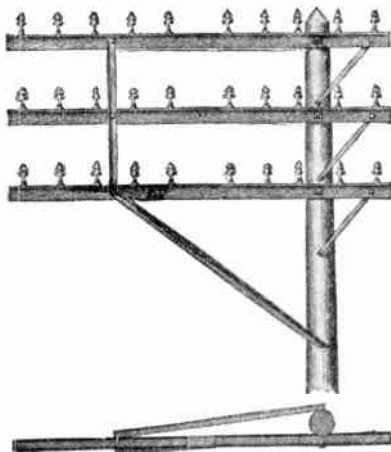
Hubbard Angle Steel Alley Braces

Hot Galvanized—Forged Ends



Cat. No.	Size Angle Inches	Length Feet	Wt. 100 Pcs.	Price per 100 With Step
7981	1 1/2 x 1 1/2 x 3/16	5	1100	171.92
7982	1 1/2 x 1 1/2 x 3/16	6	1100	189.90
7983	1 1/2 x 1 1/2 x 3/16	7	1100	211.12
7984	1 3/4 x 1 3/4 x 3/16	7	1760	237.74
7985	2 x 2 x 1/4	10	3800	473.60

Hubbard Extension Fixtures



Showing Diagonal Back and Vertical Brace Assembled

Cat. No.	Description	Length Inches	Size of Angle Inches	Wt., Lbs. per 100	Price per 100
8050	Diagonal with Step	83	2 x 2 x 3/16	1750	\$209.40
8051	Back	54 1/2	2 x 2 x 1/4	1350	167.94
8052	"	66 1/2	2 x 2 x 1/4	1665	224.48
8054	Vertical	30 3/8	1 3/4 x 1 3/4 x 1/4	745	97.38

Hot Galvanized

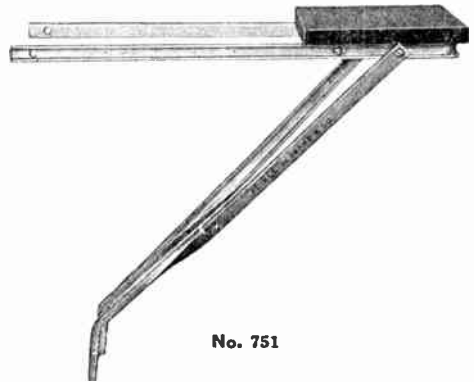
Where it is necessary to clear buildings or trees without the use of high poles, extension fixtures of the A. T. & T. Co. design furnish a very rigid and economical construction. They are designed for supporting either 6 or 10 pin arms, No. 8051 Back Brace being used with 6, and No. 8052 with 10 pin arms.

Prices do not include bolts.

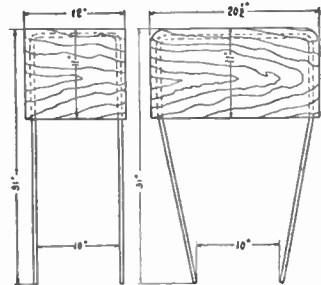
Peirce Pole Seats

Hot Galvanized

The frames and braces of all styles are of 1x1/2-inch channel steel. The wood seats are 1 1/4-inch cypress, boiled in creosote. The bars of the all steel seats are 3/8-inch square steel, let into the frame in such manner as to leave no projecting ends. There is no strain on the riveted joints. The bars are placed with corners up to prevent slipping. They are shipped completely assembled in bundles of five.



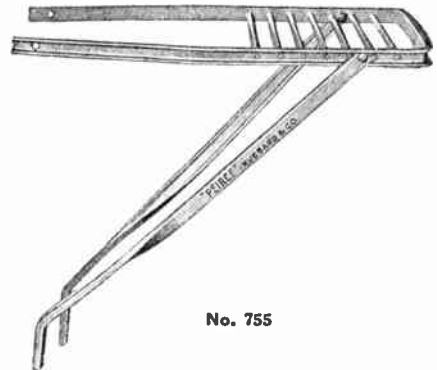
No. 751



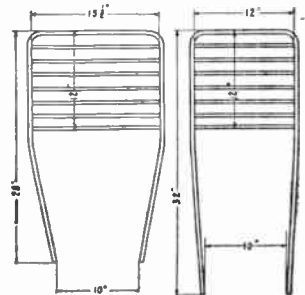
No. 751

No. 753

Cat. No.	Finish	Std. Pkg.	Wt. Pounds per 100	Width Inches	Extends Inches	Price per 100
751	Galvanized	5	1260	12	31	\$413.98
753	"	5	1400	20	31	600.22



No. 755



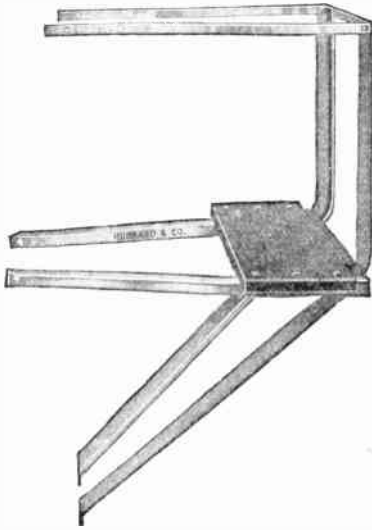
No. 755

No. 757

755	Galvanized	5	1400	13 7/8	28	\$520.80
757	"	5	1260	11	32	496.80

No. 9035 Hubbard Pole Balconies

Hot Galvanized



The frame, braces and guard rails are open hearth steel having a tensile strength of 55000 to 65000 pounds per square inch. All steel work of the balcony is galvanized by the hot dip process. The wooden platform is thoroughly seasoned oak, painted with 2 coats of standard green pole paint. Upright angles are made of 1½x1½x¾-inch steel, the platform angles of 1¾x1¾x¾-inch, and guard rail of ¼x1¼-inch flat steel.

The price includes all bolts for fastening the parts together but not the bolts for attaching to the pole.

Cat. No	Size of Seat Inches	Style of Seat	Ship. Wt. Lbs., per 100	Price per 100
9035	14¼x29¾	Wood, Painted	6500	\$3000.00

Hubbard Cable Suspension Clamps

Hot Galvanized



These are the standard A. T. & T. Company's Cable suspension clamps, the one-bolt type being used for light cables and on cable arms, and the three-bolt clamp for heavy cables and long spans. The one-bolt clamp is furnished without a bolt, as the ¾-inch through bolt is used both for attaching the clamp to the pole and tightening the clamp on the stand. The three-bolt clamp is furnished with two ½-inch high carbon steel track bolts.

Cat. No.	Type	Length In.	Size Strand In.	Wt., Lbs. per 100	Price per 100
8901	One-bolt	2½	¼ to ¾	74	\$15.20
8903	Three-bolt	5¾	¼ " ¾	220	39.34

Hubbard Reinforcing and Safety Straps

For Suspension Clamps

Hot Galvanized



No. 8905 is used to support the messenger bolt at points of extreme stress, such as long spans. No. 8906 is a Safety Strap to prevent the cable's falling if the hangers give way. No. 8907 is a combination of Nos. 8905 and 8906.

Reinforcing Straps

Cat. No.	Size Steel Inches	Wt., Lbs. per 100	Price per 100
8905	1½x1½	36	\$13.50
8906	1¾x1½	76	25.00
8907	1¾x1½	116	36.00

Hubbard Steel Cable Cross Arms

Hot Galvanized

Angle steel cross-arms for telephone cables are furnished complete with A. T. & T. Co. one-bolt messenger clamps and clamp bolts, but without braces, No. 8933 and No. 8938 is standard A. T. & T. Co. arms.



Cat. No.	No. of Cables	Length Inches	SPACING BETWEEN CABLES, IN.		Size Angle Inches	Wt. Lbs.	Price per 100
			Poles	Side			
8923	4	36	20	6	3x3x¼	22	\$450.00
8924	6	48	20	6	3x3x¼	30	600.00
8933	4	36	20	6	5x3x¾	32	650.00
8934	6	48	20	6	5x3x¾	44	900.00
8938	4	48	16	6	5x3x¾	65	1300.00

Hubbard Universal Messenger Hangers

Hot Galvanized



The universal hanger is forged from open hearth steel with a specially curved groove, which allows it to be used at corners as well as on straight runs.

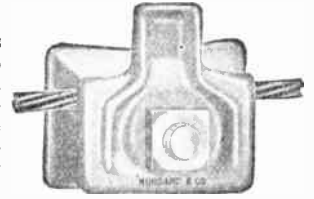
Two ¾-inch high carbon steel track bolts clamp the messenger securely at each pole.

Cat. No.	Dimen. Inches	Length Legs, In.	Wt., Lbs. per 100	Price per 100
8911	2 x ½	5x3¼	300	\$66.20
8912	1¾x¾	5x3¼	230	61.00

Hubbard Non-breakable Messenger Hangers

Hot Galvanized

The non-breakable hanger is one of the most economical to install. It is placed on a standard through bolt, requiring no extra nuts, and the vertical finger keeps the messenger in place while it is being pulled taut, after which the strand is dropped into the groove and the nut set up. It is made of malleable iron, with back curved up to fit the pole, has a long clamping surface, and supports the cable well away from the pole.



Cat. No.	Size Cable Inches	Wt., Lbs. per 100	Price per 100
8914	⅝ and Smaller	150	\$56.80
8915	¾ " Larger	150	56.80

Hubbard Crossover Clamps

Hot Galvanized

Used for joining two cable messengers when they cross each other at right angles. For telephone work where cables turn corners, or where branch cables leave line at points distant from poles.

Weight, 160 pounds per 100. Dimensions, 1½x1½x3¼ in. Price, No. 8930 Clamps per 100 \$67.00

No. 8929 Hubbard Reinforcing Links

Hot Galvanized

Used on each side of the cable suspension clamp to relieve side strains at corners in the line. Bolted to the pole by ½-inch lag screws.

Cat. No.	DIMENSIONS, IN.		Ship. Wt., Lbs. per 100	Price per 100
	Length	Size of Steel		
8929	8¾	½	116	\$30.00

Hubbard Conduit Straps

Hot Galvanized



No. 8925



No. 8927

Used for attaching standard 2 or 3-inch vertical conduit to wood poles. Made of 1/4x1 1/4-inch steel and have holes for 1/2-inch lag screws.

Cat. No.	Nominal Size Conduit, Inches	Type	Ship. Wt., Lbs. per 100	Price per 100
8925	2	Single	78	\$20.60
8926	3	"	100	26.40
8927	2	Double	106	27.84
8928	3	"	150	39.60

Hubbard Telegraph and Telephone Pothead Supports

Hot Galvanized



Screwed into pole under terminal box and clamped around cable.

Cat. No.	DIMENS., IN. Length	Diam.	Wood Screw Thread, In.	Wt., Lbs. per 100	Price per 100
9017	12 3/4	5/8	4 3/4	138	\$50.00

Hubbard Manhole Ladders

Hot Galvanized

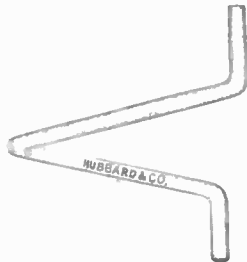


The rungs pass through the sides and are riveted over on the outside. Rungs are spaced 15 inches apart. The bottom rung is 15 inches from the bottom of the ladder.

Cat. No.	No. of Rungs	Length Ft.	Rung Spacing	Width Inside Inches	Wt., Lbs. Each	Price Each
9110	4	6	15	12	23	\$5.76
9111	5	6 1/2	15	12	24 1/2	6.24
9112	6	8	15	12	30	7.68
9113	7	10	15	12	38	9.60
9114	8	11	15	12	42	10.56
9115	9	12	15	12	46	11.52
9116	10	13	15	12	49	12.48
9117	11	14	15	12	53	13.44

Hubbard Pulling-in Irons for Manholes

Hot Galvanized



Pulling-in Irons are set into the concrete or brick walls of street vaults opposite all duct entrances to provide a convenient and strong attachment for the pulling-in blocks for installing or removing cables. They are made of 1/2-inch steel in accordance with the Bell Company's specifications, extend from the wall 8 inches, and are so designed as to straddle one brick.

Cat. No.	Size Steel In.	Extension From Wall Inches	Wt., Lbs. per 100	Price per 100
9120	1/2	8	600	\$144.00

No. 9145 Hubbard Dowel Pins

In laying multiple duct clay conduit, these dowel pins are inserted in holes provided in the ends of the lengths and thus keep adjacent lengths in proper alignment and insure the smoothness of the ducts. Made of 5/16-inch round steel, 3 inches long.



Cat. No.	Size Inches	Ship. Wt., Lbs. per 100	Price per 100
9145	5/16x3	8	\$13.20

Peirce Presteel Cable Racks

Hot Galvanized

For manhole and interior cable work.

The rack sections are made in two lengths which can be combined into almost any desired length.

These sections are made from 1 1/2x5/8x3/16-inch open hearth steel channel, with ample strength to support the heaviest cables. They should be fastened to manhole walls with 1/2x4-inch Peirce Expansion Bolts.



Rack Sections

Cat. No.	No. of Holes	Hole Spacing	DIMENSIONS, INCHES Length Over All	Bolt Hole Spacing	Wt., Lbs. per 100	Price per 100
2124	8	1 1/2	15	13 5/8	120	\$43.20
2125	14	1 1/2	24	22 1/2	260	77.74
2126	18	1 1/2	30	28 1/2	310	91.28

Hooks

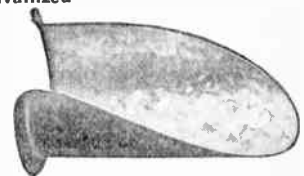
Cat. No.	DIMENSIONS, INCHES Extensions From Face of Rack	Thickness of Plate	Wt., Lbs. per 100	Price per 100
2131	4	1 1/2x1 1/8x3/16	52	\$35.40
2132	7 1/2	1 1/2x1 1/8x3/16	104	50.16
2133	10	1 1/2x1 1/8x3/16	126	61.68

Hubbard Cable Duct Shields

Hot Galvanized

Designed to protect cable sheaths at duct entrances.

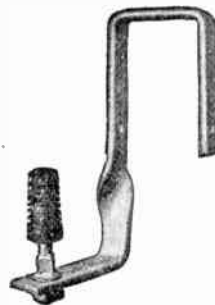
Cat. No.	9140	9142
Length, inches	6	9
Size Duct, " "	3	2 5/8
Gauge No.	20	12
Weight per 100, lbs.	61	170
Price. . . per 100	\$29.52	46.20



Hubbard Standard Transposition Brackets

Hot Galvanized

Nos. 9250 and 9252 are similar to 9251, illustrated except that the Western Union Standard Bracket No. 9250 does not have the 3/8-inch round holes for lagging the bracket to the arm. No. 9251 is the A. T. & T. Co. standard for one wire, and No. 9252 for two wires on a transposition insulator. The Western Union bracket is clamped on the arm by a 3/8 x 4 1/2-inch carriage bolt. Pins and bolts not included in price.



Cat. No.	Size of Steel Inches	For Cross-arms Size, In.	Wt., Lbs. per 100	Price per 100
9250	1 1/4x5/8	3 x 4	230	\$51.70
9251	1 1/4x5/8	3 1/4x4 1/4	242	51.70
9252	1 1/2x3/8	3 1/4x4 1/4	368	68.20

Hubbard Transposition Brackets

For Phantom Circuits

Hot Galvanized

The A. T. & T. Co. standard Transposition Bracket for 4-wire transpositions with large, double potted porcelain insulators, such as are used on the transcontinental circuits, is fastened to the cross arm by two 1/2x4 3/4-inch machine bolts, spaced 2 3/8 inches apart, and has holes for 1/2-inch pins. The price includes the two parts shown, the smaller of which projects above the arm, but no bolts or pins.



Cat. No.	DIMENSIONS, INCHES Steel Cross-arm	Wt., Lbs. per 100	Price per 100
3275	1 1/2x3/8 3 1/4x4 1/4	693	\$128.10

No. 9280 Hubbard Break Iron Brackets

Hot Galvanized



No. 9280 Break Iron is furnished complete as illustrated. The standard 5/8-inch wood top pins are spaced on 6 1/2-inch centers. The 1/2x6-inch machine bolt is equipped with a clipped pin washer.

Cat. No.	Pin Spacing Inches	Ship. Wt., Lbs. per 100	Price per 100
9280	6 1/2	314	\$103.00

Peirce Multipoint Transposition Brackets

Hot Galvanized



No. 237



No. 437

No. 437 is used for transposing the four wires of two toll circuits on which a phantom circuit is connected, and No. 237 for 2-wire transposition. Prices include clamps.

Brackets for U-bolts are furnished with bolts bent for 3 1/4x4 1/4 in. arms unless otherwise specified. Points are made of 12-gauge steel.

Two-point		Std. Pkg.	Wt., Lbs. per 100	Price per 100
Cat. No.	Size, Back Inches	20	215	\$88.32
237	1x1x1/8			
Four-point		Std. Pkg.	Wt., Lbs. per 100	Price per 100
Cat. No.	Size, Back Inches	10	500	\$203.68
437	1 1/4x1 1/4x1/8			

Peirce Transposition Brackets

Hot Galvanized

Single Point Underhang Brackets



Nos. 110, 111



No. 114



No. 115

Brackets shown with U-bolts are furnished with bolts bent for 3 1/4x4 1/4-inch arms unless otherwise specified.

No. 110 is the most popular type for single wires. No. 111 is for the heavier work and No. 114 is designed for 2-wire transposition insulators. No. 115 bolts to the shank of a 1/2-inch steel pin below the arm and is held by the pin nut.

Cat. No.	DIMENSIONS, INCHES Channel	U-bolt	Std. Pkg.	Wt., Lbs. per 100	Price per 100
110	3/4	3/8	25	88	\$60.50
111	1	3/8	25	144	79.70
114	1	3/8	25	160	90.74
115	1	..	25	144	67.16

Hubbard Telephone Distributing Brackets

Hot Galvanized



No. 9200

Cat. No.	Style Bracket	DIMEN., INCHES Size of Steel	Length of Legs	Approx. Ship. Wt., Lbs. per 100	Price per 100
9202	L Pole	2 x 1 1/4	4 x 3	87	\$16.24
9200	L House	1 3/4 x 3/16	3 1/16 x 2 3/16	51	10.00

Hubbard Telephone Corner Brackets

Hot Galvanized



No. 9204

The corner bracket is used where the lead from the pole comes to the building at an angle.

One No. 9226 knob with a No. 9603 machine bolt or two No. 9226 knobs with a No. 9605 1/2 machine bolt, listed below, are used with this bracket, but not included in the price.

Cat. No.	Style Bracket	Size of Steel, In.	Length of Legs, In.	Approx. Ship. Wt., Lbs. per 100	Price per 100
9204	Corner	1 3/2 x 3/2	4 x 5	65	\$13.30
9205	"	1 1/2 x 1/2	2 7/8 x 10 3/8	90	16.24

Hubbard Porcelain Knobs for Telephone Brackets



No. 9225



No. 9226

These knobs are of dry process white glazed porcelain and are for use with the telephone brackets listed above.

Cat. No.	Type	DIMEN., INCHES Dia n Bolt Hole	Height	Approx. Ship. Wt., Lbs. per 100	Price per 100
9225	Two-groove	3/8	1 1/2	18	\$7.00
9226	Four	1/2	2 1/4	33	12.00

Hubbard Bolts for Telephone Brackets

Hot Galvanized

These bolts are used for attaching porcelain knobs to Hubbard telephone brackets.

Cat. No.	Type	Diam. In.	Length In.	Approx. Ship. Wt., Lbs. per 100	Price per 100
9232	Stove Bolt	5/16	2	6	\$2.48
9603	Machine Bolt	3/8	3	13.1	3.00
9605 1/2	"	3/8	5 1/2	18.9	4.24

Peirce Single Knob Fixtures

These small fixtures are for either telephone or lighting wires, but for the latter they should only be used in localities not visited by snow and sleet.

No. 2920 is a new design of the Peirce Knob Screw in which the shank is lengthened to 2 1/2 inches.

No. 2922 fixture can be fastened to wood buildings with a screw in the center hole and to brick buildings with a Peirce Expansion Bolt, making a strong fastening and one which is especially adapted to duplex service wires. 1 1/2-inch hole.

No. 2924 is a fixture used for telephone wires, in which the knob is strapped to the wall. 3/2-inch hole.



No. 2920



No. 2924



No. 2922

Price, No.	Wt., Lbs.	per 100	Price
2920	44	\$25.20	
2922	77	41.32	
2924	55	35.38	

No. 9214 Peirce Porcelain Knobs for Telephone Racks

Made of brown glazed dry process porcelain. The wire groove is divided by a fin which keeps the two wires of the twisted pair separated.



Cat. No.	Height	Diameter	Wire Groove	Bolt Hole	Ship. Wt., Lbs. per 100	Price per 100
9214	1 1/2	1 1/4	3/4	2 3/4	22.7	\$13.20

Peirce Distributing Knob Racks

Hot Galvanized

For Telephone Wires

These racks furnish a secure but inexpensive means for distributing twisted pair telephone wires from cable poles. Nos. 2900, 2901 and 2902 are made with 1 3/4-inch channel steel back. The holes take a 1/2-inch lag screw.



Cat. No.	Pairs of Wires	Wt., Lbs. per 100	Price per 100
2900	4	348	\$130.18
2901	6	460	171.83
2902	8	545	213.58

The above prices are for racks complete with knobs.

Hubbard Insulated Pole Bands

Hot Galvanized



No. 7246

Insulated pole bands are in popular use for trolley work. They eliminate one splice on each attachment.

Will be furnished galvanized, complete with standard No. 508 insulators, unless otherwise specified.

DIAM. POLE, IN. Nominal	Out-Side	SOLID			SPLIT		
		Cat. No.	Ship. Wt. per 100	Lbs. Price per 100	Cat. No.	Ship. Wt. per 100	Lbs. Price per 100
4	4 1/2	7254	350	\$126.00	7244	390	\$140.40
4 1/2	5	7254 1/2	365	131.40	7244 1/2	405	145.80
5	5 1/2	7255	380	136.80	7245	420	151.20
6	6 5/8	7256	400	144.00	7246	440	158.40
7	7 5/8	7257	420	151.20	7247	460	163.60
8	8 5/8	7258	440	158.40	7248	480	172.80

Hubbard Solid Steel Pole Bands For Attaching Span Wires to Tubular Poles

Hot Galvanized



One-bolt Two-bolt

Cat. No.	Size Steel Inches	DIAMETER OF POLE, IN.		Wt., Lbs. per 100	Price per 100
		Nominal	Actual Outside		
7214	1 1/2 x 3/16	4	4 1/2	160	\$57.60
7214 1/2	1 1/2 x 3/16	4 1/2	5	172	61.92
7215	1 1/2 x 3/16	5	5 1/2	185	66.60
7216	1 1/2 x 3/16	6	6 5/8	210	75.60
Two-bolt Solid Bands					
7224	1 1/2 x 3/16	4	4 1/2	200	72.00
7224 1/2	1 1/2 x 3/16	4 1/2	5	212	76.32
7225	1 1/2 x 3/16	5	5 1/2	225	81.00
7226	1 1/2 x 3/16	6	6 5/8	250	90.00

Hubbard Pole Bands with Pull-off Rods

Hot Galvanized



The Hubbard Pole Band with Pull-off Rod eliminates the necessity for using an individual band for each guy.

Cat. No.	Diam. of Pole Inches	Diam. of Band Inches	Wt., Lbs. per 100	Price per 100
7344	4	4 1/2	700	\$168.00
7344 1/2	4 1/2	5	750	180.00
7345	5	5 1/2	800	192.00
7346	6	6 5/8	900	216.00
7347	7	7 5/8	1000	240.00
7348	8	8 5/8	1100	264.00

Hubbard Split Steel Pole Bands For Attaching Span Wires to Tubular Poles

Hot Galvanized

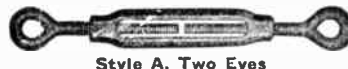


Two-bolt Three-bolt

Cat. No.	Size Steel Inches	DIAMETER OF POLE, IN.		Wt., Lbs. per 100	Price per 100
		Nominal	Actual Outside		
7324	1 1/2 x 3/16	4	4 1/2	205	\$73.80
7324 1/2	1 1/2 x 3/16	4 1/2	5	220	79.20
7325	1 1/2 x 3/16	5	5 1/2	235	84.60
7326	1 1/2 x 3/16	6	6 5/8	255	91.80
Three-bolt Split Bands					
7334	1 1/2 x 3/16	4	4 1/2	245	\$88.20
7334 1/2	1 1/2 x 3/16	4 1/2	5	260	93.60
7335	1 1/2 x 3/16	5	5 1/2	275	99.00
7336	1 1/2 x 3/16	6	6 5/8	295	106.20

Hubbard Turnbuckles

Hot Galvanized



Style A, Two Eyes



Style B, Hook and Eye

All parts are made of drop forged steel, insuring reliability and strength.

Furnished in the two styles illustrated, also in Style C having eye and clevis, at the same prices.

Specify style when ordering.

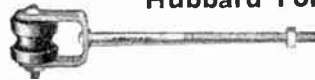
Diam. of Bolt Inches	Open Inches	Clewed Inches	Length of Opening Inches	Width of Eye Inches	Opening of Clevis Inches	Opening of Hook Inches	Approx. Wt., Lbs. per 100
3/8	16 1/2	10 1/2	6	9/16	5/8	1/2	83
1/2	17 3/4	11 3/4	6	3/4	5/8	5/8	153
1/2	23 3/4	14 3/4	9	3/4	5/8	5/8	178
1/2	29 3/4	17 3/4	12	3/4	5/8	5/8	203
5/8	19 1/2	13 1/2	6	1 1/2	3/4	3/4	255
5/8	25 1/2	16 1/2	9	1 1/2	3/4	3/4	305
5/8	31 1/2	19 1/2	12	1 1/2	3/4	3/4	355
3/4	20	14	6	1 1/2	1	7/8	350
3/4	26	17	9	1 1/2	1	7/8	410
3/4	32	20	12	1 1/2	1	7/8	470

Clevises smaller than 1/2-inch are not carried in stock.

Size Inches	CAT. NO. TYPE OF ASSEMBLY					
	Eye and Eye	Eye and Hook	Eye and Clevis	Hook and Hook	Hook and Clevis	Clevis and Clevis
3/8 x 6	8601	8621	8661	8661	8681	8701
1/2 x 6	8602	8622	8642	8662	8682	8702
1/2 x 9	8603	8623	8643	8663	8683	8703
1/2 x 12	8604	8624	8644	8664	8684	8704
5/8 x 6	8605	8625	8645	8665	8685	8705
5/8 x 9	8606	8626	8646	8666	8686	8706
5/8 x 12	8607	8627	8647	8667	8687	8707
3/4 x 6	8608	8628	8648	8668	8688	8708
3/4 x 9	8609	8629	8649	8669	8689	8709
3/4 x 12	8610	8630	8650	8670	8690	8710

Prices upon application.

Hubbard Fork Bolts



No. 357 insulators with 3/8-in. bolts. Fork has 6-in. thread.

Cat. No.	Diam. In.	Length, In. of Bolt Hole	Wt., Lbs. per 100	Price per 100	Cat. No.	Diam. In.	Length, In. of Bolt Hole	Wt., Lbs. per 100	Price per 100
8811	1/2	12	114	42.32	8814	5/8	14	171	53.79
8812	1/2	14	124	43.90	8815	5/8	16	186	56.30

No. 561 Hubbard Insulated Forks

Hot Galvanized

Used with a standard through bolt for dead ending heavy wires run on Peirce secondary racks. The bolt passes through the pole and allows the taking up of any slack which may accumulate in the line. Furnished complete with a Peirce rack insulator No. 355.



Standard package, 100; weight, 230 lbs. Price, No. 561..... per 100 \$62.40

Hubbard Insulated Forks

Hot Galvanized



By the addition of a standard 5/8-inch through bolt, lag screw or carriage bolt, the insulated forks illustrated may be converted into fork bolts, which simplifies considerably the keeping of stocks.

Fork No. 8820 is made of 1 1/2 x 1/4-inch flat steel, formed so that the head of the through bolt keeps it from turning. It is equipped with insulator No. 357, which is attached by a 3/8-inch bolt.

No. 641 is made of 1 1/4 x 1/2-inch channel steel and is provided with a square bolt hole, into which the square shoulders of a carriage bolt fit, preventing the fork from turning around on the bolt. Insulator No. 357 is also furnished with this fork.

Cat. No.	Type	Kind of Bolt	Approx. Ship.	
			Wt., Lbs. per 100	Price per 100
8820	Flat Steel	5/8-inch Through Bolt	118	\$43.20
641	Channel Steel	5/8 " Carriage	115	43.20
561	" "	5/8 " Through "	230	62.40

Peirce Mine Brackets

Hot Galvanized

Attached to underside of cross timbers by 5/8-inch or smaller lag screws or hanger screws. Designed to support two wire circuits on standard pin type insulators in mines or timber framed buildings.



Price, No. 216, Wt., 104 lbs. per 100 per 100 \$146.42

Hubbard Standard Western Union Pins

Hot Galvanized

Made in accordance with the specifications of the Western Union Telegraph Co., and the Railway Signal Association. The cobs are of the best grade of air dried oak, turned to fit a gauge and boiled in paraffine to exclude all moisture. The pins are made of stiff, high carbon steel with clean threads, square nuts and clipped, round washers, and are for use with standard insulators having 1-inch pin holes.

Long Shank Pins for Wood Cross Arms

Cat. No.	Diam. In.	LENGTH, INCHES		Ship. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder		
8000	1/2	4 1/4	5	74	\$13.90
8005	5/8	4 1/4	5	106	20.00



Lag Screw Pins for Wood Arms and Poles

8006	1/2	4 1/4	3	63	\$13.50
8007	5/8	4 1/4	3	90	20.00

Hubbard Short Shank Pins

Hot Galvanized

Nos. 8011 and 8016 have long cob.

Cat. No.	Diam. In.	LENGTH, IN.		Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder		
8010	1/2	4	1	53	\$14.00
8011	1/2	5	1	59	15.00
8015	5/8	4	1	74	20.00
8016	5/8	5	1	77	22.00



No. 3825 Peirce Forged Steel Pins

Hot Galvanized

For Railway Feeders

For use with composition feeder insulators at points of excessive load.

Cat. No.	LENGTH, IN.		DIAM., IN.			Price per 100
	Above Shoulder	Below Shoulder	Shank	Shoulder	Thread	
3825	4 1/4	3 3/8	1 1/4	2 1/2	1	\$125.44

Weight, pounds, per 100, 276.



Hubbard Wood Top Pins

Hot Galvanized

With Steel Colts



Wood top pins are composed of seasoned locust tops, thoroughly impregnated with paraffine and stiff steel fin bolts. They are made in a variety of heights with short and long shanks for wood, angle or channel steel arms, and for two sizes of insulator pin holes, 1 and 1 3/8 inches in diameter.



Cat. No.	SIZE OF WOOD TOP INCHES		SIZE OF BOLT, IN.	Length of Bolt Below Top, In.	Wt. Lbs. per 100	Price per 100		
	Diam. Top	Diam. Bottom					Length	
8070	1	1 3/8	4 1/2	1 1/2	5 1/2	60	\$21.10	
8071	1	2 1/4	5 1/2	1 1/2	6 1/2	68	26.00	
8072	1 3/8	2 1/4	4 1/2	5/8	5 1/2	95	30.50	
8073	1 3/8	2 1/4	5 1/4	5/8	6 1/2	105	32.50	
8074	1	1 7/8	4 1/2	1 1/2	9 1/2	75	24.30	
8075	1	2 1/4	5 1/4	1 1/2	10 1/2	85	29.20	
8076	1	2 1/4	5 1/4	1 1/2	11 1/2	96	\$30.50	
8077	1 3/8	2 1/4	4 1/2	5/8	9 1/2	5	130	36.00
8078	1 3/8	2 1/4	4 1/2	5/8	10 1/2	6	136	38.00
8079	1 3/8	2 1/4	5 1/4	5/8	10 1/2	5 1/4	140	38.90
8080	1 3/8	2 1/4	6 1/2	5/8	12 1/2	6	170	42.50
8081	1 3/8	2 1/2	8	5/8	14	6	196	51.00
8082	1 3/8	2 3/4	9	5/8	16	7	221	70.00

No. 3820 Peirce Forged Steel Pins

Hot Galvanized For Railway Feeders

For use with composition feeder insulators at points of excessive load.

Cat. No.	LENGTH IN.		DIAM. IN.		Wt., Lbs. per 100	Price per 1000	
	Above Shoulder	Below Shoulder	Shank	Shou'd. Thread			
3820	4 1/4	4	1 1/2	2 1/2	1	354	\$131.98



Peirce Long Shank Forged Steel Pins with 1-inch Spring Thread

Hot Galvanized For Wood Cross-arms

Cat. No.	Diam. In.	LENGTH, INCHES			Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
71	1/2	4 3/4	4 3/4	9 1/2	81	\$35.86
74	1/2	4 3/4	5 1/2	10 1/4	86	36.70
80	5/8	4 3/4	4 3/4	9 1/2	115	44.16
81	5/8	4 3/4	5 1/2	10 1/4	122	46.80
81A	5/8	4 3/4	6 1/2	11 1/2	129	49.20
82	5/8	6	4 3/4	10 3/4	126	48.24
84	5/8	6	5 1/2	11 1/2	132	48.96
83	5/8	6	6 1/2	12 1/2	140	52.80
90A	3/4	4 3/4	5 3/4	10 1/2	177	67.92
90	3/4	6	5 3/4	11 3/4	192	71.28
91	3/4	6	6 3/4	12 3/4	205	76.08



Peirce Short Shank Forged Steel Pins with 1-inch Spring Thread

Hot Galvanized For Steel Cross-arms

The 1/2-inch forged pin stands a load of 1000 pounds applied at the wire groove of a D.P.D.G. insulator with a deflection of less than 10 degrees and the 5/8-inch and 3/4-inch pins, 4 3/4 inches above the arm, 1700 pounds and 2300 pounds respectively.

Cat. No.	Diam. In.	LENGTH, INCHES			Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
72	1/2	4 3/4	1 1/4	6	67	\$37.20
86	5/8	4 3/4	1 1/4	6	85	40.80
87	5/8	6	1 1/4	7 1/4	96	44.40
93A	3/4	4 3/4	1 1/2	6 1/4	107	44.64
93	3/4	6	1 1/2	7 1/2	123	50.20



Peirce Long Shank Forged Steel Pins

With Standard 1-inch Lead Threads for Low Voltage Insulators
For Wood Cross Arms
Hot Galvanized



Cat. No.	Diam. In.	LENGTH, INCHES			Approx. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
971	1/2	4 3/4	4 3/4	9 1/2	108	\$35.86
974	1/2	4 3/4	5 1/2	10 1/4	113	36.70
980	5/8	4 3/4	4 3/4	9 1/2	135	44.16
981	5/8	4 3/4	5 1/2	10 1/4	142	46.80
981A	5/8	4 3/4	6 1/2	11 1/4	149	49.20
982	5/8	6	4 3/4	10 3/4	146	48.24
983	5/8	6	6 1/2	12 1/2	152	52.80
990A	3/4	4 3/4	5 3/4	10 1/2	190	67.92
990	3/4	6	5 3/4	11 3/4	205	71.28
991	3/4	6	6 3/4	12 3/4	218	76.08

Peirce Short Shank Forged Steel Pins

With Standard 1-inch Lead Threads for Low Voltage Insulators
Hot Galvanized
For Steel Cross Arms and Brackets

Cat. No.	Diam. In.	LENGTH, INCHES			Approx. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
972	1/2	4 3/4	1 1/4	6	94	\$37.20
986	5/8	4 3/4	1 1/4	6	105	40.80
987	5/8	6	1 1/4	7 1/4	116	44.40
993A	3/4	4 3/4	1 1/2	6 1/4	120	44.64
993	3/4	6	1 1/2	7 1/2	136	50.40



Peirce Presteel Pins
Hot Galvanized

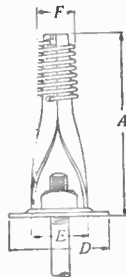
The same pin can be used for either steel or wood arms, on any size wood arm, on arms bored for any size of pin.

The pin is fastened to the arm with either a 1/2-inch or 5/8-inch machine bolt. The nut fits within the body of the pin and is held from turning. A wrench is used on the head of the bolt to tighten it.



Straight Base

Curved Base



For Flat Top Arms

Cat. No.	DIMENSIONS, INCHES				Wt., Lbs. per 100	Price per 100
	A	D	E	F		
5201	5	3	1 1/2	1	91	\$56.08
5202	6 1/2	3 1/4	1 3/4	1	112	70.82
5203	8	3 1/2	2	1	144	88.56
5211	6 1/2	3 1/4	1 3/4	1 3/8	142	73.34
5212	8	3 1/2	2	1 3/8	175	91.52

For Round Top Arms

5221	5	3	1 1/2	1	91	\$56.08
5222	6 1/2	3 1/4	1 3/4	1	112	70.82
5223	8	3 1/2	2	1	144	88.56
5231	6 1/2	3 1/4	1 3/4	1 3/8	142	73.34
5232	8	3 1/2	2	1 3/8	175	91.52

Bolts are not included. Use either 1/2 or 5/8-inch machine bolts, 2 inches long for steel arms and 6 inches for wood arms.

Bolts for Presteel Pins

Cat. No.	Size	Ship. Wt. Lbs. per 100	Price per 100
5240	1/2x2-inch with Nut and Nut Lock	24	\$8.80
5241	5/8x2 " " " " " "	39	12.38
5246	1/2x6 " " Lock Washer and Nut	44	12.68
5247	5/8x6 " " " " " "	69	19.20

Peirce Lag Screw Forged Steel Pins

With Standard 1-inch Lead Threads for Low Voltage Insulators



Hot Galvanized
For Pole and Transformer Wiring

Cat. No.	Diam. In.	LENGTH, INCHES			Approx. Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
973	1/2	4 3/4	3	7 3/4	92	\$33.46
975	1/2	6	3	9	103	35.12
988	5/8	4 3/4	3	7 3/4	108	36.96
989	5/8	7 1/2	4	11 1/2	140	46.36
994	3/4	6	4	10	143	49.92

Peirce Broad Base Forged Steel Pins

Hot Galvanized

Designed for supporting heavy primary and secondary lines on wood cross arms. Base is 2 1/2 inches wide and made in two styles, for flat top arms and for roofed arms.

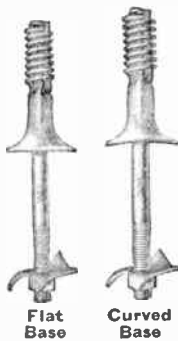
Shank, 5/8 inch in diameter, is furnished in 5 1/2 or 6 1/2-inch lengths, and provided with 2 1/2-inch cut thread.

Spring Thread for 1-in. Pin Hole

Cat. No.	Dimens., In.	Approx. Wt., Lbs. per 100	Price per 100
1081	4 1/2	5 1/2	148 \$69.46
1083	4 1/2	6 1/2	159 70.68

Lead Thread for 1-in. Pin Hole

1091	1090	4 1/2	5 1/2	207	\$55.00
1093	1092	4 1/2	6 1/2	218	59.16

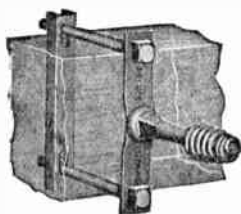


Flat Base

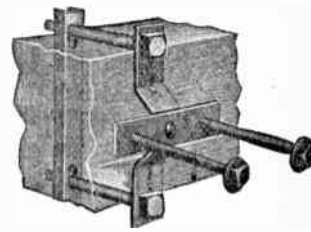
Curved Base

Peirce Side Clamp Pins and Fuse Block Clamps

Hot Galvanized



No. 4452



No. 5452

These pins and clamps are made entirely of open hearth steel and are hot dip galvanized. They are furnished complete with standard Peirce Cross Arm Straps which are included in the prices.

The side clamp pin binds the fibres of the wood together and thus keeps the arm from splitting and later, rotting. This is especially important for the transformer arm.

Side Clamp Pins

Cat. No.	Size Cross Arm Inches	Wt., Lbs. per 100	Price per 100
4452	Up to 4x5	231	\$79.70

Fuse Block Clamps

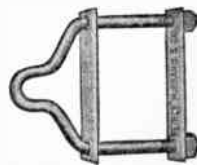
Cat. No.	Size Cross Arm Inches	Wt., Lbs. per 100	Price per 100
5452	Up to 4x5	191	\$79.70

Peirce Cross Arm Clevises

Hot Galvanized

For dead ending wires on wood arms.

Cat. No.	Size Arm Inches	Wt., Lbs. per 100	Price per 100
549	3 1/4 x 4 1/4	191	\$55.78
550	3 1/2 x 4 1/2	215	57.24
551	3 3/4 x 4 3/4	224	58.58
552	4 x 5	233	59.04





Peirce Lag Screw Type Forged Steel Pins

Nos. 73, 88 and 94 pins with lag screw shanks are largely used wherever attachments of vertical runs of wires down the poles are necessary, as in feeders to arc and series lamps, etc.

The 1/2-inch forged pin stands a load of 1000 pounds applied at the wire groove of a D.P.D.G. insulator with a deflection of less than 10 degrees and the 5/8-inch and 3/4-inch pins, 4 3/4 inches above the arm, 1700 pounds and 2300 pounds, respectively.

Cat. No.	Diam. In.	LENGTH, INCHES			Wt., Lbs. per 100	Price per 100
		Above Shoulder	Below Shoulder	Total		
73	1/2	4 3/4	3	7 3/4	65	\$33.46
75	1/2	6	3	9	76	\$35.12
88	5/8	4 3/4	3	7 3/4	88	\$36.96
89	5/8	7 1/2	4	11 1/2	120	\$46.36
94	3/4	6	4	10	130	\$49.92

Peirce Screw Pins

Can be screwed into a cross-arm or the studing of a building in a moment. Owing to the small diameter of the screw, it will not split the wood.

Cat. No.	Size Channel In.	Diam. In.	Height Above Base, In.	Wt., Lbs. per 100	Price per 100



Peirce Clamp Pins For Low Voltage Lines
Hot Galvanized

The clamp pin is made of a single piece of open hearth steel channel, bent double, with riveted spreaders to give it a truss construction. It is clamped on the cross-arm by a heavy strap for drop forged steel.

All of the pins listed are equipped with Peirce 1-inch steel Spring Threads. 1 in No. 4300 is pressed from a single piece of 12-gauge sheet steel, and Nos. 4400-1 are made of 3/4 x 3/8 x 1/8-inch channel steel.

Cat. No.	Size Cross-arm Inches	Height Above Arm, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
4400	4 x 5	"	300	114	\$51.64
4401	3 1/2 x 4 1/2	"	300	110	\$50.16



Peirce Clamp Pins For High Voltage Insulators on Steel and Wood Cross-arms
Hot Galvanized

The Clamp Pin is made of a single piece of channel steel bent double, and separated by spacers. Furnished with separable Thimbles and with the Peirce 1 3/8-inch Threads.

With 1 7/32-inch Drawn Steel Separable Thimble

Cat. No.	Size Channel In.	Height Above Arm, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
4807	1 x 1/2	7	4 3/4	152	\$77.62
4808	1 x 1/2	8	5 3/4	203	\$79.70
4809	1 x 1/2	9	6 3/4	217	\$85.56
4810	1 x 1/2	10	7 3/4	230	\$94.44
4811	1 x 1/2	11	8 3/4	244	\$103.32
4812	1 x 1/2	12	9 3/4	257	\$110.68



With 1 3/8-inch Lead Thread

Cat. No.	Channel In.	PIN HT. ABOVE ARM, IN.		Lbs. per 100	Price per 100
		When Mounted on Angle or Pipe	When Mounted on Wood Arm		
4856	1 x 1/2	6	3 3/4	239	\$83.33
4857	1 x 1/2	7	4 3/4	254	\$77.22
4858	1 x 1/2	8	5 3/4	268	\$89.30
4859	1 x 1/2	9	6 3/4	278	\$98.16
4860	1 x 1/2	10	7 3/4	288	\$104.64
4861	1 x 1/2	11	8 3/4	298	\$112.92
4862	1 x 1/2	12	9 3/4	314	\$96.23



Peirce Cross-arm Straps

Hot Galvanized



Drop forged from round steel and have a broad flat bearing on the arm, which helps to hold the pins firmly upright. By drop forging from round stock, freedom from flaws is assured, and the threads are always uniform in size.

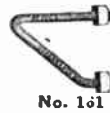
Light Cross-arm Straps for Low Voltage

Cat. No.	Light Cross-arm Inches	Size of Bolt Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
1002	3 1/2 x 4 1/2	1 1/2	100	85	\$33.48
1003	3 3/4 x 4 3/4	1 1/2	100	90	\$34.96
1004	4 x 5	1 1/2	100	95	\$36.58

Heavy Cross-arm Straps for High Voltage

Cat. No.	Size Arm Inches	Size Bolt Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
2002	3 1/2 x 4 1/2	5/8	100	138	\$44.26
2003	3 3/4 x 4 3/4	5/8	100	144	\$47.20
2004	4 x 5	5/8	100	150	\$49.70

Peirce Clamps for High Voltage Clamp Pins



Hot Galvanized



No. 161

No. 165

Notched Angle Clamps

Angle clamps are used for supporting clamp pins on cross-arms of angle section, such as the Bo-Arrow, and Angle Arms.

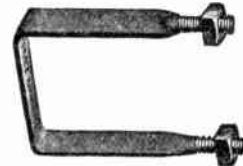
Cat. No.	Size Arm Inches	Size Bolt Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
160	3 x 2	5/8	100	110	\$24.94
161	3 x 3	5/8	100	125	\$27.22
162	3 1/2 x 3 1/2	5/8	100	141	\$29.54

Standard Pipe Clamps

165	1 1/4	5/8	100	160	\$41.32
166	1 1/2	5/8	100	163	\$43.04
167	2	5/8	100	170	\$44.88

Peirce Wood Cross-arm Straps

Hot Galvanized



The wood cross-arm strap is drop-forged of 1/2-inch steel with a 1 1/8-inch flat portion for bearing on arm.

Cat. No.	Size Arms Inches	Wt., Lbs. per 100	Price per 100
1872	3 1/2 x 4 1/2	100	\$35.12
1873	3 3/4 x 4 3/4	106	\$39.50
1874	4 x 5	112	\$42.76

Hubbard Ridge Irons

Hot Galvanized



Fastened to pole by four 1/2-inch lag screws, holes staggered to prevent splitting pole top.

Pins not included in prices.

Cat. No.	Steel In.	DIMENS., INCHES			Wt., Lbs. per 100	Price per 100
		Ht.	Pole	Pin Hole		
9407	2 1/4 x 1 1/8	7	6	9/16	140	\$34.48
9408	2 3/4 x 3/16	8	7	11/16	280	\$44.72
9409	2 3/4 x 1 1/4	8 1/4	7	13/16	450	\$73.78
9410	3 x 1 1/4	18 1/2	7	13/16	888	\$136.00

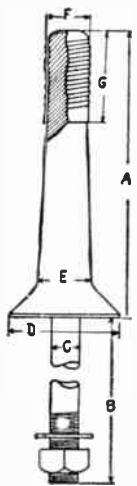
Peirce Forged Steel Pins for Wood Arms

Hot Galvanized

With Drawn Zinc Separable Thimbles

The new Peirce Forged Steel Pin for high voltage insulators is a development of the original Peirce forged steel pin construction, with an important change. A drawn zinc separable thimble has replaced the malleable iron thimble. This change has made possible a much greater strength in the pin than can be secured with a pin of any other type of construction, and a strength which is uniform in all lengths of the pin.

Each of the series is made in two distinct types: The long bolt pin for wood arms and the short bolt pin for steel arms. The pin is a solid forging from a single block of steel, and has neither welds nor joints.



Peirce Forged Steel Pins for Steel Arms

Hot Galvanized

With Drawn Zinc Separable Thimbles

This pin is made in three series of strengths: a 1500-lb. series, a 3000-lb. series and a 4500-lb. series, each developing its rated strength on a dead end pull exerted at the insulator groove, with a deflection of less than 10 degrees. Each of these series is made in heights ranging from 4 to 16 inches above the arm, so that the correct pin for any style of insulator made by the insulator manufacturers can be selected. The taper of the shank of the pin is so designed that a 1500-lb. series, 16-inch pin, will, in spite of its greater lever arm, withstand a strain of 1500 pounds just as a 4-inch pin in the same series will.



1500-pound Series with Thimbles for Cementing into Insulators with 1-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5102	3 1/2	5 1/2	3/4	2 1/4	2 7/32	2	168	\$71.00
5104	4	5 1/2	3/4	2 1/4	2 7/32	2	180	75.00
5106	4 1/2	5 1/2	3/4	2 1/4	2 7/32	2	192	79.04
5108	5	5 1/2	3/4	2 1/4	2 7/32	2	204	83.04
5110	5 1/2	5 1/2	3/4	2 1/4	2 7/32	2	216	87.74
5112	6	5 1/2	3/4	2 1/4	2 7/32	2	228	93.10
5114	7	5 1/2	3/4	3	2 7/32	2	286	118.56
5116	8	5 1/2	3/4	3	2 7/32	2	308	131.96

1500-pound Series with Thimbles for Cementing into Insulators with 1-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5101	3 1/2	1 3/4	3/4	2 1/4	2 7/32	2	110	\$60.26
5103	4	1 3/4	3/4	2 1/4	2 7/32	2	122	64.30
5105	4 1/2	1 3/4	3/4	2 1/4	2 7/32	2	134	68.30
5107	5	1 3/4	3/4	2 1/4	2 7/32	2	146	72.34
5109	5 1/2	1 3/4	3/4	2 1/4	2 7/32	2	158	77.04
5111	6	1 3/4	3/4	2 1/4	2 7/32	2	170	82.40
5113	7	1 3/4	3/4	3	2 7/32	2	228	107.84
5115	8	1 3/4	3/4	3	2 7/32	2	250	121.22

1500-pound Series with Thimbles for Cementing into Insulators with 1 3/8-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5118	4	6 1/2	3/4	2 1/2	1 7/32	2 1/2	246	\$88.12
5120	5	6 1/2	3/4	2 1/2	1 7/32	2 1/2	273	96.84
5122	5 1/2	6 1/2	3/4	2 1/2	1 7/32	2 1/2	300	99.34
5124	6	6 1/2	3/4	2 1/2	1 7/32	2 1/2	327	104.63
5126	7	6 1/2	3/4	3	1 7/32	2 1/2	377	128.60
5128	8	6 1/2	3/4	3	1 7/32	2 1/2	422	137.68
5130	9	6 1/2	3/4	3	1 7/32	2 1/2	467	150.14
5132	10	6 1/2	3/4	3	1 7/32	2 1/2	512	163.12
5134	11	6 1/2	3/4	3 1/2	1 7/32	2 1/2	544	181.88
5136	12	6 1/2	3/4	3 1/2	1 7/32	2 1/2	579	197.38
5138	13	6 1/2	3/4	3 1/2	1 7/32	2 1/2	614	199.96
5140	14	6 1/2	3/4	3 3/4	1 7/32	2 1/2	733	216.98
5142	15	6 1/2	3/4	3 3/4	1 7/32	2 1/2	817	230.76
5144	16	6 1/2	3/4	3 3/4	1 7/32	2 1/2	901	240.58

1500-pound Series with Thimbles for Cementing into Insulators with 1 3/8-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5117	4	1 3/4	3/4	2 1/2	1 7/32	2 1/2	175	\$75.70
5119	5	1 3/4	3/4	2 1/2	1 7/32	2 1/2	202	84.38
5121	5 1/2	1 3/4	3/4	2 1/2	1 7/32	2 1/2	229	86.78
5123	6	1 3/4	3/4	2 1/2	1 7/32	2 1/2	256	91.28
5125	7	1 3/4	3/4	3	1 7/32	2 1/2	306	116.14
5127	8	1 3/4	3/4	3	1 7/32	2 1/2	351	125.26
5129	9	1 3/4	3/4	3	1 7/32	2 1/2	396	137.68
5131	10	1 3/4	3/4	3	1 7/32	2 1/2	441	150.70
5133	11	1 3/4	3/4	3 1/2	1 7/32	2 1/2	473	169.44
5135	12	1 3/4	3/4	3 1/2	1 7/32	2 1/2	508	179.44
5137	13	1 3/4	3/4	3 1/2	1 7/32	2 1/2	543	187.52
5139	14	1 3/4	3/4	3 3/4	1 7/32	2 1/2	662	204.52
5141	15	1 3/4	3/4	3 3/4	1 7/32	2 1/2	746	215.92
5143	16	1 3/4	3/4	3 3/4	1 7/32	2 1/2	830	228.10

3000-pound Series with Thimbles for Cementing into Insulators with 1 3/8-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5146	4	8 1/2	1	2 1/2	1 7/32	2 1/2	387	\$113.56
5148	5	8 1/2	1	2 1/2	1 7/32	2 1/2	413	125.90
5150	5 1/2	8 1/2	1	2 1/2	1 7/32	2 1/2	447	137.30
5152	6	8 1/2	1	2 1/2	1 7/32	2 1/2	473	143.24
5154	7	8 1/2	1	3	1 7/32	2 1/2	496	157.40
5156	8	8 1/2	1	3	1 7/32	2 1/2	561	170.78
5158	9	8 1/2	1	3	1 7/32	2 1/2	626	184.84
5160	10	8 1/2	1	3	1 7/32	2 1/2	691	202.24
5162	11	8 1/2	1	3 1/2	1 7/32	2 1/2	853	227.72
5164	12	8 1/2	1	3 1/2	1 7/32	2 1/2	906	241.10
5166	13	8 1/2	1	3 1/2	1 7/32	2 1/2	960	256.52
5168	14	8 1/2	1	3 3/4	1 7/32	2 1/2	1010	278.60
5170	15	8 1/2	1	3 3/4	1 7/32	2 1/2	1095	296.28
5172	16	8 1/2	1	3 3/4	1 7/32	2 1/2	1180	320.80

3000-pound Series with Thimbles for Cementing into Insulators with 1 3/8-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5145	4	2	1	2 1/2	1 7/32	2 1/2	227	\$86.78
5147	5	2	1	2 1/2	1 7/32	2 1/2	253	99.12
5149	5 1/2	2	1	2 1/2	1 7/32	2 1/2	287	110.52
5151	6	2	1	2 1/2	1 7/32	2 1/2	313	116.52
5153	7	2	1	3	1 7/32	2 1/2	336	130.60
5155	8	2	1	3	1 7/32	2 1/2	401	143.98
5157	9	2	1	3	1 7/32	2 1/2	466	158.04
5159	10	2	1	3	1 7/32	2 1/2	531	175.46
5161	11	2	1	3 1/2	1 7/32	2 1/2	693	200.90
5163	12	2	1	3 1/2	1 7/32	2 1/2	746	214.30
5165	13	2	1	3 1/2	1 7/32	2 1/2	800	235.08
5167	14	2	1	3 3/4	1 7/32	2 1/2	850	251.80
5169	15	2	1	3 3/4	1 7/32	2 1/2	935	263.50
5171	16	2	1	3 3/4	1 7/32	2 1/2	1020	294.00

4500-pound Series with Thimbles for Cementing into Insulators with 1 1/2-inch Pin Holes

Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5184	8	8 3/4	1 1/4	3 1/2	1 7/16	2 1/2	950	\$273.60
5186	9	8 3/4	1 1/4	3 1/2	1 7/16	2 1/2	1020	293.76
5188	10	8 3/4	1 1/4	3 1/2	1 7/16	2 1/2	1080	311.04
5190	11	8 3/4	1 1/4	4	1 7/16	2 1/2	1190	328.44
5192	12	8 3/4	1 1/4	4	1 7/16	2 1/2	1305	344.40
5194	13	8 3/4	1 1/4	4	1 7/16	2 1/2	1420	374.88
5196	14	8 3/4	1 1/4	4 1/4	1 7/16	2 1/2	1650	396.00
5198	15	8 3/4	1 1/4	4 1/4	1 7/16	2 1/2	1770	424.80
5200	16	8 3/4	1 1/4	4 1/4	1 7/16	2 1/2	1880	451.20

4500-pound Series with Thimbles for Cementing into Insulators with 1 1/2-inch Pin Holes

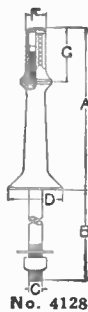
Cat. No.	DIMENSIONS, INCHES						Ship. Wt., Lbs. per 100	Price per 100
	A	B	C	D	F	G		
5183	8	2 1/4	1 1/4	3 1/2	1 7/16	2 1/2	750	\$216.00
5185	9	2 1/4	1 1/4	3 1/2	1 7/16	2 1/2	820	236.16
5187	10	2 1/4	1 1/4	3 1/2	1 7/16	2 1/2	880	253.44
5189	11	2 1/4	1 1/4	4	1 7/16	2 1/2	990	261.36
5191	12	2 1/4	1 1/4	4	1 7/16	2 1/2	1105	293.04
5193	13	2 1/4	1 1/4	4	1 7/16	2 1/2	1220	319.44
5195	14	2 1/4	1 1/4	4 1/4	1 7/16	2 1/2	1450	335.16
5197	15	2 1/4	1 1/4	4 1/4	1 7/16	2 1/2	1570	348.00
5199	16	2 1/4	1 1/4	4 1/4	1 7/16	2 1/2	1680	379.20

Peirce Forged Steel Pins

Hot Galvanized



Peirce Lead Thread Pins are made of a special stiff alloy steel. The top of the pin is threaded for a Peirce separable drawn thimble so that by melting off or otherwise removing the lead thread, the pin may be used with an insulator having a separable drawn thimble cemented into it.



Peirce Forged Steel Pins with separable malleable iron thimbles are forged from a solid bar of open hearth steel. The top of the pin is threaded with a standard 3/4-inch thread 1 3/4-inch long so that it may be used with any separable malleable thimble. Unless otherwise specified, these pins are furnished complete with malleable iron thimbles for cementing into insulators with 1 3/8-inch pin hole.

Peirce Drawn Zinc Separable Thimbles

For Peirce Pins



As these thimbles are included with the pins with which they are listed, it is not necessary to order them separately, except when they are to be cemented into insulators used for replacements.

No. 5051 Thimble, 27/32 inch in diameter, is cemented into insulators with a standard 1-inch pin hole. The 1 1/32-inch Thimble No. 5052 is used with insulators having a 1 3/8-inch pin hole. No. 5053 Thimble, used with the 4500-pound series pin, is cemented into insulators having a 1 1/2-inch or larger pin hole. This thimble is 1 7/16 inches in diameter.

Cat. No.	Diam. of Thimble, In.	Size of Insulator Pin Hole, In.	Ship. Wt., Lbs. per 100	Price per 100
5051	27/32	1	6.5	*
5052	1 1/32	1 3/8	12.5	*
5053	1 7/16	1 1/2	17.5	*

*Prices upon application.

Long Shank Pins for Wood Arms

With Lead Threads for 1-inch Pin Hole

Cat. No.	DIMENSIONS, INCHES							Shipping Wt., Lbs. per 100	Price per 100
	A	B	C	D	E	F	G		
5310	5 1/2	6	3/4	2 1/2	3/4	1	1 5/8	244	\$96.00
5312	6	6	3/4	2 1/2	3/4	1	1 5/8	250	98.40
5314	7	6	3/4	2 1/2	3/4	1	1 5/8	262	100.80

With Lead Threads for 1 3/8-inch Pin Hole

5326	7	6 1/2	3/4	3	1	1 3/8	2 3/8	439	\$146.40
5328	8	6 1/2	3/4	3	1	1 3/8	2 3/8	457	151.20
5330	9	6 1/2	3/4	3	1	1 3/8	2 3/8	473	156.00
5332	10	6 1/2	3/4	3	1	1 3/8	2 3/8	491	160.80
5334	11	6 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	664	175.20
5336	12	6 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	700	181.20
5338	13	6 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	736	187.20
5342	15	6 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	772	199.20

Short Shank Pins for Steel Arms

With Lead Threads for 1-inch Pin Hole

5309	5 1/2	1 1/2	3/4	2 1/2	3/4	1	1 5/8	178	\$86.40
5311	6	1 1/2	3/4	2 1/2	3/4	1	1 5/8	184	88.80
5313	7	1 1/2	3/4	2 1/2	3/4	1	1 5/8	196	91.20

With Lead Threads for 1 3/8-inch Pin Hole

5325	7	1 1/2	3/4	3	1	1 3/8	2 3/8	373	\$132.00
5327	8	1 1/2	3/4	3	1	1 3/8	2 3/8	391	136.80
5329	9	1 1/2	3/4	3	1	1 3/8	2 3/8	407	141.60
5331	10	1 1/2	3/4	3	1	1 3/8	2 3/8	425	146.40
5333	11	1 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	568	153.60
5335	12	1 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	604	166.80
5337	13	1 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	650	172.80
5341	15	1 1/2	3/4	3 3/4	1 1/8	1 3/8	2 3/8	686	184.80

Long Shank Pins for Wood Arms

With Separable Malleable Iron Thimble for 1 3/8-inch Pin Hole

4120	5	6 1/2	3/4	2 1/2	...	1 1/8	2 1/2	283	\$111.24
4122	5 1/2	6 1/2	3/4	2 1/2	...	1 1/8	2 1/2	310	113.64
4124	6	6 1/2	3/4	2 1/2	...	1 1/8	2 1/2	337	119.00
4126	7	6 1/2	3/4	2 1/2	...	1 1/8	2 1/2	387	143.00
4128	8	6 1/2	3/4	3	...	1 1/8	2 1/2	432	152.08
4130	9	6 1/2	3/4	3	...	1 1/8	2 1/2	477	164.54
4132	10	6 1/2	3/4	3	...	1 1/8	2 1/2	522	177.52
4134	11	6 1/2	3/4	3 1/2	...	1 1/8	2 1/2	554	196.28
4136	12	6 1/2	3/4	3 1/2	...	1 1/8	2 1/2	589	211.78
4138	13	6 1/2	3/4	3 1/2	...	1 1/8	2 1/2	624	214.36
4140	14	6 1/2	3/4	3 3/4	...	1 1/8	2 1/2	743	231.38
4142	15	6 1/2	3/4	3 3/4	...	1 1/8	2 1/2	827	245.16

Short Shank Pins for Steel Arms

With Separable Malleable Iron Thimble for 1 3/8-inch Pin Hole

4119	5	1 3/4	3/4	2 1/2	...	1 1/8	2 1/2	212	\$98.78
4121	5 1/2	1 3/4	3/4	2 1/2	...	1 1/8	2 1/2	239	101.18
4123	6	1 3/4	3/4	2 1/2	...	1 1/8	2 1/2	266	105.68
4125	7	1 3/4	3/4	2 1/2	...	1 1/8	2 1/2	316	130.54
4127	8	1 3/4	3/4	3	...	1 1/8	2 1/2	361	139.64
4129	9	1 3/4	3/4	3	...	1 1/8	2 1/2	406	152.08
4131	10	1 3/4	3/4	3	...	1 1/8	2 1/2	451	165.10
4133	11	1 3/4	3/4	3 1/2	...	1 1/8	2 1/2	483	183.84
4135	12	1 3/4	3/4	3 1/2	...	1 1/8	2 1/2	518	193.88
4137	13	1 3/4	3/4	3 1/2	...	1 1/8	2 1/2	553	201.92
4139	14	1 3/4	3/4	3 3/4	...	1 1/8	2 1/2	672	218.92
4141	15	1 3/4	3/4	3 3/4	...	1 1/8	2 1/2	756	230.32

Peirce Lead Thread Separable Thimbles
Drawn Thimble Type

While the cementing of thimbles into the insulators is recommended as being the most dependable method, there are cases, for instance, where wood pins are being replaced with forged steel pins, in which the cost and trouble of cementing the thimbles are too great.

For such conditions standard Peirce drawn zinc thimbles are furnished with lead threads cast on them, so that insulators can be screwed on the thimbles mounted on the pins instead of having the thimbles cemented into the insulators and then screwed on the pins. These thimbles may be used on No. 5100 series forged steel pins, high voltage clamp pins, and pole top pins.



Cat. No.	For Insulator Pin Hole, In.	Size of Thimble, In.	Ship. Wt., Lbs. per 100	Price per 100
5020	1	27/32	35.5	\$26.52
5025	1 3/8	1 7/32	56.5	29.16

No. 5018 Peirce Lead Thread Thimbles

Malleable Thimble Type

This thimble is made by casting lead threads on the No. 5019 thimble adapter and is used with pins having a standard 3/4-inch center bolt or with Peirce No. 4100 series pin.

The lead thread is made to screw directly into an insulator having a 1 3/8-inch pin hole.



Cat. No.	For Insulator Pin Hole, In.	Hole in Thimble, In.	Ship. Wt., Lbs. per 100	Price per 100
5018	1 3/8	3/4	118	\$50.40

No. 5019 Peirce Thimble Adapters

Hot Galvanized

Provides a method for using insulators, in which Peirce Drawn Thimbles are cemented, on old lines equipped with cast iron separable thimbles.

Cat. No.	Outside Thread	Inside Thread	Height	Ship. Wt., Lbs. per 100	Price per 100
5019	1 1/32	3/4	3	55	\$30.24

Peirce Presteel Centering Washers

Hot Galvanized

Used on the lower end of Peirce Forged Steel Pins to center the pin when used on arms bored for wood pins.

Cat. No.	To Fit Hole Inches	Pin Hole Inches	Ship. Wt., Lbs. per 100	Price per 100
5030	1 1/2	1 3/16	28	\$5.42
5031	1 1/4	1 1/16	27	5.42
5032	1 1/2	1 5/16	31	5.84
5033	1 1/2	1 1/8	29	5.84



Peirce Pole Top Pins

Hot Galvanized

Pipe Pole Top Pins

Separable Thimble Type

Cat. No.	Size Pipe	DIMENSIONS, INCHES			Ship. Wt., Lbs. per 100	Price per 100
		Lgth.	Hole Mount- ing Spac- ing Holes	Diam of Thread		
3060	1 1/4	18	8	1 1/16	220	\$169.34
3061	1 1/2	18	8	1 1/16	340	197.18
3063	1 1/2	24	8	1 1/16	703	238.35
3065	1 1/2	28	8	1 1/16	823	267.34
3066	2	28	8	1 1/16	1098	340.48
3067	1 1/2	32	10	1 1/16	945	295.28
3068	2	32	10	1 1/16	1265	377.60
3069	2	36	10	1 1/16	1433	415.44

Lead Thread Type

3070	1 1/4	18	8	1 3/8	437	\$202.12
3071	1 1/2	18	8	1 3/8	457	224.38
3073	1 1/2	24	8	1 3/8	826	270.80
3075	1 1/2	28	8	1 3/8	946	303.76
3076	2	28	8	1 3/8	1221	380.56
3077	1 1/2	32	10	1 3/8	1078	325.28
3078	2	32	10	1 3/8	1398	417.28
3079	2	36	10	1 3/8	1566	458.90

Presteel Pole Top Pins

Gauge of steel, 9.

Spring Thread Type

Cat. No.	Length	DIMENSIONS, INCHES			Ship. Wt., Lbs. per 100	Price per 100
		Spac- ing Holes	Diam. of Thread	Hole Mount- ing		
3040	18	8	1	1/16	240	\$109.52
3045	24	8	1	1/16	340	149.06

Lead Thread Type

3034	18	8	1	1/16	331	\$109.52
3039	18	8	1 3/8	1/16	404	114.96
3044	24	8	1	1/16	447	149.06
3049	24	8	1 3/8	1/16	510	170.62

Separable Thimble Type

3042	18	8	1 1/2	1/16	275	\$121.90
3043	18	8	1 7/8	1/16	286	121.90
3047	24	8	1 3/2	1/16	400	161.02
3048	24	8	1 3/2	1/16	406	161.02

Angle Steel Pole Top Pins

Size of angle, 2x2x 3/16 inches.

Spring Thread Type

3030	18	8	1	1/16	360	\$165.32
3031	24	8	1	1/16	460	224.36
3033	36	10	1	1/16	600	265.66

Lead Thread Type

3001	18	8	1	1/16	469	\$165.32
3002	24	8	1	1/16	569	224.36
3003	36	10	1	1/16	709	265.66

Heavy Channel Pole Top Pins

Size of channel, 1 3/4 x 5/8 inches. No. 3020 is composed of 2 heavy channels riveted back to back.

Spring Thread Type

3020	18	8	1 3/8	1/16	470	\$191.64
3022	25	8	1 3/8	1/16	600	247.96

Lead Thread Type

3024	18	8	1 3/8	1/16	587	\$201.24
3025	25	8	1 3/8	1/16	723	257.56

Light Channel Pole Top Pins

Size of channel, 1 x 1/2 inches, excepting Nos. 3013 and 3017 which are 1 1/8 x 1 inches. Nos. 3000, 3010 and 3012 are used for signal wires. No. 3000 is offset so as to bring the insulator over the center of the pole. No. 3010 is a straight pin, similar to No. 3012. Nos. 3013 and 3017, made of presteel, are recommended for use with 1-inch bore insulators on light 6600 and 11000-volt lines.

Spring Thread Type

3000	18	4	1	1/16	144	\$62.00
3010	12	4	1	1/16	88	36.00
3012	18	4	1	1/16	128	62.00
3013	15	4	1	1/16	150	74.38

Lead Thread Type

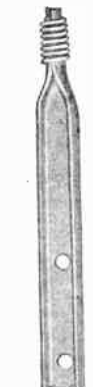
3014	18	4	1	1/16	201	\$62.00
3015	12	4	1	1/16	145	36.00
3016	18	4	1	1/16	185	62.00
3017	15	4	1	1/16	207	74.38



No. 3048



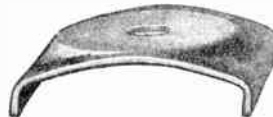
No. 3000



No. 3013

Peirce Presteel Cross Arm Saddles

Hot Galvanized



Used with Peirce Forged Steel Pins on round top cross arms. Pressed from No. 7 galvanized sheet steel.

Cat. No.	DIMENS., INCHES		Approx. Ship. Wt., Lbs. per 100 Pieces	Price per 100
	Width Cross Arm	Size Pin Hole		
5001	3 1/4	1 1/16	87	\$17.66
5002	3 1/2	1 1/16	93	18.48
5003	3 3/4	1 1/16	99	19.32
5004	4	1 1/16	105	20.26
5005	5	1 1/16	130	24.80
5011	3 1/4	1 1/16	87	17.66
5012	3 1/2	1 1/16	93	18.48
5013	3 3/4	1 1/16	99	19.32
5014	4	1 1/16	105	20.26
5015	5	1 1/16	130	24.80

Peirce Lock Washers

Hot Galvanized



Designed especially for use with long shank insulator pins. It will be furnished on any standard pin when specified at additional cost.

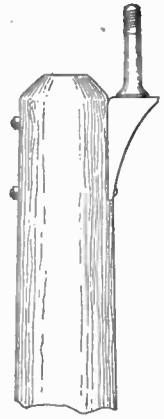
Cat. No.	Size of Pin Hole, In.	Size of Steel, In.	Ship. Wt., Lbs. per 100	Price per 100
5040	1/16	12-ga. x 1 3/4	42	\$6.32
5041	1/16	12 " x 1 3/4	40	6.32

Peirce Presteel Pole Top Brackets

Hot Galvanized



No. 3035



No. 3035 Mounted on Pole

Some engineers like to use the same type of pin for both cross arm and pole top work. The Presteel Pole Top Bracket allows them to use Peirce Steel Pins for both these purposes, which, of course, simplifies stock keeping.

The Presteel Bracket is pressed out of a single plate 1/4 inch thick, with no welds or seams. This construction, besides making it strong enough for use with Peirce Steel Pins, at the same time guarantees that it is free from flaws.

Diameter of pin hole: No. 3035, 5/16 inch; No. 3036, 1 1/16 inches.

Weight, 440 pounds per hundred.

Price, No. 3035.....per 100 \$177.12
 " " 3036....." 100 177.12

No. 6785 Hubbard Drop Forged Ball Eye

Hot Galvanized

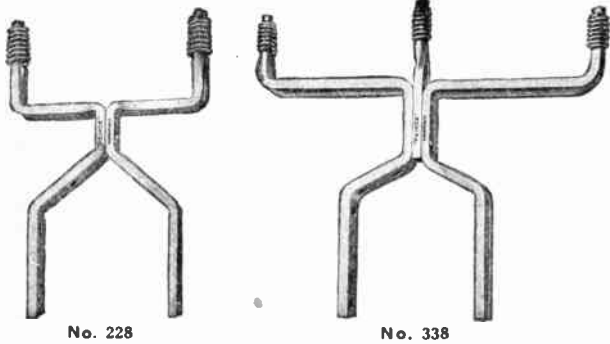
Designed to fit suspension insulator hardware of the ball and socket type.

Cat. No.	DIMEN., IN. Size Stock	Diam. Eye	Ship. Wt., Lbs. per 100	Price per 100
6785	5/8	1 1/16	50	\$48.00



Peirce Ridge Brackets

Hot Galvanized



Convenient for carrying a few foreign wires such as signal and fire alarm circuits on pole tops.

The No. 228 is made of 1x1/2-inch steel channel and is for use on poles with 6 3/4-inch diameter tops.

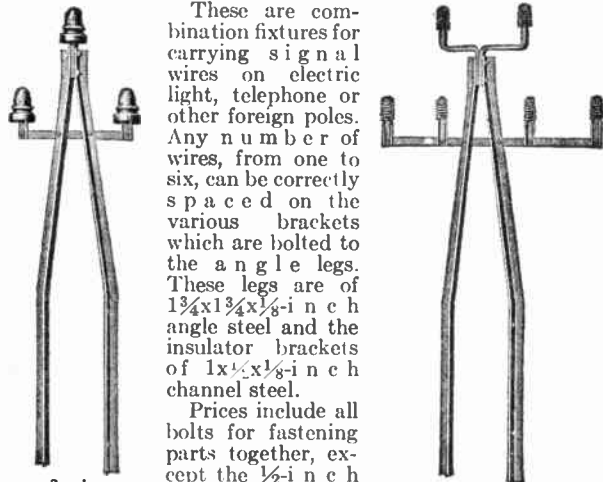
The 3-wire bracket, No. 338, is somewhat heavier than the 228, being made of 1 1/2 x 3/8-inch channel. This bracket is used on poles with 7-inch tops.

The points of these brackets are 4 1/2 inches high and are equipped with Peirce spring threads for 1-inch pin hole insulators. Each bracket is provided with sufficient holes for secure mounting.

Cat. No.	Size Channel	DIMENSIONS, INCHES			Ship. Wt., Lbs. per 100	Price per 100
		Spac-ing	Diam. Pole	Diam. Holes		
228	1 x 1/2	10	6 3/4	7/16	300	\$113.86
333	1 1/2 x 3/8	10	7	9/16	700	318.88

Peirce Fire Alarm Fixtures

Hot Galvanized



These are combination fixtures for carrying signal wires on electric light, telephone or other foreign poles. Any number of wires, from one to six, can be correctly spaced on the various brackets which are bolted to the angle legs. These legs are of 1 3/4 x 1 3/4 x 1/8-inch angle steel and the insulator brackets of 1 x 1/2 x 1/8-inch channel steel.

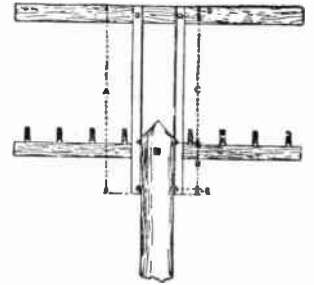
Prices include all bolts for fastening parts together, except the 1/2-inch through bolts, for which 3/8-inch holes are provided.

Cat. No.	Description	CONSISTING OF			Price per 100
		Legs	Bracket	Arm	
2582	2-wire	2592	2591	2593	\$470.52
2583	3 "	2592	2590	2593	505.86
2584	4 "	2592	2591	2593	564.92
2585	5 "	2592	2590	2594	628.86
2586	6 "	2592	2591	2594	691.92
2590	One-point Bracket				75
2591	Two "				200
2592	Pair Angle Legs				1200
2593	Two-point Arm				200
2594	Four "				390

Peirce Pole Extensions

Hot Galvanized

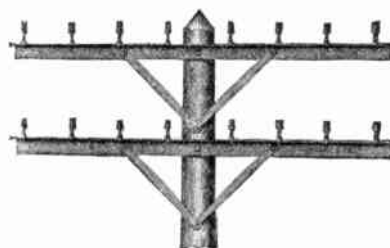
Designed to support electric light wires 42 inches above the telephone wires on the first cross arm when the upper through bolt of the extension is located at the top of the telephone arm. The clearance specified, 42 inches, is that required by the Bell companies. Holes for 5/8-inch through bolts. Size angle, 3x3x1/4 inches.



Cat. No.	Description	DIMENSIONS, INCHES					Wt. Lbs.	Price per 100
		A	B	C	D	E		
2375	Angles only....	70	24	37 3/4	4 1/4	2	57	\$767.16
2376	Complete.....	68	24	39	3	2	87	1166.16

Hubbard Angle Steel Cross Arms

Hot Galvanized



Steel arms of a given cross section are uniform in strength, and when protected by hot-dip galvanizing, their strength remains uniform throughout the life of the zinc coating, probably thirty years.

Unless otherwise specified, holes will be of the following sizes: for through holes, 1/8 inch; for brace bolts, 7/16 inch for flat braces and 9/16 inch for angle braces; and for pin, 3/8 inch. Quotations on special arms will be given promptly.

Telephone Arms

Cat. No.	No. of Pins	Lgth. In.	Punched for Pole No.	PIN SPACING, IN.		Dimen. Inches	Ship. Wt., Lbs. Each	Price Each
				Pole Pins	Side Pins			
7602	2	20	8020	16	..	3 x 2 x 3/16	5 1/4	.....
7604	4	40	8020	16	10	3 x 2 x 3/16	10 1/4	.....
7606	6	60	8022	16	10	3 x 3 x 1/4	24 1/2	.....
7608	8	80	8030	16	10	3 x 3 x 1/4	32 3/4	.....
7610	10	100	8032	16	10	3 x 3 x 1/4	41	.....

Electric Light Arms—N. E. L. A. Standard Spacing

7612	2	36	8120	30	..	3 x 3 x 1/4	14 3/4	.....
7614	4	65	8126	30	14 1/2	3 x 3 x 1/4	26 1/2	.....
7616	6	94	7940	30	14 1/2	3 1/2 x 3 1/2 x 5/16	56 1/2	.....
7620	8	117 3/4	7941	30	13 5/8	3 1/2 x 3 1/2 x 5/16	70 3/8	.....

Power Transmission Arms

7622	2	28	8120	24	..	3 x 3 x 1/4	11 3/8	.....
7632	2	40	8120	36	..	3 x 3 x 1/4	16 3/8	.....
7642	2	52	8120	48	..	3 x 3 x 1/4	21 7/8	.....
7672	2	80	7940	74	..	3 1/2 x 3 1/2 x 5/16	48	.....
7624	4	76	7950	24	24	3 x 3 x 1/4	31 3/8	.....
7634	4	116	7942	38	36	3 1/2 x 3 1/2 x 5/16	69 1/2	.....

Hubbard Ground Wire Bayonets

Hot Galvanized or Plain

Offset Bayonets

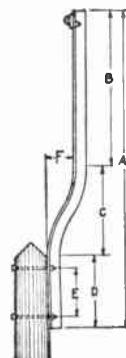
The offset type of bayonet is used when an overhead ground wire is installed on a single-circuit transmission line employing pole top pin or ridge iron construction.

Offset Bayonets

Cat. No.	Length Inches	Size Angle Inches	Wt. Lbs. per 100	Price per 100
6420	54	2 1/2 x 2 1/2 x 1/4	1850	\$246.00
6421	72	2 1/2 x 2 1/2 x 1/4	2500	308.32
6422	81	3 x 3 x 1/4	3310	386.00

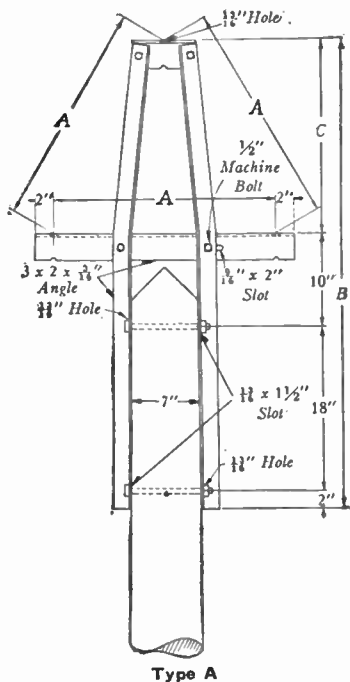
Dimension of Offset Bayonets, Inches

B	C	D	E	F
23 1/2	12	18 1/2	15	8
37 1/2	14	20 1/2	17	10
39 5/8	15 5/8	25 1/2	22	12

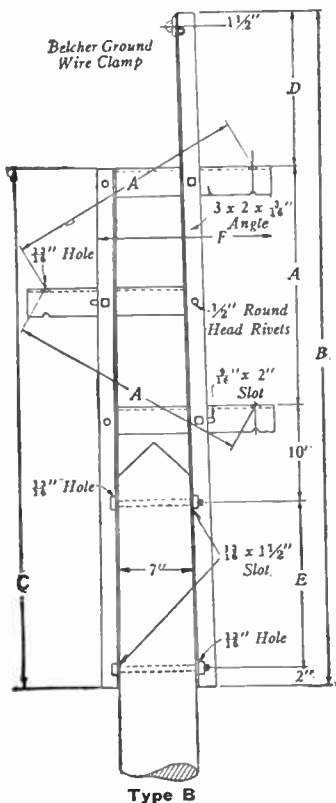


Peirce Hi-Ten Extensions

Hot Galvanized



Type A

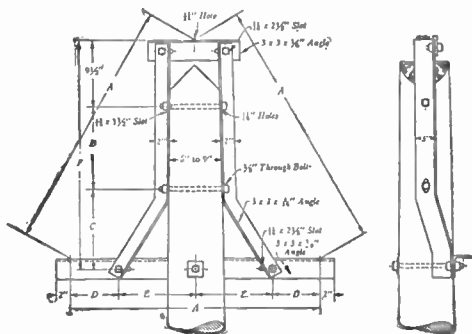


Type B

Cat. No.	Type	DIMENSIONS, IN.						Shp. Wt., Lbs. Each	Price per 100
		Triangular Wire Spacing	A	B	C	D	E			F
2370	A	24	24	51	21	..	..	35	\$54.00
2371	A	36	36	61	31	..	..	45	648.00
2380	B	26	26	74	56	18	18	50	72.00
2381	B	36	36	90 1/2	66	24 1/2	18	61	878.40
2382	B	52	52	126	94	32	30	80	1152.00

Hubbard Pole Top Fixtures

Hot Galvanized



Hubbard Pole Top Fixtures were designed primarily for lines without an overhead ground wire, although off-set bayonets for supporting a ground wire can be furnished when desired.

These fixtures are adjustable to poles having a top dimension of from 6 to 9-inch. Three 5/8-inch through bolts and one 2 1/4-inch square washer are required for attaching the fixture to the pole but are not included in the price. The four 5/8-inch bolts used for holding the parts together are furnished with the fixture.

The arms are made of 3x3x1/4-inch angle steel, the side braces of 3x2x3/8-inch angle. All bending is done hot and the parts are hot-dip galvanized after fabrication insuring a strong fixture for dependable service.

Cat. No.	DIMENSIONS, INCHES						Shp. Wt., Lbs. Each	Price per 100
	A	B	C	D	E	F		
7030	30	9	9	5 1/2	9 1/2	27 1/2	35	\$452.04
7036	36	11 5/8	11 1/2	7	11	32 3/8	41	520.38
7042	42	14 3/8	14	8 7/8	12 3/8	37 1/8	47	571.10
7048	48	17 1/8	16 1/2	10	14	43 1/8	53	624.00
7052	52	19	18	10 7/8	15 1/8	46 1/2	64	674.88
7060	60	22 1/2	21 1/2	12 7/8	17 1/8	53 1/2	69	747.50
7072	72	27 3/8	26 1/2	15 3/4	20 1/4	63 3/8	82	879.80

Hubbard Double Arming Plates

Hot Galvanized

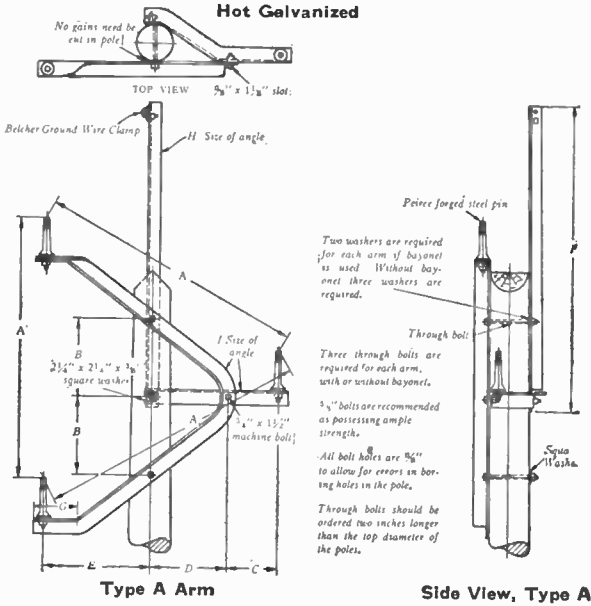


Made from 4x1/2-inch steel. Adjustable for poles from 7 to 12 inches, top diameter, with gains 1/2-inch deep. The pin holes are 3/8-inch diameter, 2 inches from each end. Slots are 3/8x3 inches.

Cat. No.	Length Inches	Shp. Wt., Lbs. per 100	Price per 100
5830	30	1350	193.20
5844	24	1300	156.00
6850	30	1650	198.00

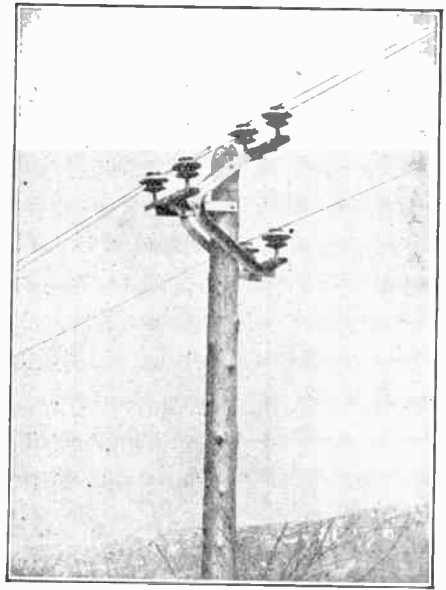
Hubbard Single Bo-Arrow Arms

Hot Galvanized



Hubbard Bo-Arrow Double Arming Sets

Hot Galvanized



Showing Standard Construction on Hubbard Double Bo-Arrow Arms

Fits poles of any diameter. Arrow is slotted at point at which it is bolted to bow. Arm can be adjusted to fit any size of pole top without interfering with vertical alignment of pins or security of attachment of arm to pole.

It allows a triangular wire spacing while leaving the pole top clear for a straight bayonet supporting the overhead ground wire, which is a much stronger construction than a two-pin arm and pole top pin with an offset ground wire bayonet.

Since no two wires are in the horizontal plane, the danger of wires swinging together is greatly reduced, which permits the use of longer spans with a given wire spacing.

The 24 and 30-inch Bo-Arrow Single Arming Sets are made of 2 1/2 x 2 1/2 x 1/4-inch open hearth steel angle, the larger arms of 3 x 3 x 1/4-inch angle.

Through bolts are not included in Bo-Arrow and Bayonet prices on account of the great variation in the lengths required for the different classes of poles used. Three bolts are needed for a single arming set, the proper size being about 2 inches longer than the top diameter of the pole. When bayonets are used with single arms, two washers are required per arm; without bayonets, three washers.

Size In.	Dimensions, Inches										
	A	B	C	D	E	F	G	H	I		
24	24	7 7/8	4 1/2	8	8 1/4	32	4	2	x2	x 1/4	2 1/2 x 2 1/2 x 1/4
30	30	9 1/8	7	8	11	40	5	2	x2	x 1/4	2 1/2 x 2 1/2 x 1/4
36	36	12 3/16	6	12	13 1/2	50	8	2 1/2	x2 1/2	x 1/4	3 x 3 x 1/4
42	42	13 1/2	8	13	16	58	8 3/8	2 1/2	x2 1/2	x 1/4	3 x 3 x 1/4
52	52	15 3/8	10	15	20	66	9	2 1/2	x2 1/2	x 1/4	3 x 3 x 1/4
72	72	21 1/16	18	20 1/2	24	75	10 1/2	3	x3	x 1/4	3 1/2 x 3 1/2 x 5/16

Type A Single Bo-Arrow Arms

Cat. No.	Wire Spacing In.	Size Angle Inches	Wt. Lbs. Each	Price per 100
6030	30	2 1/2 x 2 1/2 x 1/4	25	383.68
6036	36	3 x 3 x 1/4	39	518.18
6042	42	3 x 3 x 1/4	43	553.46
6052	52	3 x 3 x 1/4	52	665.92
6072	72	3 1/2 x 3 1/2 x 5/16	69	1309.78

Type B arms notched for use with Peirce Clamp Pins, can be furnished when specified.

Straight Bayonets

Cat. No.	For Arm Spacing, In.	Length Inches	Size Angle Inches	Wt. Lbs. Each	Price per 100
6040	30	40	2 x 2 x 1/4	10 3/4	156.56
6050	36	50	2 1/2 x 2 1/2 x 1/4	17	194.04
6058	42	58	2 1/2 x 2 1/2 x 1/4	19 1/2	236.48
6066	52	66	2 1/2 x 2 1/2 x 1/4	22 1/2	266.80
6075	72	75	3 x 3 x 1/4	31	361.62

These sets are adjustable by means of the slots in the cross pieces for poles of from 7 to 11 inches in top diameter. The 36, 42, 52 and 72-inch sets consist of a right and a left-hand Bow, a right and a left-hand straight Arrow; 3 double arming channels or angles, depending on whether forged steel or clamp pins are used; two 3/4 x 1 1/2-inch bolts for fastening Bows and Arrows together and six 5/8-inch bolts for clamping the cross pieces to the arms. These cross pieces are necessary to give sufficient clearance between the two large high voltage insulators required in each line wire, but are not needed on the 24 and 30-inch arms, in which cases two Bows, two straight Arrows and a 5/8 x 12-inch double arming or spreader bolt for fastening the 4 parts together are furnished.

Three through bolts are required for a double set but are not included in the prices on account of the great variation in the lengths necessary for the different classes of poles used.

No washers are required.

Cat. No.	DIMENSIONS, INCHES		Shipping Wt., Lbs. Each	Price per 100
	Wire Spacing	Size Angle		
6224	24	2 1/2 x 2 1/2 x 1/4	43	\$694.58
6230	30	2 1/2 x 2 1/2 x 1/4	51	787.18
6236	36	3 x 3 x 1/4	113	1514.84
6242	42	3 x 3 x 1/4	121	1620.28
6252	52	3 x 3 x 1/4	139	1852.20
6272	72	3 1/2 x 3 1/2 x 5/16	173	2187.36

Hubbard Corner Bayonets

Hot Galvanized

Two extra through bolts are required for attaching the corner bayonet to a pole. Each corner bayonet consists of one straight piece of angle steel, one bent piece and two 1/2 x 2-inch machine bolts for fastening them together.

Prices cover bayonets punched for attaching ground wire clamps. Bayonets equipped with 1-inch Peirce spring threads for standard insulators in place of clamps can be furnished when specified. Corner bayonets have 5/16-inch holes and slots for through bolts.

Cat. No.	Used with Bo-Arrow Arm No.	DIMEN., IN.		Ship. Wt., Lbs. Each	Price per 100
		Length	Size Angle		
6232	6224	32	2 x 2 x 3/16	13	\$183.02
6240	6230	40	2 x 2 x 3/16	16	242.56
6250	6236	50	2 x 2 x 1/4	26	330.76
6258	6242	58	2 1/2 x 2 1/2 x 1/4	38	460.84
6266	6252	66	2 1/2 x 2 1/2 x 1/4	44	540.22
6275	6272	75	2 1/2 x 2 1/2 x 1/4	45	648.28

Hubbard Ground Wire Bayonets

Hot Galvanized or Plain



The Hubbard open hearth steel angle bayonets represent the most secure and economical means of supporting the overhead ground wire on wood or steel poles.

Corner bayonets are for use at all points at which double arms are required, such as corners in the line, long spans, etc., and are much stronger than straight bayonets, even when the latter are made of extra heavy angles. A corner bayonet consists of two angles, one bent, the other straight, fastened together by two 1/2-inch machine bolts.

Straight Bayonets

Cat. No.	Length Inches	Size	Angle Inches	Wt., Lbs. per 100	Price per 100
6436	36	2	x2 x 1/4	1000	\$114.84
6448	48	2 1/2	x2 1/2 x 1/4	1640	162.64
6466	66	2 1/2	x2 1/2 x 1/4	2255	205.70
6484	84	3	x3 x 1/4	3430	278.06

Corner Bayonets

6536	36	2	x2 x 3/8	1370	\$190.32
6548	48	2	x2 x 3/8	1825	229.36
6566	66	2	x2 x 1/4	3350	333.48
6584	84	2 1/2	x2 1/2 x 1/4	5500	489.64

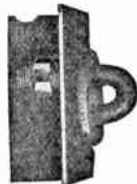
No. 6484 No. 6584

Hubbard Belcher Ground Wire Clamps

Hot Galvanized

These clamps will hold any size of wire from No. 8 solid to 3/8-inch stranded. A soft copper sleeve should be wrapped around copper and copper clad steel wires to cover points of contact with the galvanized metal of the clamp.

The Style J provides a secure fastening and one that does not injure the wire in any way, as the wire comes in contact only with rounded surfaces even when an angle is turned in the line, as the link holds it away from the sharp corners of the bayonet. Weight, 44 pounds per 100.



No. 6450

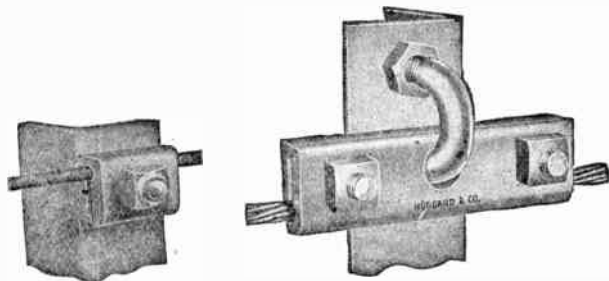


No. 6451

Price, No. 6450, Style J..... Wt. 44 lbs. ..per 100 \$24.00
 " " 6451 " U..... " 70 " .. " 52.80

Hubbard Ground Wire Clamps for Bayonets

Rolled Steel—Hot Galvanized



No. 6455

No. 6456

The rolled steel clamp is preferred by some operating men because of its long clamping surface. The ends of the grooves are flared out to prevent cutting the strand, and for the same reason the clamping surface is perfectly smooth. The rolled clamp is made in two styles. Rigid, 2 1/2 inches long, and swinging, 5 1/4 inches long. All necessary bolts are included with clamps.

Weight rigid clamps, 120 pounds per hundred; flexible, 275 pounds per hundred.

Price, No. 6455 Rigid Clamps.....per 100 \$26.40
 " " 6456 Flexible " " 138.60

Hubbard Double Arming Channels

Hot Galvanized



On the double armed poles of high voltage lines with pin type insulators, it is necessary to attach the two pins of each phase wire to the ends of a cross piece bolted across the double arms in order to secure the pine spacing required by the large diameters of the insulators.

The Hubbard Double Arming Channel serves this purpose as it has the necessary rigidity with light weight and low cost, and, by means of the slots for bolting it to the arms, is adjustable for poles of from 7 to 12 inches top diameter, with gains 1/2 inch deep. Channels are 4 inches wide, 1 1/2 inches deep with a 3/8-inch pin hole 2 inches from each end, and 3/16-inch slots for two 3/8-inch machine bolts.

Cat. No.	6824	6830
Length.....inches	24	30
Shipping Weight, Pounds.....per 100	1080	1350
Price....." 100	\$131.06	193.20

No. 6770 Belcher Strain Yokes

Hot Galvanized



For standard suspension many operating companies are ready to protect their high tension lines by double suspension throughout.

The best way to do this is with two strings hanging at an angle with each other, with one Belcher Strain Yoke and standard conductor suspension clamps.

In dead ending long spans of heavy wire in transmission line construction, it is good practice to use two strings of suspension insulators in parallel on each line wire, so as to decrease the mechanical stress on the insulator units and thus secure a greater factor of safety, both mechanically and electrically. This is often necessary at crossings and at angle turns.

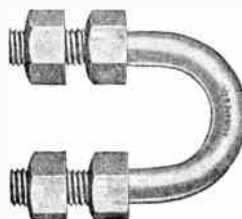
For straight line crossings, as compared with dead ending it has two advantages; the cost of the suspension is half that of dead ending as two strings are used at each tower connection instead of four; also, in case of a broken disc, the line will adjust itself without shock.

Formed of steel plate 1/4 inch thick, hot pressed, to shape and support the 529 strings of insulators 13 inches apart on centers, which is the standard for 10-inch discs. Each yoke is furnished with the five bolts illustrated, and with a hole for the discharge horn bolt.

Discharge or arching horns for use with these yokes can be furnished to meet specifications.

The Belcher Strain Yokes allow all necessary movement in any direction and their reliability is guaranteed by the fact that every part is forged from open hearth steel and hot dip galvanized.

Cat. No.	Thickness of Steel Inches	Insulator String Spacing Inches	Ship. Wt., Lbs. per 100	Price per 100
6770	1/4	13	960	\$426.20



Hubbard U Bolts


Hot Galvanized

Cat. No.	Number and Kind of Nuts	Ship. Wt., Lbs. per 100	Price per 100
6791	2 Hexagon	39	\$19.20
6792	4 "	93	24.00
6794	4 Square	165	36.00
6795	4 Hexagon	221	52.80

Hubbard Links

Hot Galvanized

Cat. No.	Ship. Wt., Lbs. per 100	Price per 100
6781	18	\$14.40
6782	21	15.60
6783	39	24.00
6784	99	60.00




Hubbard Drop Forged Clevises

Hot Galvanized

Furnished complete with clevis bolt and brass cotter.



Cat. No.	Ship. Wt., Lbs. per 100	Price per 100
6793	66	\$29.84
6798	146	52.56
6799	160	40.80
6800	85	57.60



Hubbard Drop Forged Eyes

Hot Galvanized

Cat. No.	Size of Stock, In.	Width of Eye, In.	Length of Eye, In.	Ship. Wt., Lbs. per 100	Price per 100
6789	1/2	7/8	1 1/8	60	\$53.32
6790	1/2	7/8	1 1/8	60	65.32





Hubbard Connecting Links

Hot Galvanized

Rolled steel, shaped to provide a clevis on one end and an eye on the other. Complete with one clevis bolt and brass cotter.

Cat. No.	Size of Stock	DIMENSIONS, INCHES			Ship Wt., Lbs. per 100	Price per 100
		Diam. of Holes Eye End	Opening in Clevis	Clevis Bolt		
6786	1 1/2 x 1 1/2	3/4	9/16	1 1/2	169	\$64.90
6787	5/8 x 1 3/4	1/2	5/8	1 1/2	503	193.16



Hubbard Clevis Bolts

Hot Galvanized



Made by forging the clevis to the bolt in such a way as to develop the full strength of the bolt.

Bolts are measured from the shoulder of the clevis to the end of the bolt. Hexagon nuts are furnished.

Cat. No.	Size of Stock, In.	Length of Bolt, In.	Length of Threads, In.	Ship. Wt., Lbs. per 100	Price per 100
6805	5/8	5	4 1/2	125	\$45.00
6809	5/8	9	6	162	58.32
6814	5/8	14	6	195	70.20
6825	3/4	5	4 1/2	161	57.96
6829	3/4	9	6	225	81.00
6834	3/4	14	6	305	109.80

Hubbard Hook Bolts

For Suspension Insulators

Hot Galvanized

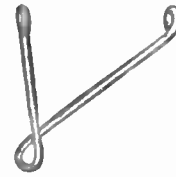


Hook bolts are used for supporting strings of suspension type insulators from cross arms. Hooks are drop-forged and made in three lengths above the shoulder, 1 1/2 inches for angle steel arms, 6 inches for wood arms up to 4x5 inches, and 9 inches for the double channel cross arms used on steel towers.

Cat. No.	6751 1/2	6756	6759
Shipping Weight, Pounds.... per 100	130	390	416
Price.....	\$46.80	68.40	81.00

Hubbard Corner Construction Brackets

For Small Angles
Hot Galvanized



Used with suspension type insulators to give the desired clearance to the line wire. A 1/2-inch link is sometimes used in the lower end for attaching insulator string and will be furnished when specified.

Cat. No.	Size In.	Spacing of Eyes, In.	Extension, In.	Ship. Wt., Lbs. per 100	Price per 100
6727	5/8	12	12	353	\$84.72
6728	3/4	12	12	490	117.60

3/4-inch J Bolts for Corner Construction Brackets

Cat. No.	Inside of Hook to End of Bolt, In.	Depth of Cross Arm, In.	Ship. Wt., Lbs. per 100	Price per 100
6734	6 3/4	4	125	\$30.00
6734 1/2	7 1/4	4 1/2	141	33.84
6735	7 3/4	5	147	35.28
6736	8 3/4	6	160	38.40

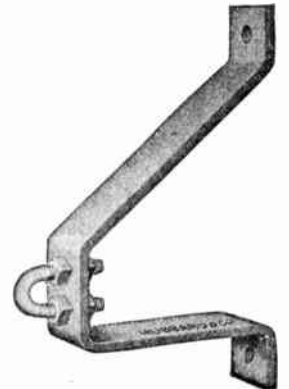
Hubbard Brackets for Corner Construction

With Suspension Insulators

Hot Galvanized

This type of bracket is used with metal cap suspension type insulators at angles or corners in lines either suspension or pin type insulators on tangents. Two through bolts fasten the bracket to the side of the pole, toward the "pull," and the string of insulators is attached to the 5/8-inch "U" bolt shown. The brackets are placed one above another.

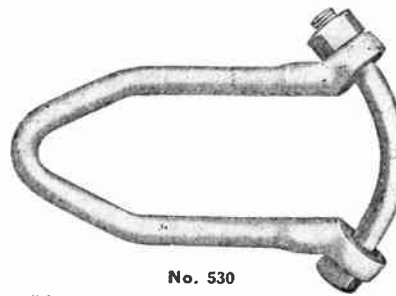
Shipping Weight, Pounds
.....per 100 700
Price, No. 6725 per 100 \$180.60



Hubbard Drop Forged Strain Insulator Clevises

Standard Type

Hot Galvanized

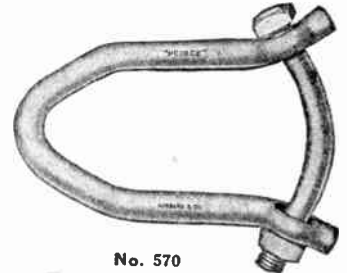


Drop forged from round, open hearth steel. Heavy type is made of 1/2-inch stock as is also the curved bolt, which is fitted with a hexagon nut.

No. 530

The light type is made of 1/8-inch steel and equipped with a 3/8-inch curved bolt and square nut.

An eye 1 1/8-inch inside diameter is necessary to accommodate the bolt ends of heavy clevis; light clevis requires an eye 1 inch.



No. 570

		Heavy Type		Light Type			
Cat. No.	Dimen. In.	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Dimen. In.	Ship. Wt., Lbs. per 100	Price per 100
530	2 1/2 x 2	111	\$54.24	533	5 1/4 x 2 1/4	148	\$54.24
531	3 3/4 x 1 1/2	124	54.24	534	4 1/2 x 2 1/2	133	54.24
532	3 1/4 x 2 1/4	117	54.24	535	4 3/4 x 2 1/4	135	54.24
570	2 1/2 x 1 7/8	62	\$38.40	573	5 1/4 x 2 3/8	87	\$43.20
571	3 3/4 x 1 3/8	69	40.80	574	4 1/2 x 2 3/8	83	43.20
572	3 1/4 x 2 1/8	67	40.80	575	4 3/4 x 2 1/8	84	43.20

Hubbard Drop Forged Strain Insulator Clevises



Eye Type Hot Galvanized

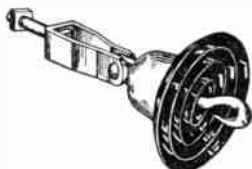
The eye type clevis is similar in all respects to the standard type except that an eye is drop forged in the crotch of the clevis and is provided with an 1/8-inch hole so that it may be used on the head or nut end of a through bolt or the nut end of a double arming or eye bolt.

Cat. No.	Dimen. In.	Ship. Wt., Lbs. per 100	Price per 100	Cat. No.	Dimen. In.	Ship. Wt., Lbs. per 100	Price per 100
630	2 1/2 x 2	131	\$82.44	633	5 1/4 x 2 1/4	168	\$82.44
631	3 3/4 x 1 1/2	144	82.44	634	4 1/2 x 2 1/2	153	82.44
632	3 1/4 x 2 1/4	137	82.44	635	4 3/4 x 2 1/4	155	82.44

Klauber Universal Dead Ending Clevises Hot Galvanized



No. 555 Clevis



Eye Connection

This clevis is the only one made that will anchor a metal cap strain insulator with any one of the three types of connections—eye, clevis and hook—on the end of a bolt through the side of a cross arm or building. Where a variety of insulators are used, the universal clevis is a necessity. Forged from flat steel 1 1/4 x 5/8 inches, and fits both 1/2 and 5/8-inch bolts. Weight, 94 pounds per hundred. Price, No. 555 Clevises.....per 100 \$37.20

Peirce Dead Ending Insulated Clevises Hot Galvanized

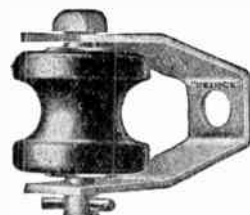


For dead ending primary lines on cross arms. The insulators are of brown glazed wet process porcelain, mechanically and electrically correct for primary work. No. 1339 is suitable for circuits up to 4000 volts, No. 1340, up to 6600.

The yoke of the clevis is made of 3/8 x 1 1/2-inch flat steel and is equipped with a 5/8-inch clevis bolt and brass cotter pin. The hole for mounting No. 1339 is 1/16 inch. For No. 1340 a 3/4-inch oval hole is provided.

Cat. No.	Style of Insulator	Length to Center of Bolt, Inches	Approx. Ship. Wt., Lbs. per 100	Price per 100
1239	Small, Wet Process	4 3/8	125	\$55.29
1340	Large " "	4 3/8	269	69.60

Peirce Insulated Clevises Hot Galvanized



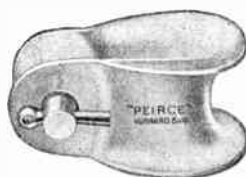
For secondary work. Furnished with standard Peirce rack insulators, No. 355 for the large type and No. 1606 for the small type.

The yoke of the clevis is made of 1/8 x 1 1/2-inch flat steel and is equipped with a 3/4-inch clevis bolt and brass cotter pin.

The hole for mounting the No. 1341 is 1/16-inch. The hole for mounting the No. 1342 is a 3/4-inch oval.

Cat. No.	Style of Insulator	Length to Center of Bolt, In.	Ship. Wt., Lbs. per 100	Price per 100
1341	Small, Dry Process	4 3/8	136	\$46.80
1342	Large, " "	4 3/8	225	61.20

Peirce Thimble Clevises Hot Galvanized



The thimble clevis is used for dead ending insulated lines to suspension type insulators.

Clevises are provided with a well rounded surface so as not to injure the insulation.

The No. 655 clevis is made of 12-gauge steel and has an opening 3/4 inch wide for attaching to the stud of the insulator.

The 1/2-inch cotter bolt is provided with a brass cotter pin.

No.	Size Steel Inches	Dimen. Ga.	Size Cable Inches	Shipping Wt., Lbs. per 100	Price per 100
653	1 1/4	x12	1/2	26	\$31.20
654	2	x11	1	49	36.00
655	2 5/8	x 9	1	67	40.80

No. 176 Peirce Brackets for Duplex Arc-light Drops Hot Galvanized



Owing to the trouble experienced from arc-light duplex drop wires crystallizing and breaking when rigidly tied, this special insulator attachment has been developed.

The attachment consists of a No. 1602 Peirce insulator with metal straps for attaching it to a standard deep groove double-petticoat pin type insulator. This allows the street lighting drop wire to hang free, and as it swings in the wind it bends over a large enough radius to prevent breaking wire.

No.	Insulator Wire Hole Inches	Extension Inches	Wt., Lbs. per 100	Price per 100
176	1/8 x 1/2	3	83	\$64.80

No. 232 McKean Signal Brackets For Railway Signal Work Hot Galvanized



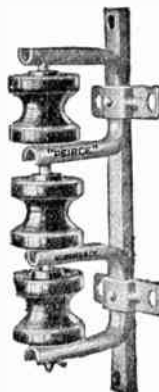
Designed at the suggestion of Mr. A. H. McKean, System Signal Engineer of the Union Pacific and Oregon Short Line.

Used for breaking and dead ending a circuit for signal and train control work.

The metal part of the bracket is pressed from 12-gauge sheet steel and thoroughly hot galvanized after forming. Shaped to fit a roofed arm to which it is attached by a 1/2 or 5/8-inch machine bolt through the cross arm pin hole.

An important feature is the fact that the insulators are made of a solid block of porcelain and are not metal bound. Should the insulators break, the wire would fall clear and not form a closed circuit by coming in contact with the metal part of the bracket. Prices upon application.

Peirce Light Presteel Secondary Racks Hot Galvanized



The Presteel Rack is a lighter form of the No. 350 Peirce Secondary Rack. It is designed to carry No. 3 and lighter wire secondary mains on poles and service wires on buildings, work which does not require the strength of the heavy rack.

Cat. No.	No. of Line Wires	Wire Spacing Inches	Length Over All Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
183	1	0	6 3/8	10	150	\$51.94
286	2	6	12 3/8	10	300	116.16
383	3	3	12 3/8	10	356	136.44
386	3	6	18 3/8	10	448	171.36
583	5	3	18 3/8	10	548	223.16

Peirce Secondary Racks

Hot Galvanized

Standard Type



No. 350

Strong enough for the heaviest work, with an ample factor of safety. Equipped with No. 355 insulators, although Nos. 356, 455 and 456 insulators can be furnished if desired. The insulators are packed in corrugated paper boxes and the racks are wired in bundles of ten.

The width of the back of the rack is $2\frac{3}{4}$ inches with a slot $\frac{3}{4}$ inch wide between the two angles, which allows the use of $\frac{5}{8}$ -inch through or lag bolts for fastening the rack to the pole.

Cat. No.	No. of Line Wires	DI MEN., IN. Wire Spacing	Length Over All	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
250	2	4	$9\frac{1}{2}$	10	591	\$173.78
258	2	8	$13\frac{1}{2}$	10	734	226.58
350	3	4	$13\frac{1}{2}$	10	866	244.18
358	3	8	$21\frac{1}{2}$	10	1116	336.04
450	4	4	$17\frac{1}{2}$	10	1108	306.70
540	5	4	$21\frac{1}{2}$	10	1380	371.24
3058	3	8	$13\frac{1}{2}$	10	914	262.66

Extended Back Type

Similar in all respects to the standard rack except that the angles forming the back are extended to accommodate through bolts for attaching the rack. Some construction men like this feature as the insulators can be assembled on the rack in the storeroom and attached to the pole without removing them.



No. 1350

Cat. No.	No. of Line Wires	DI MEN., IN. Wire Spacing	Length Over All	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
1250	2	4	$13\frac{3}{8}$	10	664	\$194.06
1258	2	8	$17\frac{3}{8}$	10	804	247.66
1350	3	4	$17\frac{3}{8}$	10	936	265.24
1358	3	8	$25\frac{3}{8}$	10	1186	357.12
1450	4	4	$21\frac{3}{8}$	10	1178	328.78
1540	5	4	$25\frac{3}{8}$	10	1450	392.30
3158	3	8	$17\frac{3}{8}$	10	984	283.72

Insulators for Peirce Secondary Racks

Standard Type



No. 355

No. 355 brown glazed insulator is the most popular secondary rack insulator and is furnished on all heavy type racks unless otherwise specified. For marking the neutral wire of a secondary circuit, some construction men use the No. 355 white glazed insulator.

Where high mechanical strength is required, such as for dead-ending heavy lines, the No. 455 is used by many companies.

Cat. No.	Color of Glaze	Kind of Porcelain	Shp. Wt., Lbs. per 100	Price per 100
355	Brown or White	Dry Process	132	\$17.60
455	Brown	Wet	132	24.60

Double Groove Type

Has 2 grooves, one for tying in the main circuit and the other for the service wires.



No. 356

Cat. No.	Color	Kind of Porcelain	Shp. Wt., Lbs. per 100	Price per 100
356	Brown	Dry Process	134	\$25.80
456	"	Wet	134	28.80

No. 1606 Light Rack Type

Insulators for the light racks are furnished with either brown or white glaze, both of which are made of dry process porcelain. The brown glazed insulator is also used on the No. 1341 clevis, on spreader racks, light house racks, and on sister hook and tree fixtures.

Cat. No.	Color	Kind of Porcelain	Shp. Wt., Lbs. per 100	Price per 100
1606	Brown or White	Dry Process	45	\$13.20

No. 1603 House Rack Type

Used with house racks. Also used on the No. 2925 swinging knob fixture.



No. 1603

Cat. No.	Color	Kind of Porcelain	Shp. Wt., Lbs. per 100	Price per 100
1603	Brown	Dry Process	45	\$12.00

Peirce Heavy Presteel Secondary Racks

Hot Galvanized



No. 278

The heavy Presteel Racks are of sufficient weight and strength for general secondary work; however, for long spans and heavy cable construction Standard Peirce Racks are recommended.

These racks are made of a presteel channel back $1x2x\frac{1}{8}$ inch; presteel channel U-shaped points $\frac{5}{8}x1\frac{1}{4}x\frac{1}{8}$ inch, which are inserted through and riveted to the back, and a $\frac{5}{8}$ -inch through rod for attaching the No. 355 insulators to the points.

The Nos. 278 and 378 are furnished with straps so that they may be used on buildings for making heavy service connections. When used on poles, the straps should be hammered flat against the pole, increasing the bearing surface. The Nos. 1278 and 1378 may be used in connection with Peirce Rack Bands for attaching the racks to tubular steel poles.

Cat. No.	Description	Shp. Wt., Lbs. per 100	Price per 100
278	2-point 8-in. Spacing with Straps	526	\$207.94
378	3 " " " " " " " "	879	311.72
1278	2 " " " " without Straps	486	185.36
1378	3 " " " " " " " "	729	277.96
374	3 " " 4 " " with " " "	654	225.52
1374	3 " " 4 " " without " " "	614	202.90

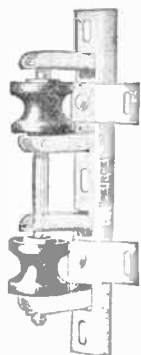
Peirce Light Presteel Secondary Racks

Hot Galvanized

These racks were designed for light secondary work. They are especially adaptable, on account of their strength and low cost, for running extensions from secondary mains; for lines where future development is limited; and for house service connections.

The Light Presteel Racks have a presteel channel back $\frac{3}{4}x1\frac{1}{2}x\frac{1}{8}$ inch; presteel channel U-shaped points $\frac{5}{8}x1\frac{1}{2}x\frac{1}{8}$ inch, which are inserted through and riveted to the back, and a $\frac{1}{2}$ -inch through rod for attaching the No. 1606 insulators to the points.

The Nos. 2768 and 3768 racks are intended for use as Pole Service Racks for taking off services opposite the Line Rack. The bolt holes in the back of these racks are spaced the same as on the Peirce Heavy Presteel Secondary Racks, or Standard Peirce Secondary Racks, with extended backs so that they may be attached to the pole.



No. 276

Cat. No.	Description	Shp. Wt., Lbs. per 100	Price per 100
276	2-Point 6-in. Spacing with Straps	350	\$147.24
376	3 " " " " " " " "	554	205.80
1276	2 " " " " without Straps	310	130.08
1376	3 " " " " " " " "	445	180.00
2768	2 " " 8 " " " " " "	350	153.24
3768	3 " " 8 " " " " " "	545	226.44

Peirce Extension Brackets for Secondary Racks

Hot Galvanized



No. 3355

By the addition of a pair of these extension brackets, any one of the standard secondary racks may be converted from a 4 to 10-inch extension from the face of the pole or wall. This allows the line wires to comply with regulations specifying a minimum wire clearance of 13 inches from the line wires to the center of the pole.

The curved back type has one $\frac{1}{16}$ -inch hole for a $\frac{5}{8}$ -inch through bolt and two $\frac{9}{16}$ -inch holes for a $\frac{1}{2}$ -inch 1 g screw.

Brackets made of No. 9 gauge steel are 6 inches long, have a 4-inch bearing on pole or wall, and $\frac{5}{8}x2$ -inch carriage bolt.

Cat. No.	Description	Shp. Wt., Lbs. per 100 Pieces	Price per 100 Pairs
3355	Curved Back, for Poles	250	\$76.78
3356	Flat " " Walls	250	76.78

Peirce Secondary Racks

Huff Type
Hot Galvanized



No. 248



No. 344

Designed by Mr. B. L. Huff of the Consumers Power Company, and are recommended for secondaries of medium weight.

Consist of presteeled U-shaped points made of 12-gauge steel securely riveted to a 1/4x1 1/4-inch flat steel back.

The insulators are attached to the rack with a 5/8-inch button head bolt.

The mounting holes are 1/16x1 inch for use with either 5/8-inch through bolts or lag screws.

No. 355 brown glazed insulators are standard equipment. These insulators are shipped separately in compartment boxes. The racks are wired together in bundles of ten.

When 4-inch spacing racks are specified, a shield, for attaching over the upper edges of the points, is furnished to prevent injury to the insulation when stringing the wire.

Cat. No.	No. of Line Wires	Wire Spacing	DIMEN., IN. Over All Length	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
248	2	8	12 1/4	10	630	\$202.16
344	3	4	12 1/4	10	758	223.46
248	3	8	20 1/4	10	980	300.00
544	5	4	20 1/4	10	1236	342.62

Peirce Secondary Racks

Horizontal Type
Hot Galvanized

Peirce Secondary Racks with insulators mounted in a horizontal position are used for heavy cable work.

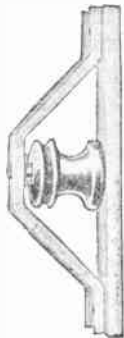
The porcelain insulator acts as a roller in stringing the cable and entirely eliminates the danger of injury to the insulation.

The weight of the cable rests in the groove of the insulator without depending on a tie wire for support.

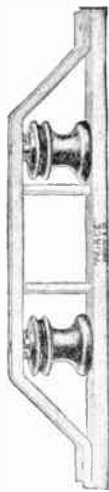
These racks are built for heavy duty.

The back is of 1 3/4x5/8-inch channel steel. The front is of 1 1/4x 1/2-inch channel.

Spacers 1/2 inch in diameter are riveted to the back and front channels for additional strength and rigidity.



No. 168



No. 268

The No. 355 insulators, which may be replaced without removing the rack from the pole, are held in place by 5/8-inch bolts.

The mounting holes are 1/16 inch for 5/8-inch bolts.

Cat. No.	No. of Line Wires	Wire Spacing	DIMEN., IN. Over All Length		Mounting Hole Spacing	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
168	1	0	14	12 1/4	25	483	\$135.32	
260	2	4 3/4	18 3/4	17	10	721	211.80	
268	2	9 1/2	23 1/2	21 3/4	10	868	260.86	
360	3	4 3/4	23 1/2	21 3/4	10	998	279.72	
368	3	9 1/2	33	31 1/4	10	1227	382.28	
460	4	4 3/4	28 1/4	26 1/2	10	1288	356.18	
560	5	4 3/4	33	31 1/4	10	1487	410.68	

Peirce Dead-ending Straps

For Secondary Racks

Hot Galvanized

Used to temporarily dead-end a line. Provided with a

5/16-inch hole for 1/2-inch lag screw.

Cat. No.	Type	Size of Steel, In.	Shp. Wt., Lbs. per 100	Price per 100
999	Light	14-ga. x 1 1/4	60	\$16.80
1000	Heavy	1/4 x 1 1/4	100	24.00

Peirce Pole Bands

For Secondary Racks

Hot Galvanized



No. 7364



No. 7374

Made of 1/4x1 1/2-inch steel, the single type for attaching one rack and the double type for attaching two racks. Furnished with 5/8x2-inch carriage bolts for attaching rack.

Nominal Pole Diam., In.	Actual Outside Diam., In.	Cat. No.	SINGLE TYPE		Cat. No.	DOUBLE TYPE	
			Shp. Wt., Lbs. per 100	Price per 100		Shp. Wt., Lbs. per 100	Price per 100
4	4.50	7364	320	\$108.00	7374	366	\$120.00
4 1/2	5.00	7364 1/2	376	110.40	7374 1/2	421	124.80
5	5.56	7365	388	112.80	7375	433	127.20
6	6.62	7366	415	117.60	7376	460	132.00

Peirce Presteel Single Point Pole Brackets

Hot Galvanized



The back of bracket No. 137 is curved to fit a pole. Especially desirable for supporting single wires, such as series arc circuits and light railway feeders, etc.

Cat. No.	Exten. In.	Holes	Std. Pkg.	Wt., Lbs. per 100	Price per 100
137	4 1/2	1/8	25	80	\$46.28

Peirce Single Point Pole Brackets

Hot Galvanized



No. 109



No. 142



No. 144

Bracket No. 109 is used for supporting eccentric railway feed wires on poles. No. 144 is extensively used for telephone circuits on transmission line poles. No. 142 has greater extension from the pole and is suitable for lines of higher voltage.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Channel	Extension	Holes			
109	1 3/4	6	9/16	10	360	\$171.80
144	1	2 1/2	7/16	25	80	39.24
142	9 Ga. Sheet	12	9/16	10	340	177.12

No. 1312 Peirce Brick Drive Brackets

Hot Galvanized

The Peirce Brick Drive Bracket is drop-forged from open hearth steel which eliminates the possibility of breaking when driven.

Weight, Pounds.....per 100 95
Price, No. 1312..... " \$46.48



Peirce Multipoint Pole Brackets

Hot Galvanized



The No. 308 type is a rugged bracket used instead of a Secondary Rack for low voltage circuits of light wire.

No. 208 is of the same type but with 2 points.

No. 321 is fastened to the back of the pole, has a bump which fits over the head of the cross-arm bolt, and with a spreader bracket on each end of the arm, supports wires carried across the pole. It also serves as a wide base wall bracket for central station service wires.



No. 308

No. 321

Cat. No.	Channel	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
		Extension	Spacing	Holes			
208	1	4 1/4	6 1/2	7/16	20	230	\$106.84
308	1	4 1/4	6 1/2	7/16	20	330	159.40
321	3/4	3 3/4	6 1/2 and 9	1 1/32	20	370	118.08

No. 220 Peirce Suspension Telephone Brackets

For Steel Tower Lines

Hot Galvanized



On steel tower transmission lines it is sometimes advisable to carry the telephone circuits on the towers instead of on a separate pole line. This necessitates heavier wires, on account of the longer spans used. If, however, the telephone circuits are supported by these brackets, hung from messenger cables stretched between towers, the length of span is decreased and the usual No. 10 hard drawn copper wire may be used.

Cat. No.	Description	Wt., Lbs. per 100	Price per 100
220	Two-point	220	\$83.28

Peirce Cross Arm Terminal Brackets

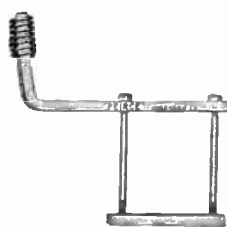
Hot Galvanized



No. 103



No. 104



No. 105

Brackets Nos. 104, 103 and 105 are used for dead ending wires on cross arms, and are attached by means of 3/8-inch carriage bolts through the sides of the arms. The first two are intended for telephone circuits only. No. 104 is used by some companies for running jumper wires from end to end under the arms. No. 105 may be placed either above or below the arm.

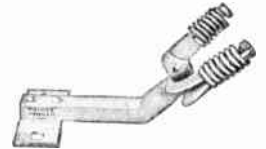
Cat. No.	DIMENSIONS, INCHES	Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Holes Channel			
103	7/16 1	25	80	\$43.34
104	7/16 3/4	25	72	43.34
105	1 1/2 1	10	160	67.24

Peirce Cross Arm Brackets

Hot Galvanized



No. 1116



No. 2116

The Nos. 1116 and 2116 Brackets are attached on the ends of cross arms by Peirce Drop Forged Cross Arm Straps. They are used for running vertical leads between cross arms or from the cross arms to the lighting fixture.

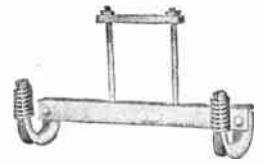
Cat. No.	Spacing Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
131	0	25	79	\$36.00
1116	0	10	140	62.00
2116	8	10	240	87.82

Peirce Cross Arm Distributing Brackets

Hot Galvanized



No. 218



No. 210

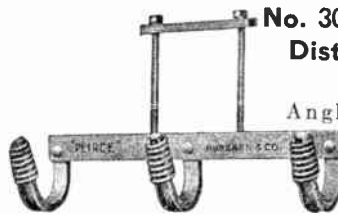
The No. 218 Presteel Distributing Bracket is made of No. 9 gauge steel and is strong enough to meet any possible condition that might arise. It is attached to the cross arm by 3/8-inch machine bolts, bolted through the arm. Machine bolts are not included in the price.

Brackets No. 210 are used for taking off service connections from the ends of cross arms. They are adjustable to arms 4x5 inches and smaller. These brackets are made up of 1 1/4 x 1/8-inch angle steel to which presteel points equipped with resilient spring threads, are securely riveted. The Presteel points give greater strength to these brackets than channel points previously furnished. No. 210 supports the wires 13 inches apart.

Cat. No.	DIMENSIONS, INCHES		Std. Pkg.	Wt., Lbs. per 100	Ship. per 100	Price per 100
	Size Steel	Spacing				
200	1 Channel	16	10	230		\$110.32
210	1 1/4 x 1/8 Angle	13	10	300		150.98
218	9-ga. Sheet	10	10	280		128.52

No. 300 Peirce Cross Arm Distributing Brackets

Hot Galvanized



Angle steel 1 1/4 x 1/8 inches. Spacing 6 1/2 inches.

Cat. No.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
300	10	340	\$128.52

No. 106 Peirce Cross Arm Extra Wire Brackets

Hot Galvanized



No. 106 is a roof bracket.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Length	Holes	Channel			
106	5	1 1/2	1	25	112	\$34.80

No. 107 Peirce Cross Arm Extra Wire Brackets

Hot Galvanized



Will support an extra wire at the end of a filled arm.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Length	Holes	Channel			
107	18	7/8	1	25	152	\$61.32

Peirce Cross Arm Extra Wire Brackets

Hot Galvanized

No. 227 will support two wires at any point under the arm, or with the U-bolt in the other leg of the angle, will serve as a break arm or spreader bracket for light wires.

Size channel is 3/4 inch.

Spacing is 8 inches.



Cat. No.	Length Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
227	11 1/2	20	180	\$122.00

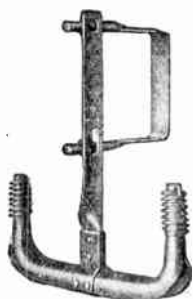
Peirce Heavy Presteel Extra Wire Brackets

Hot Galvanized

These brackets are pressed from No. 9 gauge steel and the cross section of their main body is 1x1 1/2 inches. Will take the strain of the largest and heaviest services.

The line will be safer and cross-arms will last longer because brackets clamp around the arms, instead of bolting through them. This keeps the arms from splitting and rotting.

No. 230, with the strap as shown, will save the cost of a cross-arm by carrying two extra wires under an arm already filled.



Cat. No.	Spacing Points In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
230	10	10	300	\$147.60

Peirce Spreader Brackets

Hot Galvanized

The Peirce Spreader Brackets are designed so that the top cross wire clears the line wire.

Cross-arm straps are not included in bracket prices.

Standard package, 10.



Cat. No.	Spacing Points Inches	Wt., Lbs. per 100	Price per 100
217	13	290	\$150.72
317	6 1/2	400	217.78

Peirce Heavy Presteel Break Arms

Hot Galvanized

The Cow Horn No. 231 is the type of break arm in general use as a circuit breaker on series lighting circuits. It fits any standard cross-arm, by the arrangement of two bolts with slots and holes in the bracket and in the cross-arm strap.



Cat. No.	Spacing Points In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
231	12	10	360	\$230.26

Peirce Spreader Brackets

Hot Galvanized

This bracket may be clamped around the arm by a cross-arm strap instead of bolting through it, and thus it prevents splitting and decay and adds to the strength and life of the arm.

It can be installed in a moment and its base and strap bear on all sides of the arm and form a most secure fastening.

It may be adjusted vertically on the arm when used with a cross-arm strap, and, if desired, may be bolted to the arm through the side holes in the base.



Nos. 202 and 302



Nos. 201 and 301

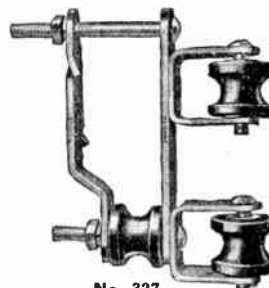
Cat. No.	DIMENSIONS, INCHES				Width Back Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Spacing	Channel	Holes				
201	4 1/2	10	1	2 1/16	2 1/2	10	300	\$145.10
202	4 1/2	12	1	2 1/16	2 1/2	10	340	164.56
301	4 1/2	6 1/2	1	2 1/16	2 1/2	10	400	206.16
302	4 1/4	6 1/2	1	2 1/16	2 1/2	10	460	217.80

Peirce Spreader Racks

Wilson Type
Hot Galvanized

Provides a new and dependable method for taking off secondary services from the ends of cross arms. The neutral wire is usually carried on the insulators under the arm.

Rack No. 327 is furnished complete with No. 1606 insulators. No. 330 heavy type is equipped with No. 355 insulators.



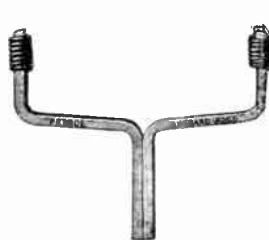
No. 327

Cat. No.	Size of Cross Arm, In.	Shp. Wt., Lbs. per 100	Price per 100	Cat. No.	Size of Cross Arm, In.	Shp. Wt., Lbs. per 100	Price per 100
325	3 1/4 x 4 1/4	585	\$165.60	328	4x5	607	\$165.60
326	3 1/2 x 4 1/2	593	165.60	330	4x5 and Smaller	890	211.20
327	3 3/4 x 4 3/4	600	165.60				

Peirce Break Arms

For Series Circuits

Hot Galvanized



No. 224

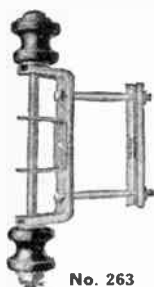


No. 225

Peirce Break Arms are made of channel steel, which, with the steel spring threads, gives them a resiliency which prevents the insulator breakage and line trouble so common with cast iron break arms. They are adjustable to any size of arm from 3 1/4 x 4 1/4-inch to 4x5-inch. No. 223 has 3/8-inch bolts, No. 225, 3/8-inch. No. 224 fits in a 1 1/2-inch pin hole.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Spacing	Channel	Bolts			
223	12	1	3/8	10	230	\$110.38
224	12	1	3/8	10	240	104.52
225	8 1/4 to 10	1	3/8	10	230	107.26

Peirce Insulated Spreader Racks



No. 263

Hot Galvanized

The rack type spreader has recently become popular with central station construction men because of its strength and low cost. Made with a 1-inch channel back, 1/2-inch insulator through bolt and is adjustable to cross arms 3 3/4 x 4 3/4-inch and smaller. Insulators, which are included in the price of these racks, are the No. 1606.

Cat. No.	Channel	DIMEN. IN. Spacing	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
263	1	10 1/2	25	403	\$149.80
363	1	5 1/4	25	448	167.38
463	1	6-8 3/8	25	610	207.14

Peirce Wireholders

Hot Galvanized

Insulator drains readily in all positions. Has wet arc test of 1900 volts, giving a large factor of safety for all service voltages. Insulators can be replaced without removing fixture from wall.

DIMENSIONS.—Distance wire from wall, in hole, 1 3/4 inches; distance wire from wall, in groove, 3 1/8 inches. Fastening holes for 5/8-inch bolts or screws. Back plate, 1 1/8 x 3/8-inch presteel. Insulators: width, 1 5/8 inches; height, 2 3/4 inches; hole, 1/2 inch, groove, 1/2 inch.

Brackets are furnished complete, assembled with insulators.



4-wire

Cat. No.	Wire Spacing Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
494	4 1/2	25	390	\$139.92

3-wire

Cat. No.	Wire Spacing Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
394	4 1/2	25	284	\$106.80
396	6	25	308	118.80

2-wire

Cat. No.	Wire Spacing Inches	Std. Pkg.	Wt., Lbs. per 100	Price per 100
296	6	25	204	\$74.40
299	9	25	208	79.20

Three-wire

1-wire

Two-wire



No. 190

Cat. No.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
190	50	78	\$33.60
191	50	96	37.20
191A	25	76	37.20
*1607	50	108	32.40
†1617	50	108	36.00
*1621	50	60	27.60
†1631	50	60	31.20

*Galvanized screw.

†Brass screw.

No. 191-A



No. 1602

No. 1602 Insulator Only

Packed 1000 in a barrel. Weight, per 100, 36 pounds.

Price, No. 1602 Insulator Only... per 100 \$18.02

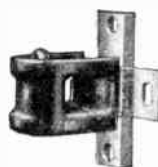
No. 501 Corner Irons with Bolt

Packed 25 in a bundle. Weight, per 100, 20 pounds.

Price, No. 501 Corner Irons... per 100 \$19.48

Peirce Heavy Type Wire Holders

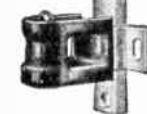
Hot Galvanized



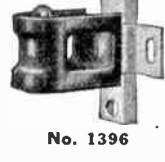
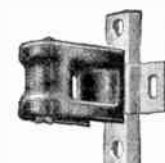
No. 1191



No. 1296



No. 1396



No. 1396

The Heavy Type Wire-holder is intended for heavy services and will take triplex cables, the smaller sizes of duplex or single twisted wires may be used with the wire-holders.

In making the service connection some construction men prefer the use of a single bracket making the tie to the insulator before separating the wires. Other men separate the wires about 2 feet from the building and tie them to separate insulators using 2 or more single brackets or a multi-point bracket.

The rugged construction of these wire-holders makes them suitable for heavy, long span work.

Stock No.	No. of Wires	Wire Spacing Inches	Std. Pkg.	Approx. Shp. Wt. Lbs. per 100 Pieces	Price per 100
1191	1	0	50	178	\$51.26
1296	2	6	25	345	99.36
1299	2	9	25	371	86.84
1396	3	6	25	516	148.60
*1604	..	0	100	59	20.40

*Insulator only.

Peirce Light House Racks

Hot Galvanized



No. 1385

These racks, while not as strong as the presteel racks, are in popular use for light service connections.

Frame is made of 1-inch channel, to which are securely riveted two straps 4 1/8 inches wide and provided with 5/8 x 1 1/8-inch mounting holes. The No. 1606 insulators are attached to the frame by a 1/2-inch through bolt.

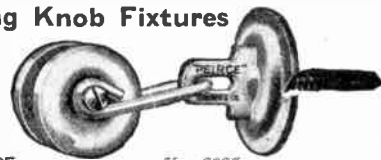
For shipment, the insulators are assembled on the rack and protected with corrugated fibre sleeves.

The holes in the frame are spaced 5 5/8 inches.

Cat. No.	No. of Lims Wires	DIMEN. IN. Spacing	Extension	Std. Pkg.	Shp. Wt., Lbs. per 100	Price per 100
1285	2	10 1/2	2 1/4	25	280	\$137.04
1385	3	5 1/4	2 1/4	25	325	166.20

Peirce Swinging Knob Fixtures

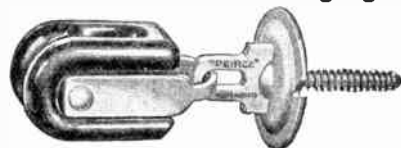
No. 2925 has insulator same as presteel racks. No. 1603 and No. 2926, same insulator as Peirce Single Knob Fixtures No. 2927.



No. 2925

Price, No. 2925, Wt. 102 Lbs. per 100... per 100 \$44.26
 " " " 2926 " 82 " " 100... " 100 39.24

No. 2932 Peirce Swinging Knob Fixtures



Furnished with a redesigned No. 1602 insulator. The insulator hole is 1/2 x 1/2 inch. Standard package, 50. Shipping weight, 100 pieces, 95 lbs.

Price, No. 2932... per 100 \$46.48

No. 2945 Peirce Swinging Knob Fixtures with Bolts

Hot Galvanized



The swinging knob fixture is similar to the standard Peirce Fixture No. 2925 except that a 3/8x5-inch carriage bolt is secured to the base instead of the standard wood screw.

Some construction men are using this fixture, bolted through the cross arm, for taking off service drops. The fixture is adaptable to light secondaries on twisted wires.

No.	Ins. No.	Wt., Lbs. per 100	Price per 100
2945	1603	111	\$52.80

Peirce Swinging Knob Fixtures

Hot Galvanized



These fixtures are used for making house service connections. The sister hook arrangement permits the removal of the insulator, for driving the screw, without the use of tools.

The No. 2928 is equipped with a Peirce No. 1606 insulator. The No. 2929 with a Peirce No. 355 insulator.

Price, No. 2928, Wt. 165 Lbs. per 100	per 100	\$72.32
" " 2929 " 250 " " 100	" 100	99.44

Peirce Tree Insulators

Hot Galvanized

The Peirce Tree Fixture provides:

- 1.—Sufficient insulation.
- 2.—An easy method of installation without injury to the tree.
- 3.—An easy method of stringing in the line without cutting.
- 4.—A roller bearing to prevent chafing the insulation.
- 5.—Sufficient strength and flexibility for use with various sizes of wire.

The sister hook feature permits the removal of insulators for driving the screw and stringing in the wire without the usual trouble with small nuts and bolts, also eliminates danger of parts working loose due to vibration.

No. 2934 Flexible Type, Wt. 155 Lbs. per 100	per 100	\$38.80
" 2933 Rigid Type, Wt. per 100, 115 Lbs.	" 100	43.00



Peirce Pole Brackets

For Duplex and Twisted Single Wires

Hot Galvanized



No. 173



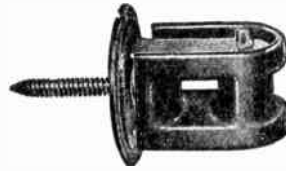
No. 174

Used for supporting wires from cross-arm to arc or incandescent lamp. Forged from open hearth steel; double hot-dip galvanized. Insulators are made of thoroughly vitrified, brown glazed porcelain. Supports wire 5 inches from pole.

No. 173, screw type, size of screw, 5/8x3 inches.	173	174
Cat. No.	230	240
Shipping Weight, Pounds, per 100	230	240
Price, Pounds, per 100	\$108.48	120.10

Peirce Duplex Wireholders

Hot Galvanized



The 1190 Wireholder is used for attaching duplex or triplex cables to the house for making the service connection.

Price, No. 1190, Wt. 147 Lbs. per 100	per 100	\$76.70
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Peirce Bracket Feet and Corner Irons

Hot Galvanized

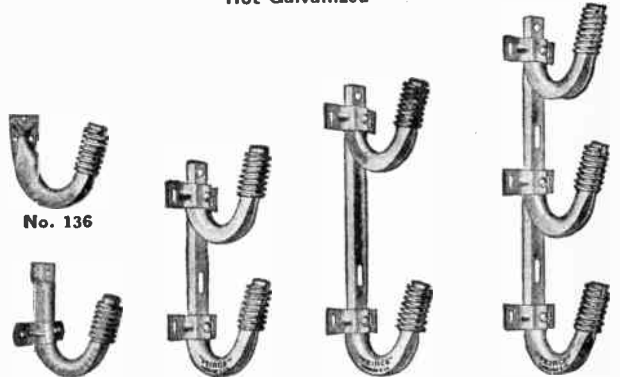
For use with vertical wall brackets; extension 4 3/8 inches from wall. Furnished complete with two stove bolts.



Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Channel	Holes			
500	4 3/8	1 x 3/8	1 1/2	10	88	\$31.82

Peirce Light Presteel Brackets

Hot Galvanized

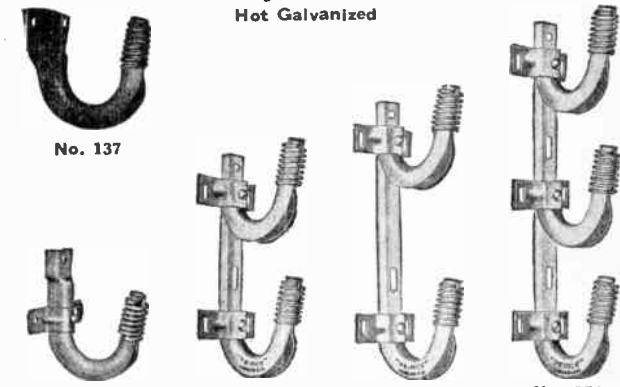


No. 136 is used for supporting telephone wires on transmission poles. Nos. 253, 253 1/2 are popular house brackets.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Spacing	Size of Holes			
136	3 1/2	...	5/8	25	56	\$27.92
153	3 3/4	...	1 1/32	25	80	32.56
253	3 3/4	9	1 1/32	20	170	84.02
253 1/2	3 3/4	6 1/2	1 1/32	20	80	81.02
353	3 3/4	6 1/2	1 1/32	20	300	23.04

Peirce Heavy Presteel Brackets

Hot Galvanized



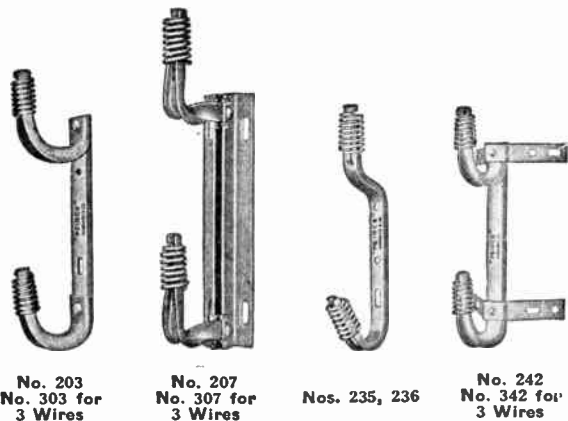
No. 137 is curved to fit pole. No. 138 (not illustrated) is the same as No. 137 but with flat back for wall mounting.

Cat. No.	DIMENSIONS, INCHES			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Spacing	Size of Holes			
137	4 1/2	...	7/8	25	80	\$46.28
138	4 1/2	...	7/8	25	80	46.28
154	4 1/4	...	1 1/32	25	100	45.60
254 1/2	4 1/4	6 1/2	1 1/32	20	210	100.36
254	4 1/4	9	1 1/32	20	235	106.28
354	4 1/4	6 1/2	1 1/32	20	400	147.58

Peirce Channel Steel Wall Brackets

Hot Galvanized

Vertical Two and Three Point



No. 203
No. 303 for 3 Wires

No. 207
No. 307 for 3 Wires

Nos. 235, 236

No. 242
No. 342 for 3 Wires

Peirce Brackets are made from hot-rolled open-hearth steel channel and angle which, under severe strains, will bend but will never break and let the wires down. The brackets shown with short springs are for telephone wires.

Cat. No.	DIMENSIONS, INCHES				Wire Spacing	Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Channel	Holes					
203	3 3/4	3/4	1 1/2	9	9	20	150	\$70.10
207	4 1/2	3/4	1 3/2 x 1	9	9	10	230	112.76
235	3 1/2	3/4	1 1/2	12	12	25	108	55.28
236	3 1/2	1	1 1/2	10	10	25	140	58.06
242	3 3/4	3/4	1 1/2	9	9	20	180	82.30
303	3 3/4	3/4	1 1/2	6 1/2	6 1/2	20	250	106.28
307	4 1/2	3/4	1 3/2 x 1	6 1/2	6 1/2	10	320	155.28
342	3 3/4	3/4	1 1/2	6 1/2	6 1/2	20	260	121.90

No. 147 Peirce Wall Brackets

Channel Steel—Hot Galvanized

Single Point



Cat. No.	DIMENSIONS, INCHES				Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Channel	Holes				
147	9	1	5/16 and 9/16		25	120	\$69.68

No. 312 Peirce Forged Hook Brackets

Hot Galvanized

Used for running secondaries on poles and for making service attachments on buildings. Forged from open hearth steel, this bracket is stronger and more dependable than the malleable iron type formerly used.

Furnished with either the resilient spring thread or lead threads for insulators having a standard 1-inch pin hole.



Cat. No.	Size Steel	DIMEN., IN.		Std. Pkg.	Ship. Wt., Lbs. per 100	Price per 100
		Extension	Size Screw			
312	5/8	3 1/2	2 3/4	200	140	\$55.60

No. 150 Peirce Wall Brackets

Presteel—Hot Galvanized

Single Point—Corner



Cat. No.	DIMENS., IN.			Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Steel	Hole			
150	3 1/2	12-Ga.	1 1/2	25	80	\$37.76

Peirce Presteel House Brackets

Hot Galvanized

Horizontal

Designed to take the place of brackets Nos. 240 and 241.



No. 243
No. 343 for 3 Wires

Cat. No.	Spacing of Points, In.	Std. Pkg.	Wt., Lbs. per 100	Price per 100
343	6	10	245	\$103.32

Peirce Channel Steel Wall Brackets

Hot Galvanized

Horizontal



No. 241
No. 341 for 3 Wires

Made from hot-rolled open-hearth steel channel and angle which under severe strains, will bend but will never break and let the wires down.

Cat. No.	DIMENSIONS, INCHES			Wire Spacing	Std. Pkg.	Wt., Lbs. per 100	Price per 100
	Extension	Channel Slot					
241	4	7/16 x 1		7	10	260	\$112.18
341	4	7/16 x 1		6 1/2	10	450	197.78

No. 215 Peirce Lamp Lead Brackets

Hot Galvanized



This bracket is provided with mounting slots for four 3/8-inch lags, supports the lamp leads 9 inches from the pole and 10 1/2 inches apart.

Spiral spring threads are provided for use with standard insulators having a 1-inch pin hole.

The bracket is of sturdy construction and makes a neat and dependable method for handling lamp leads direct from the cross arm.

No.	Extension Inches	Wt., Lbs. per 100	Price per 100
215	9	220	\$103.20

No. 132 Peirce Screw Brackets

Hot Galvanized

Small diameter of screw, 3/8 x 2 3/4-inch, prevents splitting of wood.

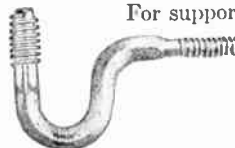


Cat. No.	Diam. Base In.	Extension In.	Wt. Lbs. per 100	Price per 100

Peirce Prussian Hook Brackets

Hot Galvanized

For supporting wires on poles, trees, etc.



Cat. No.	Size Steel Inches	Wt., Lbs. per 100	Price per 100
314	5/8 Square	170	46.82
315	1/2 "	105	37.32
316	1/2 Round	86	31.48

Peirce Corner Pins and Plates

Hot Galvanized



No. 5064 Plate

The special corner pin and cross arm plate were designed for the Duquesne Light Company.

Under test, 2 of these pins mounted under actual working conditions on an angle of 90° withstood a load of 4,200 pounds at which tension one of the insulators failed.

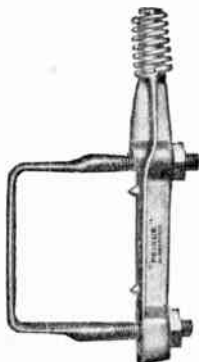
The pins showed no signs of deflection.

No. 5430 Pin

Prices upon application.

Peirce Drop Forged Clamp Pins and Corner Plates

Hot Galvanized



No. 4410 Clamp Pin

For flat and round top arms from 3 1/4 x 4 1/4 to 4 x 5 inches. Fitted with the new copper weld spring thread.

On straight runs the pin with a standard forged cross arm strap is used. The 1/4-inch lugs bite into the arm and prevent displacement.

On angles and corners the plate is slipped under the pin, and holds it rigidly under side strains of 1200 pounds in any direction.

Prices upon application.

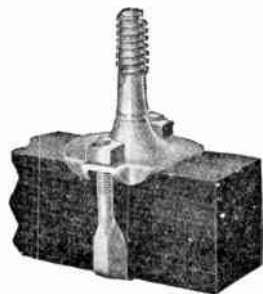


No. 5072 Plate

Peirce Drop Forged Cross Arm Straps

Hot Galvanized

The Peirce Drop Forged Cross Arm Straps are drop forged from round steel and have a broad flat bearing on the arm, which holds the pin permanently in place. The flat section is 1/4 x 1 1/2 inch and the round is 5/8 inch.



Cat. No.	For Arm Inches	Approx. Ship. Wt., Lbs. per 100 Pieces	Price per 100
1881	3 1/4 x 4 1/4	126	\$42.50
1882	3 1/2 x 4 1/2	133	45.00
1883	3 3/4 x 4 3/4	140	47.50
1884	4 x 4	147	50.00

Peirce Clamp Pins

Hot Galvanized

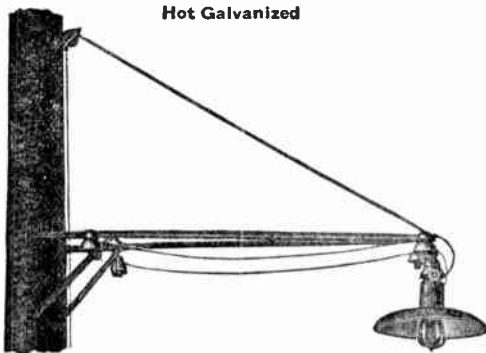
Designed for corner construction and will withstand strains of 2500 pounds without deflection. Each pin is forged from a single piece of new hot rolled open hearth steel and is so constructed that the greatest amount of metal is at the point where the strain is the hardest.

Made for flat and round top arms.

Cat. No.	Spring Thread In.	For Flat Top Arm In.	Approx. Ship. Wt., Lbs. per 100 Pes.	Price per 100
4310	1	3 1/4 x 4 1/4	348	\$87.60
4311	1	3 1/2 x 4 1/2	348	87.60
4312	1	3 3/4 x 4 3/4	412	106.32
4313	1	4 x 5	412	106.32

Peirce Hinged Mast Arms

Hot Galvanized



The hinged arm supports the lamp beyond the line of foliage of the trees and has means of bringing it to the ground or to the pole for cleaning or renewal, thus doing away with the expensive and awkward center span suspension. In this case the arm is hinged near the pole and is lowered by a chain passing over a pulley. The inspector climbs a short distance up the pole, lowers the lamp to meet him, cleans it and pulls it back in place. Arms are made of 1 and 1 1/4-inch channel steel, and the side brackets provided for the lamp leads do away with the long swinging loop which makes the old style mast arm so unsightly.

Prices are for arms only, without hoods, pulleys or chains.

Cat. No.	Length Feet	Wt. Lbs.	Price per 100
3306	6 1/2	16	\$973.80
3308	8 1/2	19 1/2	1121.02
3310	10 1/2	23 3/4	1298.98
3312	12 1/2	29 3/4	1476.20

Peirce Truss Mast Arms

Hot Galvanized

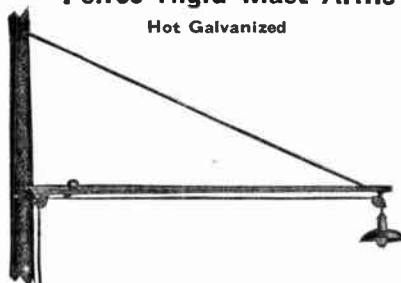


Where lamps need not be hung more than six feet from the pole, the Peirce Truss Arm is the ideal support. It is braced against stresses in any direction, and is neat and attractive.

Cat. No.	Length Feet	Wt. Lbs.	Price per 100
370	4	8	\$329.64
371	6	12	449.92
372	4	8	329.64
373	6	12	449.92

Peirce Rigid Mast Arms

Hot Galvanized



Lamps are lowered to street by a rope or chain. Prices include two cutter sleet-proof pulleys, but no chain.

Cat. No.	Length Feet	Wt. Lbs.	Price per 100	Cat. No.	Length Feet	Wt. Lbs.	Price per 100
3506	6	25	\$1391.44	3512	12	54	\$2630.12
3508	8	41	1696.80	3514	14	60	2765.88
3510	10	46	2290.76	3516	16	65	3139.20

Peirce Presteel Trolley Mast Arms

For Tungsten and Arc Lamps

Hot Galvanized



The strong points of the trolley arm are its safety and simplicity. The long swinging loops of wire are eliminated. The lamp is out of the reach of children, and cannot fall to the street. The trimmer has no trouble operating the Arm under any weather

conditions, and runs no risk of injury by street traffic.

The lamp trimmer climbs the pole, pulls the lamp in by the rod attached to the lamp hanger, and then pushes it back to place by the same rod. There are no chains or ropes to break or become jammed on pulleys. The sliding mechanism is simple, and is completely protected from sleet and ice.

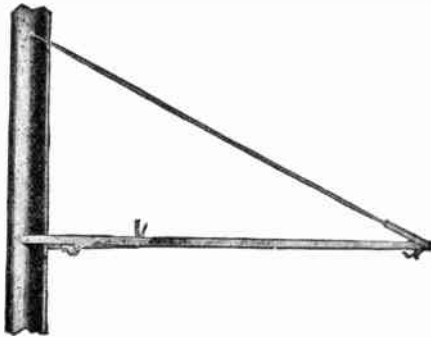
The Arm is pressed from a single length of 14-gauge sheet steel. It is furnished with a 1/2-inch round guy rod, a channel steel back brace to prevent its swinging around the pole, a channel spreader arm, and an operating rod with a sliding carriage which has a 3/4-inch pipe-threaded connection for Tungsten lamps. On this lamp connection is another spreader arm. All parts are hot-dip galvanized.

For arc lamp service the sliding carriage can be equipped with the No. 1504 Insulator. This insulator has a safety hook for engaging the link in the top of the lamp.

Cat. No.	Length Feet	Wt. Lbs.	Price per 100	Cat. No.	Length Feet	Wt. Lbs.	Price per 100
3406	6	35	\$1476.16	3412	12	53	\$2172.80
3408	8	41	1744.80	3414	14	59	2584.28
3410	10	47	1921.76	3416	16	65	2995.72

Peirce Presteel Trolley Mast Arms

Chain Type
Hot Galvanized



No. 3610

These mast arms, the latest development for street lighting, are made like the Standard Presteel Trolley Arms, except that the carriage is operated by a continuous chain instead of a rod. The chain is completely protected and will operate under any weather condition. The handle may be locked on each revolution for supporting the lamp in any position on the arm, to clear foliage.

The guy rod is fastened to the same side of the pole as the arm. A 1/2-inch lag screw is used. Size of guy rod, 1/2 inch. End of rod is threaded 6 inches for leveling arm.

One standard 5/8-inch through bolt secures both the arm and the back brace. The spreader bracket is adjustable and can be placed at any point on the arm to best suit wiring conditions.

With set screw and locknut for regulating tension on chain. Size of section, 1 3/8 x 2 1/4 inches.

Cat. No.	Length Feet	Ship. Wt. Lbs., Each	Price Each	Cat. No.	Length Feet	Ship. Wt. Lbs., Each	Price Each
3606	6	30	\$17.62	3612	12	48	\$25.98
3608	8	36	20.19	3614	14	54	29.10
3610	10	42	22.50	3616	16	60	32.67

No. 1504 Peirce Arc Lamp Suspension Insulators

Hot Galvanized



This insulator is provided with a safety hook for the arc lamp. It measures 6 inches between the hook and eye and is rated at 6600 volts.

Shipping Weight, Pounds...per 100 330
Price, No. 1504..... " 100 \$360.00

No. 1591 Peirce Insulated Lamp Hangers

Hot Galvanized

These hangers are equipped with a 6600-volt insulator. The threading on the cap and stud is for standard 3/4-inch connections.

Cat. No. 1591
Shipping Weight, Pounds.....per 100 338
Price..... " 100 \$132.00



Paragon Grounds

Made of one continuous piece of pure No. 22 sheet copper. Five feet of No. 4 copper connecting wire furnished with each ground. The cones are perforated to give ample discharge points and filled with charcoal to give uniform filling and attract and hold moisture in the earth around the cone. The cylinders are not perforated and are furnished either filled with charcoal or open at both ends with no filling.



Cat. No.	Description	Length Filling	Price Each
1	Cylinder.....	1	\$5.00
2	".....	2	6.25
3	Cone.....	1	5.00
4	".....	2	6.25

Matthews Cable Clamps

For Use On Power Cable Only



These clamps are designed to relieve the strain from cable ranging in size from 000 to 1500000 CM at corners and dead ends, and to do away with the expense of splices at these places and the cost of making up into strain insulators, etc.

Guaranteed to effect a saving of at least \$5.00 per corner turn in cable to 500000 C M or larger.

Finish	Price Each
Painted Black.....	\$3.20
Galvanized.....	3.60

Packed in bags of 12, 25 and 50 each. Shipping weight, 410 pounds per 100.

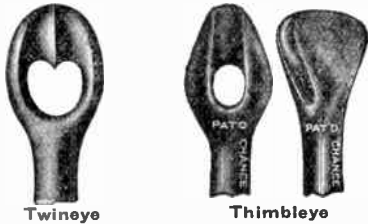
Marline



Furnished in one-pound balls in both the 2 and 3-ply varieties.

Cat. No.	Grade	Price per Lb.
415	2-ply	\$3.35
416	3 "	3.50

Never-creep Anchors



Twineye

Thimbleye

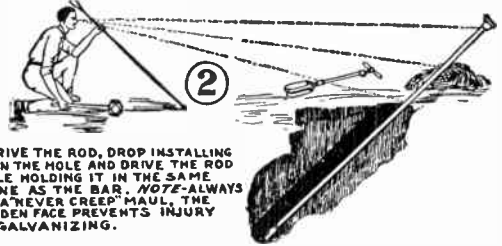
An ordinary 8-inch auger is all that is required to install all sizes up to and including the 36-inch. The Thimbleye rod is furnished at no extra cost and is so shaped that it holds the cable in a true cylindrical form thus preventing flattening of cable which shifts the greater strain upon a portion of the wires sooner or later resulting in injury. The Twineye, having two thimble shaped orifices is for joint construction or double guying. Prices on Never Creeps with Twineye rods instead of single Thimbleye, add 10 cents to the list prices following.

Cat. No.	Size of Plate Inches	Holding Surface Sq. In.	Size of Rod Inches	Wt. Lbs.	Price, Ea. Anchor Complete
5101 1/2	5x10	55	1 1/2 x 5	7	\$1.45
5103 1/2	5x10	55	1 1/2 x 6	8	1.55
6151 1/2	6x15	97	1 1/2 x 5	10	2.05
6153 1/2	6x15	97	1 1/2 x 6	11	2.15
6155 3/8	6x15	97	5/8 x 6	14	2.45
6205 3/8	6x20	130	5/8 x 6	16	3.05
6207 3/8	6x20	130	5/8 x 7	17	3.20
8205 3/8	8x20	180	5/8 x 6	20	3.45
8207 3/8	8x20	180	5/8 x 7	21	3.60
8203 3/4	8x20	180	3/4 x 6	23	3.90
8205 3/4	8x20	180	3/4 x 7	24	4.15
8253 3/4	8x25	212	3/4 x 6	26	5.10
8255 3/4	8x25	212	3/4 x 7	27	5.35
8257 3/4	8x25	212	3/4 x 8	29	5.55
8303 3/4	8x30	255	3/4 x 6	30	5.70
8305 3/4	8x30	255	3/4 x 7	32	5.95
8307 3/4	8x30	255	3/4 x 8	34	6.15
8353 3/4	8x35	297	3/4 x 6	35	6.90
8355 3/4	8x35	297	3/4 x 7	37	7.15
8357 3/4	8x35	297	3/4 x 8	39	7.35
835-1	8x35	...	1 x 7	41	9.00
835-1	8x35	...	1 x 8	47	9.40
1040-1	10x40	440	1 x 7	62	11.10
1040-1	10x40	440	1 x 8	64	11.50

Never-Creep Anchors

Method of Installing

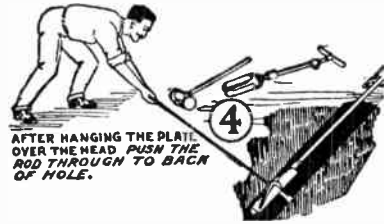
Locate the spot desired for the anchor rod and measure from that point back from the pole the length of the rod and start the hole at this point. Use an 8-inch auger and bore the hole as nearly at right angles to the line of strain as conditions will allow.



TO DRIVE THE ROD, DROP INSTALLING BAR IN THE HOLE AND DRIVE THE ROD WHILE HOLDING IT IN THE SAME PLANE AS THE BAR. NOTE-ALWAYS USE A NEVER CREEP MAUL. THE WOODEN FACE PREVENTS INJURY TO GALVANIZING.



CATCH THE PLATE BY THE HOLDER ON THE TAMPING BAR. PASS DOWN INTO THE HOLE AND HANG OVER THE HEAD OF THE ROD.



AFTER HANGING THE PLATE OVER THE HEAD PUSH THE ROD THROUGH TO BACK OF HOLE.



TRIP THE HOLDER OFF THE PLATE

Never-Creep Installing Bars



The installing bar is a turned maple handle 10 feet long with a galvanized Never-Creep Holder mounted on one end and a malleable tamp head on the other.

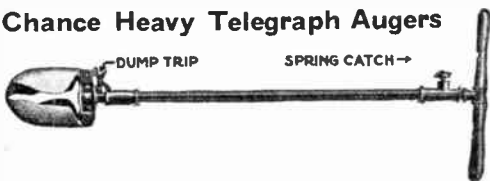
Price.....each \$2.60

Never-Creep Mauls



Price, 4-lb. Maul for 1/2, 5/8, and 3/4-inch Rods...each \$2.25
 " 18 " " " 1-inch Rod..... " 2.60

Chance Heavy Telegraph Augers



Price, Complete.....each \$9.50

NOTICE.—After driving the rod take the installing bar and measure the distance the rod is from the bottom of the hole to be sure the plate will have room to swing freely on the rod without touching the bottom.

After hanging plate on the rod attempt to disengage the holder until the rod has been pushed through to the opposite wall of the hole. This not only allows easier disengagement of the holder but permits the plate to drop and swing freely upon the rod.

Always use a Never-Creep wooden faced iron maul to drive the rod. Don't use a hand axe or hammer. They will batter the eye, injure the galvanizing and ruin the rod.

Matthews Scrulix Anchors

Matthews Scrulix Anchors are screwed into solid ground. They have no moving parts to adjust or that might be carelessly buried unadjusted. Nothing to assemble.

The use of No. 300 Matthews Auger in hard grounds such as adobe, hardpan, gumbo, sun-baked clay, or disintegrated rock easily prepares the way for the quick installation of the Nos. 612R, 658R, 758R and 858R Matthews Scrulix Anchors.

The No. 375 Matthews Auger should be used before attempting to screw down the 858R, 800, 1000 and 1200 Matthews Scrulix Anchors. It will pay to use it in all but soft or sandy ground before installing any of these anchors.

The Nos. 612R, 658R, 758R and 858R Matthews Scrulix Anchors will be furnished with galvanized rods. The Nos. 612R, 658R and 758R are packed in bundles of 4 each. All the rest are shipped singly. There has been no change in the wrench except to make it stronger. Nos. 800, 1000 and 1200 anchors are guaranteed to outlast galvanized steel round rods with a diameter of 1 1/8, 1 1/4 or 1 1/2 inches. The fact that the rods of these anchors are square gives them a greater cross section and makes it possible to use mild steel rods instead of high carbon steel rods. Mild steel rods resist rust better than high carbon steel. A No. 567 wrench must be used with all anchors smaller than No. 800. No wrench is needed for the Nos. 800, 1000 or 1200 anchors.



Round					
Cat. No.	Diam. Anchor Inches	Size Rod In.	Lgth. Feet	Wt., Lbs. per 100	Price Each
612R	6	1/2	6	750	\$3.50
658R	6	5/8	6	1050	4.00
758R	7	5/8	6	1200	5.00
858R	8	5/8	6	1500	6.50
Square					
800	8	1 1/8	6	3700	\$16.50
1000	10	1 1/4	6	5700	21.00
1200	12	1 1/2	6	7900	28.00

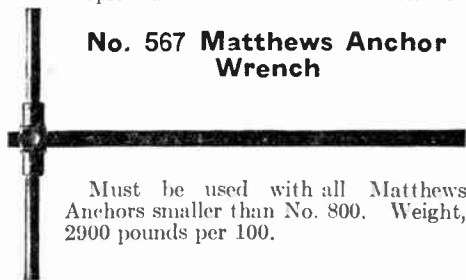
Matthews Augers

Cat. No.	Diam. of Auger Inches	Length Inches	Wt., Lbs. per 100	Price Each
300	3	71	1650	\$17.00
375	3 3/4	71	1750	17.50

Parts for Augers

Cat. No.	Description	Length Over All Inches	Price Each
301H	Heads for 3-in. Auger	14	\$12.50
303C	Auger Blades for 3-in. Auger	9 3/8	8.20
376H	Heads for 3 3/4-inch Auger	6 1/2	13.00
378C	Auger Blades for 3 3/4-in. Auger	14	8.80
3375	Telescopic Handle	3 ft. 1 in.	7.00

No. 567 Matthews Anchor Wrench



Must be used with all Matthews Anchors smaller than No. 800. Weight, 2900 pounds per 100.

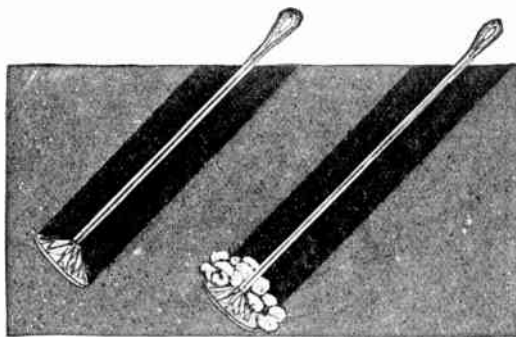
Price, No. 567 each \$14.00

No. 865 Ratchet Handle

For installing 612R, 658R, 758R and 858R anchors close to buildings, fences, etc.

Weight, 1500 pounds per 100. Length, 37 inches. Price, No. 865 each \$32.00

Everstick Cone Anchors



Ordinary guy rods are used with Cone Anchors. For an anchor where stone is easily procured, the Cone Anchor is a splendid anchor to use. The stone wedges between the ribs of the anchor, making anchor and stone one mass or unit.

Cone Anchors without Rods

Size Inches	Description	Wt., Lbs. Each	Price Each
8	Japanned Finish	4	\$.50
12	" "	12	1.65

Non-Thimble (No Thimble Needed) Rods for Use with Above Anchors

Size In.-Ft.	Description	Wt., Lbs. Each	Price Each
5/8x6	Galvanized Finish		\$.70
5/8x8	" "		.95
3/4x8	" "		1.25

Everstick Anchors



Two-way Anchor Expanded

Everstick Anchors expand into solid and undisturbed earth at bottom of hole. There is absolutely no backward movement. It is not necessary to pull them up a foot or two to make them firm. The expanding is done by striking the anchor with a tamping bar.

Ordinary standard guy rods used in Everstick Anchors.

Nos. 5 and 6 two-way anchors will take 5/8-inch or smaller rods of any length; No. 6 four-way and No. 8 two-way, 3/4-inch or smaller; Nos. 8 and 10 four-way, 1-inch rod or smaller, any length.

Two-way Anchors, without Rods

Cat. No.	Size Inches	Weight Pounds	Size, In. Anchor Expanded	Sq. In. of Holding Surface	Price Each
5	5	4	5x9	45	\$.70
6	6	7 1/2	6x11	66	1.10
8	8	12 1/2	8x15	120	1.65

Four-way Anchors, without Rods

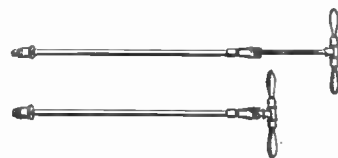
Same general construction as the two-way anchors but with four prongs instead of two and consequently a greater holding power.

Cat. No.	Size Inches	Weight Pounds	Size, In. Anchor Expanded	Sq. In. of Holding Surface	Price Each
6	6	10	11x11	121	\$1.45
8	8	17 1/2	15x15	225	2.40
10	10	31	19x19	361	3.75

Blackburn's Telescoping Auger Handles

Made in two lengths to bore 8 and 10-foot holes; can be telescoped to shorter length when necessary.

Weight, 17 and 20 pounds respectively. Price each \$3.00



Bierce Guy Anchors



Acts on the principle of the inverted wedge, the conical point being projected upward in the direction of the pull. This construction causes the anchor to get tighter the harder it is pulled.

Directions for Installing

Bore a hole not less than five feet deep with an earth auger of the same diameter as the Bierce Anchor. Use 1/2-inch, 5/8-inch, or 3/4-inch anchor rods, as desired, for 8-inch anchors, and 1-inch rods for the 12-inch size. Attach the anchor to the rod and drop it into the hole with the point up.

There are no adjustments to make after the anchor is in place. Just tamp about 1/2 cubic foot (1 water bucket full)

of coarse (2-inch) broken stone or hard brick firmly around the anchor, and then attach the guy wire. Fill hole and tamp well.

	DIAMETER, INCHES			
	5	6	8	12
Weight, Pounds . . . per 100	230	290	570	1500
Price each	\$.90	1.00	1.20	2.20

Prices do not include rods. Use standard guy rods.

Blackburn's Boltless Guy Clamps



No. 4M use instead of one 3-bolt clamp. No. 6M use instead of two or more 3-bolt clamps. No. 16M use instead of three or more 3-bolt clamps.

Price, No. 4M, Wt. per 100, 125 pounds each	\$.20
" " 6M, " " 100, 200 " "	.33
" " 16M " " 100, 425 " "	.55

Blackburn's Boltless Strain Insulators



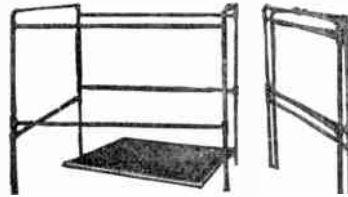
Cat. No.	Description	Price Each
601	Equipped with White's No. 601 Square Type Porcelain Insulator, Blackburn's Boltless Clamps and 5/8 Steel Strand Doubled	\$.75
602	Same as No. 601 but Equipped with White's No. 602 Square Type Porcelain Insulator	1.15
604	Equipped with White's No. 604 Square Type Porcelain Insulator, Blackburn's Boltless Clamps and 3/8 Steel Strand Doubled	1.50
606	Same as No. 604 but Equipped with White's No. 606 Square Type Porcelain Insulator	2.00

Blackburn's Boltless Wire or Messenger Splicers



Cat. No.	Description	Price Each
3	Splicer, Stronger than Strand	\$.60
3 1/2	Same as No. 3, except Has Take-up Feature, in Other Words, with It a Piece of Strand Can Be Inserted Where a Break or Burn Has Occurred . . . . .	.75

Manhole Guards



Size open, 50x50x12 inches; closed, 3 1/2x50x42 inches. Shipping weight, 43 pounds. Price, Manhole Guards . . . each \$25.00

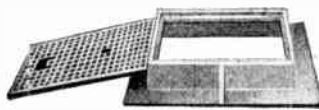
Manhole Skids and Sheaves

For leading the pulling line from mouth of duct to capstan.



Price, 9-foot . . . per set \$60.00
Additional lengths, \$3.00 per foot.

Manhole Frames and Covers



Cat. No.	Size, INCHES		Ht. In.	Wt. Lbs. Each	Price Each
	Opening	Flange			
229	17x22	31x36	6	340	\$24.00
271	18x30	26x38	5	375	29.00
278	28x32	38x42	7 1/4	620	48.00
Round					
202	23	36	9	540	\$33.00
204	23	36	9	450	31.00
206	23	36	9	400	29.00
208	23	35	7	350	24.00
211	23	36	6	315	22.00
212	22	30	5 1/4	265	20.00

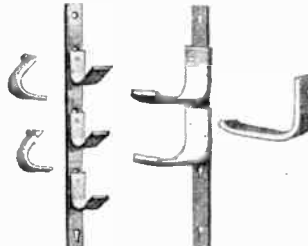
Extra sizes upon application. Name of company can be cast on covers at slight additional cost, name not to exceed 15 letters.

Keyhole Manhole Strips and Hooks

The strips take any number of hooks desired.

The hooks are made in 2 styles.

The No. 1 hook is for single cables. No. 2 hook is a double hook for holding 2 or more cables.



No. 1 Hook No. 2 Hook

Strips			
No. of Holes	Price Each	No. of Holes	Price Each
2	\$.30	8	\$.91
4	.52	10	1.18
6	.70	..	....

Hooks			
Cat. No.	Price Each	Cat. No.	Price Each
1	\$.24	2	\$.32

Channel Manhole Racks and Hooks

Used where it is especially desirable to have a compact arrangement. The holes in the rack are spaced 2 1/2 inches apart and to remove the hooks it is necessary to lift them but 3/8 inch.

Racks made with from 4 to 24 holes as specified. Hooks made in 4, 7 and 10-inch lengths.

Racks			
No. of Holes	Price Each	No. of Holes	Price Each
4	\$.24	7	\$.36
5	.28	8	.40
6	.32	..	...

Hooks			
Size In.	Price Each	Size In.	Price Each
4	\$.11	10	\$.14
7	.12	..	...



National Double Tube Connectors



These sleeves are manufactured accurately to size from the best grade of pure copper. Each detail of operation has been carefully planned, and a rigid factory inspection weeds out any possible defective material.

When twisted, National Sleeves are drawn so tightly around the conductors as to form practically a welded joint.

Thus the danger of corrosion, due to air and moisture, is entirely eliminated; and instead of building up a high resistance, as is true of the average hand splice, a joint of this type has a ratio of conductivity with the conductor of better than two to one.

National Double Tube Copper Sleeves for Stranded Cable

Cat. No.	Gauge No.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000
200	0000 B&S	.530	20	1570
201	000 B&S	.470	20	1400
202	00 B&S	.420	18	1025
203	0 B&S	.375	16	675
204	1 B&S	.330	14	550
205	2 B&S	.291	12	350
206	3 B&S	.261	9 1/2	250
207	4 B&S	.231	8 3/4	190

National Double Tube Copper Sleeves for Solid Wire

Cat. No.	Gauge No.	Diam. Wire Inches	Length Inches	Wt. Lbs. per 1000
210	0000 B&S	.460	20	1400
211	000 B&S	.410	18	1025
212	00 B&S	.365	16	675
213	0 B&S	.325	14	550
214	1 B&S	.289	12	350
215	2 B&S	.258	9 1/2	250
216	3 B&S	.229	8 3/4	190
217	4 B&S	.204	6	130
218	4 B&S	.204	8	160
219	5 B&S	.182	6	115
220	6 B&S	.162	6	100
221	7 B&S	.144	5 3/4	85
222	8 B&S	.128	5 1/2	60
223	8 BWG	.165	6	100
224	9 B&S	.114	5 1/4	50
225	9 BWG	.148	5 3/4	85
226	10 B&S	.102	4 3/4	30
227	10 BWG	.134	5 1/2	60
228	11 BWG	.120	5 1/4	50
229	12 B&S	.081	4 1/2	23
230	12 BWG	.109	4 3/4	35
231	12 NBS	.104	4 3/4	30
232	14 B&S	.064	4	20
233	14 BWG	.083	4 1/2	23
234	14 NBS	.080	4 1/2	23
235	16 B&S	.051	4	18
236	16 BWG	.065	4	20
237	17 B&S	.045	4	15
238	18 B&S	.040	4	14

National Double Tube Tinned Copper Sleeves

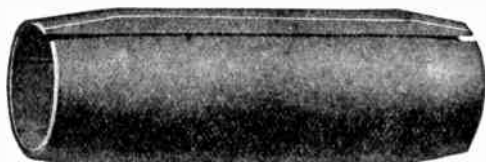
Cat. No.	Gauge No.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000
240	8 BWG	.165	6 3/4	110
241	9 BWG	.148	5 3/4	90
242	10 BWG	.134	5 1/2	65
243	12 BWG	.109	4 3/4	40
244	14 BWG	.083	4 1/2	30
245	16 BWG	.065	4	25

National Double Tube Tinned Steel Sleeves

Cat. No.	Gauge No.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000
250	8 BWG	.165	6 3/4	90
251	9 BWG	.148	5 3/4	60
252	10 BWG	.134	5 1/2	55
253	12 BWG	.109	4 3/4	35
254	14 BWG	.083	4 1/2	30
255	16 BWG	.065	4	25

National Single Tube Connectors

For Splicing Underground Power Transmission Cables



These sleeves are split their entire length to enable the hot solder to flow evenly around the cable and are covered with a coating of tin to permit easy soldering. The ends are beveled so that there will not be the possibility of the building up of a high potential occasioned by sharp corners.

Cat. No.	Size Cond.	Cable	Diameter, Inches	Approx. Inside Sleeve	Length Inches	Ship. Wt., Lbs. per 100
325	12 B&S Solid	.081	.086	2	1	
326	10 B&S "	.102	.107	2	1 1/2	
327	10 B&S Strand	.115	.120	2	2	
328	8 B&S Solid	.128	.133	2	2	
329	6 B&S "	.162	.167	2	3	
330	6 B&S Strand	.183	.190	2	4 1/2	
331	5 B&S Solid	.182	.188	2	4	
332	5 B&S Strand	.206	.212	2	5	
333	4 B&S Solid	.204	.210	2	5	
334	4 B&S Strand	.231	.240	2	5 1/2	
335	3 B&S Solid	.229	.235	2	5	
336	3 B&S Strand	.261	.270	2	6	
337	2 B&S "	.291	.299	2	6	
338	1 B&S "	.330	.340	2	7	
339	0 B&S "	.375	.381	2	8	
340	00 B&S "	.420	.428	2	9	
341	000 B&S "	.470	.482	2	12	
342	0000 B&S "	.530	.540	2 1/4	15	
343	200000 C. M.	.512	.522	2 1/4	14	
344	250000 "	.575	.585	2 1/4	24	
345	300000 "	.630	.642	2 1/2	28	
346	350000 "	.679	.693	2 1/2	33	
347	400000 "	.728	.741	2 3/4	38	
348	450000 "	.770	.785	2 3/4	43	
349	500000 "	.819	.828	3	48	
350	550000 "	.855	.867	3	50	
351	600000 "	.891	.907	3	57	
352	650000 "	.927	.944	3	60	
353	700000 "	.963	.981	3	65	
354	750000 "	.999	1.016	3 1/2	87	
355	800000 "	1.035	1.048	3 1/2	91	
356	850000 "	1.062	1.081	3 1/2	98	
357	900000 "	1.092	1.112	3 1/2	100	
358	950000 "	1.125	1.145	3 1/2	107	
359	1000000 "	1.152	1.175	4	118	
360	1250000 "	1.289	1.314	4	173	
361	1500000 "	1.412	1.437	5	205	
362	1750000 "	1.526	1.556	5 1/2	250	
363	2000000 "	1.630	1.665	6	310	
364	2500000 "	1.819	1.854	6 1/2	370	

National Single Tube Split and Tinned Cable Sleeves

For Large Gauge Telephone Cable

It is not desirable to splice large gauge telephone cables used in long distance or toll line work by ordinary hand methods, as the joints thus formed would take up too much space.

For this work a single tube sleeve is provided, split its entire length and covered with a coating of tin, to permit of easy soldering. In this way the joint is solid and compact and at the same time an extremely efficient electrical connection is obtained.

Cat. No.	Gauge B. & S.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000	Cat. No.	Gauge B. & S.	Diam. Wire Inches	Length Inches	Wt., Lbs. per 1000
260	10	.102	1 1/2	5	62	14	.064	1 1/2	4
61	13	.072	1 1/2	4	63	16	.051	1 1/2	3

Prices on application.

National Aerial Cable Rings



This ring is made of spring steel wire galvanized by hot dip process after being formed. It is attached without the use of a tool and will stay in position on the strand.

Specify size of strand when ordering.

Packed in burlap sacks.

Size Inches	Size Strand Inches	Weight per 1000 Pkg.	Std. Pkg.	Price per 1000
1½	5/16-3/8	55	2000	\$18.00
2	5/16-3/8	62	1000	27.50
2 Heavy	5/16-3/8	75	1000	30.00
2½	3/8-7/16	90	1000	35.00
3	3/8-7/16	105	500	38.00
3½	7/16	115	500	43.00

National Marline Cable Hangers
No. 3 A. T. & T. Specifications



The hooks are made of No. 9 spring steel wire and are regalvanized by hot dip process after they are formed.

The loop is three-ply houseline in the lengths indicated.

Lgth. of Loop, In.	Size of Cable, Pair	Wt., Lbs. per 1000	Price per 1000
9	25	35	\$15.98
11	50	37	17.72
12	75	38	18.56
14	100	40	20.39
15	150	42	21.38
16	200	45	22.07

No. 6 regalvanized hooks furnished on this grade at a net advance of \$1.50 per thousand.

Bonita Aerial Cable Rings

Attach on the strand by hand easily and quickly. May be used either for new work or reclipping on old cables. May be reused. The ring size is determined by the diameter of the circular opening of the rings when on the strand. May be obtained for any diameter of messenger wire. Specify strand size in each instance. Allow at least 3/4-inch greater diameter of ring than outside diameter of cable to be installed.



Diam. Inches	No. and Kind of Wire	Std. Pkg.	Wt. Lbs.	Price per 1000
1½	11 round	2000	65	\$16.00
1½	3/2 x 3/16	1000	48	18.00
2	1/4 x 1/4	1000	70	25.00
2	1/8 x 1/4	1000	87	30.00
2½	1/8 x 1/4	500	55	35.00
3	1/8 x 1/4	500	60	40.00
3½	1/8 x 1/4	500	65	45.00
4	Special	250	..	70.00
4½	to order	250	..	85.00

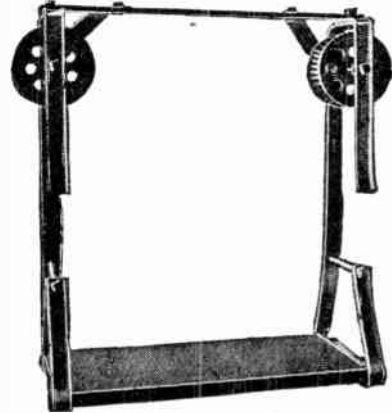
Blackburn Neverslip Triple Type Cable Rings



Neverslip Rings are applied by hand, no tool required. Can be installed over or removed from an existing cable without injury to the ring or strand. Hangers fit 1/4-inch to 1/2-inch strand.

Cat. No.	Size Hanger Inches	No. in Sack	Wt., Lbs. per 1000	Price per 1000
1½	1½	500	102	\$16.00
2 (Light Weight)	2	500	113	18.00
2 (Heavy ")	2	500	157	20.50
2½	2½	500	167	23.50
3	3	500	185	26.50
3½	3½	500	203	29.00

Davis Linemen's Safety Chairs



Now made with aluminum wheels, the large corrugations of which negotiate with ease, cable rings, clamps and thimbles without injury to them.

Users of this chair claim that they can apply more rings in a given time and with more ease than can be done with other types of chairs.

The Davis is the ideal chair to use when installing Blackburn's Neverslip cable rings.

Pr.ce. each \$15.00

Bierce Cable Rollers



The Bierce Cable Roller is practically unbreakable, the frame being made of forged steel and the roller of cast iron, protected on both sides by pressed steel disks, insuring the cable from injury and preventing it from catching when being pulled over the roller.

The clamping device, being mounted upon the hinged member, allows the frame to be rigidly clamped in position without placing any side strain on the messenger wire. The frame is so constructed that it will hang safely from the wire before the clamp is tightened.

Price, Plain each \$3.50

No. 2000 Klein's Matlock Cable Rollers



By use of this roller, the work of running aerial cable is greatly expedited. A suitable number of rollers are attached to messenger wire in manner shown in illustration, fastened in place by the T handle screws. Cable is then placed on the maple rollers and carried on to any required distance.

A great many feet of cable can thus be run with ease and in a short time. The maple roller has a metal bushing extending beyond each end. This prevents wear on roller and keeps it in center of frame. Frame is forged of mild steel. Weight, No. 2000-30, 4½ pounds; No. 2000-31, 8 pounds.

Price, No. 2000-30, with Wooden Roller each \$4.75
" " 2000-31 " Iron " " " " " 6.50

Galvanized Bridle Rings



Style	SIZE, INCHES			Price per 1000
	Eye	Opening	Shank	
A	1 5/8	1/4	1 1/4	\$70.00
C	1 1/4	1/4	1 1/2	60.00
E	5/8	1/4	7/8	26.00
F	3	1/4	1 3/4	270.00

Prices on enamel furnished upon application.

Seamless Linemen's Rubber Gloves



Made from the finest grade of pure Para rubber combined with the proper chemicals to give maximum durability and non-conducting properties.

Vulcanized by a long, slow, steam cure, which develops to the greatest extent their long-wearing qualities and insures extreme flexibility

under all conditions of weather.

These gloves have the most uniform thickness with no thin spots at finger tips or creases.

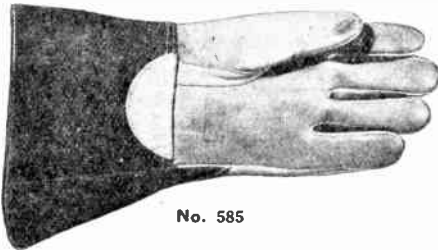
Supplied in two types, A and B, both tested to 10000 volts. Type A is a heavy glove and can be used without protector. Type B is a lighter glove in weight and more flexible, soft, and better adapted to use in cold climates. Type B should be covered in doing rough work by the genuine horse-hide leather protector gloves with gauntlets.

All gloves are 14 inches long over all. The standard size is 10, but sizes 10½ and 11 can be furnished. The standard size of protector gloves is 11.

Packed 1 pair in a box.

Price, No. 706, Type A, Untested.....	} Prices upon Application.
" " 709 " A Tested.....	
" " 710 " B, ".....	
" " 711 " B, Untested.....	
" Genuine Horse-hide Leather Protector Gloves with Gauntlets....	

Linemen's Leather Protector Gloves



No. 585

Linemen's Protector Gloves are made of tanned horsehide of superior quality, soft and flexible, and will not become hard when dried after immersion in water. They are made with welted seams and reinforced thumb strap, in sizes 11, 11½ and up. These gloves are made to protect a rubber glove from wear.

Sizes, 9½, 10 and 10½ are for protection of linemen drawing cable, conduit, etc., or any other outside operation.



No. 524

Nos. 585, 586 and 587 are full length gloves with gauntlet and closed back.

No. 524 is a short glove with extended palm and open back.

Packed, 1 pair in a box.

Price, No. 585.....	per dozen pairs	\$12.50
" " 586.....	"	12.50
" " 587.....	"	12.50
" " 524.....	"	12.50

Marshall's Linemen's Shields



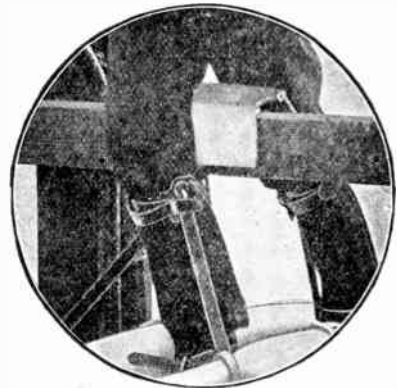
Linemen's shield submerged test as follows: Shield placed in water, inside of shield filled with water to within 1½ inches of edge of shield. 1 minute at 20000 volts, ½ minute at 25000 volts and 10 seconds at 30000 volts.

Do not try to repair or patch these shields. If for any reason whatsoever the shields become defective or unserviceable inside of five years from date of shipment, return shield with full details, and an allowance will be made towards the purchase of a new one.

Price.....	each	\$35.00
" Hard Rubber Rings for Linemen's Shields "	"	.50
" Straps for Linemen's Shields.....	"	.75

Marshall's Linemen's Cross Arm Shields

Tested to 20000 Volts



Cross arm protectors dry test. Metal on inside and metal on outside. 1 minute at 10000 volts, ½ minute at 15000 volts, and 10 seconds at 20000 volts.

In ordering cross arm shields, be careful in stating length between pins from center to center and width of cross arm on tip as they have to be made to fit. Made in lengths up to 17 inches from center to center of pins.

Price.....each \$10.00

Marshall's Linemen's Shoes

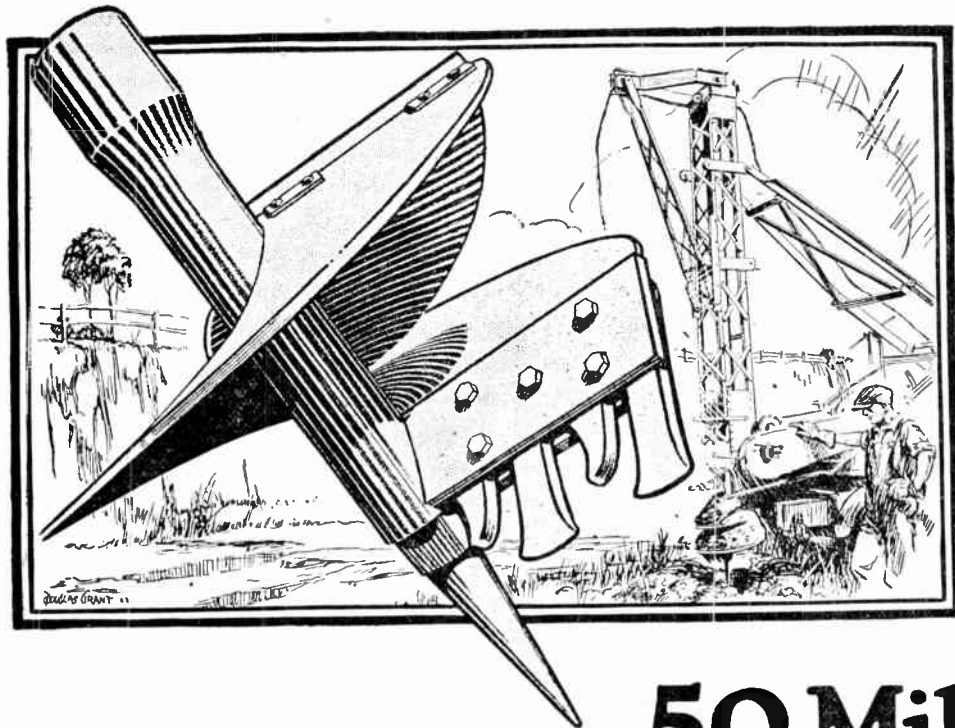
Test: Place the shoe in 2 inches of water, fill the shoe with water to depth of 1¼ inches at center of shoe. 2 minutes at 5000 volts, 1 minute at 10000 volts and 10 seconds at 20000 volts.

A perfectly insulated rubber shoe which gives linemen on the poles, on the ground and in the manholes absolute protection against pressures up to 20000 volts. It is vulcanized into a solid piece and will not peel nor come apart; nor can it be affected by oil, gasoline or grease. No metal used in any part of its construction.

Each pair of shoes includes 1 pair of specially made stockings. Shoes carried in sizes 7, 8, 9, 10 and 11. Unless special size is specified No. 9 will be sent.

Price.....	per pair	\$12.00
" Linemen's Stockings.....	"	1.25





50 Million earthworms rolled into one

IT takes power to dig a nine-foot hole through hard soil in six minutes. But power is just what's back of this husky digger.

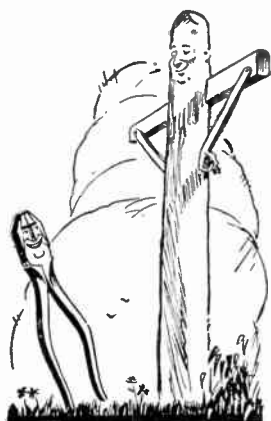
The Auto Earth Borer and the Auto Pole Derrick are an unbeatable combination for digging holes and setting telephone and electric light poles. These capable tools are typical of many which Western Electric distributes to save the cost of man power and help speed up your public utility service.

Backing up industry with electrical supplies

Western Electric brings to this city supplies of everything electrical, selected from markets the country over, and stocked in our warehouse downtown—ready for regular or emergency orders.

To wholesale electrical buyers, service like this makes possible a worthwhile economy. Depend on Western Electric, and your own stocks can be largely reduced, with a consequent saving in your investment and expense of storekeeping.

We think it will pay you to look into Western Electric service. Some interesting particulars are available whenever you are.



Orders that go to extremes

Filing an order that ranges from a pair of pliers to a 60-foot telephone pole is all in the day's work with us. Wholesale buyers can secure complete stocks of everything electrical through Western Electric.

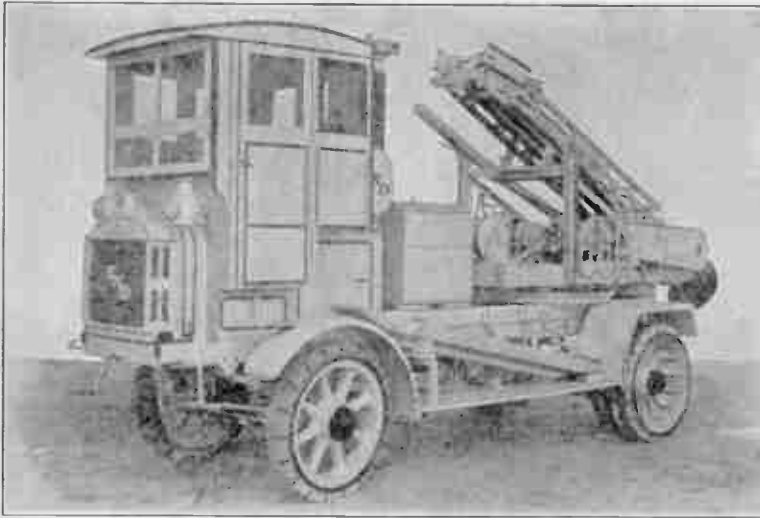
Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Earth Boring and Pole Setting Equipment



Central Station Type Earth Boring Machine

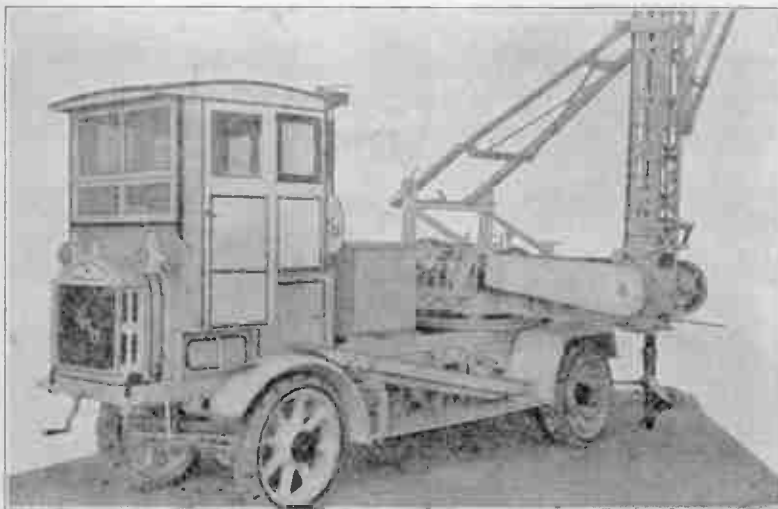
demand of the user. A 6-foot tower allows for boring a hole 6 feet deep; a 9-foot tower is used for boring holes up to 9 feet deep and a 12-foot tower provides for holes up to the 12-foot depth. This tower is of latticed angle iron and is $8\frac{1}{2}$ inches one way by $15\frac{1}{2}$ inches the other and it is possible to tilt it to any angle desired by means of a double acting ratchet wrench. The tower is tilted on a worm made from carbon steel carbonized. This worm has a reduction of 44 to 1.

The augers are all made of special cast steel and are of special designs of the spiral type and can be had in various sizes from 15 inches to 48 inches. Cutting blades are furnished with each auger.

The Central Station Type Machines are equipped as standard with one 24-inch and one 30-inch auger and have a 9-foot tower. This machine will bore a hole 10 feet deep on absolutely level ground, and is rated as a 9-foot size, one foot being allowed for unevenness in ground surface. The boring machine is furnished with a 6-foot turn table which enables the operator to bore holes from either side of the truck as well as from the rear.



The Auger for Boring Through Shale



Bell System Type Earth Boring Machine

Because soil conditions vary it is impossible to state definitely how much work the earth boring machine will do in a given amount of time.

Under favorable conditions, however, the machine will bore a 24-inch hole 7 feet deep in 2 minutes. Under ordinary conditions, holes can be bored and poles dropped into them at the rate of 60 per an 8-hour day. Records furnished by present users are indicative of a saving of from 3 to 5 dollars on each hole bored and pole set.

The machine will dig holes in any kind of soil that can be dug by hand methods without blasting. By using a special auger, supplied by the company, a 24-inch hole 7 feet deep can be dug through the toughest shale in 12 minutes.

The earth boring machine is designed exclusively for FWD trucks and is operated from a special power take-off. To operate any part of the borer the operator must first throw in the rotating earth boring clutch.

The tower on the earth boring machine can be furnished in various lengths to meet the

This turn table gives a range of more than 180 degrees and the auger may be stopped at any point in this semi-circle and a hole bored. The tower may also be tilted from any point within this range. It requires but 15 seconds to turn the table from one extreme position to the other.

In order to relieve the springs of the truck from all strains and shocks when the boring machine is in operation, a positive lock has been provided on the rear springs. These locks are left in place when moving from one hole to another and disengaged only when the truck is traveling for any unusual distance.

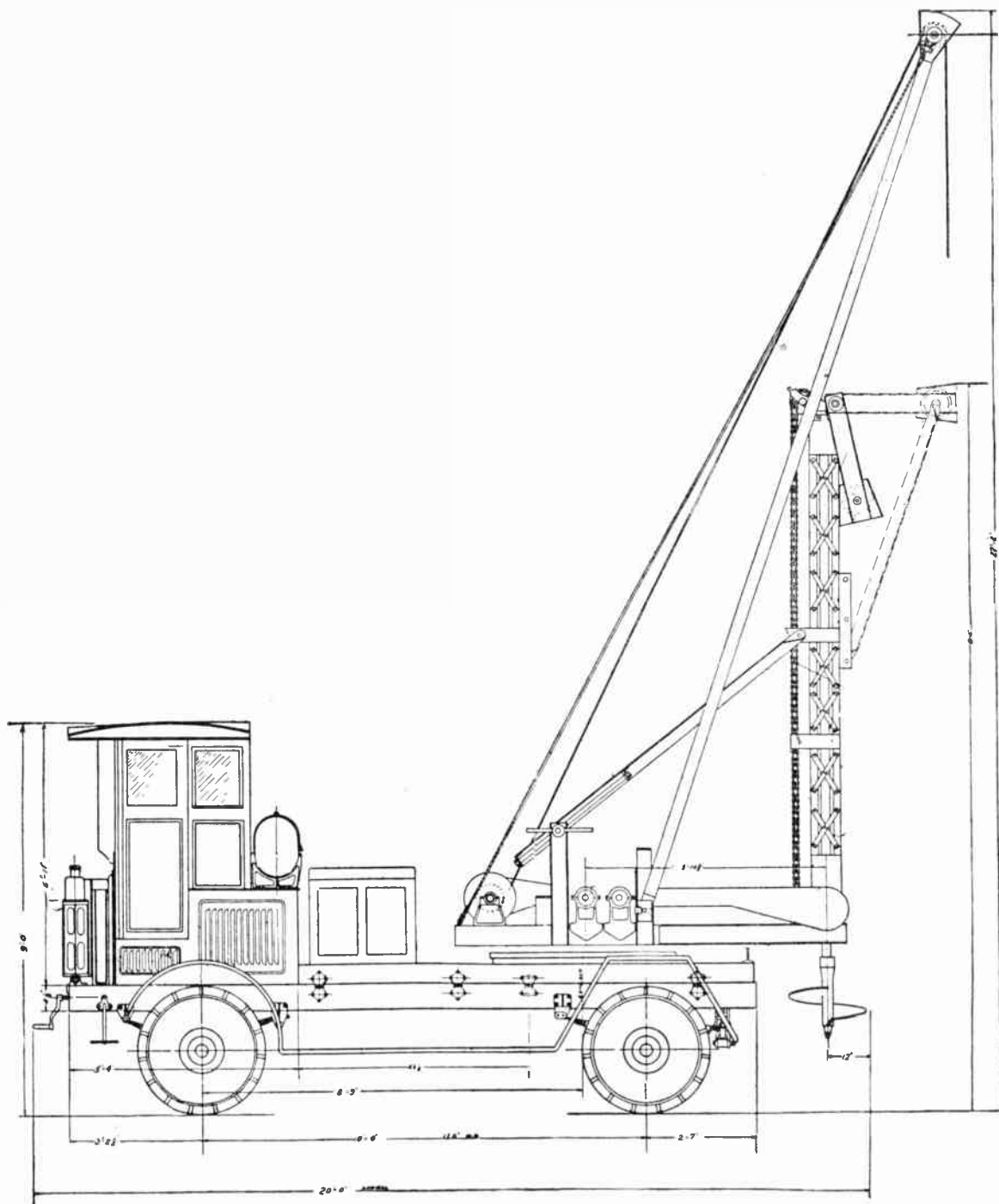
The Bell System Type Earth Boring Machine is the same as the Central Station Type except that it is a 6-foot machine. It will, however, bore holes 7 feet deep on absolutely level ground. The auger tower, shaft and chain is, therefore, 3 feet shorter than the Central Station Type.

It will set 35-foot poles, instead of 65-foot. Augers furnished are 20-inch and 24-inch instead of 24-inch and 30-inch. Total weight is 14,300 pounds instead of 15,000.

With the above exceptions, both types of machines are identical and the same amount of extras as outlined in Central Station Type are shipped with machine.

Earth Boring and Pole Setting Equipment

Continued



Dimensions of Earth Boring Machine

A winch is mounted on the front end of the earth boring frame. This winch has a lifting capacity of 5000 pounds and is used in connection with the standard boom or special derrick in the pulling or setting of poles. A steel cable is run from the winch to the top of the boom or derrick over an 8-inch sheave and thence to the pole or other object to be lifted. This sheave has an oilless bronze bushing.

For longer lengths a special derrick is furnished. The special derrick is 25 feet 8 inches long and measures 28 feet from the ground to anchor brackets on the side of the earth boring machine frame and 2 cables are run from the top of the derrick to the front end of the earth borer frame to hold

derrick firmly in place. Stops are provided on the anchor brackets to prevent derrick from falling forward on the truck cab. The derrick has a capacity of 4000 pounds and is made from 3½-inch outside diameter 40 to 45 cold drawn seamless steel tubing with a wall thickness of .134 in. The total weight of the derrick is 350 pounds and it is so designed that it can be quickly set up or taken down. The derrick is carried on the side of the truck and extends 6 feet 4 inches behind the machine when assembled for transportation. The over all length of the chassis with derrick folded is 28 feet. The derrick is made in any length from 22 to 28 feet and will handle poles up to 70 feet in length.

Enclosed Gear Type Earth Boring Machines Mounted on FWD Auto Trucks



In addition to earth boring machines with turntables described and illustrated elsewhere in this catalogue, the FWD Auto Truck can be furnished and equipped with an Enclosed Gear Type Earth Boring Machine as shown in the accompanying illustrations.

Specifications of FWD Model B 3-ton Chassis (A. T. & T. Type)

Tractor construction, motor under hood, left hand drive.

LOAD CAPACITY.—3 tons.

BODY WEIGHT ALLOWANCE.—1500 pounds.

CHASSIS WEIGHT.—7300 pounds.

WHEELBASE.—133 inches.

TREAD.—56 inches.

TURNING RADIUS.—34 feet, 6 inches.

SPEED.—15 $\frac{3}{4}$ miles per hour on high, 7 $\frac{1}{8}$ miles per hour on intermediate, 2 $\frac{1}{2}$ miles per hour on low.

TIRES.—Front, 40x7 inches; rear, 40x5 inches dual.

CYLINDERS.—4, cast in pairs, 4 $\frac{3}{4}$ -inch bore, 5 $\frac{1}{2}$ -inch stroke, offset $\frac{3}{4}$ inch.

CRANK SHAFT BEARINGS.—Diameter, 2 inches; length, front and center, and connecting rod, 3 $\frac{1}{2}$ inches; rear 4 inches long.

WRIST PIN.—Hardened steel, hollow, bearing in cast iron piston, 1 $\frac{1}{16}$ inches in diameter, 3-inch long bearings.

CAM SHAFT.—1-piece forged steel; smallest diameter, $\frac{1}{16}$ inch; 3 bearings.

PISTONS.—Cast iron, 6 $\frac{1}{4}$ inches long.

PISTON RINGS.—3, cast iron, $\frac{1}{4}$ inch wide.

VALVES.—Diameter, 2 $\frac{1}{2}$ inches; lift, $\frac{3}{8}$ inch.

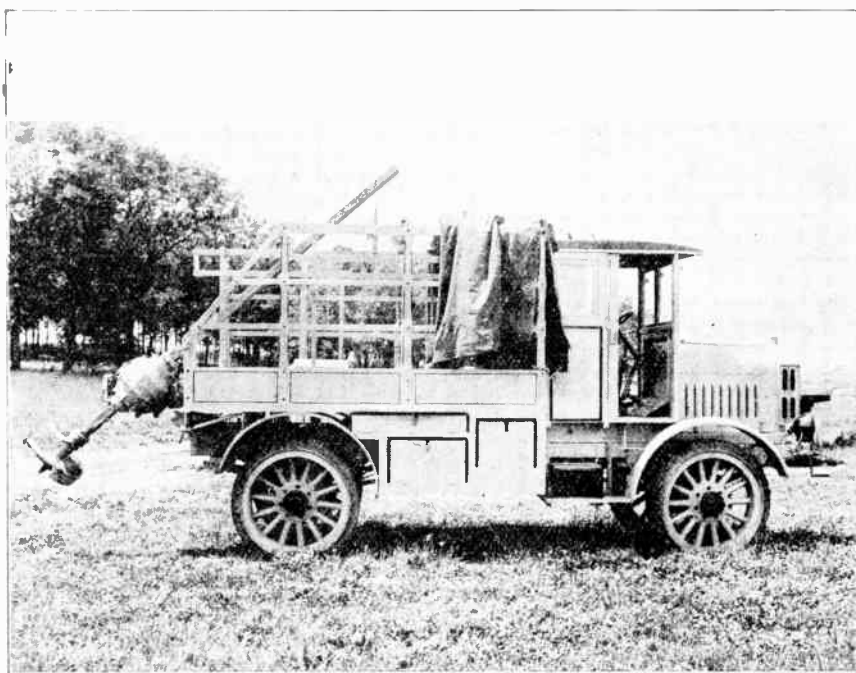
FLYWHEEL.—16 $\frac{3}{4}$ inches in diameter, 3 $\frac{1}{4}$ -inch face. Timing marked thereon.

CRANK CASE AND COVERS.—Aluminum.

WEIGHT OF ENGINE.—600 pounds.

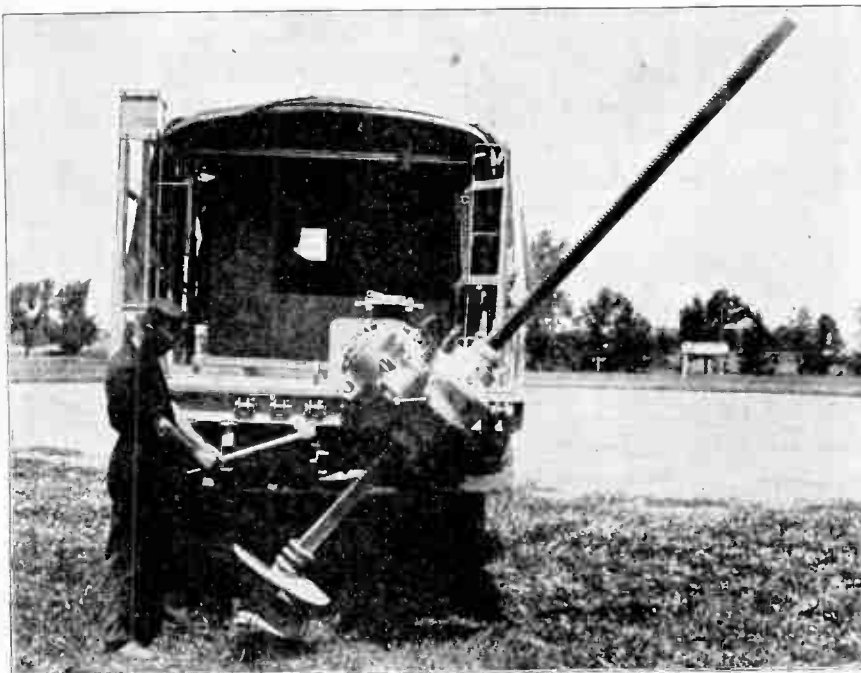
HORSEPOWER.—36.1 S.A.E.; displacement, 389.6 cubic inches.

CONTROL.—Left hand drive and right hand shift. Conventional H. type, shifting gate, 3 speeds forward and 1 reverse. Service foot brake operating on all 4 wheels. Emergency hand brake operates on rear wheel drums. Hand and foot throttle. Spark lever on steering column.



Enclosed Gear Type Earth Boring Machines Mounted on FWD Auto Trucks

Continued



COOLING SYSTEM.—Capacity, 10½ gallons; tubular core radiator with cast tanks and sides. Centrifugal type bronze water pump driven through flexible coupling. 4-blade fan, 22 inches in diameter, driven by 1½-inch belt.

CARBURETOR.—Plain tube type 1¼-inch.

LUBRICATION.—Combined force feed and spray; pressure, 5 to 10 pounds per square inch; capacity, 10 quarts.

TRANSMISSION.—Jaw clutch type with gears always in mesh. Selective. Ratio, 1-1 on high, 2-1 on second, 6.3-1 on low, 4.13-1 on reverse. Gears; 1¼ inches wide; 5-7 pitch; ball and roller bearings exclusively. Runs in oil. Aluminum case.

CENTER DIFFERENTIAL.—Mounted on ball bearings. Driven by 5-inch wide silent chain. Runs in oil. Provided with hand operated lock which is controlled by driver from seat.

SPRINGS.—Alloy steel, semi-elliptic; 2½ inches wide. Front, 42¾ inches long; rear, 52¾ inches long.

CLUTCH.—Multiple disc, running in oil, 12 bronze and 11 steel discs.

GASOLINE CAPACITY.—20 gallons.

UNIVERSAL JOINTS.—Fabric type joint between clutch and transmission. One universal joint on each end of propeller shafts.

AXLES.—Both axles full floating and provided with roller bearings throughout. Ball and socket type in front axle housing, enclosing universal joint on driving shaft. Differentials of bevel gear type.

BRAKES.—Service foot brake, external, transmission type, 11½ inches in diameter by 7 inches wide, mounted on frame cross member. Emergency brake, external, 15¼ inches in diameter by 2¾ inches wide on rear wheel drums.

BEARINGS.—All wheel roller bearings interchangeable.

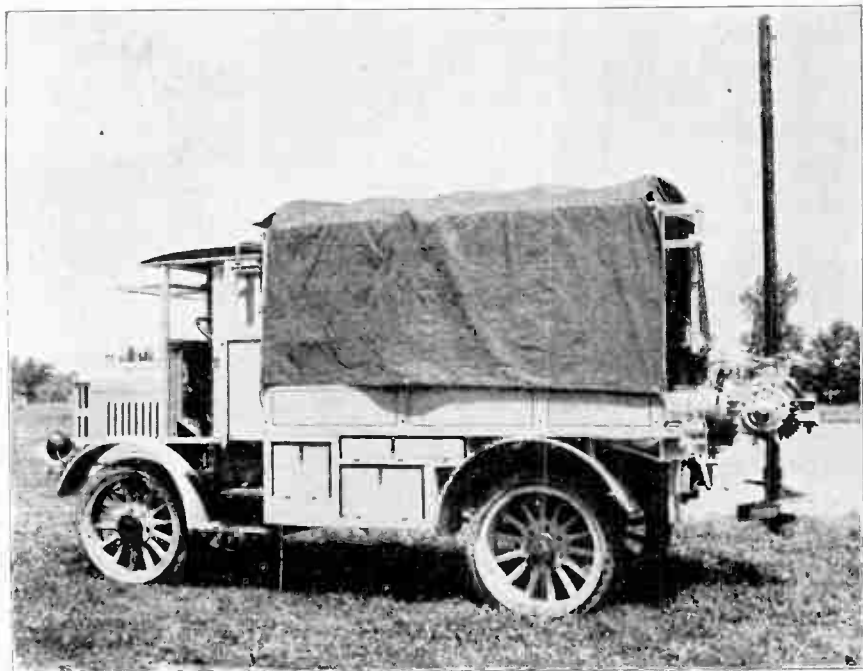
EQUIPMENT.—Complete set of tools. Tool box, oil cans, horn hub cap, valve and magneto wrenches. Two kerosene side lamps, one kerosene tail lamp.

PAINTING.—Chassis painted in lead color.

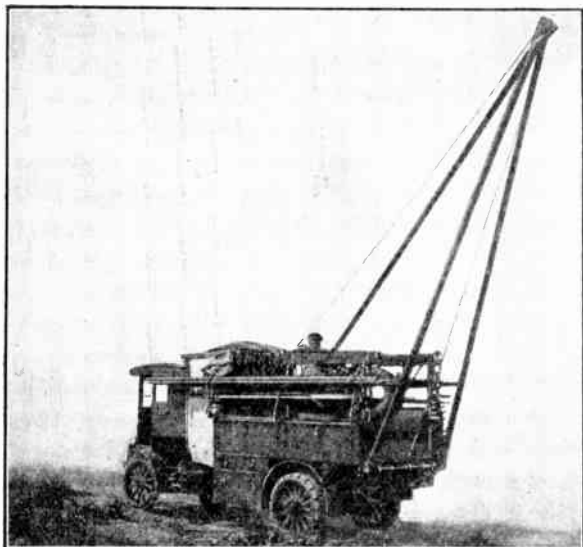
CAB.—Inclosed type of wooden frame and sheet steel panels.

NOTE. Body as permanent equipment. Truck available as truck alone by removing 4 bolts and disconnecting at power take-off.

Prices upon application.



Automobile Pole Derricks



H-T Type

The derricks shown adapt the abilities of modern motor trucks to the services of pole line construction and maintenance organizations.

They are designed to be light of weight, and yet be strong for the loads that come upon them.

A crew of from 10 to 12 men was common in the past. The derrick connected with the truck motor takes all the heavy work off the men. The truck crew can be cut to 5 or 6 men.

The saving on direct labor by reduction of crew averages the total cost of truck and equipment each year.

To protect the ideas and labors involved, these derricks are covered by Letters Patent held by the American Tel. & Tel. Co. We are the only licensed manufacturers.

Realizing our success, many have attempted to imitate our derrick, with poor materials and poorly worked out mechanical details. The use of such derricks subjects the truck crews to unusual hazards and risk.

General Specifications of Materials

TUBING.—Special heat-treated seamless drawn steel of from 115,000 to 120,000 pounds tensile strength.

All points taking strain reinforced inside or outside.

SHEAVES.—Forged steel; that for derrick head bushed with self-lubricating bronze.

QUICK HOOK.—Drop forged.

REAR SPINDLE.—Same material specification as derrick tubing.

PAINTING.—One coat of anti rust; one coat of lead enamel, usually red in color, as danger signal.

The metal parts for body of truck are made up in standardized sets and can be attached to practically any 2 or 3-ton truck. Blue print of how to attach them furnished purchasers.

Large assortment of tubing for regular or special derricks always carried in stock.

A complete derrick assembly includes:

- Derrick Proper—1 Right-hand side leg.
- 1 Left-hand side leg.
- 1 Middle leg, upper section.
- 1 " " middle "
- 1 " " lower "
- 1 Apex pin key, snap and chain.
- 1 Floor pocket bolt.
- 2 Connecting pins, key, snap and chain.

- 1 Foot plate.
 - 1 Rear spindle and sheave (length to suit truck body).
 - 1 Tail bolt assembly.
 - 2 Front supports for spindle.
 - 2 Rear " " " " }
 - 1 Floor pocket.
 - 1 Quick hook for end of winch line.
- } Designated as Metal Parts for attaching to truck body.

Automobile Pole Derricks

Continued



Front Support for Rear Spindle



Rear Support for Rear Spindle



Tail Bolt Assembly

B-T Type

Lift as stiff leg from 11 feet 0 inches to 16 feet 0 inches. Lift as mobile assembly approximately 20 feet 0 inches. Suitable for handling poles up to 45 feet 0 inches in length. Poles normally planted and not rock-bound can be removed by this derrick without the use of a shovel.

This derrick can be applied to practically any 2 or 3-ton truck.

This derrick is interchangeable on the same truck with a P-S or Hy. P-S derrick.

Price, B-T Type, Complete.....each \$325.00

P-S Type

Lift as stiff leg from 13 feet 0 inches to 18 feet 0 inches. Lift as mobile assembly approximately 22 feet 6 inches. Suitable for handling poles up to 55 feet 0 inches in length.

The Hy. P-S Type has the same dimensions as the P-S Type, but is made from tubing about 50 per cent heavier and is suitable for heavier service.

The P-S and Hy. P-S Types can be applied to any 2 or 3-ton truck. Both these types are interchangeable with the B-T Type on the same truck.

Price, P-S Type, Complete.....each \$350.00
 " Hy. P-S Type, Complete..... " 400.00

H-T Type

Lift as stiff leg from 16 feet 0 inches to 23 feet 0 inches. Lift in mobile assembly approximately 27 feet 0 inches. Suitable for handling poles up to 70 feet 0 inches in length.

Due to the height of the suspended load above ground, this derrick should not be attached to anything lighter than a 5-ton truck. It is not usually interchangeable with any smaller type.

Price, H-T Type, Complete.....each \$650.00

Hinge Type

The standard types are provided with a foot piece for lower end of middle leg, which fixes the position of derrick head and overhang at rear of truck.

Many times a bank on which a pole is placed or to be placed, or a hedge or deep gutter has prevented the truck being so placed as to be of service.

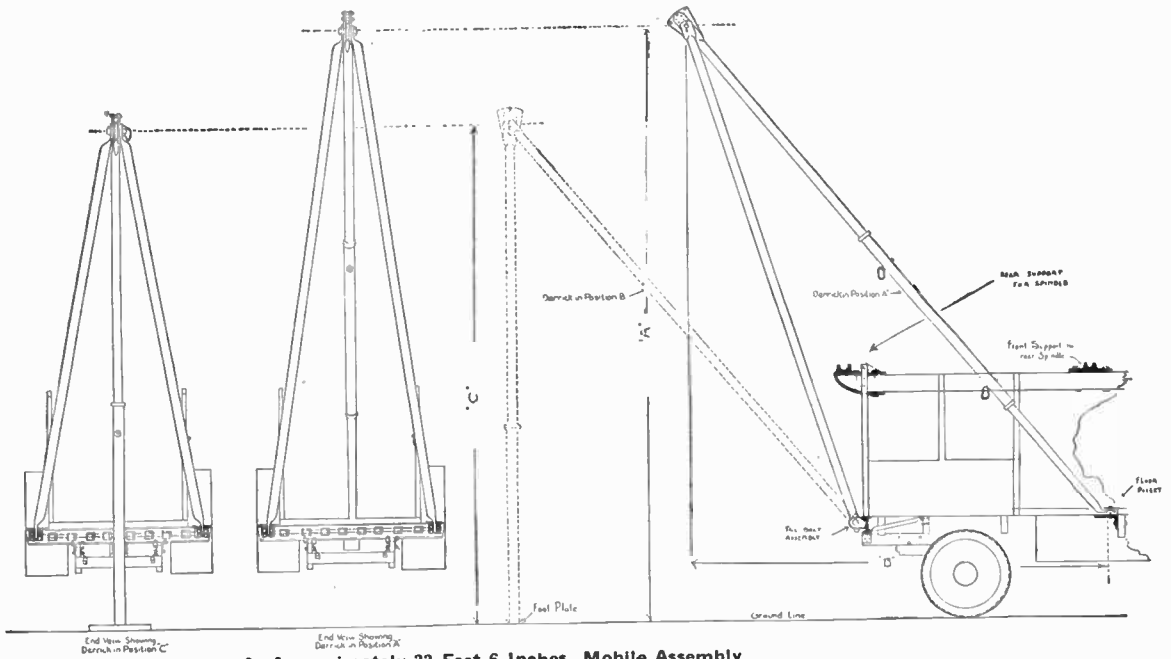
The Hinge Type Derrick can be changed from one extreme position to the other without the telescoping center leg becoming disengaged. All positions are fixed by use of pins.

The sketch gives an idea of the flexibility of this derrick.

Hinge Type Derricks are made in B-T, P-S and Hy. P-S Types at no extra cost.

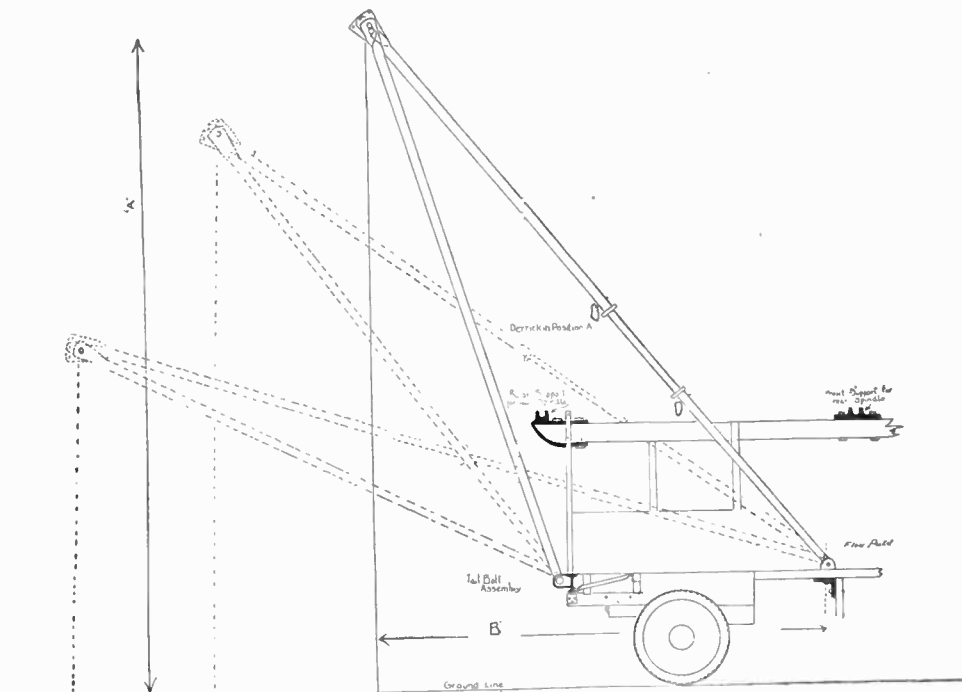
Automobile Pole Derricks

P-S and Hy. P-S Types



A= Approximately 22 Feet 6 Inches, Mobile Assembly
B= About 13 Feet 0 Inches, Overhang=About 5 Feet 0 Inches
C Varies from 13 Feet 0 Inches to 18 Feet 0 Inches, Stiff Leg Assembly

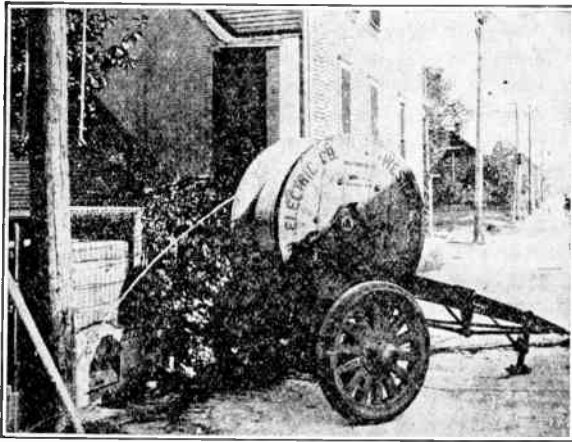
Hinge Type



A= Same Maximum Height as Standard Derrick of Same Type and is Variable below that Dimension
B= Same as Standard Derrick and Varies with Position of Derrick

Type D Cable Reel Trailers

Designed by American Telephone & Telegraph Co.'s
Engineers



Trailer in Position for Paying Out

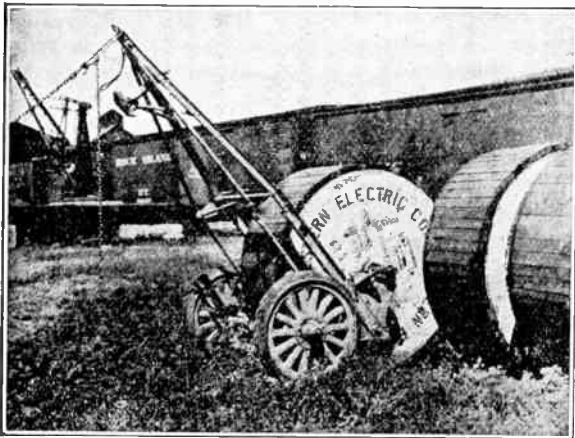
CAPACITY.—Accommodates reels 3 to 7 feet in diameter and 35½ to 48 inches wide.

Cable reel trailers save expense in jacking up reels when paying out cable. Save wear and tear to cable spool. Save price of truck or team for transporting. Trailer on which cable is loaded is pulled by the same truck employed for other work. Saves hazards of accidents.

One man in addition to truck driver is all that is needed to operate this trailer.

It is possible to reduce man hour cost 50 per cent.

The Type D Cable Reel Trailer is equipped with adequate spring suspension, making it possible to pull trailer over roughest places without damaging the cable.



Loading Reel on Trailer

SPECIFICATIONS.—Capacity, 3 tons. Frame: 4 inches, 10½ pounds, steel I-beam. Springs: elliptic, 22¾x3½ inches, 10 leaves. Wheels: S. A. E. 14, 2½x3-inch spokes. Tires, 40x5-inch Goodyear A. W. T. Axles, special; Continental, bell crank, 2½ inches square. Bearings, Timken.

*Telephone Type D

Tread, 64 inches.

Weight, 2145 pounds.

*Central Station Type D

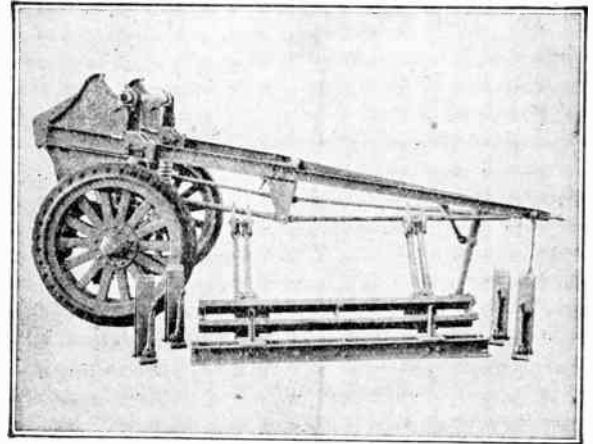
Tread, 76½ inches.

Weight, 2332 pounds.

*Same except Central Station Type accommodates wider reel.

Prices upon application.

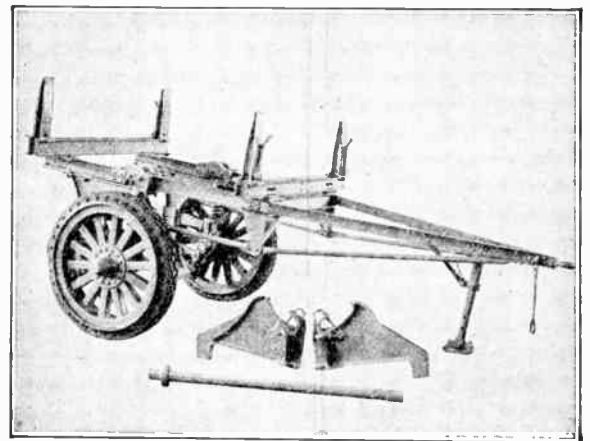
Combination Pole and Cable Reel Trailers



Equipped for Hauling Cable Reels

Advantages of the combination pole and cable reel trailer are many.

Central stations which do not have continuous work for cable reel trailers should use this type of trailer. By removing 4 bolts, cable reel saddles can be replaced with special holster, thus converting the cable reel trailer into a pole trailer and vice versa. Trailer will accommodate poles any length. By balancing first pole on trailer, using this pole as a reach, securing from end of pole to truck, remaining poles can be loaded on trailer and bound securely with pole binders and chains to first pole. Flexibility of use in a trailer of this type together with its rugged construction, should make it the choice of central station operators.



Equipped for Hauling Poles

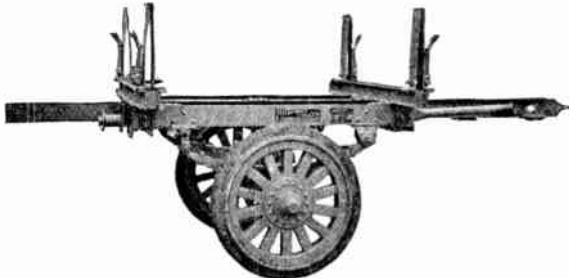
SPECIFICATIONS.—Capacity, 5 tons. Frame: 4 inches, 10½ pounds. Steel I-beam. Wheels: S. A. E. 14, 3x3-inch spokes. Tires, 40x7-inch Goodyear solid A. W. T. Axles, special; Continental, bell crank, 2½ inches square, 40-45 carbon steel. Bearings, Timken. Tread, 64 inches. Weight, 2912 pounds.

Prices upon application.

Models M and H Pole Trailers

Designed by American Telephone & Telegraph Company's Engineers

For Use When the Entire Load Is to Be Carried on the Trailer



Model M—Capacity, 3 Tons

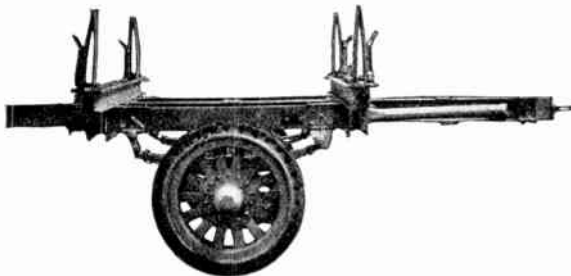
The same truck and truck driver employed for carrying wire, tools, cross arms, and other construction material can pull this trailer loaded with poles.

The trailer is equipped with telescoping tongue permitting hauling poles of various lengths. Tongue is attached to rear of truck by means of military pintle hook hitch which is included in price of trailer.

The small winch bracketed to rear of trailer is used for tightening cable which binds load.

Each trailer is equipped with 2 stationary bolsters on which are mounted steel sliding adjustable uprights held in place by eccentric levers.

Made in 2 different sizes.



Model H—Capacity, 5 Tons

Model M

SPECIFICATIONS.—Capacity, 3 tons. Frame: 72x43 inches, 5-inch channel. Springs: 46x3 inches, 14 leaves, silica manganese steel. Wheels: S.A.E. 14, 3-inch spokes. Tires, 36x5-inch Goodyear solid A.W.T. Axles: Continental drop forged, 2½ inches square. Bearings, Timken. Tread, 56 inches. Bolster: 6-inch channel, 68 inches wide. Bolster stanchions: 18x4 inches, adjustable. Adjustable tongue, 6 adjustments for variable lengths. Weight, 2105 pounds.

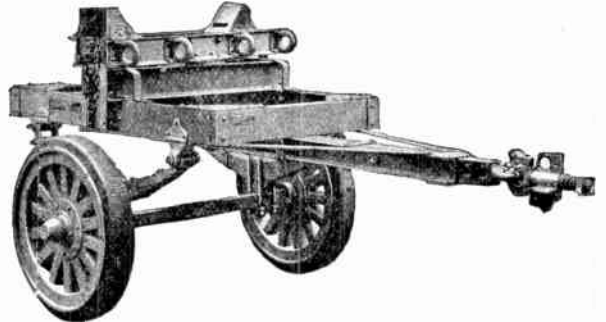
Model H

SPECIFICATIONS.—Capacity, 5 tons. Frame: 72x43 inches, 6-inch channel, 13 pounds. Springs: 49x3½ inches, 12 leaves, silica manganese steel. Wheels: S.A.E. 14, 3-inch spokes. Tires, 36x8-inch Goodyear solid A.W.T. Axles: Continental drop forged, 3 inches square. Bearings, Timken. Tread, 58 inches. Bolster: 6-inch channel, 80 inches wide. Bolster stanchions: 18x4 inches, adjustable. Adjustable tongue, 6 adjustments for variable lengths. Weight, 2800 pounds.

Prices upon application.

Model S-2 Pole Trailers

For Use When One-half of The Load Is to Be Carried on The Motor Truck



Model S-2 Trailers are truck built throughout. Have powerful spring and axle suspension. Axle U-bolts are equipped with standard S. A. E. threads and hexagon nuts which insure a tight fit.

Telescoping tongue permits adjustment of the trailer loads of any length up to 30 feet between bolsters. The end of the tongue is equipped with a drop forged pintle hook connecting ring which makes the connection unbreakable.



S-2 Fifth Wheel Bolster Plate

The S-2 fifth wheel bolster plate takes care of unevenness of the road and stabilizes load at any angle, keeping center of gravity at all times directly above axle centers.

Price includes pivoting bolsters for both trailer and motor truck.

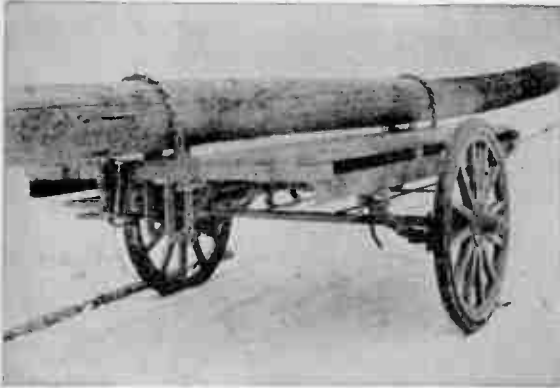
Steel sliding blocks are adjustable every chain length. They are arranged to receive ramps to permit fast loading and unloading. The boom rings make a firm lashing for the load. Steel sliding blocks are released by chain on opposite side of trailer.

This eliminates all hazard of accident to workmen.

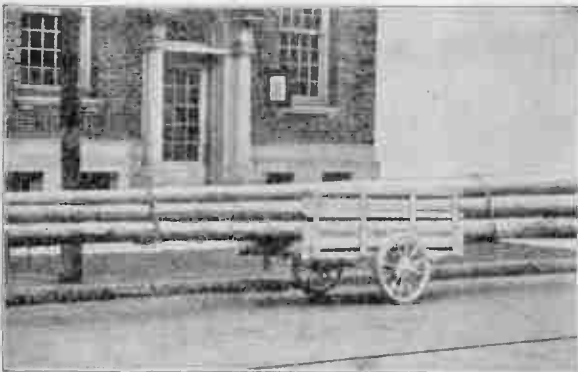
Price includes military type drop forged pintle hook furnishing an unbreakable connection. Furnished with relief spring taking up destructive strain of starting and stopping. Compensates for variation in turning radius. Is equipped with a positive spring lock.

SPECIFICATIONS.—Capacity, 3 tons. Frame: 68x43 inches, 6-inch channel. Springs: 46x3 inches, 14 leaves. Wheels: S. A. E. 14, 3-inch spokes. Tires, 36x6-inch Goodyear solid A. W. T. Axles: Continental, 2¾x2¾ inches. Bearings, Timken. Tread, 56 inches. Bolsters: 5-inch channel, 72 inches wide. Bolster stanchions, steel sliding blocks equipped with stake pockets. Adjustable tongue, 3 adjustments for variable lengths. Weight, 2110 pounds.

Prices upon application.

Model B-2 Pole Trailers**1-ton General Purpose Trailer**

Can be Used for Hauling One Pole



Or a Number of Poles, if Necessary

The body sills are made of 3-inch channel iron so that trailer may be left out in the yards without fear of warping.

Any small truck or automobile conveying workmen to the job can pull a B-2 trailer loaded with one or more poles.

Model B-2 Trailers are adaptable for paying out wire. Various types of reels can be mounted on spindles attached to trailer body paying out as many as 4 at a time.

The removable rack body makes the Model B-2 Trailer available for tree trimming, and other types of hauling.

The eccentric pole binder securely binds load of any size with least possible effort. Two of these with two 8-foot lengths of chain furnished with each Model B-2 Trailer.

The drop forged upset axle gives strength and durability. Upset axle end is an exclusive feature giving maximum strength at axle spindle.

Each Model B-2 Trailer is equipped with 3 chain tighteners. These tighteners secure the first pole to the trailer and the trailer tongue. Spring arrangements take up slack in chain and prevent stripping of threads.

SPECIFICATIONS.—Capacity, 1 ton. Frame: 3-inch channel, 4 pounds. Springs: semi-elliptic-underslung, 44x2 inches, 9 leaves. Wheels: 32x3 inches artillery, second growth hickory. Tires: 32x3-inch Goodyear solid tires. Axles, 1½ inches square drop forged upset ends. Bearings, Timken. Tread, 56 inches. Adjustable tongue, 2 adjustments. Weight, 626 pounds.

Automatic Hitches for Model B-2 Trailers

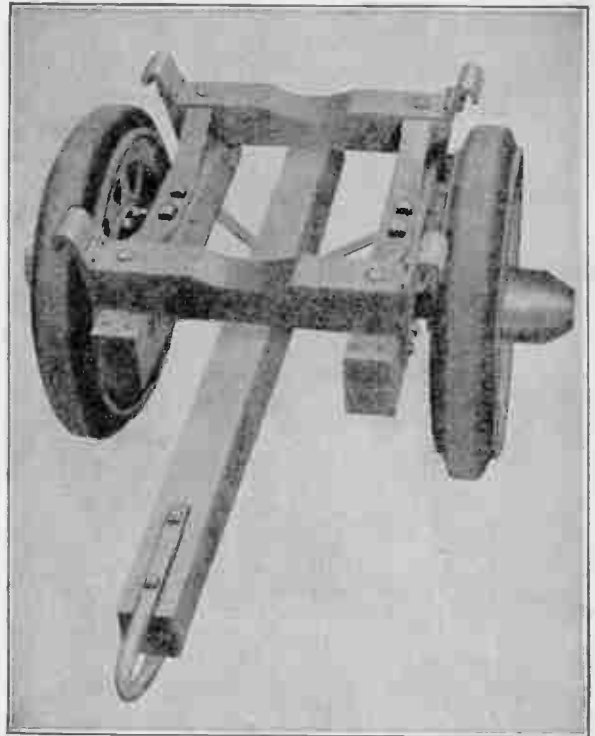
Made in the following styles: Ford hitch, straight spring hitch, and tire iron hitch.

Hitch is applied to chassis or springs instead of rear axle, distributing pull throughout frame instead of directly onto transmission unit. Likewise in trailer itself, pull is through frame and springs.

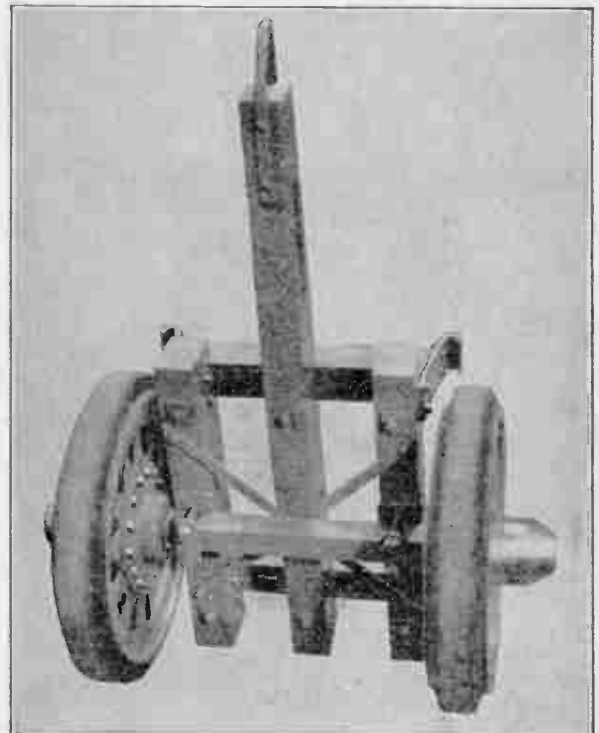
Prices upon application.

Type C Pole Dinkeys

Designed by American Telephone and Telegraph Company's Engineers



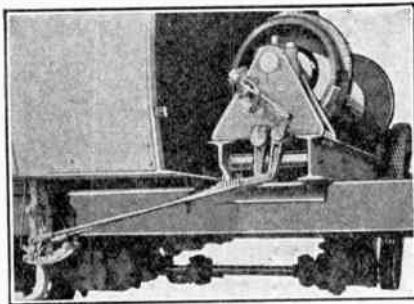
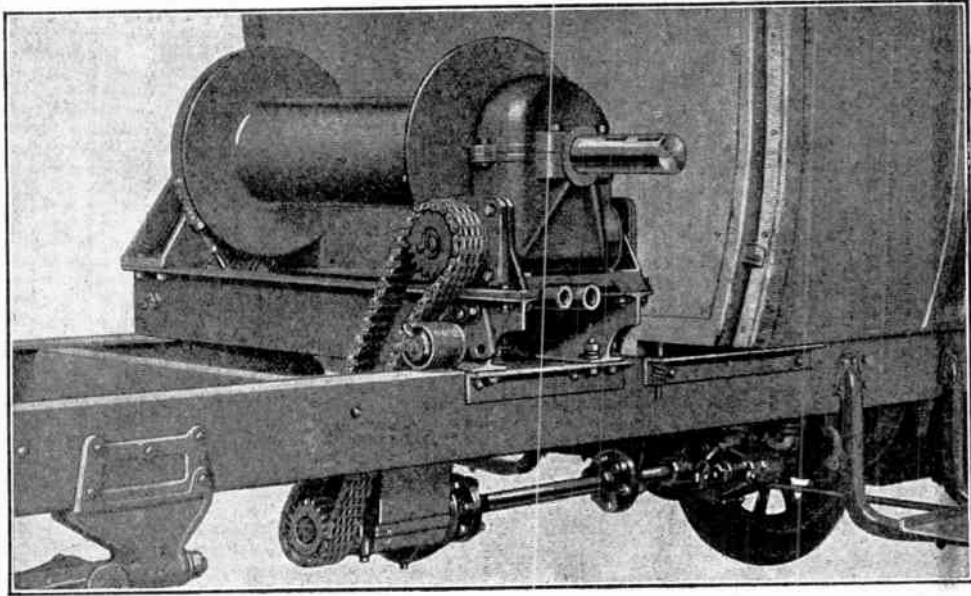
For hauling long heavy poles. Has low loading height and is adaptable for rough use. Equipped with solid rubber tires and Timken roller bearings.



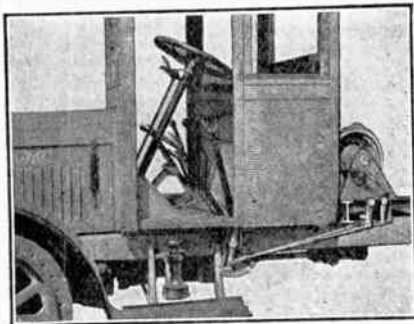
Capacity, 3½ tons. Frame, 36x20 inches, seasoned white oak. Wheels, No. 71 New York Sarven flange. Spokes, 12, 2½x2-inch. Tires, 32x5 Goodyear solid A. W. T. Axles, 2¼ square shadbolt. Bearings, Timken. Tread, 35 inches. Bolsters, white oak, reinforced with steel. Weight, 835 pounds.

Prices upon application.

Automotive Winches



Note the heavy-duty construction and sturdy strength of the Western Electric Winch. It has a positive dog-type shaft. This feature is used when paying out cable manually. With clutch engaged, the drum is positively locked to worm wheel.



All controls are located in the cab within easy reach of the truck operator, permitting one man to operate both the winch and the truck. A safety factor and an advantage is that the operator can stop instantaneously while lifting or lowering the load by releasing the truck clutch, the winch being so designed that the load cannot drive the winch.

The Western Electric Winch is a highly efficient unit designed by Public Utility men for Public Utility and many other industrial uses. It can be applied to any make of motor truck. It is capable of a variation in engine speed from 25 to 250 feet per minute. The Western Electric Winch is driven by the truck motor through the truck clutch and transmission by means of a power take-off. In design, materials, workmanship and efficiency this unit offers the user extraordinary value. It is light, safe and strong.

Specifications

Drum—Electric furnace cast steel, machined all over. Drum Shaft—1035 S. A. E. steel heat-treated and ground. Drum Shaft Hanger—Electric furnace cast steel. Worm—Nickel steel hardened, ground and polished. Worm Wheel—Phosphor bronze Worm Bearing Radial—Hyatt. Worm Wheel Housing—Electric furnace cast steel. Worm Bearing Thrust—Large bronze washer between 2 hardened, ground and polished steel washers, one being anchored to the worm and the other to the bearing cap.

Information Required when Ordering

When ordering always place order with local Western Electric Distributing House, giving them the following information: Whether right or left hand worm is desired. Right or left hand steer on truck. Make, model and wheel-base of truck. Has truck standard S. A. E. opening in transmission. Is multiple or single speed winch required. Is niggerhead required. If possible, give location of winch sprocket to front or rear and on right or left side of truck.

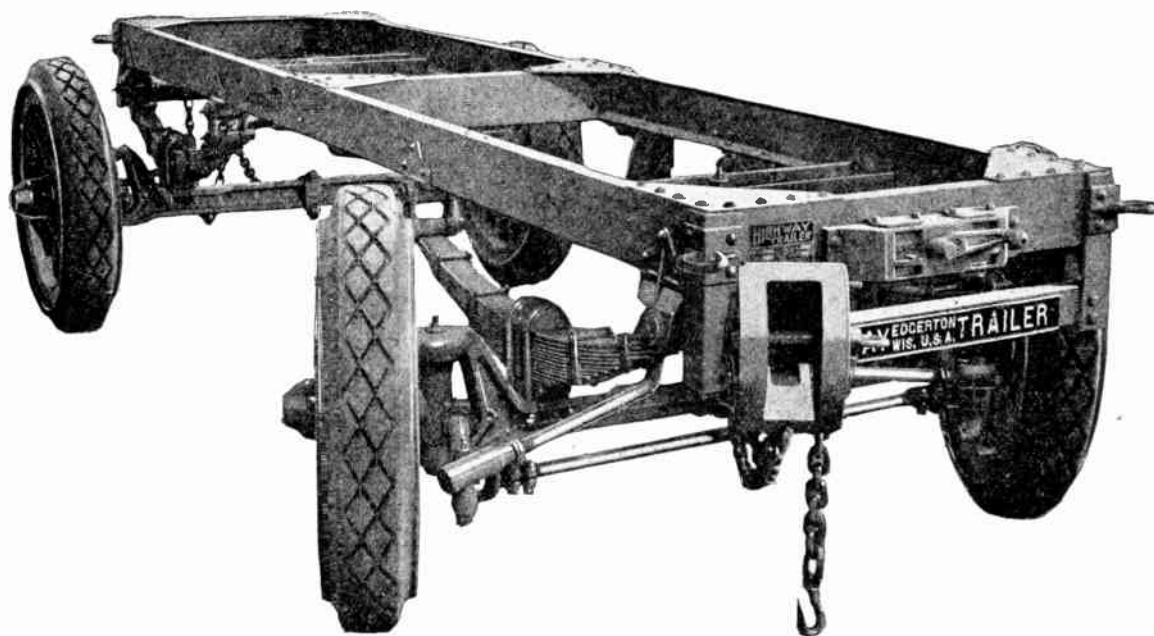
Capacities

Maximum Cable Pull.....	pounds	10000
Working ".....	"	5000
Diameter of Drum.....	inches	8
" Flange.....	"	16
Length of Drum.....	"	23 1/4
Diameter of Cable.....	"	7/8
Drum Capacity.....	feet	1400
Cable Speed High Gear, Average per Min.....	"	250
" Low ".....	"	70
" Reverse Gear, Average per Min.....	"	100
Weight of Winch.....	pounds	500
" Transmission.....	"	60

Standard Winch Units

Price, Winch.....	per set	
" Transmission.....	"	
" Sprocket (18, 19 and 20 Teeth).....	"	On
" Winch Sprocket.....	"	Appli-
" Universal Joint (2 Required).....	"	cation
" Chain.....	"	
" Tightener.....	"	

Highway Four-wheel Reversible Trailers



Model P-4

These trailers have unusual strength of frame construction and simplicity of design. Frame is reinforced throughout with $\frac{1}{4}$ -inch gusset plate and rigidly reinforced in center.

The Continental axle has ball thrust bearing in the head of knuckle. Machine limits are as close as one-thousandth of an inch.

The drop forged drawbar with double acting coil spring absorbs jars of sudden starting and stopping. The only trailer construction using the freight car principles.

The military type drop forged pintle hook with cushion spring and positive lock is furnished. This hitch is fastened to rear of motor truck.

Model A-4

SPECIFICATIONS.—Capacity, $1\frac{1}{2}$ tons. Body allowance, 1200 pounds. Track, 56 inches. Length of frame, 12 feet. Extreme width, $66\frac{3}{4}$ inches. Extreme length, including drawbar, 175 inches. Height of frame, 33 inches. Width of frame, 34 inches. Depth of frame channel, 4 inches; $5\frac{1}{4}$ pounds. Ground clearance, 11 inches. Axles and bearings: Continental drop forged axles, Timken bearings. Springs: 42x2 inches, 12 leaves. Tires, 32x3 $\frac{1}{2}$ -inch. Wheels, 14, 2-inch spokes. Wheel base, 90 inches. Weight, 1800 pounds.

Model B-4

SPECIFICATIONS.—Capacity, $2\frac{1}{2}$ tons. Body allowance, 1300 pounds. Track, $58\frac{1}{4}$ inches. Length of frame, 12 feet. Extreme width, 70 inches. Extreme length, including drawbar, 175 inches. Height of frame, $36\frac{1}{2}$ inches. Width of frame, 35 inches. Depth of frame channel, 4 inches; $6\frac{1}{4}$ pounds. Ground clearance, $15\frac{1}{4}$ inches. Axles and bearings: Continental drop forged axles, Timken bearings. Springs: 46x3 inches, 10 leaves. Tires, 36x4-inch. Wheels, 14, 2-inch spokes. Wheel base, 86 inches. Weight, 2275 pounds.

Prices upon application.

Equalizer pivots directly under spring drawbar. This device takes up side sway and holds wheels of trailer in perfect alignment with motor truck wheels, at high speed. This device constitutes one of the most perfect trailer steering mechanisms.

Drop forged link connects trailer to pintle hook. This is attached to drawbar with automatic lock pin.

Automatic drawbar lock eliminates necessity of centering drawbar before locking. It is strong and durable.

Springs are of alloyed steel. Both first and second plates form the eye of the spring. This is an exclusive feature. Bronze bushings are used in all spring eyes.

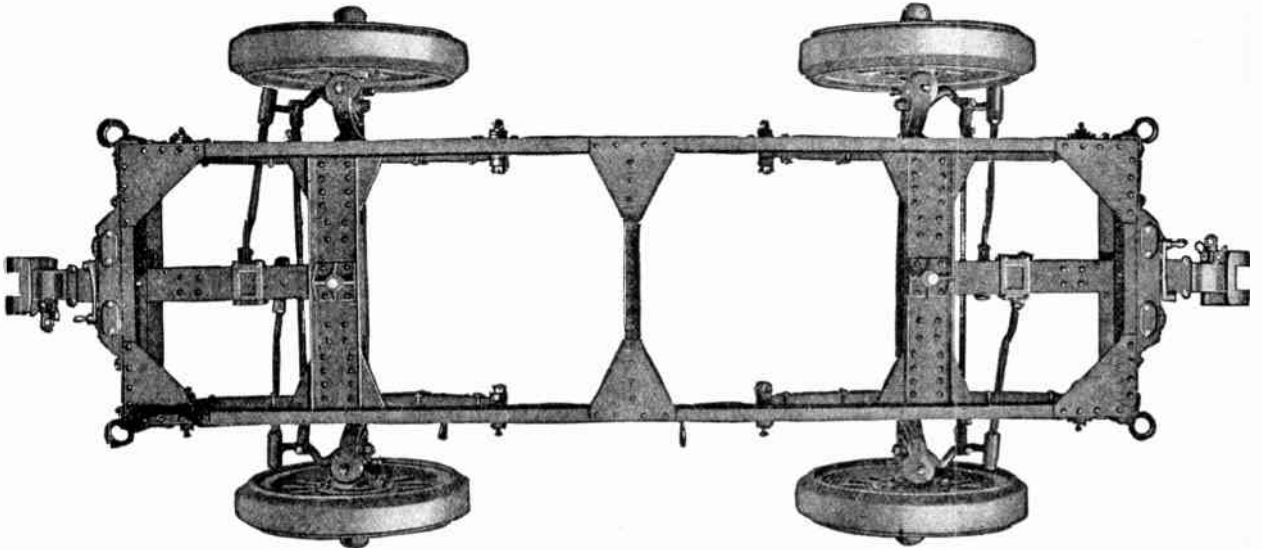
Model N-4

SPECIFICATIONS.—Capacity, 4 tons. Body allowance, 1400 pounds. Track, $66\frac{1}{2}$ inches. Length of frame, 12 feet. Extreme width, $80\frac{3}{4}$ inches. Extreme length, including drawbar, 175 inches. Height of frame, $37\frac{1}{2}$ inches. Width of frame, 40 inches. Depth of frame channel, 5 inches; $6\frac{1}{2}$ pounds. Ground clearance, $14\frac{1}{2}$ inches. Axles and bearings: Continental drop forged axles, Timken bearings. Springs: 46x3 inches, 10 leaves. Tires, 36x5-inch. Wheels, 14, $2\frac{1}{2}$ -inch spokes. Wheel base, 86 inches. Weight, 2795 pounds.

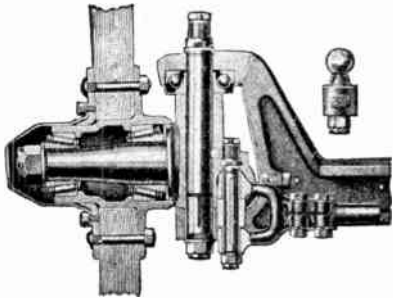
Model P-4

SPECIFICATIONS.—Capacity, 6 tons. Body allowance, 1800 pounds. Track, $68\frac{3}{4}$ inches. Length of frame, 12 feet. Extreme width, $84\frac{1}{2}$ inches. Extreme length, including drawbar, 175 inches. Height of frame, $38\frac{1}{2}$ inches. Width of frame, 40 inches. Depth of frame channel, 6 inches; 10 $\frac{1}{2}$ pounds. Ground clearance, 14 inches. Axles and bearings: Continental drop forged axles, Timken bearings. Springs: 46x3 inches, 14 leaves. Tires, 36x7-inch. Wheels, 14, 3-inch spokes. Wheel base, 86 inches. Weight, 3775 pounds.

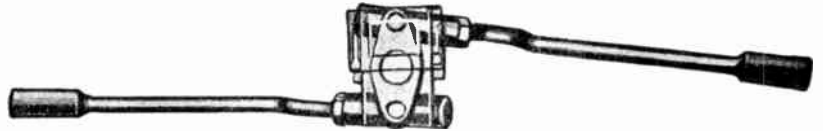
Highway Four-wheel Reversible Trailers
Exclusive Features



Reversible Trailer Chassis
Note Unusual Strength of Frame Construction and Simplicity of Design. Frame is Reinforced Throughout with 1/4-Inch Gusset Plate and Rigidly Reinforced in Center



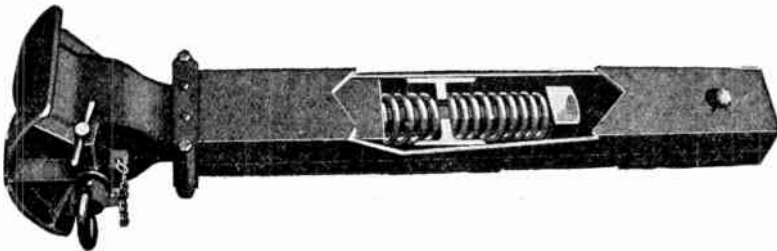
Sectional View of Continental Axle Showing Ball Thrust Bearing in the Head of Knuckle. Machine Limits Are as Close as 1/1000 of an Inch



Equalizer Pivots Directly under Spring Drawbar. This Device Takes up Side Sway and Holds Wheels of Trailer in Perfect Alignment with Motor Truck Wheels, at High Speed. This Device Constitutes One of the Most Perfect Trailer Steering Mechanisms Developed Today



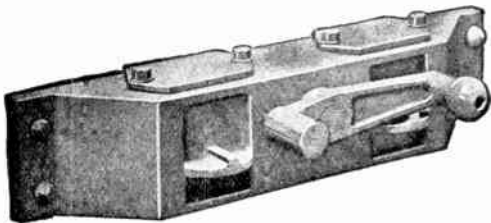
Drop-forged Link Connects Trailer to Pintle Hook. This Is Attached to Drawbar with Automatic Lock Pin



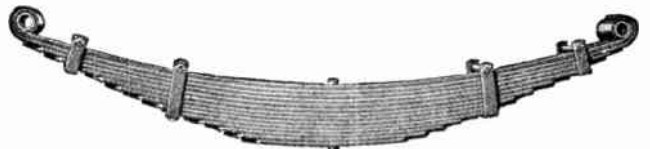
Drop-forged Drawbar with Double-acting Coil Absorbs Jars of Sudden Starting and Stopping. The Only Trailer Construction Using the Freight Car Principles



Military Type Drop-forged Pintle Hook with Cushion Spring and Patented Positive Lock. This Hitch is Fastened to Rear of Motor Truck



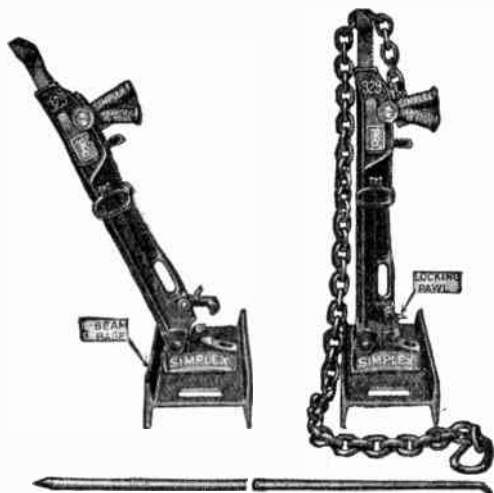
Automatic Drawbar Lock Eliminates Necessity of Centering Drawbar Before Locking. It Is Strong and Durable



Springs Are of Alloyed Steel. Note That Both First and Second Plates Form the Eye of This Spring. This is an Exclusive Feature. Bronze Bushings Are Used in All Spring Eyes

No. 329 Simplex Pole Pulling and Pole Straightening Jacks

Automatic Raising and Lowering Jacks



The hinged base is the feature that specifically and successfully adapts the No. 329 Simplex Jack to every phase of pole maintenance work. This jack insures saving in time and labor of the pole crew, no digging around pole, no breaking up of pavement or curbing. Takes but a minute to make jack ready to operate, and but a few minutes for one or two men to pull the heaviest pole, no matter how deep in ground or the character of the soil.

In moving entire pole lines from one location to another, this jack has shown that it insures economies in time, labor and expense over other available methods. Lines moved any distance easily, and without interrupting the service.

Simplex Pole Pulling and Pole Straightening Jacks are furnished complete with 8-foot scarf welded B B B steel chain, fitted with pear shaped link at one end, 5-foot forged steel pinch bar, heat treated, and 10 inch—25 pound I-beam base 24 inches long, with punched hand hole.



No. 329 Simplex is the new and stronger pole pulling and pole straightening jack. Automatic in raising and lowering. No digging or loosening of the earth is necessary, the I-beam base is placed beside the pole—the jack set upon it, the chain slung around the pole—one end of the chain dropped into the forked cap—the jack is operated and the pole comes up.

The photographs illustrate how easily, quickly and safely the Simplex Pole Pulling or Pole Straightening Jack will pull or straighten the largest poles.

No strained backs, no hernia, no damage to or removal of over head equipment, but a quick, positive and clean pole pulling job in a few minutes, where, with all other methods hours are wasted.

No. 329 Simplex Pole Pulling and Pole Straightening Jacks

Automatic Raising and Lowering Jacks
Continued



The final and complete operation of pulling a pole is illustrated and the job was finished in 8 minutes with the use of the No. 329 time saving Simplex Jack.

Cat. No.....	329
Capacity.....	15 tons
Lift.....	24 inches
Height.....	38 "
Weight, Complete.....	193 pounds
Price.....	each \$70.00

No. 318 Simplex Tripping Type Jacks

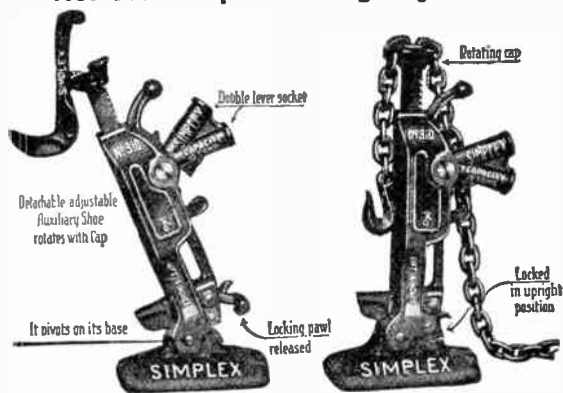


This jack is built so that the pawls can be tripped and the load dropped from any position. By manipulating the pawls by hand, the load can be lowered one notch by notch. Same standard equipment as the No. 329 Simplex.



Cat. No.....	318
Capacity.....	15 tons
Lift.....	24 inches
Height.....	37 1/4 "
Weight, Complete.....	187 pounds
Price.....	each \$62.50

No. 310 Simplex Emergency Jacks



Automatic raising and lowering. Because of its pivoting base, the No. 310 Simplex can be operated at any angle. An indispensable tool for electric and steam railways, for emergency and shop use in repair yards. Also in any service when timbers, machinery, or other heavy objects are to be lifted or pushed into position.

Its four points of lift, chain, auxiliary shoe, cap and lower foot, enable jack to operate in cramped and difficult positions and handle irregular shaped objects where ordinary jacks many times cannot operate at all.

It pulls poles also.

This jack is smaller and lighter than No. 329, and operates in similar manner. Adapted to handling small poles that can be grabbed by its 5-foot chain.

Equipped complete with 5-foot steel chain, 5-foot forged steel lever bar, and drop forged steel detachable shoe.

Cat. No.	310
Capacity	15 tons
Lift	12½ inches
Height	20½ "
Weight, Complete	104 pounds
Price, No. 310	each \$48.00

No. 87 Simplex Pole Derrick Jacks



Designed to support the rear end of heavy pole, maintenance trucks, when setting poles with a derrick mounted on the truck. Also recommended for use in garages, under heavily loaded truck to relieve pressure on pneumatic tires and springs while standing idle.

Cat. No.	87
Capacity	5 tons
Lift	14 inches
Height	23 "
Weight	35 pounds
Price, No. 87	each \$18.00

No. 47 Simplex Auto Truck Jacks

A rugged, powerful geared jack of proportions and material that have proved it to be the master of every emergency.

It is a miniature of the 35-ton Simplex Railroad Jack, and is used by a number of railroads as a journal jack.

The continuous operation or earning power of the heaviest motor trucks are insured with this jack.

Cat. No.	47
Capacity	7½ tons
Lift	7 inches
Height	12 "
Weight	35 pounds
Price, No. 47	each \$18.00



No. 322 Simplex Cable Reel Jacks



Specially designed for cable reels of 36 inches to 84 inches diameter. Furnished in pairs one right and one left, so that men operating jacks are working on same side of reel, and raising it uniformly. The practical use of steel bracing right and left hand thread, allows for the continuous alignment of the jack, and the oak base, under all conditions of wet and dry weather. Note rigid connections between braces and the oak base.

Automatic double acting jack operating on the upward and downward stroke. Lifts ⅝ inch on each stroke, allowing for the practical leveling of any cable reel.

Base is of No. 1 kiln dried oak. Standard is made of malleable iron. Lever socket is steel. Forging-heat treated rack bar. Drop forged pawls. Hardened steel bearings. Lever pole is forging-heat treated.

Cat. No.	322
Capacity	10 tons
Lift	14 inches
Total Height Cap When Down	29 "
" " " " Raised	43 "
" " " " Down	17 "
" " " " Raised	31 "
Weight	100 pounds
Price	each \$65.00

Simplex Portable Cable Reel Jacks



No. 41



No. 81

Jack held on oak base by taper wedged brackets—can be quickly removed and packed in tool box. Made single acting, raising the load on the downward stroke only, and double acting, raising the load on both the downward and upward strokes.

Designed to lift small, but heavy cable reels from 24 inches to 48 inches diameter, and can readily be used for any work, where 1 to 2-ton loads are to be handled.

Cat. No.	DOUBLE ACTING			SINGLE ACTING			
	41	42	43	81	82	83	84
Capacity	1	1½	2	1	1½	2	5
Lift	8	9½	11	7	8½	9¾	7
Height	11½	13¼	14½	11¾	13¼	14¾	16
Total Height	19½	22¾	25½	13¾	21¾	24½	23
Weight with Base	17½	18	19	17½	18½	19½	35
Price	each \$16.00	18.00	20.00	16.00	18.00	20.00	24.00

Simplex Car, Bridge and General Utility Jacks

Simplex Track Jacks

Single Acting—Automatic Raising and Lowering



No. 22

These jacks are especially designed for bridge, track crossing, car body, and heavy construction work. Strong, sturdy frame and base, powerful, rapid and dependable, built without a machine screw, and for rough and abusive service.

No. 22 is a powerful, sturdy 10-ton jack especially suitable for low lift car body and truck purposes on electric railways. As the usual wooden pole furnished with 10-ton jacks would break under heavy overload, it is supplied with a steel lever pole appropriate for its power.

No. 24 and No. 29 are 15-ton jacks especially designed for medium and high lift car body and truck work on electric and steam railways. Massive standards, drop forged steel working parts. Highly efficient and dependable jacks.

The working parts are interchangeable in these jacks and as the parts are all hardened and tempered, the maximum strength is obtained with the minimum weight.

Equipped with oval socket and heavy duty six-foot oval pole, insuring jacks developing maximum power without danger of pole breaking.

Standardized by electric and steam railroads for their mechanical excellence, correct design and dependability.



No. 29

Cat. No.	22	24	29
Capacity tons	10	15	15
Lift inches	12	13	18
Height "	21 1/4	23	28
Weight pounds	58	87	110
Price, Oval Socket with Pole... each	\$25.00	\$38.00	\$40.00
" Square " without Pole. "	24.00	36.00	38.00

Simplex Geared Car Jacks are designed for the easy and safe handling of loaded freight cars, heavy interurban cars, and industrial work, where a heavy duty yet comparatively light and portable jack is required. The geared ratio plus the short fulcrum centers, made practical only by the use of Simplex trunnion bearings cast integral with the lever socket, produces the greatest man power.

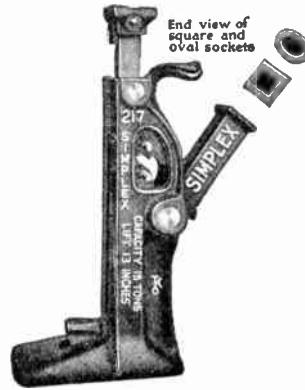
No. 126 Simplex is the same as the No. 125 except that it is equipped with a shoe at the bottom of the rack bar. Designed for use in handling heavy machinery and in such work as lowering the bottom of large steel storage tanks.

Built without a machine screw.



No. 135

Cat. No.	125	126	135
Capacity tons	25	25	35
Lift inches	15 1/2	15 1/2	15 1/2
Height "	26 3/4	26 3/4	26 3/4
Weight pounds	150	150	220
Price each	\$100.00	100.00	135.00



No. 217

Simplex Track Jacks embody every desirable feature that goes to make perfect track jacks.

They have fewer working parts. The one inch fulcrum trunnions integral with lever socket eliminates troubles of the bent fulcrum pins of ordinary track jacks. Fulcrum leverage insures easiest, most powerful operation under safest conditions. The arched and unbendable base guarantees a firm and solid foundation at all times. All working parts are crucible steel and drop forgings.

Made from high carbon steel and heat treated.

Double Acting Simplex Track Jacks operate on both upward and downward stroke of lever, and trip from any position. Designed and built to give maximum service with minimum effort. Vertical pawls, one-inch trunnions, short fulcrum, closed end bearings securely locked, insure greater leverage, easier operation, lessens friction, and adds longer life to the jack.

Equipped, when desired, with square lever socket for use with standard lining bar as lever in place of wood axle. This eliminates the breaking of poles and carrying of extra lever poles when the lining bars are always on the job.



No. 217 with Foot Lift

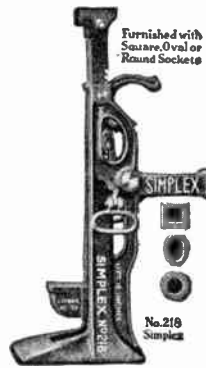
Single Acting Simplex Track Jacks operate on downward stroke of lever, and trip from any position. They combine quick tripping and tooth by tooth lowering.

All parts strongly built of crucible steel and drop forged steel, heat-treated.

Adapted for low, medium and high lift track work.

The man power of the Nos. 216, 217, and 218 is identical because the fulcrum centers are equal in each jack; the parts are interchangeable with the exception of the heights of the standards and the rack bars.

Equipped when desired, with square lever socket same as double acting jacks.



No. 218

Simplex Track Jacks are used and endorsed by the largest railroad system.

Cat. No.	DOUBLE ACTING		SINGLE ACTING		
	101	106	216	217	218
Capacity tons	10	15	10	10	15
Lift inches	12 1/2	17 1/2	8	12 1/2	18
Height "	23	29	17 1/4	23	28
Weight pounds	58	70	46	53	70
Price, Oval Socket with Pole... each	\$22.00	\$28.00	\$20.00	\$22.00	\$28.00
Price, Square Socket without Pole... each	21.00	27.00	19.00	21.00	27.00

No. 1 Cable Reel Jacks



No. 1 with Plain Head

The illustration shows the new pattern cable reel jack which has been designed to fill the need for a strong jack that will carry a heavy load, and at the same time be light enough so as to be easily portable. This jack will swing a 7000-pound reel, and is made in two sizes, either with or without ratchet heads.

It is also constructed with handle to prevent the reel from striking the frame, when rolling.

Size of Screw	inches	1 3/4
Length of Screw	"	14
Height " Stand Only	"	16
Height " " to Bearing Point in Yoke	"	20 1/2
When Screw Is Up to Limit Bearing Point in Yoke	inches	31
Length of Base	"	26
Width "	"	12
Weight " Stand	pounds	54
Price, No. 1, with Forged Heads	per pair	\$45.00
" " 1A " Ratchet "	"	61.00

No. 2 Cable Reel Jacks

This cable reel jack is constructed with handle to prevent the reel from striking the frame, when rolling.

The No. 2 cable reel jack is equipped with ratchet head and will swing a 7000-pound reel.

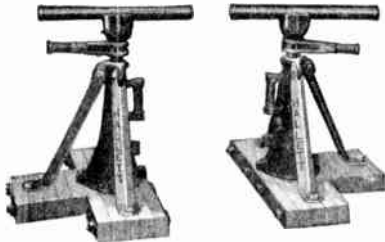


No. 2 with Ratchet Head

Size of Screw	inches	1 3/4
Length of Screw	"	16
Height " Stand Only	"	26
Height " " to Bearing Point in Yoke	"	30 1/2
When Screw Is Up to Limit Bearing Point in Yoke	inches	42
Length of Base	"	40
Width "	"	16
Weight of Stand	pounds	65
Price, No. 2, with Forged Heads	per pair	\$55.00
" " 2A " Ratchet "	"	71.00

Cable Reel Jacks

With or without Ratchet Attachments



With Ratchet Attachments

Each set contains 2 jacks, a 6-foot reel bar and a jack bar.

The jacks are locomotive pattern with hardwood bases.

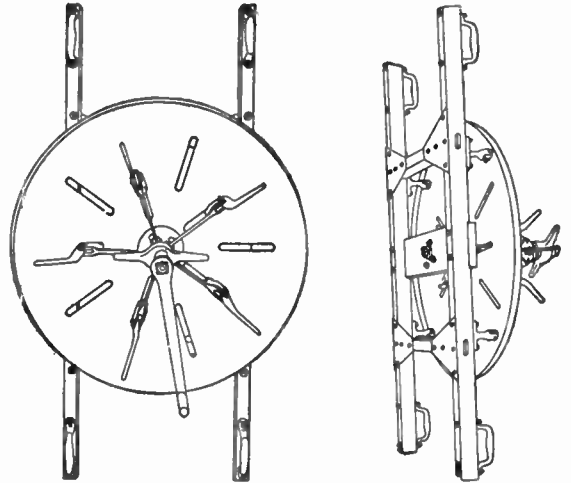
Reel bars are made of high carbon steel. The outfit will swing a reel of any ordinary size and of any weight.

Price, Complete, without Ratchet Attachments, per set	\$42.00
" " " with " " "	53.00

If cable reel bars are not required, deduct \$6.00 from price.

Matthews Adjustable Reels

For Both Pay Out and Take Up



Top View

Side and Bottom View

The five arms can be contracted or expanded to fit the inside diameter of any size coil of wire within its range. Revolving table is made of sheet iron reinforced by a turned over edge which prevents it from being bent out of shape. Edge prevents wire from getting caught under table or cutting itself on a sharp edge when paying out or taking up.

The table rests on four roller bearings when paying out a coil of wire. This prevents the reel from catching on the frame or bending out of shape because of more pressure on one side or the other. Can be operated flat on the ground for paying out wire or in a vertical position for taking up.

Price, without Brake	each	\$130.00	Shipping	{ 107 Lbs.
" with " " " "	"	138.00	Weight	{ 111 "

Oshkosh Folding Take-up Reels

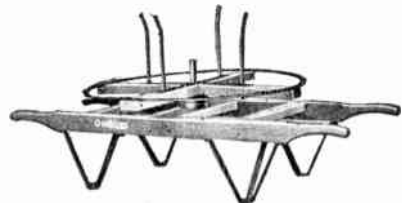
The reel part collapses and automatically throws off the coil at the same time and in an instant is ready for another coil. The frame, made of heavy hardwood, is strong and heavily reinforced throughout and folds up like a hinge.

It can be taken down in a moment merely pulling the pin out of the shaft, throwing off the coil and folding up the frame.



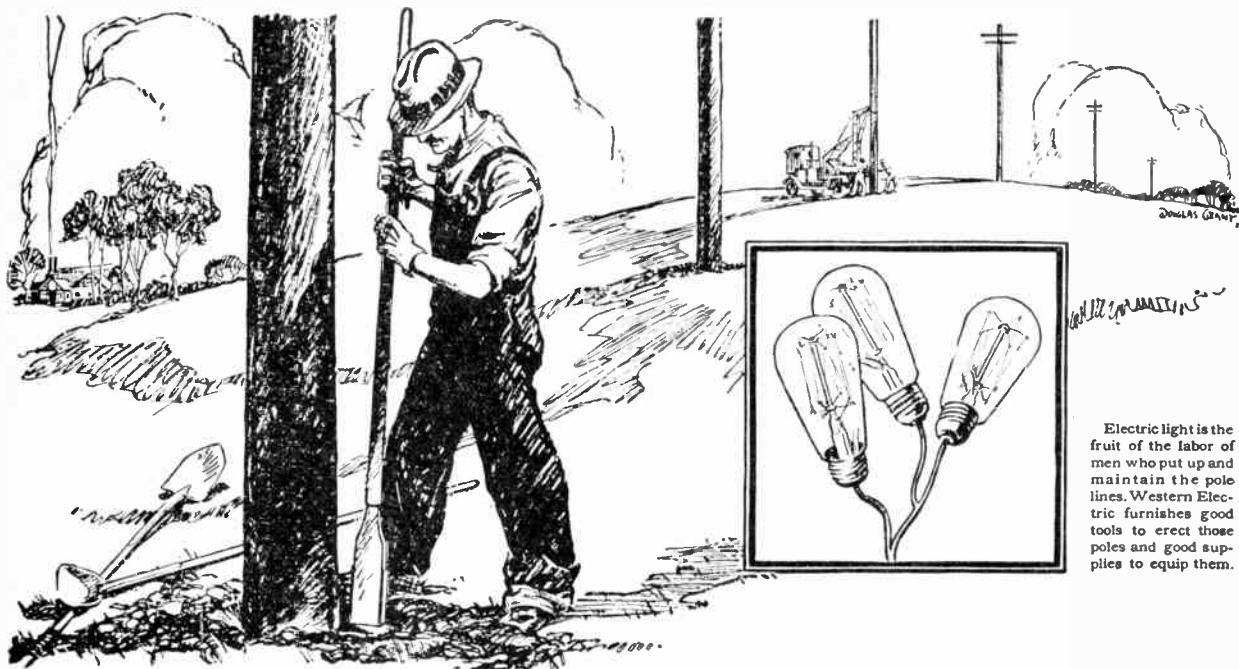
Cat. No.	Size of Coil, In.	Wt., Lbs. Each	Price Each
896	18	40	\$31.50
897	21	41	32.00
898	24	42	32.50

Oshkosh Barrow Reels



Made of hard rock maple strongly reinforced with angle iron braces. Rests on strong steel legs. Has a large diameter pivot and is made for heavy work.

Cat. No.	Description	Wt., Lbs. Each	Price Each
900	Barrow Reel Only	80	\$37.50
901	Extra Pins, per Set of 4	2	7.25



Electric light is the fruit of the labor of men who put up and maintain the pole lines. Western Electric furnishes good tools to erect those poles and good supplies to equip them.

A Spring planting that will bear good fruit

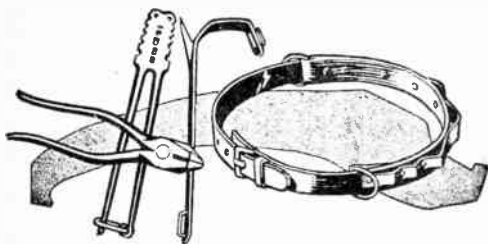
THIS is planting time for electric light poles. Now that the ground is softening up, the light and power companies are adding to their plant and their service.

It is a far-reaching plant, and one which requires constant watchfulness. Twenty-four hours a day men are on the job—up the poles and in the generating station—to give you service at the click of your switch.

Everything electrical— when and where wanted

In all this work, supplies from Western Electric help. And not only tools and supplies for the power line. Western Electric stocks everything electrical for factory, office, store and home.

Your electrical contractor can get Western Electric products on short order from our warehouse here in town. For an installation that you can depend on you need just two things—an experienced contractor and high quality supplies, like Western Electric. And those two you usually find together.



Tools for cultivating the plant

Constant attention by the lighting company is needed to keep their plant in order. These stout tools—pliers, splicing clamp, spur and safety belt—are typical of the lineman's equipment which Western Electric supplies to help maintain service.

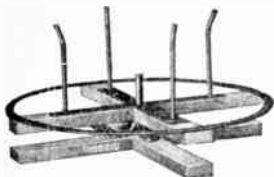
Western Electric

QUALITY ELECTRICAL SUPPLIES

WHOLESALE ONLY

This is a Typical Western Electric Newspaper Advertisement
Reproduced in Reduced Size

Oshkosh Pay-out Reels



Made of hard maple, well constructed and re-enforced throughout.

Cat. No.	Wt., Lbs. Each	Price Each
902	40	\$20.00

Oshkosh Western Pattern Post Hole Spoons



High carbon steel blades, 22-inch straps, rock maple or Northern white ash handle. Extra heavy handles furnished.

Maple Handles

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
				Cat. No.	Wt., Lbs. Each	Price Each
859	7	9 1/2	\$3.05	993	4	\$1.30
860	8	10 1/2	3.30	994	5	1.30
861	9	11 1/4	3.55	995	6	1.70
862	10	12	3.80	996	7	1.85

Ash Handles

1023	7	9 1/2	\$3.40	1005	5 1/2	\$1.90
1024	8	10 1/2	3.75	1006	6	2.15
1025	9	11 1/4	4.05	1007	6 1/4	2.45
1026	10	12	4.05	1008	7	2.90

Oshkosh Eastern Pattern Post Hole Spoons



Made with high carbon steel blades, with 22-inch straps, and equipped with rock maple or Northern white ash handle. Extra heavy handles furnished.

Maple Handles

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
				Cat. No.	Wt., Lbs. Each	Price Each
859E	7	9 1/2	\$3.05	993	4	\$1.30
860E	8	10 1/2	3.30	994	5	1.50
861E	9	11 1/4	3.55	995	6	1.70
862E	10	12	3.80	996	7	1.85

Ash Handles

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
				Cat. No.	Wt., Lbs. Each	Price Each
1023E	7	9 1/2	\$3.40	1005	5 1/2	\$1.90
1024E	8	10 1/2	3.75	1006	6	2.15
1025E	9	11 1/4	4.05	1007	6 1/4	2.45
1026E	10	12	4.80	1008	7	2.90

Post Hole Shovels



Blade is made of genuine carbon crucible steel, and is of regular weight.

Handle is of perfect, straight-grained rock maple, 1 1/8 inches in diameter.

CATALOGUE No.	Length of Handle Feet	Size of Strap Inches	Weight Pounds per Dozen	Price Each
867	7	22	100	\$6.50
868	8	22	110	7.00
869	9	22	115	7.50

Furnished with hickory or ash handle on special order.

Oshkosh Standard Straight Post Hole Shovels



These shovels are straight from the tip of the blade to the top of the handle. The blades are made of high carbon steel with 22-inch straps. Handles are select rock maple or Northern white ash and are extra heavy.

Maple Handles

Cat. No.	Size Ft.	Strap In.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
					Cat. No.	Wt., Lbs. Each	Price Each
867	7	22	8 1/4	\$3.05	993	4	\$1.30
868	8	22	9	3.30	994	5	1.50
869	9	22	10	3.55	995	6	1.70

Ash Handles

Cat. No.	Size Ft.	Strap In.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
					Cat. No.	Wt., Lbs. Each	Price Each
1032	7	22	8 1/4	\$3.25	1005	5 1/2	\$1.90
1033	8	22	9	3.60	1006	6	2.15
1034	9	22	10	4.05	1007	6 1/4	2.55
1035	10	22	10 1/2	4.80	1008	7	2.90

Oshkosh Standard Crooked Long Handle Shovels



The blades are made of high carbon steel with 22-inch straps. Handles are select rock maple or Northern white ash and are extra heavy.

Maple Handles

Cat. No.	Size Ft.	Strap In.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
					Cat. No.	Wt., Lbs. Each	Price Each
874	7	22	8 1/4	\$3.20	1000B	4 1/2	\$2.20
875	8	22	9	3.45	1000	5 1/2	2.45

Ash Handles

1040	7	22	8 1/4	\$3.50	1014	4 1/2	\$1.95
1041	8	22	9	3.80	1015	5	2.20
1042	9	22	10	4.20	1016	5 1/2	2.50
1043	10	22	10 1/2	5.05	1017	6	2.95

No. 1090 Oshkosh Standard 4 1/2-foot Round Point Shovels



Equipped with high carbon steel blades and select Northern white ash handles.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
				Cat. No.	Wt., Lbs. Each	Price Each
1090	4 1/2	5	\$1.50	1091	2	\$0.50

No. 1092 Oshkosh Standard D Handle Round Point Shovels



Equipped with high carbon steel blades and select Northern white ash handles.

Cat. No.	Wt., Lbs. Each	Price Each	EXTRA HANDLES		
			Cat. No.	Wt., Lbs. Each	Price Each
1092	4 1/2	\$1.50	1093	1 1/2	\$0.55

Oshkosh Crow and Digging Bars



Made of special octagon crucible steel, exceedingly tough and stiff.

Cat. No.	Size, in.xPt.	Wt., Lbs., Each	Price, Each
1061	1 x 7	20	\$10.50
1064	1 1/8 x 7	26	13.50
1065	1 1/8 x 8	30	15.00

Oshkosh Tamping and Digging Bars



Made of special octagon crucible steel, tough and stiff.

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
1071	1 x7	20	\$12.50
1074	1 1/8 x7	26	15.00
1075	1 1/8 x8	30	16.50

Oshkosh Plain Digging Bars



Made of special octagon crucible steel, tough and stiff.

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
1081	1 x7	10	\$6.00
1085	1 1/8 x8	28	8.00

No. 852 Oshkosh Digging Spuds with Tamper



A light, evenly balanced digging tool. Handle is made of steel tubing with a tamping head of malleable iron, and the blade and socket are of one piece of forged high carbon steel.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
852	9	20	\$10.00

No. 853 Oshkosh Loys or Slicks



The handle is of 2-inch selected maple and the blade is of tool steel 4x 1/2 inches, burned onto the handle and held by two large rivets.

Length, eight feet. Weight, 18 pounds each. Price, No. 853.....each \$9.50

Oshkosh Tamping Bars



Handle is made of hard rock maple. The tamping head is faced with an iron shoe, and measures 1 3/4 x 1 inches.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
854	7	13	\$6.00
855	8	15	6.50

Oshkosh Tamping Bars With Extra Heavy Iron Shoe



Made with hard rock maple handles with 1 1/4 x 1/2-inch steel shoe on tamping face.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each	Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
1054	7	13 1/2	\$5.82	1056	9	16 3/4	\$7.07
1055	8	15	6.19	.....	..	.....	.....

No. 1044 Oshkosh Electric Tamping Bars



Made of steel tubing with malleable iron tampers of different size on each end.

Cat. No.	Size Ft.	Wt., Lbs. Each	Price Each
1044	8	15	\$6.81

Oshkosh Plain Pike Poles



Handles of soft, old growth yellow Washington Fir, straight grained, and free from defects. Pike is of crucible steel with upset shoulder, which distributes the thrust on the entire top of the pole. The pike is driven in and fastened with a rivet running through ferrule, pike and pole.

Standard Small Size

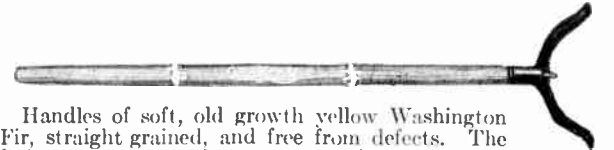
Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each	Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
805	2x10	6 1/4	\$4.50	807	2x14	9 1/2	\$5.50
806	2x12	8	5.00	808	2x16	11	6.00

Western Electric Pattern

Handle is 2 1/2 inches in the middle and tapers to 2 inches at each end.

818	2 1/2 x 12	12 1/2	\$5.50	821	2 1/2 x 18	18	\$8.00
819	2 1/2 x 14	14	6.25	822	2 1/2 x 20	20	9.00
820	2 1/2 x 16	15 1/2	7.25	.....	.....	.....	.....

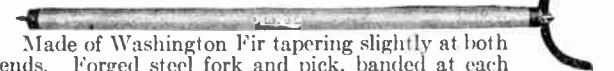
Oshkosh Guarded Pike Poles



Handles of soft, old growth yellow Washington Fir, straight grained, and free from defects. The forks are malleable iron with the fork and socket cast in one piece.

Cat. No.	Size In. x Ft.	Wt., Lbs. Each	Price Each
832	2 x 10	8 1/2	\$5.93
833	2 x 12	10	6.36
834	2 x 14	12	6.91
795	2 x 16	13	8.75
796	2 1/2 x 12	14	9.04
797	2 1/2 x 14	15	9.60
835	2 1/2 x 16	16	10.16
836	2 1/2 x 18	17 1/2	10.73
837	2 1/2 x 20	19 1/2	11.29

Oshkosh Mule Pattern Wood Pole Supports



Made of Washington Fir tapering slightly at both ends. Forged steel fork and pick, banded at each end with steel bands.

Cat. No.	Size Ft. Ctr. In.	Diam. at Each End	Wt., Lbs. Each	Price Each	Cat. No.	Size Ft. Ctr. In.	Diam. at Each End	Wt., Lbs. Each	Price Each
845	6	3 1/2	23	\$13.00	847	8	4 1/2	29	\$17.00
846	7	4 1/2	26	15.00	.....	.....	.....	.....	.....

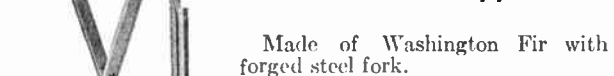
No. 848 Oshkosh Standard Deadman Wood Pole Supports



Made of select rock maple. Heavy wrought steel fork and pike banded at both ends with steel.

Cat. No.	Size Ft.	Size of Wood, In.	Wt., Lbs. Each	Price Each
848	8	4x2	29	\$24.00

Oshkosh Jenney Pattern Wood Pole Supports



Made of Washington Fir with forged steel fork.

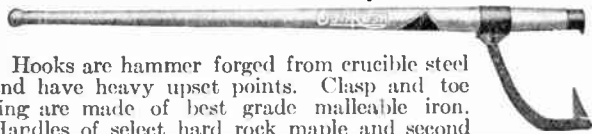
Steel pikes are placed in the bottom to prevent it from slipping on hard ground.

This support is collapsible and has steel bushed holes where there is any wear.

A light, strong, safe, pole support.

Cat. No.	Size Ft.	Size of Wood, In.	Wt., Lbs. Each	Price Each
842	6	1 3/4 x 3	25	\$16.50
843	7	1 3/4 x 3 1/2	30	19.00
844	8	1 3/4 x 3 1/2	35	20.00

Oshkosh Malleable Clasp Cant Hooks



Hooks are hammer forged from crucible steel and have heavy upset points. Clasp and toe ring are made of best grade malleable iron. Handles of select hard rock maple and second growth hickory.

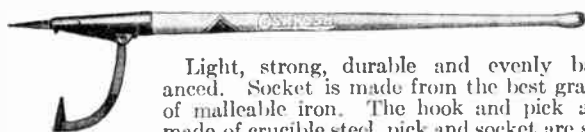
Select Maple Handles

Cat. No.	Size In.xFt.	Wt., Lbs. Each	Price Each
188A	2 1/4 x 4	6 3/8	....
189A	2 1/4 x 4 1/2	7 1/2	....
188	2 1/2 x 4	8	\$5.12
189	2 1/2 x 4 1/2	8 1/8	5.28

Select Hickory Handles

199A	2 1/4 x 4	7	\$6.48
200A	2 1/4 x 4 1/2	7 1/2	6.68
199	2 1/2 x 4	8	6.84
200	2 1/2 x 4 1/2	8 1/8	7.04

Oshkosh Malleable Solid Socket Peavies



Light, strong, durable and evenly balanced. Socket is made from the best grade of malleable iron. The hook and pick are made of crucible steel, pick and socket are set in oil, under screw pressure, not burnt or driven in.

Regular Maple Handles

Cat. No.	Size In.xFt.	Wt., Lbs. Each	Price Each
121	2 1/4 x 4	7	\$5.80
122	2 1/4 x 4 1/2	7	5.96
124	2 1/2 x 4	9	6.02
125	2 1/2 x 4 1/2	9	6.18

Select Hickory Handles

134	2 1/4 x 4	7 1/2	\$7.29
135	2 1/4 x 4 1/2	8	7.60
137	2 1/2 x 4	9	7.51
138	2 1/2 x 4 1/2	10	7.85

Oshkosh Carrying or Lug Hooks



For handling poles and heavy timbers. Made with crucible steel chisel point hooks, and malleable iron clasps and swivels. Handles of select hard rock maple.

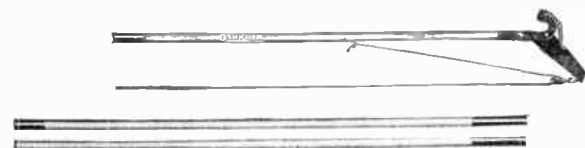
Regular Pattern

Cat. No.	Size In.xFt.	Wt., Lbs. Each	Price Each	Cat. No.	Size In.xFt.	Wt., Lbs. Each	Price Each
295	2 1/2 x 4	7	\$6.00	297	2 1/2 x 5	8	\$7.00
296	2 1/2 x 4 1/2	7 1/2	6.50	...	...	...	....

Extra Heavy, with Steel Swivels

298	3 x 5	12	\$8.75	300	3 x 7	14	\$10.25
299	3 x 6	13	9.50	...	...	...	....

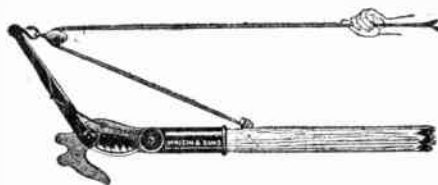
No. 915 Oshkosh Tree Trimmers



Made with a light steel head and a thin high grade saw steel knife. Equipped with genuine soft old growth yellow Washington Fir handle 1 1/2 inches in diameter, made in 3 sections, connected with positive locking ferrules. This tree trimmer will easily cut a 1 1/2-inch limb. It is light and works easily.

Cat. No.	Description	Wt., Lbs. Each	Price Each
915	Trimmer Complete	13	\$6.75

No. 3600 Klein's Favorite Tree Trimmers



Head is malleable iron and comprises hook portion with which knife operates and socket into which handle is inserted. Socket is perfectly straight, eliminating necessity of tapering end of handle. Knife is crucible steel and integral with lever and cutting edge is tempered and ground. Will sever a 1-inch branch. Knife is held open by a flat steel spring and is operated by rope attached to end of lever. Two threaded holes are provided for attaching a saw.

Cat. No.	Size, Over All Inches	Description	Weight Pounds	Price Each
3600-20	19	Without Saw	3 1/2	\$4.25
3600-21	21	With "	4	5.75

Handles

Made from straight grained lumber and jointed with heavy brass ferrules.

Cat. No	No. Pieces	Lgth., Each Piece, Ft.	Total Lgth., Ft.	Price Each
3601-9	2	9	18	\$4.50
3601-6	3	6	18	5.00

New Easy Bolt Cutters



Handles are of japanned malleable iron, buffers are high quality rubber springs, and jaws are tool steel.

No.	0	1	2	3
Length.....inches	18	24 1/2	30	36
For Bolts....."	5/8	3/8	1/2	5/8
Price.....each	\$3.75	5.00	7.00	9.00

Boston Wire Cutters



Designed for general use. Handles are insulated.

Cat. No.	Length Inches	Opening Inches	Price Each	Cat. No.	Length Inches	Opening Inches	Price Each
0	18 1/2	1/2	\$5.50	2	30 1/8	1 1/8	\$9.00
1	24 1/2	3/4	6.50	3	36 1/8	1 1/4	12.00

No. 1515-1 Klein's Cable Sheath Splitting Knives



Extra heavy. Knife edge is tempered and ground to a keen edge. Handle is made of leather. Weight per dozen, 12 pounds.

Price. No. 1515-1.....each	\$2.75
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No. 8 Star Brand Galvanized Steel Snatch Blocks



For Wire Rope
A. T. & T. Design

Especially for motor truck winch work, hoisting poles and heavy hauling.

Has special self-locking links. Shells have impressions so as to prevent the wire rope from jumping between sheave and shell.

Drop-forged flatted stiff swivel hooks, heads and links.

Steel plate shells.
Size sheave, 8x1 1/4 x 7/8 inches.
Self-lubricating bushed.

Price, No. 8.....each
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Star Brand Wood Tackle Blocks for Manila Rope

Regular Mortise—Inside Iron Strapped—Loose Hooks



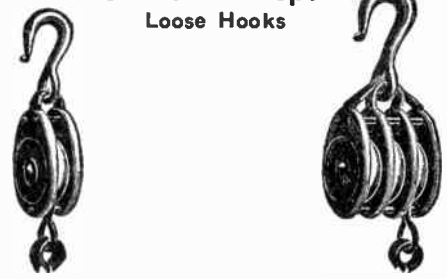
Single Double Triple

DIMENSIONS, INCHES			PRICE, EACH					
Lgth. Shell	For Diam. Rope	Diam. Sheaves	IRON BUSHED			ROLLER BUSHED		
			Single	Double	Triple	Single	Double	Triple
3	3/8	1 3/4	\$.70	\$ 1.30	\$ 1.75	\$ 1.10	\$ 2.00	\$ 2.90
3 1/2	3/8	2	.75	1.45	2.00	1.15	2.20	3.15
4	1/2	2 1/4	.85	1.60	2.15	1.20	2.25	3.25
5	5/8	3	.90	1.75	2.25	1.25	2.35	3.50
6	5/8-3/4	3 1/2	1.10	2.00	2.90	1.50	2.85	4.40
7	7/8	4 1/4	1.30	2.40	3.50	1.70	3.35	5.00
8	1	4 3/4	1.65	2.85	4.25	2.25	4.15	6.00
9	1	5 1/2	1.85	3.40	4.75	2.50	4.70	7.25
10	1 1/8	6 1/4	2.75	4.50	6.25	3.50	6.00	8.50
11	1 1/8	7 1/4	4.45	7.50	10.65	5.30	9.20	13.20
12	1 1/4	8	4.45	7.50	10.65	5.30	9.20	13.20
13	1 1/4	9	7.00	10.50	15.00	8.15	12.80	18.45
14	1 3/8	9 1/2	7.00	10.50	15.00	8.15	12.80	18.45
15	1 1/2	10	8.00	13.00	18.00	9.25	15.50	21.75
16	1 5/8	11	10.00	15.00	22.00	11.50	18.00	26.50

Beckets furnished for all single, one-half the double and one-third of the triple blocks without charge.

Star Brand Hollow Steel Tackle Blocks for Manila Rope

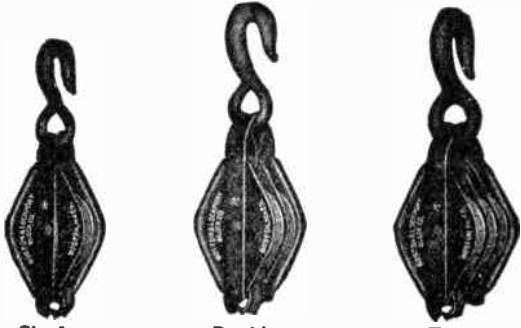
Loose Hooks



DIMENSIONS, INCHES			PRICE, EACH					
Lgth. Shell	For Diam. Rope	Diam. Sheaves	GRAPHITE BUSHED			ROLLER BUSHED		
			Single	Double	Triple	Single	Double	Triple
3	3/8	1 3/4	\$.85	\$ 1.65	\$ 2.35	\$ 1.20	\$ 2.35	\$ 3.35
4	1/2	2 1/4	.90	1.75	2.50	1.25	2.45	3.50
5	5/8	3	1.00	1.90	2.75	1.35	2.60	3.65
6	5/8-3/4	3 1/2	1.25	2.25	3.25	1.65	3.05	4.25
7	7/8	4 1/4	1.50	2.70	4.00	1.90	3.50	4.70
8	1	4 3/4	1.85	3.20	4.75	2.45	4.40	6.20
9	1	5 1/2	2.40	4.00	5.50	3.00	5.20	7.00
10	1 1/8	6 1/4	3.10	5.10	7.00	3.85	6.60	8.85
12	1 1/4	8	5.00	8.25	11.75	5.85	9.95	14.30
14	1 3/8	9 1/2	7.50	11.75	16.50	8.75	14.25	20.25

DIMENSIONS, INCHES			PRICE, EACH		
Lgth. Shell	For Diam. Rope	Diam. Sheaves	METALINE BUSHED		
			Single	Double	Triple
3	3/8	1 3/4	\$ 1.60	\$ 3.15	\$ 4.60
4	1/2	2 1/4	1.65	3.25	4.75
5	5/8	3	1.80	3.50	5.15
6	5/8-3/4	3 1/2	2.10	4.00	5.80
7	7/8	4 1/4	2.45	4.60	6.85
8	1	4 3/4	2.90	5.30	7.90
9	1	5 1/2	3.55	6.30	9.00
10	1 1/8	6 1/4	4.40	7.70	11.00
12	1 1/4	8	6.45	11.15	16.00
14	1 3/8	9 1/2	9.10	15.00	21.30

Star Brand Ideal Steel Tackle Blocks for Manila Rope With Loose Hooks



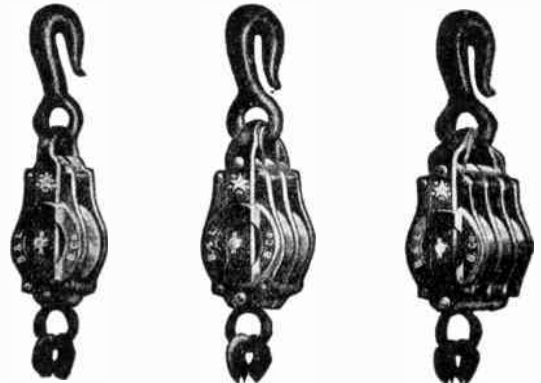
Single Double Triple

DIMENSIONS, INCHES			PRICE, EACH					
Lgth. Shell	For Diam. Rope	Diam. Sheaves	IRON BUSHED			ROLLER BUSHED		
			Single	Double	Triple	Single	Double	Triple
3	3/8	1 3/4	\$.70	\$ 1.30	\$ 1.75	\$ 1.10	\$ 2.00	\$ 2.90
4	1/2	2 1/4	.85	1.60	2.15	1.20	2.25	3.25
5	5/8	3	.90	1.75	2.25	1.25	2.35	3.50
6	3/4	3 1/2	1.10	2.00	2.90	1.50	2.85	4.40
7	7/8	4 1/4	1.30	2.40	3.50	1.70	3.35	5.00
8	1	4 3/4	1.65	2.85	4.25	2.25	4.15	6.00
9	1	5 1/2	1.85	3.40	4.75	2.50	4.70	7.25
10	1 1/8	6 1/4	2.75	4.50	6.25	3.50	6.00	8.50
12	1 1/4	8	4.45	7.50	10.65	5.30	9.20	13.20

DIMENSIONS, INCHES			PRICE, EACH		
Lgth. Shell	For Diam. Rope	Diam. Sheaves	GRAPHITE-BRONZE BUSHED		
			Single	Double	Triple
4	1/2	2 1/4	\$ 1.50	\$ 2.90	\$ 4.15
5	5/8	3	1.75	3.35	4.75
6	3/4	3 1/2	2.20	4.00	5.80
7	7/8	4 1/4	2.50	4.50	6.70
8	1	4 3/4	3.25	5.70	8.50
9	1	5 1/2	3.70	6.75	10.00
10	1 1/8	6 1/4	4.75	8.50	12.50
12	1 1/4	8	6.75	12.50	18.50

Star Brand Tarbox Wide Mortise Metal Blocks for Manila Rope

Malleable Iron Shells—Loose Hooks



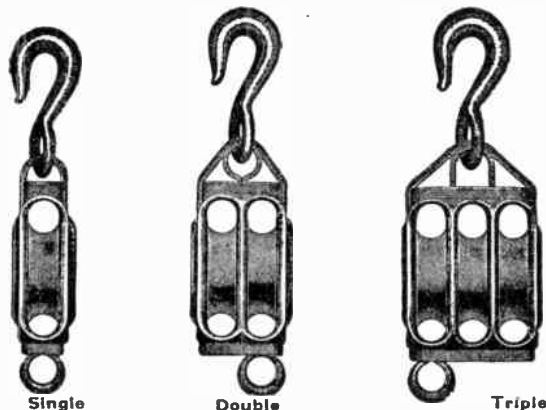
Single Double Triple

Malleable iron shell. Edges are nicely rounded to prevent wear of rope. Hooks and straps are made of steel. Can be furnished for wire rope, if desired, in either iron bushed or graphite-bronze bushed self-lubricating.

DIMENSIONS, INCHES			PRICE, EACH					
Lgth. Shell	For Diam. Rope	Diam. Sheaves	IRON BUSHED			ROLLER BUSHED		
			Single	Double	Triple	Single	Double	Triple
3	3/8	1 3/4	\$.70	\$ 1.30	\$ 1.75	\$ 1.10	\$ 2.00	\$ 2.90
4	1/2	1 5/8	.85	1.60	2.15	1.20	2.25	3.25
5	5/8	2 1/2	.90	1.75	2.25	1.25	2.35	3.50
6	3/4	3	1.10	2.00	2.90	1.50	2.85	4.40
7	7/8	3 3/8	1.30	2.40	3.50	1.70	3.35	5.00
8	1	3 3/4	1.65	2.85	4.25	2.25	4.15	6.00
9	1 1/8	4 1/4	1.85	3.40	4.75	2.50	4.70	7.25
10	1 1/4	5	2.75	4.50	6.25	3.50	6.00	8.50
12	1 3/8	7	4.45	7.50	10.65	5.30	9.20	13.20
14	1 1/2	8	7.00	10.50	15.00	8.15	12.80	18.45

Star Brand Tarbox Metal Blocks for Manila Rope

Malleable Iron Shells—Loose Hooks
Also Sister Hook or Shackles



Star Brand Boston Pattern Wrought Iron Snatch Blocks for Manila Rope

Malleable Iron Hollow Shell—Extra Heavy Drop Forged Flatted Stiff Swivel Hooks



Malleable iron. Has no rough edges to wear out the rope. Hooks and straps are steel. Can be furnished for wire-rope, if desired, in either iron bushed or graphite-bronze bushed self-lubricating.

DIMENSIONS, INCHES			PRICE, EACH					
Lgth. Shell	For Diam. Rope	Diam. Sheaves	IRON BUSHED			ROLLER BUSHED		
			Single	Double	Triple	Single	Double	Triple
2	1/4	1 1/8	\$.35	\$.70	.....	.....	.....	.....
2 1/2	5/16	1 5/8	.45	.80	.....	.....	.....	.....
3	3/8	1 3/4	.70	1.30	\$1.75	\$1.10	\$2.00	\$2.90
3 1/2	1/2	2	.75	1.45	2.00	1.15	2.20	3.15
4	1/2	2 1/4	.85	1.60	2.15	1.20	2.25	3.25
5	5/8	2 5/8	.90	1.75	2.25	1.25	2.35	3.50
6	3/4	3 3/8	1.10	2.00	2.90	1.50	2.85	4.40
7	7/8	4	1.30	2.40	3.50	1.70	3.35	5.00
8	1	4 3/4	1.65	2.85	4.25	2.25	4.15	6.00
10	1 1/8	6 1/4	2.75	4.50	6.25	3.50	6.00	8.50

Wrought iron straps, safety-locking link; smooth rounded edges to prevent chafing rope. Drop forged hooks, heads and links, flatted hooks. Blocks furnished with sheaves for wire rope, if desired.

DIMENSIONS, INCHES			PRICE, EACH		
Lgth. Shell	For Diam. Rope	Diam. Sheaves	Graphite Bushed	Roller Bushed	Metaline Bushed
6	7/8	3	\$4.50	\$5.15	\$5.75
7	7/8	3 1/2	5.50	6.25	6.75
8	1	4 1/2	6.50	7.35	8.00
9	1 1/8	5	7.50	8.50	9.25
10	1 1/4	5 3/4	10.00	11.50	12.50
12	1 1/2	6 3/4	12.50	14.00	15.50
14	1 3/4	8	16.00	18.00	19.50
16	2	9	21.00	24.00	26.00

Star Brand Boston Pattern Wood Snatch Block for Manila Rope
Drop Forged Flatted Stiff Swivel Hook



Star Brand Wrought Iron Snatch Blocks for Wire Rope

Drop Forged Flatted Stiff Swivel Hooks—Drop Links



All the connections are drop forged; the shells are double cross bolted and the bow straps on each side extend to the bottom of the shell.

DIMENSIONS, INCHES			PRICE, EACH		
Lgth. Shell	For Diam. Rope	Diam. Sheaves	Graphite Bushed	Roller Bushed	Metaline Bushed
6	7/8	3	\$4.00	\$4.65	\$5.25
7	7/8	3 1/2	4.75	5.50	6.00
8	1	4 1/2	5.75	6.60	7.25
9	1 1/8	5	6.75	7.75	8.50
10	1 1/4	5 3/4	8.50	10.00	11.00
12	1 1/2	6 3/4	10.00	11.50	13.00
14	1 3/4	8	13.00	15.00	16.50
16	2	9	17.00	20.00	22.00
18	2 1/4	10	25.00	28.50	31.00
20	2 1/2	11	38.00	43.00	46.00
22	3	11 3/4	55.00	63.00	68.00
24	3 1/2	12 1/2	70.00	78.00	86.00

Drop link pattern has shells with projections impressed between mortise above the edges of sheaves so as to prevent wire rope from slipping between shell and sheave.

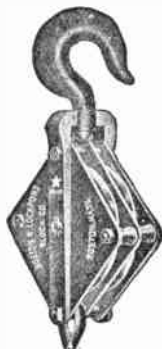
DIMENSIONS, INCHES			PRICE, EACH		
For Diam. Rope	Diam. Sheaves		Iron Bushed	Bronze Bushed	Metaline Bushed
3/8-1/2	6		\$11.00	\$12.00	\$12.00
1/2-5/8	8		14.00	15.00	15.00
5/8	10		16.00	18.00	18.00
3/4	12		18.00	21.00	21.00
3/4-7/8	14		20.00	24.00	24.00
7/8-1	16		28.00	33.00	33.00
1	18		38.00	44.00	44.00
1 1/4	20		50.00	58.00	58.00
1 1/2	20		60.00	68.00	68.00

Star Brand Diamond Wire Rope Blocks

Extra Heavy Pattern



Single Loose Hook



Double Stiff Swivel Hook



Triple With Shackle

These blocks are made of the finest steel, drop-forged flattened hooks. Loose hook and shackle block having double center plates in blocks size 12 inches and larger. The center straps are also double and extend to the bottom of the block.

Size Sheave Inches	For Rope Diam. Inches	PRICE, EACH					
		IRON BUSHED			STAR METALINE OR GRAPHITE-BRONZE BUSHED		
		Single	Double	Triple	SELF LUBRICATING Single	Double	Triple
8x1 1/4 x 7/8	1/2 - 5/8	\$11.00	\$16.00	\$22.50	\$14.00	\$22.00	\$32.00
10x1 1/4 x 1	5/8	14.00	20.00	28.00	17.00	26.00	37.00
12x1 1/2 x 1 1/8	3/4	16.00	23.00	31.00	19.00	29.00	41.00
14x1 1/2 x 1 1/4	3/4 - 7/8	18.00	25.00	36.00	21.00	31.00	45.00
16x1 3/4 x 1 1/2	7/8 - 1	31.00	40.00	46.00	36.00	50.00	72.00
18x1 3/4 x 1 1/2	1	34.50	45.00	60.00	40.00	56.00	78.00

Star Brand Malleable Iron Snatch Blocks

For Manila Rope

Eastern Pattern



Open



Closed

These snatch blocks have drop-forged hooks, heads and links. Hooks are extra large and flattened. The edges of shell are nicely rounded to prevent chafing of rope.

Blocks furnished with sheaves for wire rope, if desired.

Size Sheave Inches	For Rope Diameter Inches	Length Shell Inches	PRICE, EACH			
			Star Graphite Bushed Self-lubricating	5-roller Bushed	Star Metaline or Graphite-bronze Bushed Self-lubricating	
3 x 1 1/8 x 1/2	7/8	6	\$4.50	\$5.15	\$5.75	
3 1/2 x 1 1/4 x 1/2	7/8	7	5.50	6.25	6.75	
4 1/2 x 1 3/8 x 5/8	1	8	6.50	7.35	8.00	
5 x 1 3/8 x 5/8	1 1/8	9	7.50	8.50	9.25	
5 3/4 x 1 7/8 x 3/4	1 1/4	10	10.00	11.50	12.50	
6 3/4 x 2 1/8 x 3/4	1 1/2	12	12.50	14.00	15.50	
8 x 2 1/4 x 7/8	1 3/4	14	16.00	18.00	19.50	
9 x 2 5/8 x 1	2	16	21.00	24.00	26.00	

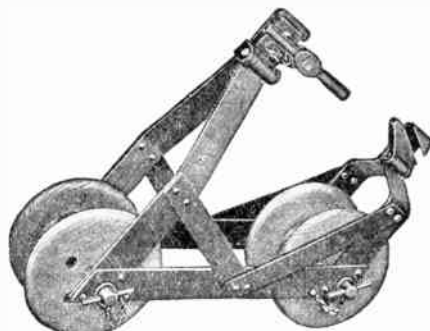
Cable Stringing Blocks

Following blocks recommended for use by public utility company's construction crews for stringing electrical cable conductors, lead and weatherproof, etc.

Aerial Cable Guides

For Stringing Lead Covered Cable

A. T. & T. Design

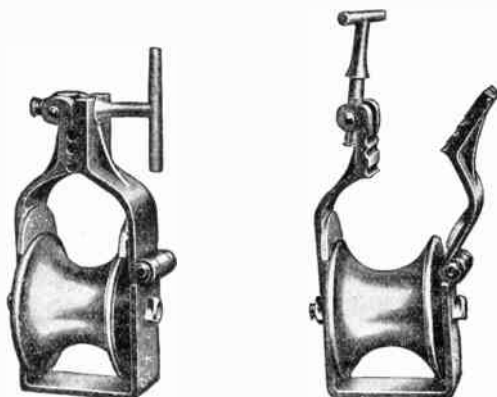


Price.....each.....

Single Sheave Cable Blocks

For Stringing Lead Covered Cable

A.T. & T. Design



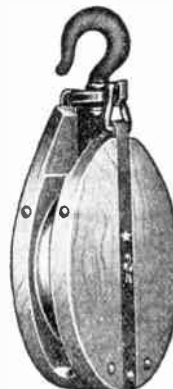
Closed

Open

Price.....each.....

Cable Stringing Wood Snatch Blocks

For Stringing Weatherproof and Aluminum Cable



For Manila or wire rope with roller bushed sheaves. Drop-forged flattened stiff swivel hooks, heads and links.

Size sheave, 10 1/2 x 1 1/2 x 5/8 inches.
Galvanized or lignumvitae.

Price.....each.....

Universal Single Eye Cable Grips



Single eye grip is designed for attaching the pulling line to the end of a cable. Has a brass marker fastened to neck.

Cat. No.	Size Inches	For Cable Diam., In.	Cat. No.	Size Inches	For Cable Diam., In.
191701	1/2 x 24	1/2 to 5/8	191709	1/2 x 36	1/2 to 5/8
191702	3/4 x 24	3/4 " 7/8	191710	3/4 x 36	3/4 " 7/8
191703	1 x 24	1 " 1 3/8	191711	1 x 36	1 " 1 3/8
191704	1 1/2 x 24	1 1/2 " 1 7/8	191712	1 1/2 x 36	1 1/2 " 1 7/8
191705	2 x 24	2 " 2 3/8	191713	2 x 36	2 " 2 3/8
191706	2 1/2 x 24	2 1/2 " 2 7/8	191714	2 1/2 x 36	2 1/2 " 2 7/8
191707	3 x 24	3 " 3 3/8	191715	3 x 36	3 " 3 3/8
191708	3 1/2 x 24	3 1/2 " 3 7/8	191716	3 1/2 x 36	3 1/2 " 3 7/8

Prices upon application.

Universal Double Eye Plain Cable Grips

The double eye plain grip is designed for pulling slack or recovering old cable. Any length or diameter of cable can be handled with ease, shifted little or much, without damage to the sheath.



Cat. No.	Size Inches	For Cable Diam., In.	Cat. No.	Size Inches	For Cable Diam., In.
191733	3/4 x 18	3/4 to 7/8	191740	3/4 x 24	3/4 to 7/8
191734	1 x 18	1 " 1 3/8	191741	1 x 24	1 " 1 3/8
191735	1 1/2 x 18	1 1/2 " 1 7/8	191742	1 1/2 x 24	1 1/2 " 1 7/8
191736	2 x 18	2 " 2 3/8	191743	2 x 24	2 " 2 3/8
191737	2 1/2 x 18	2 1/2 " 2 7/8	191744	2 1/2 x 24	2 1/2 " 2 7/8
191738	3 x 18	3 " 3 3/8	191745	3 x 24	3 " 3 3/8
191739	3 1/2 x 18	3 1/2 " 3 7/8	191746	3 1/2 x 24	3 1/2 " 3 7/8

Prices upon application.

Universal Double Eye Split Cable Grips



Designed for use on a working cable. It can be attached to any point on a cable without cutting it. It can be laced on and the cable shifted without interruption to the service.

Cat. No.	Size Inches	For Cable Diam., In.	Cat. No.	Size Inches	For Cable Diam., In.
191754	3/4 x 18	3/4 to 7/8	191761	3/4 x 24	3/4 to 7/8
191755	1 x 18	1 " 1 3/8	191762	1 x 24	1 " 1 3/8
191756	1 1/2 x 18	1 1/2 " 1 7/8	191763	1 1/2 x 24	1 1/2 " 1 7/8
191757	2 x 18	2 " 2 3/8	191764	2 x 24	2 " 2 3/8
191758	2 1/2 x 18	2 1/2 " 2 7/8	191765	2 1/2 x 24	2 1/2 " 2 7/8
191759	3 x 18	3 " 3 3/8	191766	3 x 24	3 " 3 3/8
191760	3 1/2 x 18	3 1/2 " 3 7/8	191767	3 1/2 x 24	3 1/2 " 3 7/8

Prices upon application.

Universal Leather Collar Protectors

For Use With Single Eye Cable Grips

By the use of this collar the life of the single eye grip can be greatly prolonged, for many conduits contain more or less sand and foreign matter, which tends to wear the cable grip, especially at a point near the neck.



The leather collar protector is designed to overcome this difficulty and a saving can be effected by its use.

Cat. No.	Description	Cat. No.	Description
191775	For 1-inch Grips	191778	For 2 1/2-inch Grips
191776	" 1 1/2 " "	191779	" 3 " "
191777	" 2 " "	191780	" 3 1/2 " "

Prices upon application.

No. 102-1 Klein's Splicing Clamps



A handy pocket size tool adapted specially for telephone troulemem.

Arranged with 5 round holes for bare wire.

Copper wire Nos. 8, 10, 12, 14, 16, B. & S.

Iron wire Nos. 10, 12, 14, 16, 18, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head, black handles.

Size, 8 inches.

Weight per dozen, 6 pounds.

Price, No. 102-1each \$2.60

No. 102-3 Klein's Splicing Clamps



Covers a wide range of wire sizes used in telephone and telegraph line work. Large hole can be used in serving guy wire or messenger strand. The dies fit the wire snugly insuring perfect mechanical and electrical joints.

This clamp is arranged with 5 round holes and one oval hole for bare wire.

Copper wire Nos. 2, 4, 6, 8, 10, 12, B. & S.

Iron wire Nos. 4, 6, 8, 10, 12, 14, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head, black handles.

Size, 10 3/4 inches.

Weight per dozen, 15 pounds.

Price, No. 102-3each \$3.35

No. 105-15 Klein's Splicing Clamps



A convenient pocket size clamp particularly adapted for telephone and telegraph repair work.

This clamp is arranged with openings for twisting double tube sleeves.

Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S.

Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle.

Size, 8 inches.

Weight per dozen, 6 pounds.

Price, No. 105-15each \$2.75

No. 105-17 Klein's Splicing Clamps



The unusually wide range of sizes in this clamp makes it particularly valuable for general telephone and telegraph work.

This clamp has 5 sets of chambers for twisting double tube sleeves.

Copper sleeves Nos. 6, 8, 10, 12, 14, 17, B. & S.

Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G.

Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles.

Size, 10 3/4 inches.

Weight, per dozen, 15 pounds.

Price, No. 105-17each \$3.35

No. 132-12 Klein's Combination Wire and Sleeve Clamps



For telephone and telegraph general line and trouble work. This clamp has four round holes for twisting bare wire. Copper wire Nos. 6, 8, 10, 12, B. & S. Iron wire Nos. 8, 10, 12, 14, B. W. G. The reverse side has four double chambers for twisting sleeves. Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S. Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G. Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handle. Weight per dozen, 10 pounds. Price, No. 132-12, Size, 9 Inches each \$7.50

No. 132-15 Klein's Combination Wire and Sleeve Clamps



The unusual range of wire and sleeve sizes covered by this clamp makes it practically a universal tool for telegraph, telephone and power line work. Has 5 round holes for twisting bare wire and an oval opening for guy wire or messenger strand. Copper wire Nos. 4, 6, 8, 10, 12, B. & S. Iron wire Nos. 6, 8, 10, 12, 14, B. W. G. Strand opening .467x.624. Reverse side has 5 chambers for twisting double tube sleeves. Copper sleeves Nos. 6, 8, 10, 12, 14, 17, B. & S. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. Hammer forged from high grade crucible tool steel. Oil tempered, polished head and black handles. Weight, per dozen, 16 pounds. Price No. 132-15. each \$4.75

No. 107 Klein's Di-Stock Sleeve Twisters



Made to order only.

Has ample leverage for use on heavy wires beyond capacity of standard splicing clamps or connectors. Can be made for twisting sleeves or bare wires. Illustrations show tools for making double tube joints. High grade crucible steel. Has swing latch with thumb nut to fit over reverse jaw to hold jaws in place.

Special prices on any combination upon application. Specify sizes of wire and sleeve joints tool is intended for.



Open to Receive Wire

Price, No. 107-1, for Bare Wire, Weight, 4 Lbs. .each \$12.50
 " " 107-2 " Sleeves, Weight, 4 Pounds.. " 13.75

No. 1802-30 Klein's Self-locking Troublemens' Blocks



Especially for use with Klein's Wire Grips. No. 1802-30 is furnished with 25 feet 3/8-inch Manila rope, 2 1/2 pounds. Consists of light steel shell blocks galvanized, fitted with snubbing hook to lock load in any position. To lock load, pull luff rope under hook. To release, simply pull rope. Blocks are arranged with spring guard snap hooks. When pulling up wire to make a splice, it may be used with two grips attached to snaps or with hook to anchor to an insulator-pin or other convenient anchorage.

Cat. No.	Description	Wt. Lbs.	Price per Set
1802-30	Galv., with 25 Ft. 3/8-inch Rope	2 1/2	\$4.00

Buffalo Grips Without Pulleys



The jaws may be clamped open at any width, the grip held in one hand and wire inserted, no matter what lineman's position may be.

The harder the pull the firmer the grip, yet without injury to wire or insulation.

Cat. No.	Extreme Opening Inches	Sizes of Wire Will Hold	Price Each
1	.22	Smallest to No. 6, Incl.	\$5.70
2	.35	" " " 0, "	8.30
3	.48	All from smallest to No. 0000, Incl.	13.30
4	.52	Weatherproof, No. 6 to No. 1, Incl.	8.30
5	.68	" " 6 " " 0000, Incl.	11.00
6	.29	" " 14 " " 18, Incl.	5.70

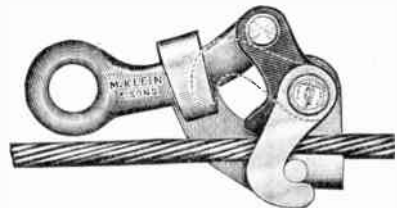
Buffalo Grips With Pulleys



Cat. No.	Extreme Opening Inches	Sizes of Wire Will Hold	Price Each
1	.22	Smallest to No. 6, Incl.	\$7.60
2	.35	" " " 0, "	12.00
3	.48	All from smallest to No. 0000, Incl.	18.10
4	.52	Weatherproof, No. 6 to No. 1, Incl.	12.00
5	.68	" " 4 " " 0000, Incl.	15.00
6	.29	" " 14 " " 18, "	8.50

Nos. 1 and 6 will accommodate 5/16-inch rope. Nos. 2 and 4 will accommodate 3/8-inch rope. Nos. 3 and 5 will accommodate 1/2-inch rope.

No. 1625-20 Klein's Improved Haven's Grips



A heavy grip adapted for handling plain or stranded wire from No. 4 to 3/4 inch in diameter. The particular feature of construction is a swing latch which engages with stud on lower jaw, thus centralizing the pressure on cross bolt which is strongly made of turned machined steel.

Weight per dozen, 69 pounds.

Price, No. 1625-20 each \$7.50

No. 1604 Klein's Haven's Steel Grips



For all around work. Forged from crucible steel. The eccentric or dog is hand cut, hardened and tempered. All rivets are steel, machine turned. Handle and eccentric allows instantaneous hold. A shake of rope on tackle disengages or releases grip. Heavy strain makes it grip tighter. Can be supplied with swing latch.

Cat. No.	Size	Weight per Dozen	Price Each
1604-10	No. 8 Wire and Finer	12	\$2.50
1604-20	1/2-inch " " "	30	3.50

Nos. 1611 and 1610 Chicago Grips for Insulated Wire

Main body piece and lever are forged steel. Drawn parts are wrought steel. Rivets are machine turned.

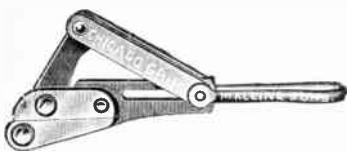


The upper jaw has a series of transverse shallow grooves into which, on applying strain, the insulation is tightly compressed but not injured.

Cat. No.	Description	Max. Openings, In.	Wt. Lbs.	Price Each
1611-20	No. 4 Wire and Smaller	1/2	2 5/16	\$10.00
1611-30	" 00 " " "	9/16	3 3/4	13.50
1611-40	" 0000 " " "	3/4	7 1/4	23.00

NOTE.—The manufacture of Chicago Grips with pulleys have been discontinued.

No. 1613 Klein's Chicago Grips for Bare Wire



Main body piece and lever are forged steel. Draw parts are wrought steel. Gripping jaws are machined smooth. Rivets are machine turned. The harder the pull, the tighter the

hold. It pulls straight without leaving kinks in the wire. It is handy to put on and holds itself in place by means of a spring acting on the compressing lever. Arrangement of draw links is so that it does not hang down at right angles and is not in the way of line when grip is put on.

Cat. No.	Description	Max. Open In.	Wt. Lbs. Each	Price Each
1613-30	For No. 6 Wire and Smaller	7/32	1 1/2	\$4.00
1613-40	" " " " "	5/16	2 5/8	5.50
1613-50	" " 0000 " " "	1/2	7 1/2	10.00

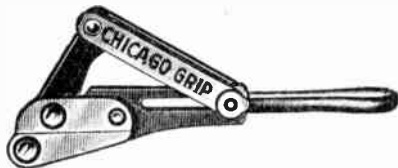
No. 1626 Klein's Chicago Grips for Aluminum Cable



Both gripping jaws are smooth and cannot injure strands of cable. Furnished plain or pulley type. Smaller sizes to order.

Cat. No.	For Cable	Maximum Opening, In.	Weight Pounds	Price Each
1626-39	250000 C.M.	5/8	7 3/4	\$15.00
1626-40	500000 C.M.	7/8	7 3/4	15.00

No. 1628 Klein's Chicago Grips for Messenger Strand Wire



These grips can be modified to order to accommodate strand wires of larger diameters.

Cat. No.	Description	Maximum Opening Inches	Weight Pounds	Price Each
1628-2	For 2200-pound Strand	5/8	3	\$6.65
1628-6	" 6000 " "	13/32	8 1/2	12.45
1628-16	" 16000 " "	11/16	14	24.80

Matthews Slack Pullers



Designed for taking the slack out of wires, guy strand and for the changing of insulators on high tension lines. Takes the place of block and tackle. By its use one man can pull as much strain as four men with block and tackle without any assistance. No slack is lost in deadending with this puller. The pulling power is obtained by a combination of miter and worm gears in combination with a long lead screw on the end of which is a drop forged hook.

Fuller is ruggedly built. Weighs 13 pounds ready to ship and has a take-up of 20 inches.

Price each \$50.00

No. 201 Klein's Diamond Special Side-cutting Pliers



Has handles shaped to the curvature of the hand. Powerful leverage and keen reinforced cutting knives make this plier adaptable for heavy cutting in telephone, telegraph and power line work. Full clearance back of the knife permits use on insulated wire.

Has polished head and handles temper blued. Packed 6 in a box.

Cat. No.	Size Inches per Doz.	Wt., Lbs. Each	Price Each	Cat. No.	Size Inches	Wt., Lbs. per Doz.	Price Each
201-5	5	3	\$2.60	201-8	8	12	\$3.75
201-6	6	5	2.80	201-9	9	12 1/2	4.45
201-7	7	7 1/2	3.35	.....	.....	.....	.....

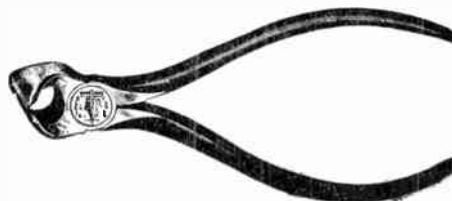
No. 212 Klein's Diamond Special Side-cutting Pliers With Sleeve Joint Twisters



Handles are curved to fit hand. Powerful leverage and keen reinforced cutting knives make this plier adaptable for heavy cutting in telephone, telegraph and power line work. These pliers have chambers for twisting double sleeve joints. Has polished head and handles temper blued.

Cat. No.	Size Inches	FOR SLEEVE No.	B.&S.	Weight, Lbs. per Dozen	Price Each
212-6	6	17	.045	5	\$3.35
212-7	7	17	.045	7 1/2	3.75
212-8	8	10	.104	12	4.45

No. 232 Klein's End Cutting Pliers



A generally useful end cutting plier for electrical mechanics. Has stout jaws and broad cutting knives. Has polished head and handles temper blued.

Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each	Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each
232-5 1/2	5 1/2	4	\$3.00	232-7	7	7	\$3.35

No. 303-6 Klein's Long Needle Nose Pliers



Long nose permits use in confined spaces. Has polished head and handles temper blued.

Weight per dozen, 3 pounds.
Price, No. 303-6, Length, 6 Inches.....each \$4.00

No. 202 Klein's Oblique Cutting Pliers

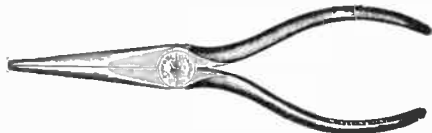


Electricians, telephone men and switchboard builders will find this plier a most useful tool. Cuts close, the narrow head permitting use in confined places. Knives are perfectly fitted so that they meet accurately at all points.

Has polished head and handles temper blued.

Cat. No.	Size In.	Weight, Pounds per Dozen	Price Each
202-5	5	4	\$2.25
202-6	6	4 1/4	2.50

No. 301 Klein's Long Nose Pliers without Cutters



For the electrician and general mechanic. Adaptable to stripping the ends of insulated wire and the extra long reach of the jaws permits working in confined spaces.

Has polished head and handles temper blued.

Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each	Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each
301-5	5	2 3/4	\$1.85	301-6	6	3	\$2.00

No. 203 Klein's Long Nose Side Cutting Pliers



For the electrician and general mechanic.

Adaptable to stripping the ends of insulated wire. The extra long reach of the jaws permits working in confined spaces.

Has polished head and handles temper blued.

Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each	Cat. No.	Size In.	Wt., Lbs. per Doz.	Price Each
203-5	5	2 3/4	\$2.20	203-6	6	3	\$2.40

No. 305-6 Klein's Long Flat Nose Pliers

Has long wide flat nose. Inside of jaws left smooth if desired. Has polished head and handles temper blued.

Weight per dozen, 3 1/2 pounds.
Price, No. 305-6, Length, 6 Inches.....each \$4.40



No. 206-6 Klein's Long Flat Nose Side Cutting Pliers



Has long wide flat nose and cutting knives. Smooth jaws if desired. Has polished head and

handles temper blued. Weight per dozen, 3 1/2 pounds.
Price, No. 206-6, Length, 6 Inches.....each \$4.80

No. 304-6 Klein's Long Duck Bill Pliers

General use. Jaws are wider and heavier than those of flat nose plier. Used as weaver's plier.



Has polished head and handles temper blued.

Weight per dozen, 3 1/4 pounds.
Price, No. 304-6, Length, 6 Inches.....each \$4.40

No. 205-6 Long Duck Bill Side Cutting Pliers

General use. Jaws are wider and heavier than those of flat nose plier. Has polished head and handles temper blued.



Weight per dozen, 3 pounds.
Price, No. 205-6, Length, 6 Inches.....each \$4.80

No. 302-6 Klein's Long Curved Nose Pliers



A handy plier for working around switchboards, terminals and telephones, due to the nose being curved. Angle is arranged to give full clearance and prevent skinning of knuckles. Adaptable to a variety of uses. Jaws will not lose their shape or set due to pressure applied, owing to quality of steel used, its hardening and tempering.

Weight per dozen, 2 3/4 pounds.
Has polished head and handles temper blued.

Price, No. 302-6, 6-inch.....each \$2.40

No. 408-8 Klein's Bent Nose Slip Joint Pliers



For use in difficult places. An excellent general purpose tool. Has polished head and handles temper blued.

Weight per dozen, 8 pounds.

Price, No. 408-8, 8-inch.....each \$1.50

No. 406-6 1/2 Klein's Slip Joint Pliers



This plier embodies all the advantages offered by a tool of this type. Has a wire cutter and a screwdriver handle. Has

polished head and handles temper blued.
Weight per dozen, 7 pounds.
Price, No. 406-6 1/2, Length, 6 1/2 Inches.....each \$2.00

No. 407-7 Klein's Utility Slip Joint Pliers

Heavy duty type. Adaptable as pipe wrench or wire cutter. Has sure grip jaws for irregular shapes.

Polished head and handles temper blued.

Weight per dozen, 7½ pounds.



Price, No. 407-7, Length, 7 Inches..... each \$2.50

No. 235-6 Klein's Diagonal Cutting Pliers



This plier has many uses.

It has long cutting knives well matched and the head is narrow to permit its use in confined places.

Has polished head and handles temper blued.

Weight per dozen, 4½ pounds.

Price, No. 235-6, 6 Inches..... each \$3.00

No. 242-6 Klein's Oblique Cutting Pliers Heavy Pattern



Heavy pattern for general work.

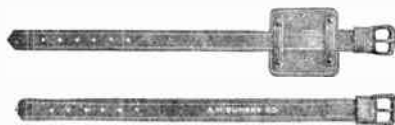
The knives are perfectly fitted, so that they meet accurately at all points.

Will be found particularly satisfactory where it is not necessary to reach into confined spaces.

Has polished head and handles temper blued.

Cat. No.	Size Inches	Weight, Pounds per Dozen	Price Each
242-6	6	4¼	\$2.50

No. 1002 Buhrke Eastern Climber Straps with Pad



Heel straps 22 inches by 1¼ inches wide; calf straps 22 inches long by 1¼ inches wide with movable pad.

No. 1002-1. Same as No. 1002 excepting that pads are sheep lined.

No. 1002-2. Same as No. 1002 excepting that pads are felt lined.

No. 1002-3. Calf straps only, two to a set. Plain leather pads.

No. 1002-4. Calf straps only, two to a set. Sheep lined pads.

No. 1002-5. Calf straps only, two to a set. Felt lined pads.

No. 1003 Plain Climber Straps

Same as No. 1002 except no pads.

No. 1004 Eastern Climber Strap Pads

No. 1004.—Separate extra heavy plain leather pad 4 inches long by 4 inches wide. Two to a set.

No. 1004-1.—Same as No. 1004 excepting that pad is lined with sheepskin. Two to a set.

No. 1004-2.—Same as No. 1004 excepting pad is lined with felt. Two to a set.

Prices upon application.



No. 1004

Klein's Linemen's Pole Climbers

Also Called Spurs or Hooks

Safety is the first and vital point in considering linemen's pole climbers. The lineman going up a pole depends entirely upon his spurs.

To assure utmost dependability Klein Climbers are forged from special steels and are individually tempered. Shanks and gaffs are tested to insure perfect riveting and temper.

Leg iron or shank is made of spring steel, gaff or spur is forged from tool steel.

The shape of Klein Climbers has been carefully considered. It is the result of many years' experience and much practical suggestion from linemen. Klein Climbers have flexible shanks and yield readily to pressure of leg; they do not chafe. Gaff or spur is correct in shape, set of angle and temper. It is hand riveted to leg iron in secure manner.

Klein's Eastern Climbers



When ordering specify length of shank desired. Measure from instep to extreme end. Other than stock sizes to order. Tested before leaving factory.

No. 1901

Stock sizes, 15, 15½, 16, 16½, 17, 17½, and 18 inches. Punched strap loops. Weight, 2⅝ pounds. Pair in a carton. Price, No. 1901.....per pair \$4.10

No. 1900

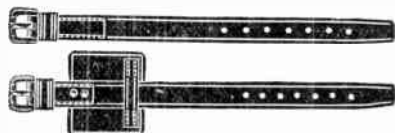
Same and same sizes as No. 1901 but has riveted strap loops. Made to order only. One pair in a carton. Price, No. 1900.....per pair \$4.45

No. 5301 Klein's Straps for Eastern Climbers

Set consists of two upper straps with 4x4 plain leather pads and two lower straps.

Made of select oak tanned harness leather, heavy drop-forged roller buckles, lock stitching with hot waxed harness thread.

Straps are 22 inches long, 1¼ inches wide.



Cat. No.	Description	Wt. per Doz.	Lbs. per Set	Price
5301-1	With Plain Pads.....	15	\$6.50	
5301-2	" Sheep Lined Pads.....	16	7.00	
5301-3	" Felt Lined Pads.....	16	7.00	
5301-4	Straps without Pads.....	6	2.70	
5301-5	" with Plain Pads.....	9	3.80	

Nos. 8200-8202 Klein's Soft Pads for Eastern Climbers

Made of select plain leather, and lined with sheepskin or felt, with loops through which to slip climber straps. Size, 4x4 inches. Weight per dozen sets, 3 pounds.

Price, No. 8200	Sheep-lined.....	per pair	\$8.80
" " 8201	Felt-lined.....	"	.80
" " 8202	Plain Leather.....	"	.55



No. 5111 Klein's Hip Pocket Tool Cases

This case is suitable for carrying pliers or other tools in hip pocket.

Prevents cutting of clothes, or possible injury to the person.

Made of russet leather.

Weight per dozen, 2½ pounds.

Price, No. 5111. Size, 5x7 Inches.... each \$1.00



No. 5206-1A Genuine Klein's Belts and Safety Straps Combined



The tool belt in this outfit is 2 1/4 inches wide. Strap, 1 3/4 inches. All snaps, D rings and buckles are solid steel drop forgings tested to 1500 pounds and are galvanized finish. The strap may be adjusted to length by means of buckle or it may be detached entirely from the belt.

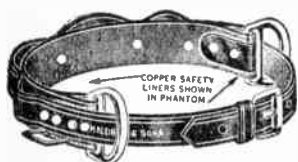
Genuine harness leather throughout. Hot waxed harness thread lock stitched.

Belt made 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches long.

Weight per dozen, 60 pounds.

Price, No. 5206-1A, with Strap, 1 3/4 In. x 6 Ft. . . . each \$8.90

Genuine Klein's Tool Belts



Made of select first quality harness leather. Cushion carries D rings. Outer or loop layer is 1 1/2 inches wide formed into tool loops by riveting to cushion. It also passes through D rings and is furnished with a strong drop forged buckle.

D rings are solid steel drop forgings of improved design tested to 1500 pounds. Surfaces taking wear of D rings are protected with copper safety liners riveted through full thickness of belt. All rivets are solid copper set with burrs and sewing is with hot waxed harness thread, lock stitched. D rings and buckle galvanized finish. A belt capable of giving long service.

No. 5202 has 2 1/4-inch cushion. No. 5204 with cushion 3 1/2 inches wide is more comfortable to recline in when using safety strap.

Made in lengths 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches. Specify length required measuring from end of buckle to middle hole at other end of belt.

Cat. No.	Size Inches	Weight, Pounds per Dozen	Price Each
5202	2 1/4	30	\$4.45
5204	3 1/2	32	4.75

No. 5211 Genuine Klein's Tool Belts

N. E. L. A. Type



First quality and selection harness leather. The inner or cushion layer, 3 inches wide, is narrowed at ends to carry D rings. Body strap, 2 inches wide, is riveted and stitched to cushion and also passes through D rings. Two tool straps are provided and formed into 2 tool loops at each side. D rings and buckle are solid steel drop forgings tested to 1500 pounds; galvanized. Surfaces taking wear of D rings are protected by copper safety liners riveted through full thickness of belt. Rivets are solid copper, hand set with burrs. Sewing is with linen thread, hot waxed and lock stitched. Made in lengths 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches. Specify length required, measuring from end of buckle to middle hole at other end. Weight per dozen, 36 pounds. Packed individually.

Price, No. 5211 each \$5.75

No. 5205 Genuine Klein's Tool Belts



Made of select first quality harness leather. The inner or cushion layer, 2 1/4 inches wide, carries the D rings and is lock stitched and riveted to the outer layer and is furnished with a strong drop forged buckle.

The D rings are solid steel drop forgings tested to 1500 lbs. and are of improved design. Surfaces which take the wear of the D rings are protected with copper safety liners riveted to the belt. D rings and buckle are galvanized finish. Solid copper rivets set with burrs; sewed with hot waxed thread, lock stitched. The loop strap is 1 1/4 inches wide, formed into 6 loops.

Made in lengths 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches; figured from end of buckle to middle hole at other end of belt.

Weight per dozen, 32 pounds.
Price, No. 5205, Width, 2 1/4 Inches each \$5.25

No. 5210 Genuine Klein's Tool Belts

Bell System Type



First quality harness leather. Cushion, 3 inches wide, is in one piece to which D rings are secured. Belt straps are in 2 pieces sewed and riveted to cushion at ends. Two plier

keepers are provided; also a tape holder of rawhide. D rings and buckle are solid steel drop forgings tested to 1500 pounds. Galvanized. Rivets are solid copper, hand set with burrs. Sewing is with linen thread, hot waxed and lock stitched. Made in lengths 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches. Specify length required, measuring from end of buckle to middle hole at other end.

Weight per dozen, 38 pounds. Packed individually.

Price, No. 5210 each \$5.95

No. 5250 Genuine Klein's Safety Straps



Standard type. Genuine harness leather of first quality. Sewed with hot waxed harness thread, lockstitched. Rivets are solid copper, set with burrs. Snaps have a solid strap loop with roller and buckle, solid drop forgings tested to 1500 pounds. Strap may be lengthened or shortened. Reinforced at ends with copper safety clasp riveted through double thickness of leather. Snaps and buckle galvanized finish.

Weight per dozen, 30 pounds.

Price, No. 5250, 1 3/4 Inches x 6 Feet each \$4.45

No. 5253 Genuine Klein's Safety Straps



This strap is a heavy duty type. Genuine harness leather, first quality. Securely sewed with hot waxed harness thread, lock stitched. Solid copper rivets and burrs. The snaps and buckle are extra heavy steel drop forgings tested to 1500 pounds. The strap may be lengthened or shortened by adjusting buckle. Reinforced at both ends with safety clips of sheet copper riveted. Snaps and buckle are galvanized.

Extra heavy drop-forged roller snaps and buckle. Weight, per dozen, 39 pounds.

Price, No. 5253, 2 Inches x 6 Feet each \$5.70

No. 5257 Genuine Klein's Safety Straps

Bell System Type



Has a double tongue buckle. First quality and selection harness leather. Securely sewed with linen thread, hot waxed, lock stitched. Solid copper rivets and burrs set by hand. Snaps and buckle are solid steel drop forgings, tested to 1500 pounds. Galvanized. Adjustable length. One end reinforced with copper safety clip. Weight per dozen, 40 pounds. Packed individually.

Price, No. 5257-S, 2x61½ Inches.....each \$5.95
 “ “ 5257-L, 2x70 “ “ 6.25

No. 5258 Genuine Klein's Safety Straps

N. E. L. A. Type



Heavy duty. First quality and selection harness leather. Sewing is with linen thread, hot waxed, lock stitched. Solid copper rivets with burrs hand set. Snaps and buckle are solid steel drop forgings tested to 1500 pounds. Galvanized. Adjustable length. Reinforced at buckle end with safety copper clip. Weight per dozen, 39 pounds.

Packed individually.

Price, No. 5258each \$6.25

No. 5209 Klein's Safety Harnesses



Back

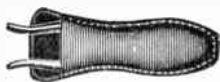
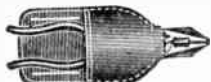


Front

Meets requirements of various safety commissions for use where danger from gassing is present. Working in gassy manholes, gas tanks, oil tanks and even boilers, men are frequently overcome and an emergency arises instantly. This harness provides a sure means by which patient can be brought to safety and danger overcome. Design is such that it slings wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening. A solid harness leather back plate 2¼x10 inches is stitched and riveted around the 1¼-inch adjustable belt strap. Back plate also carries a tested drop forged D ring to which the ¾-inch manila life line, 25 feet in length is permanently attached. Shoulder straps are ¾ inch and made adjustable and riveted to belt at single ends. These straps hold belt in position around chest so as not to encumber wearer while working. Weight per dozen, 30 pounds.

Price, No. 5209, with Life Line.....each

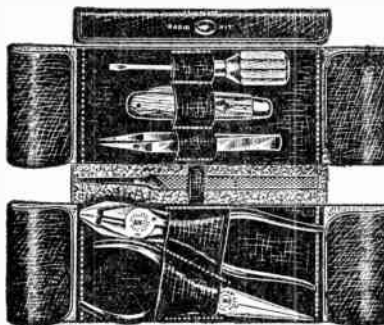
Nos. 5107 and 5112 Leather Plier Pockets



Made of good quality leather. Has slits through which belt is inserted. No. 5112 is the same as No. 5107 except that plier does not protrude.

Price, No. 5107, Weight per Dozen, 2½ Pounds.....each \$.65
 “ “ 5112 “ “ “ 2½ “ “.65

No. 1305-2 Klein's Inspectors' Tool Kits



Solid black leather folding case strongly stitched, reinforced back. Fitted with one each of the following tools: No. 201-6 side-cutting plier; No. 301-5 long nose plier; No. 1550-2 Xela electricians' knife; 1 pair electricians' tweezers; 1 special file; 1 special screwdriver.

A handy assortment to fit the pocket.
 Weight, 1½ pounds.

Price, No. 1305-2.....each \$15.00

No. 5108 Klein's Inspectors' Harness Leather Tool Bags

This bag is made of harness leather and will stand rough usage. It has a shoulder strap combined with a pad and hand strap; also a saw and bit holder. The bottom is three ply and is studded with steel studs. Retaining straps pass clear around the bag.



All seams are sewed with hot waxed linen thread, lock stitched.

Cat. No.	Size In.	Wt. Lbs.	Price Each
5108-18	18x8	4½	\$8.50
5108-20	20x8	5½	8.75

No. 5102 Klein's Linemen's Canvas Tool Bags

Made of one piece white duck reinforced all around bottom, 3¼ inches up, with heavy bag leather. Bottom is made of heavy leather outside, duck inside. Lock stitched all around. Bottom and sides are joined together with lock-stitched leather welt seams. Has harness leather handles and two retaining straps with buckles.



Cat. No.	Size In.	Wt. Lbs.	Price Each
5102-18	18	3¾	\$5.25
5102-20	20	3⅞	5.75

Buhrke Plier Pockets



No. 1044



No. 1045

No. 1044.—Made of harness leather to slip on tool belt.

No. 1045.—Made of harness leather to slip on tool belt.

Prices upon application.

No. 1025 Buhrke Belt with Rings for Safety Straps



Made of first-grade genuine Steer Hide harness leather; main belt 2½ inches wide, looping back through Anchorite rustproof finish tested 2-inch steel roller deerings; this loop being thoroughly stitched and riveted.

No. 1025, assorted sizes; No. 1025-36, 36-inch waist; No. 1025-38, 38-inch waist; No. 1025-40, 40-inch waist; No. 1025-42, 42-inch waist; No. 1025-44, 44-inch waist. No. 1030 is the same as No. 1025 except that the main belt is 3½ inches wide. No. 1032 same as No. 1030 except drop-forged dees and buckles. No. 1027 same as No. 1025 except drop-forged dees and buckles. Prices upon application.

No. 1034 Buhrke American Telegraph and Telephone Style Safety Tool Belts



No. 1034, made in accordance with A. T. & T. Co. specifications. 3 inches wide. Equipped with drop forged dees and buckles and hand set solid copper rivets and burrs.

No. 1034, price upon application.

No. 1035 Buhrke Double Belt with Rings for Safety Straps



Made of extra heavy first-grade genuine Steer Hide harness leather; main belt 2½ inches wide, made of two layers stitched together.

No plier holder is furnished with this belt.

No. 1035.—Assorted sizes; No. 1035-36, 36-inch waist; No. 1035-38, 38-inch waist; No. 1035-40, 40-inch waist; No. 1035-42, 42-inch waist; No. 1035-44, 44-inch waist.

No. 1033.—Same as No. 1035 except drop-forged buckles and dees. Prices upon application.

No. 1037 Buhrke Western Union Style Safety Tool Belts



Made of heavy genuine Steer Hide harness leather. Belt 2¾ inches wide with tool loop 1¾ inches wide having four loops. The tool loop is riveted and also sewed to the main belt, lock-stitch sewing. A 2-inch Buhrke rust-proof tested steel dee and buckle used. Made in accordance with Western Union Telegraph Company's specifications.

No. 1037, price upon application.

No. 1007 Buhrke Combination Safety and Jack Straps

No. 1007.—Made of heavy first-grade genuine Steer Hide harness leather, 6½ feet long by 1¾ inches wide, with 1¾-inch extra heavy Anchorite rustproof finish tested snap at one end and removable roller snap at other end. Strap may be adjusted as desired by a heavy Anchorite rustproof tested roller buckle.



No. 1007-1.—Made up same as No. 1007 but does not have the removable roller snap.

Prices upon application.

Nos. 1016 and 1019 Buhrke Safety Straps



No. 1016

No. 1016.—Made in accordance with A. T. & T. Co., specifications.

Drop-forged snaps and buckles. Hand set solid copper rivets. Strap 2 inches wide and either 5 or 6 feet long.

No. 1019.—1¾ inches by 5 feet. Made in accordance with Western Union Telephone Company's specifications.

Nos. 1010—1018 Buhrke Safety Straps

No. 1010.—Made of heavy first-grade genuine steer hide harness leather; 6 feet long by 1¾ inches wide, having extra heavy Anchorite rustproof finish tested snaps. Strap may be adjusted as desired by heavy Anchorite rustproof finish tested roller buckle.



No. 1010

No. 1012.—Same as No. 1010, but strap is equipped with Anchorite rustproof finish tested swivel roller snap.

No. 1014.—Same as No. 1010, excepting that strap is equipped with Anchorite rustproof tested roller snap instead of plain snap.

No. 1015.—Same as No. 1010, but strap is 2 inches wide and equipped with Anchorite tested roller snap.

No. 1018.—Same as No. 1010, but strap is 2 inches wide and equipped with drop-forged snaps and buckles.

No. 250 Buhrke Leather Trimmed Canvas Bags



Made of one-piece No. 6 (24-ounce) white duck, reinforced with bag leather 3½ inches on bottom and sides.

Bottom, leather, binder board and duck, stitched all around and supplied with heavy steel studs. No sewed-in bottom to fall out because of torn or rotted stitches.

No. 250, price upon application.

Buhrke Western Union Standard Type Tool Bags



This bag has the 12-gauge steel frame riveted to body of bag, steel studs in the bottom of the bag, and is sewed on lock-stitch machine. It is also made of one piece of canvas and has the one-piece leather bottom.

Has double harness leather handles, with solid top and shaped ends. These shaped ends are riveted to the frame and also the canvas, the latter riveting being reinforced on the inside by a leather washer. In addition they are securely sewn to the canvas. Bag is 20 inches long but can be made in regular 18, 20 and 22-inch sizes if desired. Made according to Western Union Telegraph Company's specification. Price upon application.

No. 345 Buhrke Electrician's and Plumber's Harness Leather Tool Bags



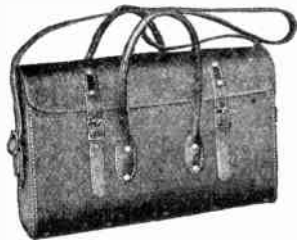
Has a shoulder strap with pad, a handle, and a saw or bit holder. Bottom is three ply and equipped with steel studs. Retaining straps pass around the bag so that it may be safely loaded to the limit of its cubic capacity.

It is sewed from the outside without leather welt, thus avoiding the necessity for turning the bag out after it has been sewn.

Cat. No.	Dimensions Inches	Price Each	Cat. No.	Dimensions Inches	Price Each
345-14	14x7x8	\$9.20	345-20	20x7x8	\$10.50
345-16	16x7x8	9.60	345-22	22x7x8	11.00
345-18	18x7x8	10.00	345-24	24x7x8	11.50

No. 355 Buhrke Pennsylvania Railroad Style Tool Bags

This bag is made of heavy harness leather, thoroughly sewn throughout on lock-stitch machine. Has two long harness leather handles sewed and riveted to the bag. It is equipped with a shoulder strap. This bag is made in accordance with Pennsylvania Railroad Company's specifications. Body of bag is made of one piece, bottom double.



- No. 355-2, 18x10x4 inches.
 - No. 355-3, 18x11x4½ inches.
- Prices upon application.

No. 270 Buhrke Tool Rolls

Made of No. 8 (18-ounce) white duck. Bound with leather and sewed throughout with lock stitch.

Pockets reinforced with rivets at top.

No. 270, 56x24 inches, thirty tool pockets, no flap.

No. 271, 60x24 inches, thirty tool pockets, flap to protect tools.

Prices upon application.

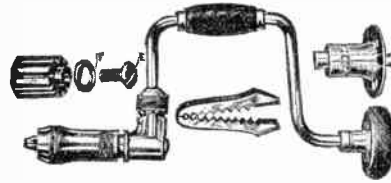


No. 1041 Buhrke Wireman's Bit Carriers



Made of black harness leather, 3 inches wide, 31 inches long. No. 1041, price upon application.

Millers Falls Ratchet Bit Braces



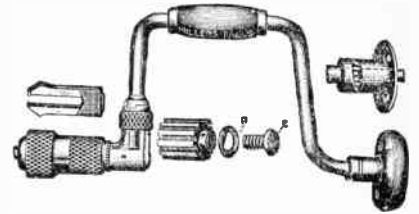
Holds bit shanks only. Barber chuck with forged steel alligator jaws. Boxed ratchet. Ball-bearing head, with steel quill. Handle has inserted metal rings. Cocobolo

head and handle. Exposed metal parts are nickel-plated and buffed. This brace will fulfill every boring requirement where bit shanks only are used. Packed ½ dozen in a box.

No.	Sweep Inches	Wt., Lbs. per ½ doz.	Price Each	No.	Sweep Inches	Wt., Lbs. per ½ doz.	Price Each
30	14	7½	\$5.10	33	8	5½	\$4.65
31	12	6½	4.95	34	6	5	4.65
32	10	6	4.70	..	..	...	....

Millers Falls Ratchet Bit Braces

Has cocobolo head and handle. Exposed metal parts nickel plated and buffed. Has lion ball bearing chuck and jaws have parallel milled grooves which grip along their entire length. Holds bit shanks, round from ⅛ to ½ inch and No. 1 Morse taper shanks. Boxed ratchet. Packed two in a box.



No.	Sweep Inches	Wt., Lbs. per ½ Dozen	Price Each	No.	Sweep Inches	Wt., Lbs. per ½ Dozen	Price Each
769	16	9½	\$6.80	772	10	7½	\$6.05
770	14	9	6.45	773	8	7	6.00
771	10	8	6.30	...	..	..	....

No. 108 Millers Falls Angular Bit Stocks



Capacity, ⅛ to ½-inch round bit shanks and No. 1 Morse taper shanks. Master chuck. Boring angle

adjustable from 180° to 125°. Weight, each, 2½ pounds. Packed one in a box. Price, No. 108.....each \$2.90

No. 542 Millers Falls Solid Center Auger Bits



The distinguishing feature of this bit is its solid center. Designed with two spurs and two cutting edges for cabinet making and other fine work where clean smooth boring is the chief essential. Deep single twist allows maximum clearance, preventing clogging.

Highly polished over all. Length, 9 inches. Packed six in a pasteboard box.

Size in 16ths in.	Price per Dozen	Size in 16ths in.	Price per Dozen	Size in 16ths in.	Price per Dozen	Size in 16ths in.	Price per Dozen
3	\$4.50	9	\$5.50	15	\$9.00	21	\$13.50
4	4.00	10	6.00	16	9.00	22	13.50
5	4.00	11	7.00	17	10.50	24	15.00
6	4.00	12	7.00	18	10.50	..	....
7	4.50	13	8.00	19	12.00	..	....
8	5.00	14	8.00	20	12.00	..	....

No. 533 Millers Falls Auger Bits



For use by electricians and locksmiths. It requires but 6 turns to go through 1 inch of timber, and is nearly 3 times as fast as the fine double threaded double lip bits. Recommended for soft woods only. Highly polished over all. Length, 9 inches. Made in 3 sizes only. Sizes in 16ths of an inch.

Size Inches	Price per Dozen	Size Inches	Price per Dozen
10	\$6.00	12	\$7.00
11	7.00	..	.....

No. 922 Millers Falls Ship Auger Car Bits



This type of bit without spur is made especially for boring in rough timber. Sizes $\frac{1}{8}$ -inch and smaller have full polished twist and round. Larger sizes have black hollows. Twelve inches twist, 18 inches over all. Packed six in a pasteboard box up to and including $\frac{1}{8}$ -inch. Packed three in a pasteboard box above this size.

Size, In. in 16ths	Price Each	Size, In. in 16ths	Price Each	Size, In. in 16ths	Price Each
4	\$11.00	11	\$12.00	18	\$16.00
5	11.00	12	12.00	20	18.00
6	11.00	13	13.00	22	20.00
7	11.00	14	13.00	24	23.00
8	11.00	15	14.50	..	.....
9	11.00	16	14.50	..	.....
10	11.00	17	16.00	..	.....

No. 35 Millers Falls Bit Extensions



Follows $\frac{1}{8}$ -inch bit or larger. Not recommended for bits larger than $\frac{1}{2}$ -inch. Removable jaws. Packed one in a box.

Length In.	Wt. Lbs.	Price Each	Length In.	Wt. Lbs.	Price Each	Length In.	Wt. Lbs.	Price Each
12	10	\$2.10	18	13	\$2.25	24	16	\$2.35
15	11	2.20	21	14	2.30	30	18	2.50

Millers Falls Screwdriver Bits



Hammer forged of high grade steel with special attention given to hardening and tempering. Length over all, 4 inches. Packed six in a pasteboard box.

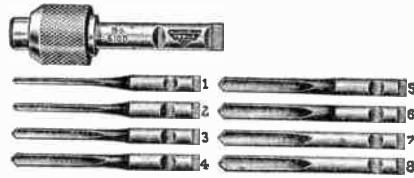
No.	Width Point		For Screws No.	4-INCH	
	In.	16ths		Wt., Lbs. per Dozen	Price per Dozen
4	$\frac{4}{16}$		6 to 8	5	\$2.95
5	$\frac{5}{16}$		8 " 12	6	3.00
6	$\frac{6}{16}$		12 " 16	8	3.15
8	$\frac{8}{16}$		16 " 20	10	3.30
10	$\frac{10}{16}$		20 " 24	11	3.45

Adjustable Plaster Drills



Designed to cut away plaster or wood on ceiling or wall of finished houses for fixture or outlet boxes. Can be used anywhere a concealed job is required. Can be used over $\frac{3}{8}$ or $\frac{1}{2}$ -inch gas pipe. Price.....each \$10.00

Millers Falls Chucks and Drills for Spiral Ratchet Screwdrivers

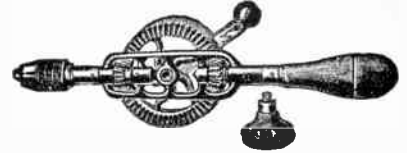


Converts spiral ratchet screwdrivers into automatic drills for boring small holes. Drills can be changed without removing chuck from screw driver. Has improved ball chuck. Operates same as when driving screws. Packed in wooden box.

No.	For Use with Screwdrivers, Nos.	Quantity	DRILLS		Wt. Oz.	Price Each
			In.	16ths		
6700	67 and 670	3	$\frac{1}{16}$	$\frac{3}{32}$	2	\$.45
6100	61 " 610	8	$\frac{1}{16}$	$\frac{11}{64}$	3	.95
5200	62 " 620	8	$\frac{1}{16}$	$\frac{11}{64}$	4	.95

No. 5 Millers Falls Hand Drills

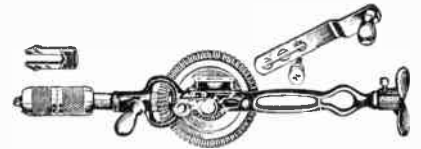
Capacity, 0 to $\frac{1}{4}$ -inch round shank drills. Three-jaw chuck, improved protected springs; single speed; ball thrust bearing; cut gears; double steel pinion, including idler to equalize the bearings.



Detachable side handle, cocobolo hollow-end main handle containing eight wood boring points. Black enameled malleable iron frame; red enameled large gear; other parts nicked. The wide rim on the large gear can be firmly held between the thumb and finger tips in doing delicate work. Length, 12 $\frac{1}{2}$ inches. Packed one in box. Weight, 1 $\frac{3}{4}$ pounds. Price, No. 5, with Drill Points.....each \$3.70

No. 12 Millers Falls Breast Drills

Capacity $\frac{1}{8}$ to $\frac{1}{2}$ -inch round bit and No. 1 Morse taper shanks. Two-jaw Master chuck; protected springs;



two speeds—gear ratios even and 3 to 1; speed changed by pressing the spring and shifting large gear. Annular ball bearing spindle and ball thrust bearing with take up nut to provide for wear; cut gears; steel pinion; idler roll to equalize bearing. Stained hardwood handles; crank handle extensible, 4 to 6-inch radius. Black enameled malleable iron frame and adjustable breastplate; level attached. Red enameled large gear, other parts nicked. Length 17 $\frac{1}{2}$ inches. Weight 6 $\frac{1}{2}$ pounds. Price, No. 12.....each \$5.75

No. 85 Millers Falls Radio Hand Drills



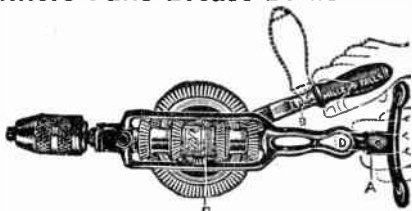
Capacity, 0 to $\frac{1}{4}$ -inch round shank drills.

Built especially for radio fans. This drill is sturdy and takes all drills used in radio work; handsomely finished. Three-jaw chuck; protected springs. Single speed; ball thrust bearing; cut gears; steel pinion. Solid main handle of stained hardwood. Malleable iron frame enameled black. Large gear enameled red. Other parts are nicked. Length, 12 $\frac{1}{2}$ inches. Weight each, 1 $\frac{3}{4}$ pounds.

Packed one in a box. Price, No. 85, without Drills.....each \$2.30

No. 97 Millers Falls Breast Drills

Capacity, 0 to 1/2-inch round shank drills, three-jaw chuck, protected springs. Two speeds—gear ratios even and 2 3/4 to 1; ball thrust bearing; cut gears; steel pinions; double gear drive; stained hardwood handles; black enameled malleable iron frame, red enameled large gear, other parts nickeled. Breast plate has hand-hold for steadying tool. Large auxiliary breast plate. Adjustable crank handle. Take-up nut to overcome ball bearing wear. Fast and slow speeds separated by bushings. Five ratchet actions—neutral, ordinary and continuous right or left hand. Length, 17 1/2 inches. Weight, 8 1/4 pounds. Packed one in a box. Price, No. 97.....each **\$11.65**



No. 63 Ratchet Screwdrivers

Ratchet, operates smoothly, noiselessly



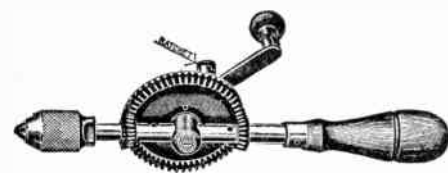
and without friction, and is so constructed that the mechanism cannot get bent, broken or out of order. It is a compact, strong tool, well proportioned and handsomely finished.

Ratchet operates by means of cam in rear of shifter sleeve, self-locking on pawls. Operates either to right or left by turning shifter ring. In vertical position can be used as solid screwdriver.

Ratchet pawls are tool steel. Ratchet springs are spring steel. Ratchet frame is cold rolled steel. Highest quality screwdriver steel blade, hardened and tempered. Hardwood, highly polished handle, well shaped.

Length.....inches **3 4 5**
Price, No. 63.....each **\$.80 .90 1.00**

No. 315 Millers Falls Hand Drills



Capacity, 0 to 1/4-inch round shank drills. Three-jaw chuck; protected springs; single speed; hardened

thrust collar; steel idler gear to equalize bearings. Ratchet operated by boss on crank handle; cut gears; steel pinion.

Hollow end main handle, stained hardwood. Solid steel frame, polished and nickeled; large gear enameled red; other exposed metal parts nickeled. Length, 11 1/2 inches. Weight, 1 pound 3 ounces. Packed one in a box. Price, No. 315, without Points.....each **\$3.75**

No. 55 Millers Falls Radio Ratchet Screwdrivers



For light work. Thumb and finger ratchet blade by means of collar while handle rests securely in hand with pressure against screw. Screw is tightened by turning handle. Hardwood handle. Right and left ratchet or solid. Six in a box.

Blade Inches	Over All Inches	Diameter Blade, In	Wt., Oz. per Six	Price Each
2	5	3/16	14	\$.75
3	6	3/8	16	.80
4	7	1/2	18	.85
5	8	5/8	20	.90
6	9	3/4	22	.95

No. 2100 Millers Falls Breast Drills



Capacity, 0 to 1/2-inch round shank drills. Three-jaw chuck, protected springs. Two speeds, gear ratio even, and 3 to 1. Cut gears, steel pinions.

Stained hardwood handles. Black enameled malleable frame. Red enameled large gear, other metal parts polished. Slightly rotating the knurled ring changes the speed instantly at any point, and without removing drill from work. Length, 17 1/2 inches. Weight, 5 3/4 pounds. Packed one in a box. Price, No. 2100.....each **\$5.25**

Millers Falls Spiral Ratchet Screwdrivers



An improved spiral ratchet screwdriver. Right and left hand ratchet movements. Has a device for making it rigid. Has accurately machined steel spiral or rod, manganese bronze spiral nuts, hardened tool steel ratchet pawls, stained hardwood handle, and blades of special analysis steel. Exposed metal parts polished and nickel plated. Three screwdriver blades furnished. One in a box.

No.	LENGTH, INCHES		WEIGHT, OUNCES		Price Each
	Extended with Bit	Closed	Without Blades	3 Blades	
67	12 5/8	9 3/8	8	1 1/2	\$2.30
61	20 1/2	14 1/4	16	2 1/4	3 10
62	26 1/4	17 1/4	24	3	4.10

No. 2 Millers Falls Hand Drills



Capacity, 0 to 3/8-inch round shank drills. Three-jaw chuck; protected springs, single speed; ball thrust bearing; cut gears; steel pinion; adjustable friction roll to equalize bearings.

Detachable side handle, cocobolo hollow-end main handle containing eight wood boring points. Black enameled malleable iron frame; red enameled large gear; other parts nickeled. Length, 14 1/2 inches. Price, No. 2, with Drill Points.....each **\$4.50**

Millers Falls Spiral Ratchet Screwdrivers



Has spring in handle. Tool works on the principle of an automatic drill in which handle is pushed and quickly returns for next stroke. Offers a quick method of drilling small holes when used in connection with chuck and drills. Hardwood handle. Blade of special analysis steel. Steel spiral, accurately machined. Packed 1 in a box.

No.	Extended Lgth. without Blade, In.	Lgth. Closed In.	Wt., Oz. without Blade	Wt., Oz. Three Blades	Price Each
610	18 9/16	12 5/8	18	2 1/4	3.50
620	24 5/8	16 1/8	27	3	4.75

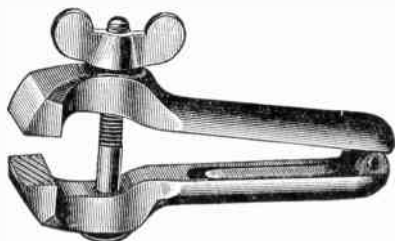
No. 59 Millers Falls Ratchet Screwdrivers



A rugged type tool. Blade of best quality screwdriver steel, hardened and tempered. Hardwood handle highly polished. Exposed

metal parts polished and nickel-plated. Length blade, 1 1/4 inches; over all, 6 1/4 inches. Packed six in a box. Price, No. 59.....each \$1.00

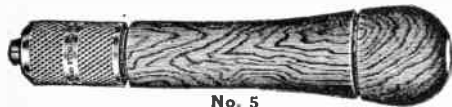
No. 3 Millers Falls Hand Vises



Solid steel castings, well tempered, in black finish with polished jaws. Jaws opened by a heavy spring and closed with thumb nut and screw bolt. Jaws are checked to insure firm grip. Length, 5 inches. Width of jaws, 1 1/2 inches. Jaws open, 1 1/4 inches. Weight each, 1 1/8 pounds.

Price, No. 3.....each \$1.75

No. 5 Millers Falls Tool Holders



No. 5

The tools are made from high-grade steel, carefully tempered and finished

and honed to a fine cutting edge.

These tools are contained in the handle which is hollow with screw cap. The jaws hold with a vise-like grip. Socket and snell threads are carefully cut so as to mesh perfectly and prevent shell from working loose and allowing tools to disengage themselves from the jaws. Cocobolo handles, highly polished. No. 5 has tools without blue finish.



Tools for No. 5

Length of handle, 7 1/2 inches. Length of tools, 4 inches.

Weight, 14 ounces. Packed one in a box.

Price, No. 5, Contains 10 Tools.....per dozen \$39.60

No. 81 Millers Falls Automatic Drills



By turning knurled nut on over end of handle, handle is released and slides down on frame, exposing points. Knurled nut locks magazine securely. Metal partitions in magazine keep each point in place. Size of point is marked against each compartment. Handle is of convenient size to fit the hand comfortably.

Has improved ball chuck, knurled handle and spiral nut of Tobin bronze. Shell cannot be completely unscrewed and lost.

Length, 10 1/2 inches.

Weight, 9 ounces.

Packed one in a box.

Price, No. 81.....each \$2.70

No. 144 Millers Electricians' Boring Machines



This machine is frequently used by carpenters and millwrights who have occasion to bore in overhead joists. Head is equipped with a double ratchet which forces the bit forward continuously as operator pulls handles up and down. Head is less than 3 inches thick and can be used in narrow places.

Interchangeable hardened bearings—runs without friction.

Bits will clear without reverse motion.

Adjustable from 7 to 12 feet. Can be lengthened to 16 feet at small additional cost.

One each of 10/16 and 1/8-inch bits are furnished with each machine.

Below boring attachment for work in old buildings furnished without extra charge.

Tempered steel tubes. Steel sprocket, steel chain. Hardwood handles.

Weight boxed, 40 pounds; net, 18 pounds.

Price, No. 144, Complete.....each \$33.45

Foot Rest for Machines

Foot rest is fastened to the base of the machine by a set screw. Standing squarely on this rest affords a means of further steadying the tool, particularly when used at its extreme height.

Weight each, 3 pounds.

Price.....each \$1.25



No. 441 Auger Bits

This bit is made especially for the No. 144 machine. It has a hole drilled in the end of the round shank to take a cotter pin which holds the bit in the machine.

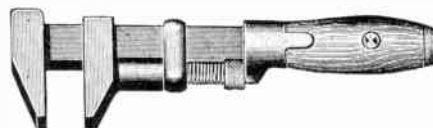
Carried in 3 sizes with 4 1/2-inch twist, 7 1/2 inches over all.

Size In.	Price per Doz.	Size In.	Price per Doz.	Size In.	Price per Doz.
10/16	\$6.00	11/16	\$7.00	12/16	\$7.00

Solid Handle Monkey Wrenches

Lgth. In.	Opens In.	Price per Doz.
6	7 7/8	\$15.00
8	11 1/4	18.00
10	13 3/4	22.00
12	2 1/8	28.00
15	2 3/4	38.00
18	3 1/8	48.00

Black Finish



Stillson Pattern Wrenches



Wood handle, 6 to 14 inches; steel handle, 18 to 48 inches.

Takes Pipe, In.	Length In.	Price Each	Takes Pipe, In.	Length In.	Price Each	Takes Pipe, In.	Length In.	Price Each
1/2	6	\$2.00	1	10	\$2.50	2	18	\$5.00
3/4	8	2.25	1 1/2	14	3.50	2 1/2	24	7.25

No. 3109-20 Klein's Combination Steel Lag Screw Wrenches



This wrench is forged from select bar steel. The slot is formed in a cross shape and will fit machine bolts, nuts or lag screws from 3/8 inch to 5/8 inch. The small end of the wrench is arranged for 3/16-inch machine bolts or lag screws. The round hole allows the end of a bolt to come through as the nut is run on.

The jaw is wider at its upper portion and when this wrench is put on a nut or bolt the tendency is to draw the bolthead or nut into the wrench and prevent slipping off. Weight, per dozen, 20 pounds.

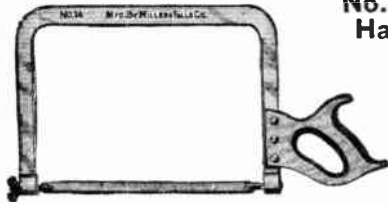
Price, Nos. 3109-20, Length, 13 1/2 Inches.....each \$2.50

Millers Falls Hack Saw Frames



Polished and nicked steel, cocobola handle. Adjustable 8 to 12 inches.

Price, No. 10, Depth 2 3/8 Inches.....each \$2.25
 " " 11 " 3 1/2 " " 2.40



No. 14 Millers Falls Hack Saw Frames

Extra heavy; for sawing steel rails, girders. Polished and nicked steel. For 12-inch blades. Depth, 10 1/4 inches. No. 14 per doz. \$49.80

No. 1027 Millers Falls Hack Saw Frames



Pistol grip hack saw frames give a comfortable grip. Extensible from 8 to 12 inches.

Price, No. 1027, with One 10-inch Blade...per dozen \$21.00

Millers Falls Hand Hack Saws Flexible—Tungsten



Flexible blades differ from all hard blades in that the teeth only are hardened. Recommended for use particularly on thin sections of soft materials, both sheet and tubing. Superior to the all hard for use in out of the way places, and when frame must be held in other than a normal position.

Electricians, plumbers and steam fitters will find this type of blade more economical than all hard.

Flexible blades should be strained tighter in frame than all hard. Because they stretch more readily tension should be increased frequently while in use.

When starting a new blade in an old cut, give work a greater turn if possible. This will overcome the binding due to wider set of new blade.

No.	Length Inches	Width Inches	Gauge	No. of Teeth	Gross in Box	Price per Gross
41	8	7/16	025-23	14	1/2	\$8.00
42	9	7/16	025-23	14	1/2	9.00
43	10	1/2	025-23	14	1/2	10.00
44	11	1/2	025-23	14	1/2	11.00
45	12	9/16	025-23	14	1/2	12.00
51	8	7/16	025-23	18	1/2	8.00
52	9	7/16	025-23	18	1/2	9.00
53	10	1/2	025-23	18	1/2	10.00
54	11	1/2	025-23	18	1/2	11.00
55	12	9/16	025-23	18	1/2	12.00
61	8	7/16	025-23	24	1/2	8.00
62	9	7/16	025-23	24	1/2	9.00
63	10	1/2	025-23	24	1/2	10.00
64	11	1/2	025-23	24	1/2	11.00
65	12	9/16	025-23	24	1/2	12.00
71	8	7/16	025-23	32	1/2	8.00
72	9	7/16	025-23	32	1/2	9.00
73	10	1/2	025-23	32	1/2	10.00
74	11	1/2	025-23	32	1/2	11.00
75	12	9/16	025-23	32	1/2	12.00

Nos. 48 and 49 Electricians' Shears



Forged steel. No. 48 has 3 1/2-inch blade and is 14 inches long. No. 49 has 3-inch blade and is 12 1/4 inches long.

Price, No. 48.....each \$2.00
 " " 49..... " 1.75

Peirce Expansion Bolts



No.	Size Inches	Price per 100	No.	Size Inches	Price per 100
1	1/4 x 1 3/4	\$8.80	9	3/8 x 5	\$21.70
2	1/4 x 2	9.32	10	3/8 x 5 1/2	22.82
3	1/4 x 2 1/2	9.58	11	1/2 x 2 1/2	22.82
4	1/4 x 3 1/4	11.26	12	1/2 x 3 1/2	25.44
4A	1/4 x 4	12.68	13	1/2 x 4	27.98
4B	1/4 x 5	16.08	14	1/2 x 4 1/2	29.24
5	3/8 x 2 1/2	15.80	15	1/2 x 5	30.48
6	3/8 x 3	16.64	16	1/2 x 5 1/2	31.76
7	3/8 x 3 1/2	18.04	17	1/2 x 6 1/2	35.52
8	3/8 x 4 1/2	21.36	18	1/2 x 8	39.60

Extra Lead Sleeves

No.	Diam. Inches	Price per 100	No.	Diam. Inches	Price per 100
22	1/4	\$3.10	24	1/2	\$14.72
23	3/8	5.04	..	..	....

Diamond N Drill Holders and Points

Drill Holders



The taper shank on the drill is carefully machined to fit the holder. The transverse hole in the handle is to admit a tapered pin which drives out the point when it is to be removed. The advantage of this drill over the one-piece regular drills is that in the smaller sizes a better grip can be had and a harder blow struck. It is also a great convenience in the reduction in weight of tools to be carried to a job where numerous holes are to be drilled. One holder may be used for many drill points. Worn drill points may be replaced with new drill points and the job continued without interruption. Holder will take drill points from 1/4 to 3/4 inch.

Price.....per dozen \$24.00

Drill Points



The points are provided with tapered shanks to fit the tapered hole in the holder and drift pins are provided to eject the point when replacement is necessary.

Size Inches	Length Inches	Price per Doz.	Size Inches	Length Inches	Price per Doz.
1/4	4 1/2	\$8.50	1/2	5	\$10.00
5/16	4	8.50	5/8	6 1/4	12.00
3/8	4 1/2	8.50	3/4	6	14.00
7/16	4	9.00	..	..	....

Sets

Set made up of one holder, one ejector pin and six points assorted of any of the above sizes, put up in a wooden box, making a convenient drill outfit in compact form for those requiring various sizes of holes for different diameter of expansion bolts.

Price, Complete.....per set \$7.50

Diamond N 4-point Drills



Recommended for use in brick, softer stone and concrete.

Diam. Drill In.	LENGTH, INCHES				Diam. Drill In.	LENGTH, INCHES			
	8	12	18	24		12	18	24	24
1/4	\$8.25	\$8.50	\$11.00	\$13.50	1 1/4	\$30.00	\$35.00	\$40.00	
5/16	8.25	8.50	11.00	13.50	1 3/8	40.00	45.00	50.00	
3/8	8.25	8.50	11.00	13.50	1 1/2	50.00	56.00	62.00	
7/16	8.70	9.00	11.50	14.00	1 5/8	60.00	66.00	72.00	
1/2	9.65	10.00	12.50	15.00	1 3/4	75.00	81.00	87.00	
9/16	11.65	12.00	15.00	17.50	1 7/8	90.00	97.00	104.00	
5/8	13.70	14.00	17.50	20.00	2	105.00	112.00	120.00	
7/8	15.30	16.00	20.00	22.50	2 1/4	135.00	145.00	165.00	
1	17.00	18.00	22.50	25.00	2 1/2	165.00	175.00	195.00	
1 1/8	24.00	28.00	32.00	..	..	..	..	..	..

Nos. 50 and 53 Peirce Hammer Drills



The Peirce Hammer Drill is a double-ended tool designed for drilling holes easily in brick, stone and concrete. It drills the hole and swages the lead sleeve of the bolt. Holds all sizes of drill points.

The drill cannot become wedged in the hole while drilling as a backward stroke of the hammer instantly releases it.

Injury to the hands of the operator is impossible.

The chuck has a quick release whereby a drill-point may be instantly removed and a sharp one inserted.

Price, No. 50 for Tamping $\frac{1}{4}$ -inch Bolts each **\$17.17**
 " " 53 " " $\frac{3}{8}$ " " **18.28**

Nos. 56-65 Peirce Drill Points



For $\frac{1}{4}$ -inch expansion bolts, $\frac{1}{2} \times 4$ or 6-inch drill points are used; for $\frac{3}{8}$ -inch bolts, $\frac{3}{8} \times 6$ -inch points; for $\frac{1}{2}$ -inch bolts, $\frac{7}{8}$ -inch points, the length of drill point depending on the length of bolt used. One and three-fourths inches of drill point is held inside the chuck. All drill points are measured over all except the 12-inch which are 14 inches over all.

Cat. No.	Size Inches	Wt., Lbs. per 100	Price per 100	Cat. No.	Size Inches	Wt., Lbs. per 100	Price per 100
56	$\frac{3}{4} \times 4$	22	\$224.78	61	$\frac{5}{8} \times 12$	79	\$411.20
57	$\frac{1}{2} \times 4$	25	224.78	62	$\frac{3}{4} \times 6$	47	386.52
58	$\frac{1}{2} \times 6$	33	249.44	63	$\frac{3}{4} \times 12$	107	463.22
59	$\frac{1}{2} \times 12$	65	274.10	64	$\frac{7}{8} \times 6$	57	411.20
60	$\frac{5}{8} \times 6$	38	328.94	65	$\frac{7}{8} \times 12$	137	493.46

No. 55 Peirce Hand Chucks for Drill Points



Permits the use of Peirce Drill Points with the old method of hand-and-hammer drilling.

Price, No. 55 per 100 **\$230.26**

Nos. 67-69 Peirce Tamping Tools

For Expansion Bolts



Price, No. 67 for $\frac{1}{4}$ -inch Bolts per 100 **\$60.72**
 " " 68 " $\frac{3}{8}$ " " " " " " " " " " 100 **60.72**
 " " 69 " $\frac{1}{2}$ " " " " " " " " " " 100 **60.72**

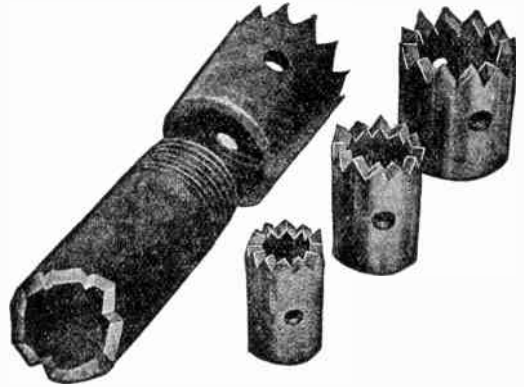
Offset Swaging Tools



The offset swaging tool is designed for tamping the lead sleeves of Peirce Ring Bolts and Knob Bolts.

Price, No. 2970 per 100 **\$216.08**

Diexco Extension Drill Heads



Diexco Drill Heads are not made from steel tubing, but are turned out from solid bar of best refined tool steel, carefully tempered so as to give the correct combination of hardness for the cutting edges and sufficient ductility to prevent breaking under hardest blows of the hammer.

Cat. No.	Size of Pipe Diam. for Handle of Hole Inches	Price per Doz.	Cat. No.	Size of Pipe Diam. for Handle of Hole Inches	Price per Doz.
2	$\frac{1}{8}$	9/16 \$12.00	8	1 2	\$48.00
3	$\frac{1}{4}$	$\frac{11}{16}$ 12.00	9	1 2 1/4	72.00
4	$\frac{3}{8}$	$\frac{7}{8}$ 12.00	9A	1 2 1/2	88.00
5	$\frac{1}{2}$	1 12.00	10	1 2 3/4	108.00
5A	$\frac{1}{2}$	$\frac{11}{8}$ 14.40	10A	1 3	124.00
6	$\frac{3}{4}$	$\frac{11}{4}$ 16.80	11	1 1/4 3 1/4	144.00
6A	$\frac{3}{4}$	$\frac{13}{8}$ 30.00	11A	1 1/4 3 1/2	160.00
7	$\frac{1}{2}$	$\frac{11}{2}$ 36.00	11B	1 1/4 3 3/4	176.00
7A	1	$\frac{13}{4}$ 42.00	12	1 1/4 4	192.00

Set made up of one each of Nos. 2, 3, 4 and 5, furnished in wood boxes or on display cards of three sets.

Price, Complete per set **\$4.00**

Diamond Rapid Fire Drills



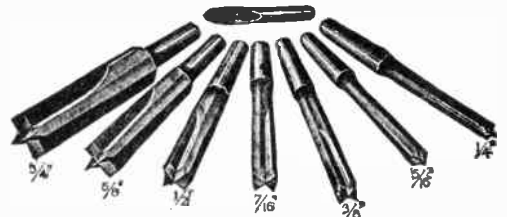
This drill reproduces the same action as is produced with the hand hammer and drill, with greatly multiplied speed.

With every revolution of the crank eight sharp blows are struck. No vibration. Its action is percussive.

Each drill has three adjustments, hard, medium and soft, controlled by a spring lever at the side of the housing. The springs are easily changed by removing the cover of the housing without disarranging or unfastening any of the parts of the mechanism.

Price, Drill Only, without Drill Points each **\$32.00**

Diamond Standard Drill Points



Diam. Inches	Length Inches	Depth Hole Inches	Price Each	Diam. Inches	Length Inches	Depth Hole Inches	Price Each
$\frac{1}{4}$	4 1/4	3	\$.71	$\frac{5}{8}$	6	4 1/2	\$1.00
$\frac{5}{16}$	4 1/4	3	.71	$\frac{3}{4}$	6	4 1/2	1.17
$\frac{3}{8}$	4 1/4	3	.71	$\frac{7}{8}$	6 1/2	5	1.33
$\frac{7}{16}$	4 1/4	3	.75	1	6 1/2	5	1.50
$\frac{1}{2}$	6	4 1/2	.84	...	...	...	...

Complete Set (7 sizes) $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ $\frac{3}{4}$ and 1.. **\$7.50**

**Diamond Super-grip Expansion Shields
For Machine Bolts**



Has cone shaped brass nut and a tubular expansion shield cast of lead and antimony.

Prices do not include machine bolts.

Diameter Bolt Inches	Length Shield Inches	Diameter Hole and Drill, In.	Price per 100	Diameter Bolt Inches	Length Shield Inches	Diameter Hole and Drill In.	Price per 100
3/16	1/2	5/16	\$10.00	1/2	2 1/4	3/4	\$38.00
1/4	1 1/8	7/16	15.00	5/8	2 5/8	7/8	45.00
5/16	1 1/4	1/2	18.00	3/4	3	1	65.00
3/8	1 3/4	9/16	25.00	..	...	...	.....

**Diamond N. Y. Expansion Bolts
With Malleable Iron Expansion Shields**

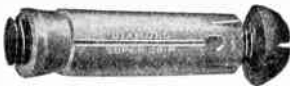


In ordering specify diameter of screw or bolt to be used and if lag screw shields, specify whether short standard or long standard is wanted.

Prices do not include lag screw or machine bolt.

Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100	Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100
1/4	1 1/2	1/2	\$15.00	5/8	3 1/2	7/8	\$45.00
5/16	1 3/4	9/16	18.00	3/4	3 1/2	1 1/8	65.00
3/8	2 3/4	5/8	25.00	7/8	5	1 3/8	95.00
7/16	2 3/4	11/16	32.00	1	5	1 1/2	110.00
1/2	3 1/2	3/4	38.00	..	...	...	.....

**Diamond Super-grip Expansion Shields
For Machine Screws**



Has cone shaped brass nut and a tubular expansion shield cast of lead and antimony. Grooves on the side of the shield not cut through, prevent its expansion before it is tightened up in the wall, hold the nut securely in place.

Prices do not include machine screws.

No. Machine Screw	Length Shield Inches	Diameter Hole and Drill, In.	Price per 100
8-32	1/2	5/16	\$10.00
10-24	1/2	5/16	10.00
12-24	1 1/8	7/16	15.00
14-20	1 1/8	7/16	15.00
18-18	1 1/4	1/2	18.00

Diamond One-part Composition Shields



DIMENSIONS, INCHES			Size Screws	Price per 100
Inside Shield	Length of Shield	Outside Diam.		
1/8	1/2	1/4	5- 6- 7	\$4.40
1/8	5/8	1/4	5- 6- 7	4.40
1/8	3/4	1/4	5- 6- 7	4.40
3/16	1/2	1/4	8- 9-10-11	5.00
3/16	3/4	5/16	8- 9-10-11	5.00
3/16	1	5/16	8- 9-10-11	5.00
3/16	1 Heavy	3/8	8- 9-10-11	5.00
3/16	1 5/8	5/16	8- 9-10-11	6.25
1/4	1/2	3/8	12-13-14	5.60
1/4	3/4	3/8	12-13-14	5.60
1/4	1	3/8	12-13-14	5.60
1/4	1 1/2	3/8	12-13-14	8.00
1/4	2	3/8	12-13-14	10.00
1/4	2 1/2	3/8	12-13-14	12.00
5/16	3/4	7/16	15-16-17-18	6.25
5/16	1	7/16	15-16-17-18	6.25
5/16	1 3/8	1/2	15-16-17-18	10.00
5/16	1 1/2	1/2	15-16-17-18	10.00
5/16	2	1/2	15-16-17-18	13.00
3/8	1 1/4	9/16	20-22-24	15.00
3/8	2	9/16	20-22-24	15.00
1/2	2	3/4	26-28-30	25.00
5/8	2	7/8	5/8-in. Lag	30.00
5/8	3 1/2	7/8	5/8 " "	50.00

Put up in wooden boxes, 100 to a box.

**Diamond Super-grip Expansion Shields
Complete with Galvanized Bolts**



Size Inches	Price per 100	Size Inches	Price per 100	Size Inches	Price per 100
1/4 x1	\$15.35	3/8 x3 1/2	\$30.75	5/8 x3 1/2	\$78.25
1/4 x1 1/2	15.50	3/8 x4	31.50	5/8 x4	80.00
5/16 x1	22.15	1/2 x3	44.40	5/8 x5	83.80
5/16 x1 1/2	23.00	1/2 x3 1/2	45.65	3/4 x3 1/2	111.90
5/16 x2	23.50	1/2 x4	47.00	3/4 x4	114.60
5/16 x2 1/2	29.25	1/2 x5	48.20	3/4 x5	120.00
3/8 x3	30.00	5/8 x3	76.40	.....	.....

**Diamond Midget Expansion Shields
Two Part Malleable**



Round Head Screw



Square Head Screw

For use where shields are required for heavy duty and where conditions will allow the use of only a small expansion. For attaching opera chairs, ornamental iron work, etc.

Prices do not include screws.

Diameter Screw Inches	Outside Diameter Shield Inches	Length Shield Inches	Diameter Drill Required Inches	Price per 100
3/16	3/8	1	3/8	\$15.00
1/4	7/16	1	7/16	15.00
5/16	1/2	1	1/2	18.00

**Di-En-Key Expansion Bolts
With Malleable Iron Expansion Shields**



For use in suspension rods for mine hangers, steam and water pipes, sprinkler systems and allied lines. The smaller sizes are adapted to opera chairs and school furniture work.

Prices do not include lag screw or machine bolt.

Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100	Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100
1/4	1	7/16	\$15.00	1/2	2 1/2	7/8	\$38.00
5/16	1 3/4	9/16	18.00	5/8	2 1/2	1	45.00
3/8	2	11/16	25.00	3/4	3 3/4	1 1/4	65.00

Rawplug Screw Anchors

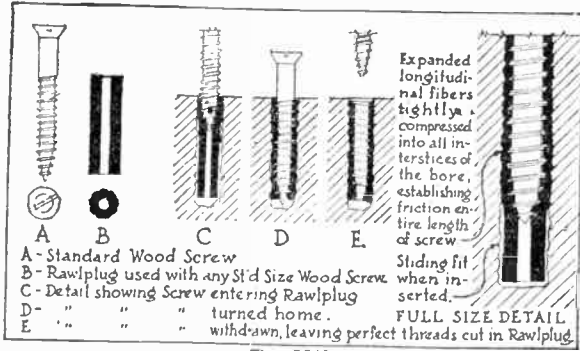


Fig. 2640

Application of Rawplug with Standard Wood Screw

The Rawplug is a hollow tube of stiffened longitudinal strands of jute fiber, so cemented that once in place it is unaffected by moisture or change in temperature. It is placed in a previously drilled hole smaller than the head of the screw and therefore invisible when in position.

Rawplugs Only in Boxes of 100

Sizes, 16, 18 and 20 are packed in boxes of 50.

No.	Diam. of Drill, Hole and Rawplug In.	For use with Screw No.	PRICE, BOXES OF 100			
			LENGTH OF RAWPLUGS, IN.			
3	1/8	3-4-5	\$.95	\$ 1.00	\$ 1.05	\$ 1.10
6	3/16	6-7	1.10	1.15	1.20	1.25
8	Slightly Under 3/16	8-9	1.20	1.30	1.40	1.50
10	Slightly Over 3/16	10-11	.....	.....	1.50	1.65
12	1/4	12-13	.....	.....	.....	.....
14	5/16	14-15	.....	.....	.....	.....
16	3/8	16-17	.....	.....	.....	.....
18	7/16	18	.....	.....	.....	.....
20	1/2	20-22	.....	.....	.....	.....

No.	PRICE, BOXES OF 100				Assorted Price per Box
	LENGTH OF RAWPLUGS, IN.				
3	3/8	1	1 1/4	2	\$ 1.10
6	1.15	1.25	.....	.....	1.35
8	1.30	1.45	.....	.....	1.80
10	1.60	1.80	\$ 2.20	\$ 2.60	2.10
12	1.80	2.05	\$ 2.30	2.55	2.75
14	2.20	2.45	2.70	2.95	3.25
16	2.60	2.90	3.20	3.50	.....
18	.....	3.30	.....	4.10	.....
20	.....	3.90	.....	4.90	.....
	.....	4.90	.....	5.90	.....
	.....	.....	.....	6.90	.....
	.....	.....	.....	7.90	.....

Rawdrills and Tool Holders

The 3-point drill is for hard material, the 1-point drill, for soft.

*Size Drill No.	PRICE, PER DOZEN			Size Drill No.	PRICE, PER DOZEN		
	3-point Drill	1-point Drill	Tool-holders		3-point Drill	1-point Drill	Tool-holders
3	\$ 2.70	\$ 2.60	\$ 12.00	14	\$ 4.20	\$ 4.10	\$ 12.00
6	2.80	2.70	12.00	16	4.80	.....	16.00
8	3.00	2.90	12.00	18	5.50	.....	16.00
10	3.30	3.20	12.00	20	6.30	.....	16.00
12	3.70	3.60	12.00	.....	.....	.....	.....

*Corresponding to size of Rawplug.

Rawplug Mechanics' Outfits

Each outfit contains 100 Rawplugs of same size, assorted lengths, toolholder, three-point drill, one-point drill, and a supply of screws.

Outfit No.	Price Each	Outfit No.	Price Each	Outfit No.	Price Each
3	\$ 2.60	8	\$ 3.15	12	\$ 4.00
6	2.90	10	3.45	14	4.60

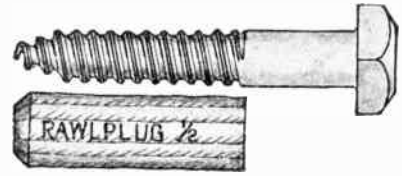
Rawplug Complete Outfits

Contains 750 Rawplugs in 49 different sizes and lengths, 3 toolholders, 9 three-point drills and 4 one-point Rawdrills, 1 box containing 50 Rawplugs and 50 screws threaded to the head, 2 drift pins and Rawplug and screw gage. (List price of contents \$29.25.)

Price, Complete Rawplug Outfiteach \$22.00

Rawplugs

For Use with Lag Screws



The Rawplug is a hollow tube of stiffened longitudinal strands of jute fibre so cemented that once in place it is unaffected by moisture or change in temperature. As the screw is turned home in the plug, the jute fibre strands expand, entering the interstices of the material, resulting in a strong and permanent grip. The screw cuts a perfect thread in the Rawplug which permits withdrawing and reinserting the lag screw at any time in the orthodox manner.

The lag screw sizes of Rawplugs are readily adaptable for use in setting motors, generators, pumps, fans, blowers, etc., on concrete foundations. Rawplugs resist and absorb vibration and shock due to the nature of their composition. Uniform pressure is exerted on all sides of the hole throughout the entire length of the plug (the entire length of the thread on the lag screw). The setting of it is accomplished without caulking, or without special tools.

For mounting heavy signs, awnings, pipes, ornamental iron work, wall radiators, motors, etc., to brick, concrete, hollow tile, or any masonry, a permanent and secure holding can be obtained by the use of Rawplugs. Due to the small hole required, a saving is effected in drilling costs.

Packed 25 Rawplugs to box; 12 boxes to a standard package.

Lag Screw Data Standard Lag Screw

Lag Screw Under Head	LENGTH, INCHES			Lag Screw Under Head	LENGTH, INCHES		
	Thread	Rawplug			Thread	Rawplug	
2 1/2	1 1/2	1 1/2		5	2 3/4	2 1/2	
3	1 3/4	1 1/2		5 1/2	3	3	
3 1/2	2	2		6	3 1/4	3	
4	2 1/4	2		7	3 3/4	3 1/2	
4 1/2	2 1/2	2 1/2		8	4 1/4	4	

Diam. Lag Screw In.	Size Drill Req'd In.	O.D. Rawplug In.	PRICE, PER 100			
			LENGTH RAWPLUG, INCHES			
3/8	7/16	7/16	\$ 6.50	\$ 7.50	\$ 8.50	\$ 9.50
7/16	1/2	1/2	7.00	8.50	10.00	11.50
1/2	5/8	5/8	.....	10.00	11.50	13.00
5/8	3/4	3/4	.....	.....	13.50	15.00
						16.50
						\$ 18.00

Rawplug Drills and Tool Holders



Nominal Size Drill Inches	Outside Diam. Drill Inches	PRICE, PER DOZEN	
		Drills	Drill Holders
3/8	7/16	\$ 9.60	\$ 16.00
7/16	1/2	13.20	21.00
1/2	5/8	16.80	27.00
5/8	3/4	21.60	27.00

Iron and Brass Wood Screws



Flat Head



Round Head

No	1/4-Inch		1-Inch-Cont.		2 1/4-Inch-Cont.	
	Iron	Brass	No.	Price	No.	Price
0	\$.90	\$.95	5	\$1.05	11	\$2.20
1	.90	.95	6	1.10	12	2.40
2	.90	1.00	7	1.15	14	2.75
3	.90	1.00	8	1.20	16	3.20
4	.90	1.05	9	1.25	18	3.75
			10	1.30	20	4.40
0	.90	.95	11	1.35		
1	.90	1.00	12	1.40		
2	.90	1.05	14	1.60		
3	.90	1.10	16	1.85		
4	.90	1.15				
5	.90	1.20	4	1.10		
6	.90	1.30	5	1.15		
7	.90	....	6	1.20		
8	.90	....	7	1.25		
			8	1.30		
1	.90	1.05	9	1.35		
2	.90	1.10	10	1.40		
3	.90	1.15	11	1.50		
4	.90	1.20	12	1.60		
5	.90	1.30	14	1.80		
6	.90	1.40	16	2.05		
7	.95	1.55	18	2.40		
8	1.00	1.75				
9	1.05	....	4	1.20		
10	1.10	....	5	1.25		
			6	1.30		
2	.90	1.20	7	1.35		
3	.90	1.25	8	1.40		
4	.90	1.30	9	1.45		
5	.95	1.40	10	1.50		
6	.95	1.55	11	1.60		
7	1.00	1.75	12	1.80		
8	1.05	1.95	14	2.05		
9	1.10	2.15	16	2.35		
10	1.15	2.40	18	2.75		
11	1.20	....	20	3.25		
12	1.25	....			
			6	1.40		
2	.90	1.30	7	1.45		
3	.90	1.35	8	1.50		
4	.95	1.40	9	1.60		
5	.95	1.50	10	1.70		
6	1.00	1.70	11	1.80		
7	1.05	1.90	12	2.00		
8	1.10	2.15	14	2.25		
9	1.15	2.40	16	2.60		
10	1.20	2.65	18	3.05		
11	1.25	2.95	20	3.60		
12	1.30	3.25				
14	1.40	....			
			6	1.55		
3	.95	....	7	1.60		
4	.95	1.50	8	1.65		
5	1.00	1.65	9	1.75		
6	1.05	1.85	10	1.85		
7	1.10	2.10	11	2.00		
8	1.15	2.35	12	2.20		
9	1.20	2.60	14	2.50		
10	1.25	2.90	16	2.90		
11	1.30	3.20	18	3.40		
12	1.35	3.55	20	4.00		
14	1.50	....			
			6	1.75		
3	.95	....	7	1.80		
4	1.00	1.60	8	1.85		
			9	1.95		
			10	2.05		

No. 550 Millers Falls Radio Socket Wrenches



This wrench converts the No. 55 Radio ratchet screw driver into a ratchet screw driver wrench. Set of 3 sockets that fit snugly on the blade.

Specially milled slot prevents socket from turning on the blade.

Steel casehardened, mottled finish.

Sizes for 1/4, 5/8 and 3/8-inch standard hexagon nuts.

Price, No. 550.....per set \$5.50

No. 21 Atkins Metal Cutting Hand Saws



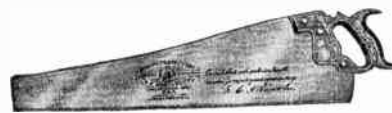
Will cut all classes of ordinary metal with ease. In 18-inch size it is 1 1/2 inches

wide at the point and 4 1/2 inches wide at the butt. It is 18 gauge on the toothed edge, 20 gauge on the back and gradually tapers to 23 gauge on the point.

The handle is made of thoroughly seasoned applewood, polished, fastened to the blade by medallion and two brass screws. Packed one-third of a dozen in a box. Saws 18 inches long will be shipped unless otherwise specified.

Length In.	Points per In.	Wt., Lbs. per Doz.	Price per Doz.	Length In.	Points per In.	Wt., Lbs. per Doz.	Price per Doz.
18	15	13	\$29.55	24	15	21	\$38.65
20	15	16	32.40	26	15	25	41.80
22	15	18	36.00	..	..	..	.....

No. 53 Atkins Hand, Panel and Rip Saws



Handle is of genuine applewood, attractively embossed, and fastened to blade by three brass screws and medallion. Pack-

ed in moisture-proof bag, one-third dozen in a box.

Length In.	POINTS PER INCH		Wt., Lbs. per Doz.	Price per Doz.
	Hand	Rip		
16	9, 10	.....	12 3/4	\$29.05
18	9, 10, 11	.....	13 1/4	32.45
20	8, 9, 10, 11	7	15 1/4	36.70
22	8, 9, 10, 11	7	17 3/4	39.55
24	7, 8, 9, 10, 11	5, 5 1/2, 6, 7	19 1/2	42.70
26	5, 6, 7, 8	4 1/2, 5, 5 1/2, 6, 7	24 3/4	44.55
28	5, 6, 7, 8	3 1/2, 4, 4 1/2, 5, 5 1/2, 6	29 3/4	50.45

No. 9 Atkins Special Interchangeable Compass Saws



Designed specially for the use of electricians. Blade is made from silver, steel and is extra heavy and stiff. Has carved beech handle with a tightening bolt and wing nut that fits in a hole, so that the blade will not pull out of the handle.

Packed one-half dozen in a box.

Length In.	Points per In.	Wt., Lbs. per Doz.	PRICE, PER DOZEN	
			Saws Complete	Blades Only
10	8	6	\$10.40	\$6.35
12	8	6 1/2	10.85	6.80
14	8	7	11.30	7.25
16	8	7 3/4	11.75	7.70
18	8	8 1/2	12.20	8.15

No. 2 Atkins Keyhole Saws and Pads

Toothed ten points per inch. Put up one dozen in a box.



Weight, per dozen, 2½ pounds.
 Price, Keyhole Saws.....per dozen \$3.25
 " Handle....." 2.65
 " No. 2, Complete....." 5.90

Atkins Cable Saws

Blade 16 inches long of Atkins high-grade special steel. Beech handle. One edge toothed 10 points to the inch; other edge, 13 points. Packed ½ dozen in a box. Weight per dozen, 9 pounds.
 Price.....per dozen \$15.20

No. 17 Atkins Forester Pruning Saws

Length of blade, 26 inches; width at point, 1¼ inches; at butt, ¾ inches. Three points to the inch gives large teeth that cut big or small limbs readily.
 Weight, per dozen, 12 pounds. Packed one-third dozen in a box.
 Price, No. 17.....per dozen \$24.00

No. 50 Atkins Coping Saws

This is a durable and rigid coping saw, as the back is ⅝-inch wide and ⅜-inch thick and made of cold rolled steel, nicked and buffed. Frame, 7¼x4⅜ inches deep. Fastened to the handle by malleable iron threaded ferrule.



All parts nicked and buffed. The handle is of hardwood, carved and varnished. Through the use of cap screws into which wires are inserted, the blade may be instantly adjusted to cut sharp or unusual angles with perfect ease and without strain on the blade. Packed two in a box.

Weight, per dozen.....pounds 7
 Price, No. 50 Complete, with Blade.....per dozen \$9.90
 " Blades Only....." 5.50

No. 11 Atkins Cross-cut Saw Handles



Length, 14 inches. Climax pattern. Reversible. Cast iron face plate and washer. Malleable bolt with lock rivet feature, preventing rivet from becoming detached. Packed 100 pairs in wire-bound box weighing 170 pounds.
 Price, No. 11.....per pair \$4.45

Atkins Thin-back Tuttle Tooth Cross-cut Saws

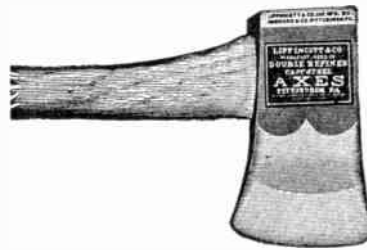


Packed 50 in a case. Prices do not include handles.

Lgth. Ft.	Wt., Lbs. Each	PRICE, EACH		
		No. 330 14x16 Gauge	No. 331 14x18 Gauge	No. 332 14x19 Gauge
4	3.56	\$4.25	\$4.85	\$5.20
4½	4.3	4.70	5.60	5.90
5	4.98	5.20	6.10	6.55
5½	5.97	5.75	6.70	7.25
6	6.34	6.25	7.35	7.85
6½	7.65	6.80	7.95	8.45
7	8.42	7.35	8.55	9.20
7½	9.88	7.85	9.20	9.90
8	10.73	8.40	9.80	10.50

Yankee Pattern Single Bit Felling Axes

No. 1—36-inch Handle



Soft steel body, crucible steel bit, hand tempered. Gold bronze finish, bit and poll polished.

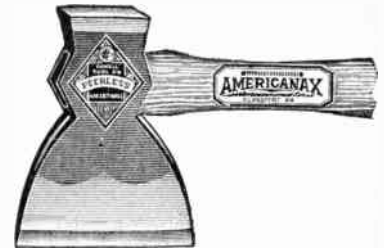
Packed ½ dozen in crate.

Weight Pounds	Price per Dozen	Weight Pounds	Price per Dozen
3½	\$30.00	4½	\$40.00
4	36.00	5	43.00

Western Pattern Single Bevel Broad Hatchets

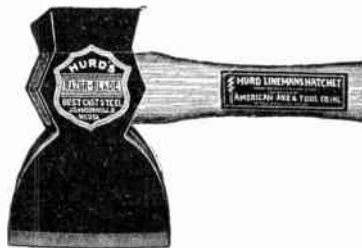
Gold bronze finish, blade and head polished. Second growth hickory handles.

Packed ½ dozen in a carton; 4 dozen in a case.



Size No.	Width Cut In.	Length Handle In.	Price per Dozen	Size No.	Width Cut In.	Length Handle In.	Price per Dozen
1	4	14	\$34.75	4	5½	16	\$46.75
2	4½	15	38.75	5	6	17	60.75
3	5	15	42.75	...	...	...	...

No. 59 Hurd's Linemen's Hatchets



Gun metal finish. Cutting edge polished. Short strong blade. Heavy hardened head.

Packed ½ dozen in a carton, 4 dozen in a case.

Size No.	Width Cut Inches	Length Handle Inches	Price per Dozen
59	4¼	15	\$44.00

Machinists' Hammers

Forged Steel, Ball Pein

Size	Wt. Lbs.	Price Each	Size	Wt. Lbs.	Price Each
0000	6	\$2.00	1	1¼	\$2.25
000	6	2.00	2	1½	2.45
00	12	2.00	3	1¾	2.60
0	1	2.10	...	...	...



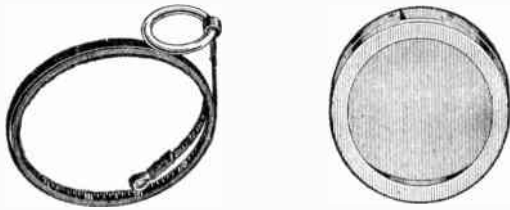
Bell-Faced Nail Hammers

Solid Forged Steel, Polished



Size	Wt. Lbs.	Wt. Oz.	Price Each
2	1	13	\$2.00
1½	1	..	2.15
1	1	4	2.25

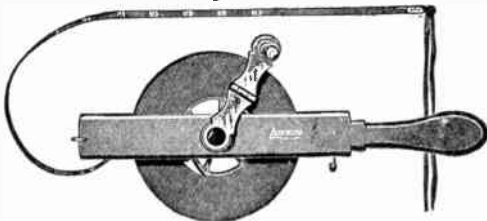
Western Electric Steel Pole Tapes



Of extra heavy 1/4-inch wide tempered steel. Graduated 72 inches to 16ths. Short blank space each end. For measuring circumferences at 6-foot mark and tops of poles.

Price, No. 1, Fitted First End with Heavy Eye, Last End with 1-in. Nickel-plated Harness Ring, Including Case.....each **\$3.10**
 Price, No. 2, Fitted First End with Metal Ball, Last End with 1-in. Nickel-plated Harness Ring....each **2.50**
 Price, Case Separate, for Above Tape..... " **.60**

Lufkin Surveyors' Chain Tapes



Etched graduations. Nubian finish; heavy 1/4-inch steel tape. Hardwood reel with long folding winding handle and large drum. Trimmings nickel-plated. Wherever graduated, the steel has a bright raised surface, with figures etched in. Steel is tempered and of best quality so that graduations and figures can never be effaced, but will always show clearly and distinctly. A convenient, strong, durable chain tape for heavy field work. A pair of rawhide thongs is furnished with each tape, (detachable rings instead if specified.)

Tapes in feet are marked feet only every foot, with end feet in 100ths. Tapes in links are marked links and poles, with end links in 10ths. Tapes with end feet marked inches and 8ths, or with extra foot first end to 100ths, numbered from right to left, no extra charge.

Tapes Complete, with Reel and Thongs

Cat. No.	Lgth. Feet	Wt., Lbs. Each	Price Each	Cat. No.	Lgth. Links	Wt., Lbs. Each	Price Each
5100	100	2 1/4	\$10.50	5066	100	2	\$9.10
5150	150	3 1/2	14.00	5132	200	3	14.00
5200	200	4	16.50				
5300	300	5 1/2	25.00				

Tapes without Reel, with Thongs

Cat. No.	Lgth. Feet	Wt., Lbs. Each	Price Each	Cat. No.	Lgth. Links	Wt., Lbs. Each	Price Each
05100	100	1 1/2	\$7.00	05066	100	1 1/4	\$5.60
05150	150	2 1/2	9.80	05132	200	2	9.80
05200	200	3	12.25				
05300	300	4 1/4	18.70				

Price, Reels, for 100-foot and 100-link Tapes....each **\$3.50**
 " " " 150 and 200-foot, 200-link Tapes " **4.20**
 " " " 300-foot Tapes..... " **6.30**

Lufkin Challenge Junior Steel Tapes



Tape, 1/4-inch wide.

Genuine leather cases; nickel-plated trimmings and folding flush handle.

Nos. 1260 to 1266 are marked in feet, inches and 16ths, and Nos. 1260D to 1266D are marked in feet, 10ths, and 100ths, one side only.

Packed one in a box.

No.	Length Feet	Wt., Oz. Each	Price Each	No.	Length Feet	Wt., Oz. Each	Price Each
1260	25	4	\$4.70	1260D	25	4	\$4.70
1261	33	5	5.00	1261D	33	5	5.00
1263	50	7	5.70	1263D	50	7	5.70
1264	66	8	7.10	1264D	66	8	7.10
1265	75	9	7.50	1265D	75	9	7.50
1266	100	12	9.60	1266D	100	12	9.60

Lufkin Rival Steel Tapes

Tape, 3/8-inch wide.

Nickel-plated steel case; folding flush handle opened by pressing pin on opposite side. Cases have knurled edges which afford a firm hold when winding in tape. Measurements guaranteed accurate.

Nos. 240 to 246 are marked in feet, inches and 8ths, and Nos. 240D to 246D are marked in feet, 10ths and 100ths, one side only.

Packed one in a box.

No.	Length Feet	Wt., Oz. Each	Price Each	No.	Length Feet	Wt., Oz. Each	Price Each
240	25	8	\$4.45	240D	25	8	\$4.45
241	33	9	4.80	241D	33	9	4.80
243	50	11	5.40	243D	50	11	5.40
244	66	14	6.85	244D	66	14	6.85
245	75	15	7.20	245D	75	15	7.20
246	100	20	9.25	246D	100	20	9.25



Lufkin Engineers' Pattern Steel Tapes



Metal lined, genuine leather cases; nickel-plated trimmings; folding flush handle, opened by pressing pin on opposite side; two detachable rings. Has 1/4-inch Nubian finished tape, which can be readily detached from case, and an extra ring is furnished for other end. The steel is heavier and stronger than used in regular steel tapes, and the cases are thinner.

Nos. 231 to 236 marked in feet, inches and 8ths, one side only.

Nos. 231D to 236D marked in feet, 10ths and 100ths, one side only.

Packed one in a box.

Cat. No.	Length Feet	Wt., Oz. Each	Price Each
231 and 231D	33	13	\$7.50
233 " 233D	50	17	8.75
234 " 234D	66	21	11.30
235 " 235D	75	22	12.50
236 " 236D	100	25	15.60

Lufkin Special Linen Tapes

Mounted on perforated metal disc reel; nickel-plated finish; folding winding handle. Leather strap handle on back. Tape is 5/8-inch, marked one side only, feet and inches. Packed one in a box. Weight, 24 ounces.

Price, 150-foot Tape.....each **\$18.00**



Lufkin Sterling Linen Tapes

Case of genuine russet leather, metal lined, with folding flush handle and nickel-plated trimmings. Tape is 5/8 inches wide with leather reinforcement first end.

Series 400 marked feet and inches, one side only; series 400D, marked feet and 10ths, one side only.

Packed one in a box.

Cat. No.	Length Feet	Wt., Oz. Each	Price Each
400 and 400D	25	8	\$3.00
401 " 401D	33	11	3.35
403 " 403D	50	12	4.00
404 " 404D	66	17	4.70
405 " 405D	75	19	5.10
406 " 406D	100	24	6.00



Lufkin Special Sentinel Linen Tapes



A high grade woven tape. First four inches are reinforced with leather.

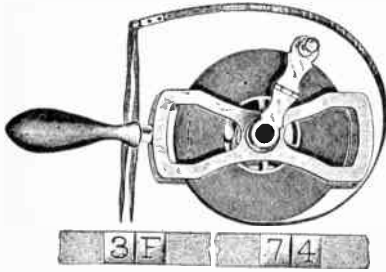
Equipped with a patent threader which makes it simple to remove an old line and attach a new one.

Drum and folding handle are of extra sturdy construction; trimmings are nickel-plated.

Tape is 5/8-inch, marked one side only, feet and inches. Packed one in a box.

Cat. No.	Length Feet	Weight Ounces Each	Price Each
413	50	12	\$4.50
416	100	24	7.00

Lufkin Surveyors' Chain Tapes
Graduated on Babbitt Metal



Of heavy and extra tough steel, coated with white metal to resist rust. Pair of rawhide thongs furnished (detachable rings instead if specified). Tapes in feet marked feet only every foot, end feet in 10ths. Tapes in links marked

links and poles, end links in 10ths. Marked one side only. Reels for tapes over 100 feet long are four-arm pattern. Packed one in a box.

Tapes Complete, with Reel and Thongs

Length Feet	Length Links	Wt., Lbs. Each	1/4 INCH WIDE		3/8 INCH WIDE	
			Cat. No.	Price Each	Cat. No.	Price Each
100	...	3 1/4	2100	\$10.50	3100	\$10.50
150	...	5	2150	14.00	3150	14.00
200	...	6	2200	16.50	3200	16.50
300	...	8	2300	25.00	3300	25.00
500	...	11 1/2	2500	38.50	3500	38.50
...	100	2 3/4	2066	9.10	3066	9.10
...	200	4 1/2	2132	14.00	3132	14.00

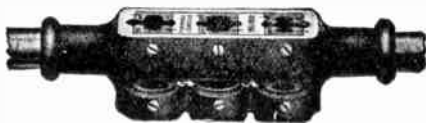
Tapes without Reel, with Thongs

Length Feet	Length Links	Wt., Lbs. Each	Cat. No.	Price Each	Cat. No.	Price Each
100	...	2	02100	\$7.00	03100	\$7.00
150	...	3 1/4	02150	9.80	03150	9.80
200	...	4 1/4	02200	12.25	03200	12.25
300	...	5 3/4	02300	18.70	03300	18.70
500	...	10 1/4	02500	31.50	03500	31.50
...	100	1 3/4	02066	5.60	03066	5.60
...	200	3 1/4	02132	9.80	03132	9.80

Price, Reels for 100-foot and 100-link Tapes. . . . each 3.50
 " " " 150 and 200-foot, 200-link Tapes. " 4.20
 " " " 300-foot tapes. " 6.30
 " " " 500 " " " 7.00

Trio Die Stocks for Pipe

Bushings can be removed to clear couplings for threading close nipples. Regularly furnished with one stock, three Little Giant Pipe Dies and three bushings.



Briggs standard right hand taper threads furnished unless otherwise specified. British (Whitworth) standard right hand taper threads furnished at regular prices. Right and left hand pipe dies are furnished at same list.

No.	Cutting Size, In.	Length Stock, In.	Weight Pounds	Price Each
200A	1/8, 1/4, 3/8	28	4 1/2	\$8.50
200B	1/4, 3/8, 1/2	28	4 1/2	8.50
210A	3/8, 1/2, 3/4	40	10	11.00
210B	1/2, 3/4, 1	40	10	11.00

Beaver Square End Pipe Cutters



This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

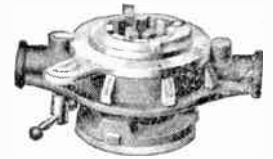
Rigid, simple and fool-proof in construction.

The knives give hundreds of cuts on the hardest pipe, and are easily resharpened

No.	Cap. Pipe In.	Price Each Complete	Knives Price per Set
1	1/8 to 1	\$18.00	\$1.20
5	1/2 " 2	20.00	3.50

No. 6 Beaverette Easy Working Die Stocks

Threads all four sizes, 1/4 to 3/4-inch, without changing dies or bushings. A thread may be cut while changing dies in other tools. The two sets of dies covering the different thread pitches are held in one plate, instantly adjusted to any size by the single handle.



A universal centering device does away with loose bushings.

The No. 6 is a compact tool, complete without loose parts. Right or left hand, as specified.

Price, No. 6, Complete. each \$15.00
 " Extra Dies, R. or L., 1/8 or 1/4 x 3/8 or 1/2 x 3/4 Inches per set 3.00

No. 25 Beaver Easy Working Die Stocks



Threads all sizes 1, 1 1/4, 1 1/2 and 2-inch, or variations from standard, without changing dies. A universal chuck centers all sizes. No loose bushings.

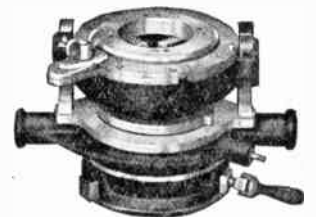
Close nipples may be cut with this tool. Instantly adjusted—simply shift the handle to size and the tool is ready. It

uses narrow receding dies that draw back with each turn, removing less and less metal, thus cutting a standard taper thread and easing the work as the thread is cut.

Price, No. 25, Complete. each \$30.00
 " Extra Dies 1, 1 1/4, 1 1/2 and 2-inch, R. H. . . . per set 3.50

No. 26 Beaver Easy Working Ratchet Die Stocks

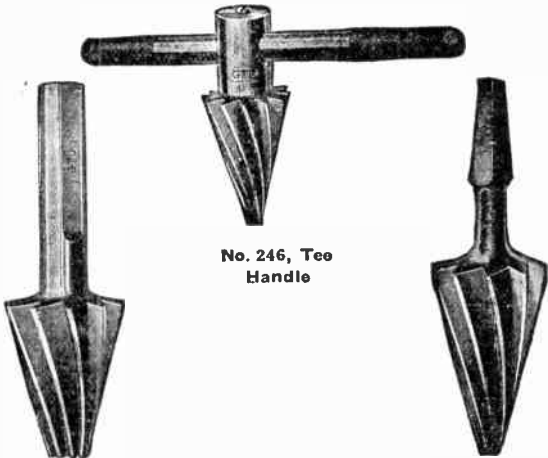
Threads all sizes, 1, 1 1/4, 1 1/2 and 2-inch, without changing dies. Provided with ratchet attachment for cutting in confined places, or can be used as a regular stock. Contains a universal chuck which means pipe is always straight, without grip screws or bushings to bother.



Uses detachable leader screw. The ideal tool for threading in confined places or at the bench.

Price, No. 26, Complete. each \$35.00
 " Extra Dies, 1, 1 1/4, 1 1/2 and 2-inch, R. H. . . . per set 3.50

G T D Spiral Fluted Burring Reamers



No. 243, Half Round Shank

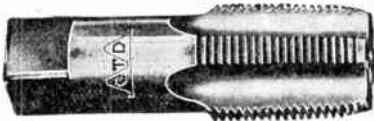
No. 246, Tee Handle

Nos. 241, 242, 242 1/2, 244 Bit Brace Shank

Made of high grade steel and designed for removing burrs caused by cutting pipe, and also for counter-sinking. Ground to adapt them for use in a variety of materials. Spiral flute reduces chattering.

No.	Style of Shank	Capacity Pipe Inches	Price Each	Price per Doz.
241	Bit Brace	1/8 to 1/2	\$1.00	\$12.00
242	" "	1/8 " 1	1.25	15.00
242 1/2	" "	1/4 " 1 1/4	1.50	18.00
243	1/2 Round	1/4 " 1 1/4	1.50	18.00
244	Bit Brace	1/4 " 2	3.00	36.00
246	T Handle	1/4 " 2	4.00	48.00

G T D Pipe Taps and Reamers



Briggs standard right hand taper pipe threads furnished unless otherwise specified. British (Whit-

worth) standard furnished at regular prices. High speed steel pipe taps regularly furnished in Briggs standard taper, right hand only. Other high speed steel pipe taps are special and subject to special prices. Right and left hand pipe taps furnished at same list. Straight (plug) pipe taps furnished at regular prices.

Size Pipe In.	No. OF THREADS TO INCH		Length Thread In.	Length Over All In.	PRICE, EACH TAPS OR REAMERS	
	Briggs Std.	Whitworth Std.			Carbon Steel	High Speed Steel
1/8	27	28	3/4	2 1/8	\$1.00	\$1.10
1/4	18	19	1 1/16	2 7/16	1.20	1.50
3/8	18	19	1 1/16	2 9/16	1.60	1.95
1/2	14	14	1 3/8	3 1/8	2.00	3.10
5/8	..	14	1 3/8	3 3/16	2.80	**
3/4	14	14	1 3/8	3 1/4	2.80	4.40
7/8	..	14	1 9/16	3 1/2	4.40	**
1	11 1/2	11	1 3/4	3 3/4	4.40	7.80
1 1/4	11 1/2	11	1 3/4	4	5.00	12.10
1 1/2	11 1/2	11	1 3/4	4 1/4	6.60	16.60
1 3/4	..	11	1 3/4	4 3/8	8.00	**
2	11 1/2	11	1 3/4	4 1/2	10.00	27.25
2 1/4	..	11	2 3/8	5	12.00	**

**Prices on application.

Fullman Conduit Benders

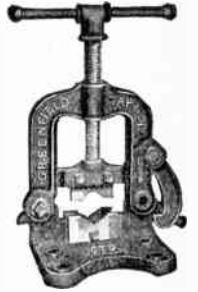
Made in two forms as listed.



Cat. No.	Size In.	Form	Wt. Lbs.	Price Each	Cat. No.	Size In.	Form	Wt. Lbs.	Price Each
900	1/2	90°	8	\$3.20	901	1/2	45°	8	\$3.20

G T D Hinged Pipe Vises

Made of malleable iron. The holes in the base of this vise are so placed that there is ample room to allow the use of an ordinary pipe wrench when bolting down to bench or post. The base is sufficiently strong to permit the omission of the front apron. Can be fastened back from the edge.



Two lugs are cast on the base so that the frame and hook can be reversed.

The jaws furnished with these vises are made of excellent tool steel.

Jaws are carefully hardened and tempered.

Cat. No.	Cap. In.	Wt. Lbs.	Price Each	Cat. No.	Cap. In.	Wt. Lbs.	Price Each
0	1/8 to 2	5	\$3.60	2	1/8 to 3 1/2	16	\$7.50
1	1/8 " 2 1/2	10 1/2	5.00	3	1/8 " 4 1/2	24	11.00

Lakin Conduit Hickeys



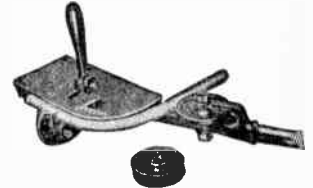
Screw a piece of 1-inch pipe in the other end of coupling. Never necessary to throw away the hickey, even if the handle breaks; simply unscrew the coupling.

Cat. No.	Size Pipe Inches	Std. Pkg.	Price Each
335	1/2	10	\$1.75
336	3/4	5	2.25

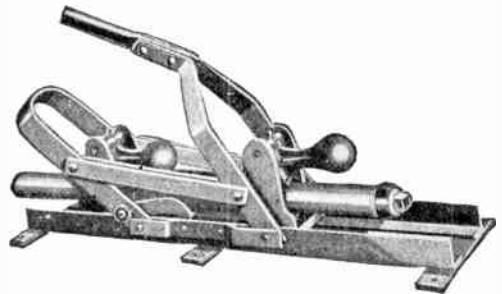
Standard Conduit Elbow Formers

Forms standard shaped elbows perfectly and accurately, exactly where desired. Saves time and also material by eliminating waste of pipe.

Price, for 1/2 and 3/4-inch Pipe...each \$30.00



Giant Pipe Pushers



This machine has enormous pushing power through the scientific application of compound leverage. A one-man machine, compact, easily handled, powerful and rapid in operation. Is simple in construction and there is nothing to get out of order because its bed is made entirely of steel with oversize bearings.

With this machine one can do the following things: Push water pipe and gas pipe through the ground; push electric conduit through the earth; draw out and replace damaged pipe; draw lead pipe into the ground; place electric cables underground; drive wells; push open stoppages in sewerage and drains; drain by blind molds and move machinery and buildings. No. 1 is for short pushes.

No.	Capacity Pipe Inches	Weight Pounds Each	Price Each
1	1/2 and 3/4	30	\$25.00
2	1/2 " 1 1/4	90	50.00
3	3/4 " 2	175	75.00
4	1 1/2 " 3	300	125.00
5	3 " 4	400	165.00

Martin Portable Vise Stand and Pipe Bender



Small Size, with Hinged Pipe Vise

Small Size, with Chain Vise



Large Size, with Hinged Pipe Vise and Rear Support

This apparatus is designed for use wherever pipe must be cut, threaded or bent. It can be picked up at any time and moved from place to place. There are no bolts, screws or braces to remove. It does not have to be fastened to the floor, walls or ceiling. It will not tilt, upset or skid.

It is convenient for cutting and threading pipe. For these operations, the pipe is fastened in the vise and rests in the bending attachment which keeps it rigid and in line.

Small Size

Equipped with a special device which will bend pipe from 1/8 to 3/4-inch diameter easily without kinking. Capacity, with chain vise, 2-inch pipe; with hinged vise, 2 1/2-inch pipe. Weight complete, with hinged vise, 54 pounds; with chain vise, 50 pounds. Rear support not supplied.

Cat. No.	Description	Price Each
1A	Complete with Hinged Vise.....	\$39.00
1B	Stand with Hinged Vise, less Legs.....	35.00
*1C	" " Legs, less Vise.....	31.00
*1D	" less " " " " " " " " " " " " " " " "	27.00
1E	Complete with Chain Vise.....	39.00
1F	Stand with Chain Vise, less Legs.....	35.00
†1G	" " Legs, less Vise.....	31.00
†1H	" less " " " " " " " " " " " " " " " "	27.00

Large Size

Capacity with chain vise, four inches; with hinged vise, 4 1/2 inches. Bender capacity, one inch. Weight complete, with hinged vise, 175 pounds, with chain vise, 159 pounds.

Cat. No.	Description	Price Each
2A	Complete with Hinged Vise.....	\$90.00
*2B	Stand with Legs and Rear Support, less Vise..	75.00
2C	" " " " Hinged Vise, " Rear Support.....	71.00
2D	Stand with Hinged Vise, less Legs and Rear Support.....	65.00
*2E	Stand with Legs, less Vise and Rear Support..	56.00
*2F	" " Only, less Vise, Legs " " " " " " " " " "	50.00
2G	Complete with Chain Vise.....	90.00
†2H	Stand with Legs and Rear Support, less Vise..	75.00
2K	" " " " Chain Vise, " Rear Support.....	71.00
2L	Stand with Chain Vise, less Legs and Rear Support.....	65.00
†2M	Stand with Legs, less Vise and Rear Support..	56.00
†2N	" " Only, less Vise, Legs " " " " " " " " " "	50.00

*Drilled for hinged vise. †Drilled for chain vise.

Henderson EZ Conduit Benders



Type EZ is a combination hand hickey and stationary bender. Handles are not supplied. They should be from 3 to 3 1/2 feet long. Bends elbows, offsets, or any combination of elbows and offsets, without slipping or distorting the conduit in any way. Made in 3 sizes for hand and stationary bending of 1/2, 3/4 and 1-inch conduit; the three larger sizes, 1 1/4, 1 1/2 and 2-inch, are for stationary bending only. See illustration to right.

Size Inches	Description	Std Pkg.	Price Each
1/2	Threaded for 1 -inch Pipe Handle.....	10	\$2.00
3/4	" " " " " " " " " " " " " " " "	5	2.50
1	" " " " " " " " " " " " " " " "	3	5.00
1 1/4	" "	1	10.00
1 1/2	" "	1	15.00
2	" "	1	20.00

Henderson Portable K-D Pipe Benches

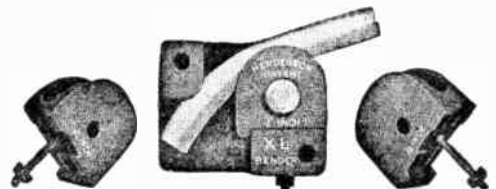


For electricians, gas-fitters, millwrights and all mechanics who cut and thread pipe. The K-D bench can be assembled in a few minutes, saving at least half an hour's time in starting a job as no time is wasted in rigging up a place to mount a pipe vise. When not in use the K-D can be taken apart and stored in a small place.

Height, 39 inches. Weight, 55 pounds. Top, 33x9 1/2x1 1/2 inches, hardwood, finished.

Price.....each \$30.00

Henderson X L Conduit Benders



The Henderson X L Conduit Bender is a stationary bender. Fastens with lag screws or bolts through the clearance holes in the base, to any suitable support.

Simple, powerful and efficient. Designed for the hardest service. Heavy base plate. Three deep grooved detachable bending blocks for 1/2, 3/4 and 1-inch conduit are furnished with each bender.

Price, Complete with Lag Screws.....each \$10.00

Henderson Turnbuckle Pipe and Conduit Benches



A portable bench, powerfully constructed for cutting, threading and bending pipe and conduit. Held in place by a single hook or eyebolt. For each size of pipe, deep grooved detachable bending blocks are furnished, which automatically grip the sides of the pipe while bending, preventing kinking, flattening or slipping, a patented feature. Any bend can be made from a simple offset to a continuous spiral. To make a bend, slip the conduit between the bending bosses and press down; advance the conduit and repeat until the bend is finished.

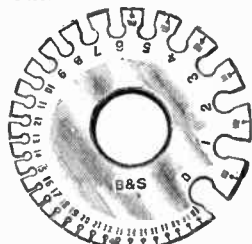
STYLE NO. 1.—Furnished with two detachable bending blocks for 1/2 and 3/4-inch conduit; capacity of pipe vise, 2 inches. Height, 45 inches. Weight, 45 pounds.

Price, No. 1.....each \$30.00

STYLE NO. 2.—Furnished with five detachable bending blocks for 1/2, 3/4, 1, 1 1/4 and 1 1/2-inch conduit; capacity of pipe vise, 3 1/2 inches. Height, 45 inches. Weight, 170 pounds.

Price, No. 2.....each \$120.00

No. 688 Brown & Sharpe Wire Gauges American Standard

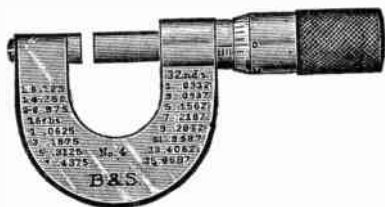


Nos. 0 to 36

Adopted by the brass manufacturers, January, 1858. Gauge numbers are stamped on one side and decimal equivalents on reverse side.

Price, No. 688 for Gauges 0 to 36.....each \$3.00
 " " 688 " " 5 " 36..... " 2.50

No. 4 Brown & Sharpe Micrometer Calipers



Measures all sizes less than one-half inch by thousandths of an inch.

Price, No. 4, Plain.....each \$7.00
 " " 4, with Ratchet Stop..... " 7.50
 " Leather Case..... " 1.20

Hand Tally Registers

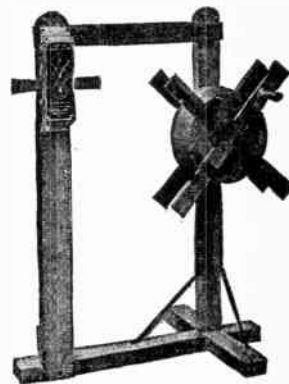


No.	Description	Price Each
0	Records 1 to 1000	\$4.00
1	" " 1 " 10000	5.00
0	With Bracket or Safety Pin	4.50
1	With Bracket or Safety Pin	5.50

Minneapolis Wire Reels and Meters

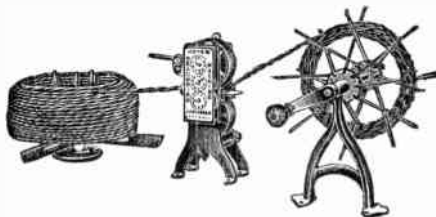
This wire reel and meter is a most desirable machine for measuring the various sizes of wire, cordage, etc. It will save time and money and a short time will demonstrate its great value.

In the meter the wire passes between two self-adjusting rollers, which admit of wide range, and will measure accurately large or small sizes.



Description	Weight Pounds	Price Each
Reel and Meter..	75	\$35.00
Meter Only.....	10	22.50
Counter Meter...	12	23.50
Cable Meter.....	35	35.00

Wire Measuring Outfits



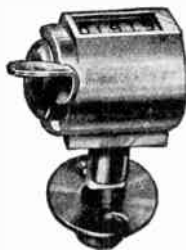
For measuring lamp cords and wires from Nos. 0 to 40 inclusive.

Description	Wt., Lbs Each	Price Each
Folding Reel.....	3 3/4	\$6.00
Measuring Machine.....	8	15.00
Wire Winder.....	5 1/2	10.00

No. 8 Veeder Telephone Counters

Used in telephone exchanges for making accurate traffic records.

Since it is desirable that telephone exchanges learn periodically the comparative amount of work performed daily by the operators, as well as the total number of calls answered daily, this counter is almost indispensable to an up-to-date exchange. The socket plate is intended to go flush into the keyboard, slightly to the right of the operator, and to remain there permanently. The counter can then be inserted and removed at will.



When ordering, give name and number of counter.

Price, No. 8, Complete with Socket Plate.....each \$2.50
 " Extra Socket Plates..... " .35

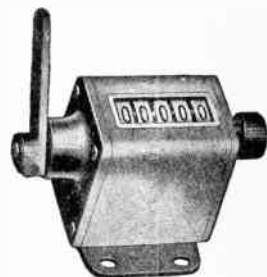
No. Z13 Veeder Reset Ratchet Counters

This counter indicates one for each oscillation of the lever, which moves through an angle of 45 degrees. It can be reset to zero by one turn of the knob.

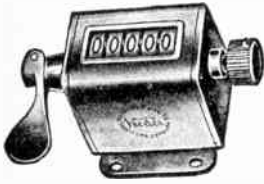
The counter can be furnished with the drive shaft projecting either on the right or left hand side as may be desired and with three, four or five figure wheels.

This counter is regularly equipped with a spring to return the lever to its operating position; but can be omitted if so desired. This counter should never be oiled.

Price, No. Z13.....each \$6.00
 " No. Z13K, Equipped with Pin Tumbler Lock and Two Keys.....each 8.00



No. Z8T Veeder Ratchet Counters with Thumb Lever



This counter indicates one for each oscillation of the lever, which moves through an angle of 45 degrees. Can be reset to zero by one turn of the knob.

Suitable where a hand-operated reset counter is desired.

Furnished with three, four or five figure wheels.

Price, No. Z8Teach \$6.00
 " " Z8T, Equipped with Pin Tumbler Lock and Two Keys.....each 8.00

No. 104 Starrett High Speed Indicators



This indicator may be run at the highest speed required without heating.

Working parts are encased and instrument is nickel-plated.

Price, No. 104, in Pasteboard Box.....each \$1.25
 " " 104, " Leather Case....." 2.60

No. 106 Starrett Speed Indicators

The graduations show every revolution, and two rows of figures read right and left as the shaft may run. Nickel-plated.



Price, No. 106, in Pasteboard Box.....each \$1.85
 " " 106, " Leather Case....." 3.20

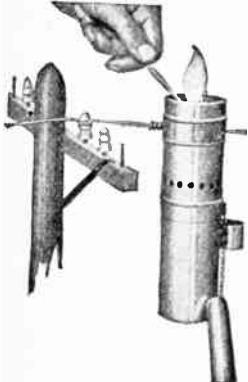
No. 107 Starrett's Speed Indicators



This instrument was devised to automatically register hundreds as well as units and tens.

Price, No., 107, in Pasteboard Box.....each \$3.60
 " " 107, " Leather Case....." 5.10

No. 3420 Klein's Staysalite Linemen's Torches



This torch burns alcohol without odor or noise and stays lit in a wind.

Light and small and is lit or extinguished in a moment, as wanted. Has no adjusting parts.

The Staysalite is carried in the lineman's belt and eliminates the ground man; can be hung directly on the wire under joint to be soldered.

Provided with a cup for holding soldering paste. Can be used as a small heater or soldering iron.

Weight, 1 1/4 pounds.

Price, No. 3420each \$5.00

No. 208 C & L Torches

For Gasoline
Double Needle

A powerful torch, strong and rigid. Burner hook is removable. Upper needle has a wire tip that cleans the orifice, lower needle regulates the flame. Capacity, one quart. Shipping weight, 5 1/8 pounds.

Price, No. 208each \$19.00



No. 210 C & L Double Needle Torches

For Gasoline

Ideal torch for cold and windy weather. The improved double needle burner generates from 200 to 300 degrees more heat. Hook is removable. Capacity, 1 pt. Weight each, 4 1/2 lbs.

Price, No. 210each \$18.00



No. 32 C & L Single Needle Torches

For Gasoline

The tank is heavy gauge brass strongly reinforced on inside. Hook is removable. Has sturdy construction. Capacity, 1 quart. Weight each, 5 1/4 pounds.

Price, No. 32each \$18.00



No. 38 C & L Single Burner Torches

For Gasoline

Used by mechanics for many years. The tank is heavy gauge brass strongly reinforced on inside. Hook is removable. Has sturdy construction. Capacity, 1 pint.

Weight each, 4 pounds.
Price, No. 38each \$17.00



No. 132 C & L Torches

For Gasoline
Single Needle

Makes a perfect fire, whether used indoors or out, in hard wind or extreme cold. A strong blast is generated by a powerful burner. Every desired adjustment quickly made. Capacity 1 quart. Shipping weight 4 1/4 pounds.

Price, No. 132each \$16.00



No. 138 C & L Torches

For Gasoline
Single Needle

Makes a perfect fire, whether used indoors or out, in hard wind or extreme cold. The powerful burner generates a strong blast. The desired adjustments are quickly made. Capacity 1 pint. Shipping weight 3 3/4 lbs.

Price, No. 138each \$15.00



No. 146 C & L Single Needle Torches

For Gasoline

Burner of bronze metal and has open type generator that injects the air which mixes with the gas producing a steady flame. Hook is removable. Capacity, 1 pint.

Shipping weight each, 3 3/4 pounds.
Price, No. 146each \$14.00



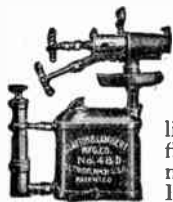


No. 144 C & L Single Needle Torches

For Gasoline

Burner of bronze metal and has open type generator that injects the air which mixes with the gas producing a steady flame. Hook is removable. Capacity, 1 quart.

Shipping weight each, 4¼ pounds.
Price, No. 144each \$15.00



No. 48 C & L Flat Tank Torches

For Gasoline

Especially for automobile uses. Burner is light yet sufficiently powerful to generate flame adapted to all requirements. Hook is removable. Cap., 1 pt. Ship. wt. ea., 4¾ lbs.
Price, No. 48D, Double Needle each. \$24.00
" 48S, Single " " 22.00

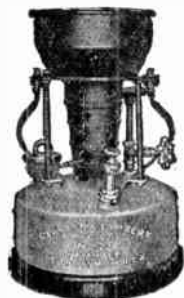
**No. 91 C & L Fire Pots
Single Needle, for Gasoline**

The burner has great generating power and burns either high or low test gasoline. A swivel permits turning the burner up or down. The top section is of steel and can be quickly removed by loosening a set screw and base with burner used as open fire. The heavy gauge drawn steel tank is tinned inside and out which prevents rust and is strongly reinforced and fitted at base with patented cushion band. Has a powerful pump and large filler plug with dust proof cap. Quickly heats pair of 12-pound soldering coppers and pot of lead or solder at the same time.



Price, No. 91each \$26.60

**No. 22 C & L Fire Pots
For Gasoline**



The tank is made of heavy gauge seamless drawn steel, tinned inside and out, and fitted with cushion protection band at base of tank.

It is supplied with brass ears, elbows, and tees, plunger pump on tank, large funnel, and filler plug with dust-proof cap and three-piece coil cup and top plate.

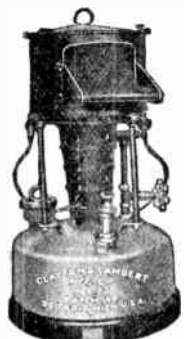
The three-piece coil cup and top plate enables the operator to remove top section by unscrewing three large nuts, exposing the burner and coil.

No coil cup lugs or small nuts to burn off.

Capacity, one gallon.

Price, No. 22each \$20.60

No. 23 C & L Gasoline Coil Fire Pots



The No. 23 Coil Fire Pot has all of the latest patented features.

It is fitted with tinner's shield which is of sheet steel, quickly heating a pair of large size soldering coppers.

The shield is removable, thus making the fire pot excellently adapted to melting metals and various other work.

Shipping weight, 14 pounds.

Price, No. 23each \$23.65

No. 24 C & L Coil Fire Pots

For Gasoline



This fire pot is made especially for elevated and street railway, telephone, electric construction and cable work for public utility use.

It is fitted with Tinner's shield, which is of sheet steel, quickly heating a pair of large size soldering coppers. The shield is removable and will admit an 8-inch pot and quickly melt metals, paraffin or insulating compound.

Weight each, 14 pounds.

Price, No. 24each \$22.90

No. 26 C & L Fire Pots

For Kerosene



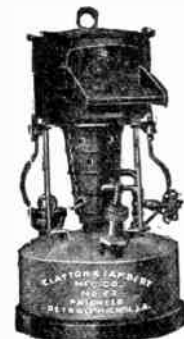
The No. 26 Kerosene Fire Pot has a powerful burner that superheats the kerosene gas before it is burned, producing perfect combustion and the maximum degree of heat. The tank is made of heavy gauge seamless drawn steel, reinforced, tinned inside and out, fitted with patented cushion protection band, preventing injury to base of tank, large funnel and filler plug, having dust-proof cap. Has pump attached to tank.

Capacity, 1 gallon. Shipping weight, 13¼ pounds.

Price, No. 26each \$32.50

No. 27 C & L Fire Pots

For Kerosene



Has a powerful burner that superheats the kerosene gas before it is burned, producing perfect combustion and the maximum degree of heat. The tank is made of heavy gauge seamless drawn steel, reinforced, tinned inside and out; fitted with patented cushion protection band preventing injury to base of tank, large funnel and filler plug, having dust-proof cap.

Fitted with a shield or top section for heating soldering coppers. This shield is removable, thus making the fire pot adapted for melting metals and various other work.

Capacity one gallon. Shipping weight, 14½ pounds.

Price, No. 27each \$35.25

No. 28 C & L Fire Pots

For Kerosene

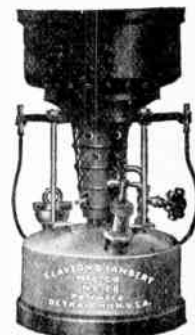
Used for melting insulating materials, paraffine, rosin, lead, etc.; for boiling water. Has cast top plate and large hood or shield, 9¼ inches in inside diameter. Tank is of seamless drawn steel, tinned outside and in; fitted with cushion protection band.

Burner is made with a generator that superheats the kerosene gas before it is burned.

Brass pump produces air pressure quickly. All parts are strong and can be easily cleaned. Burner jet is also supplied for gasoline.

Capacity, 1 gal. Ship. wt., 17½ lbs.

Price, No. 28each \$34.50



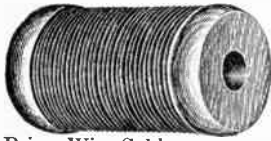
Bar Solder



An alloy of tin and lead, made up in the form of bars for convenience in handling, for making soldered joints in metals, such as lead piping systems, for cable splices and other heavy work.

Price, Solder in Regular Bars..... per pound **\$1.00**

Wire Solder



This solder is an alloy of tin and lead, and is furnished in the form of thin wire for the convenience of wiremen and other electricians in making small joints in conductors and other apparatus.

Price, Wire Solder..... per pound **\$1.00**



Resin Core Flux Solder

This solder is provided with a core of resin which melts on the application of heat and prevents the formation of oxides, thus permitting the making of a strong bond between the metals.

Price, 1-pound Spools..... per pound **\$1.00**
 " 5 " " and Over per pound **1.00**

Metal Melting Pots



These Metal Pots are of the deep pattern and hold sufficient metal or solder for all practical purposes, and fit any make of fire pot or furnace.

The 6-inch pot is the right size to fit the No. 1, large shield of Nos. 22 and 23 coil fire pots, also fire pots Nos. 1, 80, 91, 26 and 27.

Price, 5-inch..... each **\$1.65**
 " 6 " " " " " **2.00**
 " 8 " " " " " **5.00**

Wrought Steel Melting Ladles

Double Lip, Extra Deep



No.	10	20	30	40	60	80
Size..... inches	2 1/2	3	3 1/2	4	5	6
Price..... each	\$1.00	1.20	1.40	1.60	2.10	2.40

Soldering Coppers



Furnished without handle but having an iron rod fastened to the head, ready to be driven into a wooden handle. Supplied in all sizes. Prices upon application.

Burnley's Soldering Salts

Size Can Lbs.	PRICE PER POUND			
	1 to 25	25 to 100	100 to 300	300 Lbs. and over
1/2	\$.56	\$.50	\$.46	\$.42
1	.54	.48	.44	.40
5	.48	.42	.38	.36



Speco Soldering Sticks



Quick-acting, efficient, convenient, does not gum the hands. Does not let solder flow beyond point where flux is applied. Specially tested for underground cables.

Price..... each **\$1.15**

Speco Soldering Paste

Non-corrosive and protective, quick-acting, economical. Contains no sal ammoniac, which is cause of corrosive after-effects. Tested for Radio wires.

Wt. Ounces	Can Price Each	Wt. Ounces	Can Price Each	Wt. Pounds	Can Price Each
2	\$.15	8	\$.35	5	\$2.50
4	.20	16	.60	..	..



Speco Solid Sal Ammoniac

For cleaning and tinning the soldering copper.

Outlasts 5 times its weight of the old-fashioned "lump," keeps copper in good condition, does not crumble and corrode metal work near job or tools.

Price, 1/2-lb. Cakes..... each **\$1.40**
 " 1 " " " " " **.75**



Speco Soldering Salts

Salts produce vigorous, non-corrosive flux when mixed with water and a little goes a long way. A flux for general work on all metals. Makes a stronger joint than muriatic acid. Use 3 parts water to 1 part Speco Salts.

Price, 1/2-lb. Cans..... each **\$1.45**
 " 1 " " " " " **.60**



Burnley's Soldering Sticks



Price, 3 Dozen to 1 Gross..... each **\$1.15**
 " 1-gross Lots..... " **.14**
 " 2 or 4-gross Lots..... " **.13**
 " 8-gross Lots and Over..... " **.12**

Burnley Soldering Paste

Requires no preparation, always ready for instant use.



Size Can	Price Each	Size Can	Price Each
2-oz.	\$.30	5-pound	\$6.50
4 "	.50	10 "	..
1/2-pound	.90	50 "	..
1 "	1.40	.....	.....

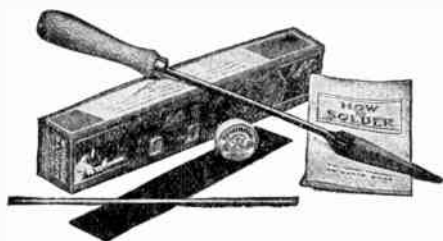
Nokorode Soldering Paste

This paste will flux all metals except aluminum. It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter. The solder will not turn dark after using.



Size Can	Standard Package	Price Each	Price per Carton
2 Oz.	36 to Carton	\$.15	\$3.60
1 Lb.	6 " "	.90 Lb.	4.50
10 "	Any Quantity	.50 "	..
25 "	" " "	.45 "	..
50 "	" " "	.45 "	..
500 "	In Barrel	.40 "	..

Nokorode Radiokits



For radio work. The Radiokit contains a long, thin soldering iron, making it easy to solder wires that are hard to reach with an ordinary iron; a box of Nokorode Paste, a strip of emery cloth, solder and book of directions, "How to Solder" with valuable information on radio work.

Price.....each \$.50

Allen Commutator Lubricant Sticks



Prevents sparking and cures it when applied properly. It prevents cutting by lubricating the commutator surfaces.

Description	Price Each
For Copper or Carbon Brushes	\$.30

Early's Commutator Cement



This cement will stand 3200° F. before it will fuse. Its strength is many hundred pounds to the square inch. It resists oil and moisture, and is not affected by gradual expansion and contractions of heat and cold.

Dielectric strength equals that of porcelain. No special tools or appliances are required. The operation is simple, if directions are followed.

For outside work and damp places give the job a coat of weatherproof insulating paint.

The dryer the cement the better the insulation.

This cement can be used to repair glass, porcelain, metal and all other materials except rubber, vulcanite and black lead.

Price, 1-pound Package, Size 2½ x 5¼ inches..each	\$2.50
" 7 " " " 5 x 10½ " .. "	10.00

Crescent Chatterton Compound



This is an insulating material used chiefly in submarine cable construction to fill the interslices between the strands of the cable conductors.

No. 1 Domestic.....per lb. \$2.00

Manson Tape



Manson Tape is a rubber filled cloth tape for protecting joints against mechanical injury. Easily handled and economical to use.

Color	Width Inches	Lbs. per Roll	Price per Lb.
Black	¾	½	\$1.10
White	¾	½	1.10

Okonite Rubber Tape

A rubber tape of the highest class for making splices or joints which, when properly made, are impervious to moisture.

Color	Width Inches	Lbs. per Roll	Price per Lb.
Black	¾	½	\$1.70



Sticka Black Friction Tape



For all ordinary commercial work. Used to protect the splicing compound on a wire joint from abrasion.

Roll contains ½ pound of ¾-inch tape, length about 56 feet.

Price.....per pound \$.90

Victor Black Friction Tape



Protects the splicing compound on wire joints from abrasion. Suitable for ordinary commercial work.

Roll contains ½ pound of ¾-inch tape, about 72 feet in length.

Price.....per pound \$1.00

Amazon Black Friction Tape



This is a good quality tape and will pass the majority of specifications in use.

Standard rolls contain ½ pound of ¾-inch tape, which is 84 feet in length.

Price.....per pound \$1.25

Victor Black Rubber Splicing Tape



A commercial grade, unvulcanized compound. Will fuse into a homogeneous mass at average air temperature under heat of the fingers. Half-pound roll, .030 inch thick, contains approximately 22 feet. Packed in 50 pound cartons.

Price.....per pound \$1.00

Amazon Gray Rubber Splicing Tape

A compound partially vulcanized which increases dielectric and tensile strength. The adjacent layers adhere readily on a joint and after a few minutes become a solid, homogeneous mass. Passes majority of specifications on splicing compounds.

Measures 24 feet per ½-pound roll. Price.....per pound \$1.25



Grimshaw Tape



Standard rolls contain ½ pound of ¾-inch tape.

Description	Price per Pound
Black Friction Tape	\$1.00
White " "	1.05
Splicing Compound (Rubber Tape)	1.10

Competition Tape

This is a good grade of tape furnished in ½-pound rolls in the ¾-inch width.

Description	Price per Pound
Black Friction Tape	\$.75
White " "	.80
Splicing Compound (Rubber Tape)	.85



Hydr-Proof Tape

Width of tape is ¾ inch. Packed in containers of ½-pound rolls.

This tape, as its name indicates, is waterproof and its uses are many.

Price.....per pound \$1.00



Hope Linen Finished Tape

Width Inches	.007 Thick Catalogue Numbers			Light Weight
	Extra	Standard	Special	
3/8		19154		22420
1/2	23814	13869		11822
5/8		23941		
5/8	23815	19002	25262	11821
3/4	23816	13870	25263	11820
7/8		15845		18802
1	23817	13871	25265	14002
1 1/4		14769		14839
1 1/2		13872		14003
1 5/8				15704
2		17974		18125

Linotape Bias Cut

Linotape is the registered trade mark name under which Empire Oiled Cloth in tape form is sold. Tape is cut in any width from 3/8 inch and above, from all grades of yellow Empire, and black Kablak insulating material.

Linotape is an insulating tape of the highest order. Its virtue rests in the multiplication of oxidized oil films on its surfaces. It has come into general use as the insulating medium for cables of all descriptions, and is used extensively in coil winding, cable splicing, bus bars, and all high tension work. Furnished in rolls guaranteed to contain 72 lineal yards, each roll coated on the edges with paraffin to exclude moisture. Linotape is continuous in the roll.

Linen Finished Tape

Width Inches	Catalogue Numbers	
	Standard .005 Thick	Special .005 Thick
1/4	25001	
3/8	8769	
5/8		
5/8		
1/2	8841	
5/8	25002	
3/4	25003	25284
7/8	25004	
1	8844	16061
1 1/4	25005	

Hope Silk Tape

Width Inches	Catalogue Numbers	
	Unbleached .0045 Thick	Black .0045 Thick
1/4	24931	24938
3/8	24932	24939
5/8	24933	24940
5/8	24934	24941
1/2	24935	24942
3/4	24936	24943
7/8		
1	24937	24944
1 1/4		

Description	No.	Thickness In.	3/4-IN. App. Wt. Lbs. per 72-yd. Roll	WIDTH Price per Gross Yards	1-INCH App. Wt. Lbs. per 72-yd. Roll	WIDTH Price per Gross Yards
Seam Bias	10	.010	.8	2.20	1.06	2.88
	125	.012	.98	2.48	1.30	3.25
Black Sewn	763	.007	.57	1.96	.76	2.56
Seam Bias	99	.010	.8	2.15	1.06	2.80
	123	.012	.98	2.43	1.30	3.18
Yellow Straight Cut	L	.007	.57	1.96	.76	2.56
	B	.010	.8	2.15	1.06	2.80
	N	.012	.98	2.43	1.30	3.18
Black Straight Cut	H	.007	.57	1.90	.76	2.50
	F	.010	.8	2.10	1.06	2.72
	M	.012	.98	2.36	1.30	3.09

Hope Webbing

Width Inches	Catalogue Numbers					
	Star	Common	Calendered	Fine	Extra Heavy	Heavy
1/4	22386	25006		21787		
1/2	22390	25007		21790		23688
5/8	22392	25008	15948	21792	20376	18376
3/4	22394	13100	4238	21794	19451	18375
7/8	22396		17389	21796		
1	22398	16628		21798	7251	8730
1 1/4					11838	9982
1 1/2			19184		1258	1613
1 5/8						9980
1 3/4					7252	17973
1 7/8						18185
2					6352	9999
2 1/4					13382	
2 1/2					25301	
2 3/4						18186
3					25302	18178
3 1/4						18179

Round Hard Vulcanized Fibre Rods

Red, Black and Gray



Intermediate sizes at next higher price. Sizes as much as .015 inch over a standard size may be billed as of that size.

Minimum charge for any one order, \$2.00.

Different sizes can be aggregated in determining the quantity price.

Domestic orders for quantities larger than that for which a foot price is given may be billed by the minimum foot price or by the pound price.

Width Inches	Catalogue Numbers				
	Special Surgical	Standard Non-elastic	Special Non-elastic	Light Stay	Standard Surgical
3/8					22826
1/2		25014	24732		7699
5/8		25015			18460
3/4	19003	25016	25020		5281
5/8	24005				17990
7/8		25017			14068
1	15618	25018	13238	6291	5224
1 1/8					24624
1 1/4	19004	4096	14671	6290	5298
1 1/2	18146	25019	25021	6289	8870
1 3/4		4097	20913		18848
2	18486	4098	19006	4544	9058
2 1/4	19750	15070	20914		10449
2 1/2	16139		20915		15859
2 3/4	16130				24228
3	19483			15020	15861
4 1/2		20804			

Hope Grey Cotton Slewing

Cat. No.	Covers Size Wire	Approx. Yards per Lb.	Cat. No.	Covers Size Wire	Approx. Yards per Lb.
0	14-20	600	8	1-2	75
1	11-12-13	240	9	1-2	105
2	7-8-9	180	10	1-0	65
3	9-10	175	11	1-0	60
*4	5-6-7	210	12	2 No. 0	50
5	5	115	13	6-7	160
6	3-4	110			

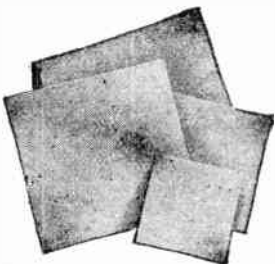
*Cat. No. 4 also furnished in red, blue and black. Standard package, 5-pound spool.

Diam. Inches	Ft. per Lb.	PRICE, PER FOOT					
		9 Ft. or Less	10 Ft. to 24	25 Ft. to 49	50 Ft. to 99	100 Ft. to 499	500 Ft. to 999
3/32	241	\$.17	\$.14	\$.11	\$.09	\$.08	\$.07
1/8	136	.17	.14	.11	.09	.08	.07
3/16	60	.17	.14	.11	.09	.08	.07
1/4	34	.18	.15	.12	.10	.09	.08
5/16	22	.20	.16	.13	.11	.10	.09
3/8	15	.22	.18	.15	.13	.12	.11
7/16	11	.27	.23	.20	.18	.16	.14
1/2	8.5	.33	.28	.22	.20	.18	.17
9/16	6.7	.40	.33	.27	.22	.20	...
5/8	5.4	.47	.40	.33	.28	.24	...
11/16	4.5	.56	.47	.39	.34	.29	...
3/4	3.8	.68	.57	.45	.38	.35	...
13/16	3.2	.80	.65	.51	.42	...	...
7/8	2.8	.94	.74	.57	.49	...	...
15/16	2.4	1.10	.84	.68	.58	...	...
1	2.1	1.30	1.00	.80	.68	...	...
1 1/8	1.7	1.60	1.15	.95	...	...	...
1 1/4	1.4	2.00	1.50	1.20	...	...	...
1 3/8	1.1	2.40	1.90	1.65	...	...	...
1 1/2	.94	2.80	2.55	2.30	...	...	...
1 5/8	.80	3.50	3.00	...	...	...	...
1 3/4	.69	4.50	4.00	...	...	...	...
1 7/8	.60	6.50	5.50	...	...	...	...
2	.53	8.50	7.50	...	...	...	...
2 1/8	.47	10.50	9.50	...	...	...	...
2 1/4	.42	12.50	11.50	...	...	...	...
2 3/8	.38	14.50	13.50	...	...	...	...
2 1/2	.34	16.50	15.50	...	...	...	...

Vulcanized Fibre Sheets

Hard and Flexible—Red, Gray and Black

Intermediate thicknesses at price of next thinner, but sheets just under a standard thickness from 1/8 inch up, must vary 1/4 inch (.015) or more, from the standard thickness to claim the lower price as an intermediate size. Sheets approximately 44x66 inches. No extra charge for cutting in halves, thirds or quarters; or in two, three or four pieces, provided there is no waste.



Several different thicknesses or colors may be aggregated in one shipment in determining the discount. Cut pieces 12 inches wide or more, containing 4 square feet or more, accompanying an order for sheets may be aggregated with them to determine the sheet fibre and the base price for the pieces, the usual addition being made, however, on the pieces for cutting.

Thickness Inches	Price per Lb.	Thickness Inches	Price per Lb.
.004	\$.55	1 1/4	\$1.00
.005 to 1/8 incl.	.50	1 3/8	1.15
" " 5/16 "	.51	1 1/2	1.30
" " 3/8 "	.53	1 5/8	1.50
" " 7/16 "	.56	1 3/4	1.80
" " 1 "	.60	1 7/8	2.20
" " 1 1/8 "	.66	2	2.60
" " 1 1/4 "	.70	2 1/8	3.00
" " 1 1/2 "	.76	2 1/4	3.50
" " 1 3/4 "	.86	2 3/8 and over	4.00

Insulating Paper

.004	\$.55	.005 to 1/8 incl.	\$.50
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Gray Egyptian Fibre

1/8 to 1/8	\$.55	1/2	\$.61
" " 5/16 "	.56	3/8	.65
" " 3/8 "	.58	3/4	.71

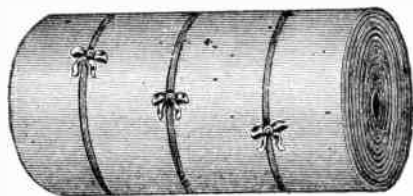
Minimum charge for one order, \$1.00.

Table of Average Weights of Vulcanized Fibre Sheets

Thickness Inches	Approx. Wt. Lbs.	Thickness Inches	Approx. Wt. Lbs.	Thickness Inches	Approx. Wt. Lbs.
1/4	2 1/2	1/4	40	3/4	120
5/16	5	3/8	50	7/8	140
3/8	7 1/2	1/2	60	1	160
7/16	10	5/8	70	1 1/8	180
1/2	15	3/4	80	1 1/4	200
5/8	20	7/8	90	1 1/2	240
3/4	30	1	100	...	...

Full sheets, approximately 44x66 inches. A square foot of 1 inch thick Hard Vulcanized Fibre weighs about seven pounds. Specific gravity, about 1.38. There are approximately 20 cubic inches to a pound.

Corrugated Rubber Switchboard Matting



It is advisable to purchase the American grade in preference to others, due to the fact the better grade will stand abrasion much better and will resist the drying action of the air, and will not crack near as quickly as the cheaper grades

Price, American Grade.....per pound	\$1.50
" Union "	1.34
" Sentinel " .....	.90

Vulcanized Fibre Tubes



Colors—red, black and gray vulcanized and D.H. gray

Egyptian. Inside Diam. In.	PRICE PER FOOT					
	THICKNESS OF WALL, INCHES					
1/8	1/8	3/8	1/2	5/8	3/4	7/8
1/8	\$.25	\$.30	\$.40	...	...	...
3/16	.25	.30	.40	...	...	...
1/4	.12	.14	.18	\$.22	\$.26	...
5/16	.13	.15	.19	.24	.28	...
3/8	.14	.16	.21	.26	.31	...
7/16	.15	.17	.22	.28	.33	...
1/2	.16	.18	.24	.30	.36	\$.42 \$.48
5/8	.17	.20	.26	.32	.39	.46 .52
3/4	.18	.21	.28	.35	.42	.49 .56
7/8	.20	.23	.30	.37	.45	.52 .60
1	.21	.24	.32	.40	.48	.56 .64
1 1/8	.22	.26	.34	.42	.51	.60 .68
1 1/4	.23	.27	.36	.45	.54	.63 .72
1 1/2	.24	.29	.38	.47	.57	.66 .76
1 3/4	.25	.30	.40	.50	.60	.70 .80
1 7/8	.27	.33	.44	.55	.66	.77 .88
2	.29	.36	.48	.60	.72	.84 .96
2 1/8	.30	.39	.52	.65	.78	.91 1.04
2 1/4	.32	.42	.56	.70	.84	.98 1.12
2 3/8	.35	.45	.60	.75	.90	1.05 1.20
2 1/2	.36	.48	.64	.80	.96	1.12 1.28
2 5/8	.39	.51	.68	.85	1.02	1.19 1.36
2 3/4	.41	.54	.72	.90	1.08	1.26 1.44
2 7/8	.44	.57	.76	.95	1.14	1.33 1.52
3	.46	.60	.80	1.00	1.20	1.40 1.60
3 1/8	.47	.63	.84	1.05	1.26	1.47 1.68
3 1/4	.49	.66	.88	1.10	1.32	1.54 1.76
3 3/8	.52	.69	.92	1.15	1.38	1.61 1.84
3 1/2	.55	.72	.96	1.20	1.44	1.68 1.92
3 5/8	.57	.75	1.00	1.25	1.50	1.75 2.00
3 3/4	.60	.78	1.04	1.30	1.56	1.82 2.08
3 7/8	.61	.81	1.08	1.35	1.62	1.89 2.16
4	.62	.84	1.12	1.40	1.68	1.96 2.24
4 1/8	.65	.87	1.16	1.45	1.74	2.03 2.32
4 1/4	.67	.90	1.20	1.50	1.80	2.10 2.40
4 3/8	.69	.93	1.24	1.55	1.86	2.17 2.48
4 1/2	.72	.96	1.28	1.60	1.92	2.24 2.56
4 5/8	.74	.99	1.32	1.65	1.98	2.31 2.64
4 3/4	.76	1.02	1.36	1.70	2.04	2.38 2.72

Tubes under 3/8-inch inside diameter are made in lengths of about 3 feet. Over 3/8 inch in lengths of about 3 feet. Tubes will be cut at an additional charge to any required length. For square and rectangular tubes double above list. Intermediate sizes take price of next larger diameter and next thicker wall excepting between 3/16 and 1/4 when they take the price of 3/8 inch.

A variation of .10 inch O.D. is not considered an intermediate size and may be billed as a standard size.

Minimum charge for one order \$2.00 Different sizes can be aggregated in determining the quantity price.

Uncut Sheet Mica

Uncut mica is carefully selected as to quality and sizes it will cut. The different grades will cut assorted sizes as shown in table. All grades are closely trimmed.

Grade No.	India			Price per Pound	
	Will Cut Assorted Sizes				
A1	4 to 6	Inches Wide,	7 to 9	Inches Long	\$9.00
1	3 " 5	" " " 5	" " 7	" " "	7.00
2	1 1/2 " 3 1/2	" " " 4 1/2	" " 6	" " "	5.50
3	1 1/2 " 3	" " " 3	" " 4 1/2	" " "	4.25
4	1 1/2 " 2 1/2	" " " 2 1/2	" " 3	" " "	3.25
5	1 " 2	" " " 2	" " 2 1/2	" " "	1.90
Amber					
A1	4 to 6	Inches Wide,	7 to 9	Inches Long	\$5.00
1	3 " 5	" " " 5	" " 7	" " "	3.25
2	1 1/2 " 3 1/2	" " " 4 1/2	" " 6	" " "	2.50
3	1 1/2 " 3	" " " 3	" " 4 1/2	" " "	1.80
4	1 1/2 " 2 1/2	" " " 2 1/2	" " 3	" " "	1.25
5	1 " 2	" " " 2	" " 2 1/2	" " "	.65

**Nos. 1 and 11 India Micanite Plate
For Molding**

No. 1 India Micanite Plate has a smooth surface which does not show any detrimental amount of loose laminations. It softens sufficiently at 140 degrees C. or 284 degrees F. to be readily molded to ordinary shapes without chipping, cracking or breaking.

It is carefully milled to specified thickness, allowing a variation of .002-inch in isolated spots on the thin sizes below .060-inch, and from .003-inch to .005-inch on sizes .060-inch and up.

Average puncture voltage per .001-inch runs from 900 volts on the thinner sizes to 800 volts on the thicker sizes. It must not be used for insulation between copper bars of commutators.

No. 11 India Micanite Plate is made of the same quality of mica films and cement that are used in our No. 1 Plate, but it is not as exact to thickness, and is not made in as many thicknesses. It varies in thickness from plus or minus .003-inch in the case of the .010-inch thick; .005-inch in the case of the 3/32-inch; to plus or minus .010-inch in the case of the 1/8-inch thick.

It becomes flexible when heated, is readily formed into shapes, and is suitable for all general purposes where a variation in thickness is permissible, except for commutator segments, for which it is not intended.

Average puncture voltage, 800 to 900 volts per .001-inch.

No. 1

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1202	.020	0.508	1.05	\$3.00
1203	.025	0.635	1.3	2.55
1204	.030	0.762	1.6	2.10
1205	1/32	0.79	1.7	2.10
1206	.035	0.889	1.85	2.10
1207	.040	1.016	2.1	1.95
1208	.045	1.143	2.35	1.95
1210	.050	1.27	2.65	1.95
1213	1/16	1.58	3.3	1.70
1216	3/32	2.38	5.	1.70
1217	1/8	3.17	6.5	1.70

No. 11

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1218	.010	0.254	.503	\$3.00
1219	.015	0.381	.748	2.75
1220	.020	0.508	.946	2.40
1223	1/32	0.79	1.64	1.70
1227	3/64	1.185	2.42	1.60
1231	1/16	1.58	3.32	1.45
1234	3/32	2.38	4.92	1.45
1235	1/8	3.17	6.22	1.45

Nos. 1 and 11 Micanite Plate furnished in special thicknesses, sizes and patterns. Prices quoted upon application.

**No. 2 India Micanite Plate
For Commutator Segment Insulation**

No. 2 Micanite Plate is made of India Mica, as this variety is recognized as standard for electrical insulation where muscovite mica is used.

It is closely milled and the average thickness will not vary more than .0005-inch from specified thickness. Individual plates will not vary more than .001-inch above or .0015-inch below thickness specified in isolated spots. It cannot be molded.

Its average puncture voltage per .001-inch runs from 900 volts on the thinner sizes, to 800 volts on the thicker sizes.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1238	.020	0.508	1.2	\$2.65
1239	.025	0.635	1.5	2.45
1240	.030	0.762	1.8	2.20
1241	3/32	0.79	1.9	2.20
1242	.035	0.889	2.1	2.20
1243	.040	1.016	2.4	1.90
1244	.045	1.143	2.7	1.90
1245	3/64	1.185	2.85	1.90
1246	.050	1.27	3.	1.90
1248	.060	1.524	3.6	1.90
1249	1/16	1.58	3.8	1.90

No. 2 Micanite Plate can be furnished in special thicknesses, sizes, or patterns. Prices quoted upon application.

**No. 3 Amber Micanite Plate
For Commutator Segment Insulation**

No. 3 Amber Micanite Plate is made of phlogopite or amber mica, which is softer than the muscovite and presents less liability of failure to wear down evenly with the copper bars.

It is closely milled and the average thickness will not vary more than .0005-inch from the specified thickness. Individual plates will not vary in isolated spots more than .001-inch above or .0015-inch below thickness specified. It cannot be molded.

Its average puncture voltage per .001-inch runs from 900 volts on the thinner sizes, to 800 volts on the thicker sizes.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1272	.020	0.508	1.2	\$4.75
1273	.025	0.635	1.5	4.50
1274	.030	0.762	1.8	4.25
1275	1/32	0.79	1.9	4.25
1276	.035	0.889	2.1	4.25
1277	.040	1.016	2.4	4.00
1278	.045	1.143	2.7	4.00
1279	3/64	1.185	2.85	4.00
1280	.050	1.27	3.	4.00
1282	.060	1.524	3.6	4.00
1283	1/16	1.58	3.8	4.00

No. 3 Micanite Plate can be furnished in special thicknesses, sizes and patterns.

Prices quoted on application.

**No. 4 Micanite Plate
For Flat Work**

This plate is made for flat work and for purposes where accuracy of thickness is not important. It is not milled or surfaced and therefore has a considerable variation in thickness.

It is suitable for all kinds of bases, round or square washers, and for all kinds of apparatus not subject to high heat.

Its non-liability to fracture under extreme vibration is a valuable feature for marine work. It does not take a screw thread, but can be drilled and turned.

Average puncture voltage, approximately 800 volts per .001-inch.

No. 4 plate is not furnished thinner than 1/16-inch.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1296	1/16	1.58	3.25	\$1.25
1297	3/32	2.38	4.87	1.25
1298	1/8	3.17	6.5	1.25
1300	1/4	6.34	13.	1.25
1301	3/8	9.52	19.5	1.25
1302	1/2	12.69	26.	1.25

Prices on sheets of No. 4 Micanite Plate, of special size and pattern quoted upon application.

**No. 5 Flexible Micanite Plate
For Cold Forming**

No. 5 Flexible Micanite is made of very thin films of muscovite mica cemented together with a special insulating cement of great flexibility and adhesiveness. This article in many ways presents mica in its most convenient and economical form for electrical insulation. It can be formed or bent to shape without application of heat.

It is an excellent insulator for armature slots, armature, magnet and commutator cores, transformers, field coils, etc.

No. 5 Flexible Micanite Plate cannot be surfaced like No. 1 No. 2, or No. 3 plate. It is therefore subject to some variation in thickness, running from .002-inch to .003-inch on the thinner sizes; from .005-inch to .007-inch on the 1/32-inch thickness, and from .010-inch to .015-inch on the 1/8-inch thickness.

Its average puncture is approximately 600 volts per .001-inch.

Cat. No.	THICKNESS		Approx. Lbs. per Sheet	Price per Lb.
	Inches	MM.		
1303	.005	0.127	.55	\$3.15
1304	.010	0.254	1.	2.00
1305	.015	0.381	1.45	1.75
1306	.020	0.508	1.9	1.75
1307	.025	0.635	2.3	1.60
1309	1/32	0.79	3.	1.60
1313	1/16	1.58	6.	1.55
1314	1/8	3.17	12.	1.55

Prices on No. 5 Micanite plate of special thickness, size, or pattern, quoted upon application.

Empire Oiled Canvas and Duck

No. 16 is made on a fabric base that has been specially finished to ensure smooth and even coating of the oil. Nos. 22 and 32 ducks have great resistance to mechanical wear and imperviousness to moisture but do not have the same smooth surface as other cloths.

Cat. No.	Quality of Fabric	FINISHED THICKNESS		Approx. Thickness	Average Lbs. per Yard	Approx. Dielectric Strength	Price per Yard
		Inches	MM.	Oil Films Inches			
16	Canvas	.016	0.406	.008	.80	10000	\$.90
22	Duck	.022	0.559	.002	1.00	.....	1.04
32	"	.032	0.813	.002	1.30	.....	1.40

Empire Oiled Silk

Empire Oiled Silk has for a base a closely woven fabric of pure silk. It is an excellent insulation where a material possessing very high insulating qualities combined with extreme thinness and great flexibility is demanded.

Cat. No.	Quality of Fabric	FINISHED THICKNESS		Approx. Thickness	Average Lbs. per Yard	Approx. Dielectric Strength	Price per Yard
		Inches	MM.	Oil Films Inches			
44	Silk	.004	0.102	.00175	.22	5000	\$1.33
55	"	.005	0.127	.00275	.27	6000	1.37
66	"	.006	0.153	.00375	.32	7000	1.41

All the above Empire Cloths, etc., are furnished in standard rolls containing 50 yards. Rolls containing 25 to 100 yards furnished when specified.

Any width cut to order provided order amounts to multiples of 72 square yards.

The dielectric strength in above tables was obtained by placing the insulating material between a 12-inch square copper plate, and copper disc electrodes 1½ inches in diameter using 60 cycle A. C. current.

No. 20 Micanite Cloth

No. 20 Micanite Cloth is made with 1, 2 or 3 layers of high-grade India Mica films, cemented together with overlapping edges into sheet form, the sheet being faced on one side with cotton cloth and the other side with Japanese paper.

It is an excellent composite insulation, the cloth adding mechanical strength, and is often used in conjunction with Empire Cloth and Paper, fish paper, etc., for transformers, field magnets and armature cores. In strip or tape form No. 20 Micanite Cloth is an efficient insulation for wrapping all sorts of conductors, and can be furnished any width from ½ to 36 inches, in rolls approximately 3¾ inches in diameter.

Cat. No.	THICKNESS		Layers of Mica	Approx. Lbs. per Roll	Price per Lb.
	Inches	MM.			
1315	.008	0.203	1	3.3	\$3.50
1316	.011	0.279	2	5.2	3.00
1317	.014	0.356	3	7	2.40

No. 24 Micanite Paper

No. 24 Micanite paper is of the same nature as No. 20 Micanite Cloth except that the material is faced on both sides with Japanese tissue paper instead of cotton cloth, the object being to supply an insulation thinner than Micanite Cloth, but retaining the same thickness of mica film.

Cat. No.	THICKNESS		Layers of Mica	Approx. Lbs. per Roll	Price per Lb.
	Inches	MM.			
1321	.005	0.127	1	2.4	\$3.50
1322	.008	0.203	2	4.2	3.00
1323	.011	0.279	3	6.	2.50

Empire Oiled Paper

The papers forming the bases all possess the greatest tensile strength consistent with their thickness and have been selected for their uniformity of thickness and freedom from deleterious chemicals. The oil films with which they are coated are of the same nature as the films on Empire Cloth.

The oiled condenser papers, on account of their extreme thinness and high tensile strength, are giving great satisfaction to the manufacturers of induction coils and other delicate work. The thicker papers have been selected for their great tensile strength, density and evenness of texture.

Furnished in rolls 36 inches wide, containing 25 to 50 yards, or in sheet, 36x36 inches.

Cat. No.	Kind of Raw Paper	Finished Thickness Inches	Approx. Wt. in Lbs. per Yard	Approx. Dielectric Strength	Price per Yard
102	"	.002	.12	3000	.22
103	"	.003	.18	4500	.24
104	Kraft	.004	.28	4500	.32
135	"	.0045	.28	3000	.30
105	"	.005	.32	5500	.38
106	Bond	.0055	.37	6000	.53
107	Gray Rope	.007	.44	7000	.40
109	"	.009	.52	9000	.52
113	Kraft	.013	.75	5000	.85
115	"	.015	.85	7000	.95
118	"	.018	1.00	10000	1.00

M. I. C. Insulating Compound

The three grades of M. I. C. Compound are composed chiefly of asphaltum and refined linseed oil. They are non-corrosive. Durable and elastic; impervious to moisture and will withstand very high temperatures. A perfect film of M. I. C. Compound has a puncture voltage of 900 volts per mil. It can be reduced to any desired density or solution with turpentine, benzine or gasoline.

Can be applied by dipping or with a brush. On cloth, paper, etc., it is advisable to apply them by dipping the material in the varnish. If a heavy coating is required, it is well to apply a number of thin coats, allowing each to dry thoroughly.

No. 1 is a glossy, black, baking varnish generally used for armature coils, field and magnet coils, wires and cables, transformers, for covering cloth, paper asbestos, and hard fibre. Bakes hard, but elastic at 300 degrees F. in eight hours. Air dries in six hours.

No. 3 is a glossy, black, air drying varnish used for armature, field and magnet coils, generators, etc.

No. 4 is a glossy, black, air drying varnish for core plates, transformer plates, and for all outdoor work such as overhead line construction, etc. Dust dry in one hour.

Size Pkg.	No. 1		No. 3		No. 4	
	Cat. No.	Price Each	Cat. No.	Price Each	Cat. No.	Price Each
1 Gal.	3030	\$2.75	3042	\$2.10	3050	\$1.80
5 "	3031	2.60	3043	1.85	3051	1.65
50 "	3033	2.20	3045	1.50	3053	1.25

No. 16 Ajax Clear Elastic Baking Varnish

An extremely elastic and flexible varnish. Is oil, acid and water-proof.

Has maximum dielectric strength, also longest life under heat. Will bake in from ten to twelve hours at 100° C. (212° F.). Thin with benzine.

Intended for use where extreme flexibility and longest life under heat are required, such as on varnished cloth, large coils, wound and insulated before assembly, etc.



Price, No. 16 in 1-gallon Cans.....	per gallon	\$5.00
" " 16 " 5 " "	"	4.80
" " 16 " Barrels.....	"	4.50

No. 22 Ajax Black Semi-plastic Baking Varnish



A black varnish which dries with a semi-plastic film. Water-proof acid-proof but only fairly resistant to oils. Has maximum dielectric strength and long life under heat. Will bake in from eight to ten hours at 100° C. (212° F.). Thin with benzine.

Suitable for use on field and stator coils and all types of armatures and armature coils, except very high-speed armatures.

Price, No. 22 in 1-gallon Cans.....per gallon **\$2.10**
 " " 22 " 5 " " " " " **1.90**
 " " 22 " Barrels..... " " **1.60**

No. 14 Ajax Clear Quick Elastic Baking Varnish

A strong, tough but elastic varnish. It is oil, acid and water-proof. Has long life under heat and maximum dielectric strength. Will bake in 8 to 10 hours at 100° C. (212° F.). Thin with benzine.

Price, No. 14 in 1-gallon Cans.....per gallon **\$4.30**
 " " 14 " 5 " " " " " **4.10**
 " " 14 " Barrels..... " " **3.80**

No. 18 Ajax Clear Air Drying and Baking Varnish

Oil, acid and water-proof. Has high dielectric strength, similar to No. 17 but has not quite as long life. Bakes in five to seven hours at 100° C. (212° F.), or will air dry in eight to fourteen hours. Thin with benzine.

Price, No. 18 in 1-gallon Cans.....per gallon **\$3.30**
 " " 18 " 5 " " " " " **3.10**
 " " 18 " Barrels..... " " **2.80**

No. 19 Ajax Clear Air Drying Finishing Varnish

A spirit finishing varnish. Has good insulating properties. Oil and moisture-proof.

Will air dry to handle in about 20 minutes, but requires more time if used on coil. Thin with denatured alcohol.

For use as a finishing coat to prevent absorption of oils and moisture.

Price, No. 19, in 1/2-gallon Bottles.....per gallon **\$3.40**
 " " 19 " 5 " Cans..... " " **3.20**
 " " 19 " Barrels..... " " **2.90**

No. 20 Ajax Black Elastic Baking Varnish

An extremely elastic, flexible varnish. Oil, acid and water-proof. Has maximum dielectric strength, also longest life under heat. Will bake in 10 to 12 hours at 100° C. (212° F.). Thin with benzine. May be used on cloth, all types of coils, on both large and small armatures.

Price, No. 20 in 1-gallon Cans.....per gallon **\$5.00**
 " " 20 " 5 " " " " " **4.80**
 " " 20 " Barrels..... " " **4.50**

No. 21 Ajax Black Plastic Baking Varnish

A soft plastic varnish. Water and acid-proof, but not oil-proof. Has maximum dielectric strength and long life under heat. Will bake in 10 to 12 hours at 100° C. (212° F.). Thin with benzine.

Price, No. 21 in 1-gallon Cans.....per gallon **\$2.50**
 " " 21 " 5 " " " " " **2.30**
 " " 21 " Barrels..... " " **2.00**

No. 23 Ajax Black Quick Baking Varnish

A hard, tough, but elastic varnish which is oil, acid and water-proof. Has maximum dielectric strength and long life under heat. Will bake in from 8 to 10 hours at 100° C. (212° F.). Thin with benzine. For use on field and stator coils, large and small armatures.

Price, No. 23 in 1-gallon Cans.....per gallon **\$3.50**
 " " 23 " 5 " " " " " **3.30**
 " " 23 " Barrels..... " " **3.00**

No. 25 Ajax Black Air Drying Varnish

Dries with a fairly hard film. Is acid-proof and water-proof, but not oil-proof. Will air dry in about one hour, but requires four to eight hours in the interior of a coil. Thin with benzine. Suitable for field and stator coils and all types of armatures except small high-speed.

Price, No. 25 in 1-gallon cans.....per gallon **\$2.10**
 " " 25 " 5 " " " " " **1.90**
 " " 25 " Barrels..... " " **1.60**

No. 27 Ajax Underwriters' Black Acid Resisting Insulating Paint

Glossy. For meter boards, switch-boards, conduits, cables, etc., will dry in about 30 minutes. Thin with benzine.

Price, No. 27 in Pint Cans.....per gallon **\$3.30**
 " " 27 " Quart " " " " **2.50**
 " " 27 " 1-gallon Cans..... " " **1.90**
 " " 27 " 5 " " " " " **1.70**
 " " 27 " Barrels..... " " **1.40**

No. 60 Ajax Black Extra Quick Baking Varnish

A quick baking semi-plastic type varnish. Similar to No. 22, but not as long life.

Water-proof and acid-proof, but not oil-proof.

Bakes in from 2 to 4 hours at 100° C. (212°F.).

Thin with benzine.

Used principally on stators of small A.C. motors and other applications, except small high speed armatures, where quick baking is necessary.

Price, No. 60, in 1-gallon Cans.....per gallon **\$2.10**
 " " 60 " 5 " " " " " **1.90**
 " " 60 " Barrels..... " " **1.60**

Nos. 111 and 112 Ajax Pothead Compound

No. 111

A black, asphaltic solid compound, plastic and adhesive. Possesses high dielectric strength and is chemically inert and thoroughly water-proof. It has a low-coefficient of expansion and contraction and will withstand extremes of heat and cold without cracking. The drip point is 85°C (185°F). May be applied by melting and pouring. For use in extremely cold climates and closed type potheads.

Price, No. 111 in 40-lb. Cans.....per pound **\$1.18**
 " " 111 " 10 " " " " " **.24**
 " " 111 " 5 " " " " " **.30**

No. 112

Same as Pothead Compound No. 111, except that the melting point is higher, 105°C (221°F). Intended for use in inverted type potheads and in very hot climates.

Price, No. 112 in 40-lb. Cans.....per pound **\$1.19**
 " " 112 " 10 " " " " " **.25**
 " " 112 " 5 " " " " " **.31**

Western Electric Improved Paper Sleeves

Made of best grade of manilla paper, carefully selected and put up in cartons of 1000 each, sealed ready for shipment.

Style	Dimen. In.	Price per 1000	Style	Dimen. In.	Price per 1000
2 1/2 A	1/8 x 2 3/4	\$3.00	18A	1/8 x 18	\$3.00
3B	3/16 x 3	3.00	18B	3/16 x 18	3.00
3C	7/32 x 3	3.00	18C	7/32 x 18	3.00

1925 "National Electrical Code"

Regulations of the National Board of Fire Underwriters

For Electric Wiring and Apparatus as Recommended by the National Fire Protection Association

Edition of 1925

TABLE OF CONTENTS

ARTICLE.

1. Definitions.
2. General.
3. Outside Supply Lines.
4. Services.
5. Wiring Methods.
 501. Open Wiring.
 502. Knob and Tube Work.
 503. Conduit Work.
 504. Other Wire Raceways.
 505. Armored Cable.
 506. Decorative Lighting.
 507. Insulation Resistance.
6. Conductors.
7. Outlet Boxes and Cabinets.
8. Automatic Protection of Circuits, Appliances and Apparatus. (Fuses, Circuit Breakers, Relays.)
9. Grounding.
10. Rotating Machinery and its Control Apparatus. (If over 600 volts, see also article 50.)
11. Transformers; under 600 volts. (If over 600 volts, see also article 50.)
12. Switches.
13. Switchboards and Panelboards.
14. Fixtures, Lamp Sockets and Receptacles, Plug Receptacles and other Outlet Devices.
15. Lamps.
16. Electrically Heated Appliances.
17. Resistance Devices.
18. Storage Batteries.
19. Lightning Arresters.
30. Cranes and Hoists.
31. Elevators.
32. Extra Hazardous Locations.
33. Garages.
34. Motion Picture Studios.
35. Motion Picture Projectors.
36. Organs.
37. Radio Equipment.
38. Signs and Outline Wiring.
39. Theatres and Motion Picture Houses.
40. Small Isolated Plants.
50. Systems and Voltages of Over 600 Volts.
60. Signal Systems.

For car wiring and equipment of cars, car houses and marine work, see rules and regulations of the National Fire Protection Association.

ARTICLE 1. DEFINITIONS.

Accessible: Not permanently closed in by the structure or finish of the building. (See readily accessible.)

Adjustable Speed Motor: One in which the speed can be varied gradually over a considerable range, but when once adjusted remains practically unaffected by the load, such as shunt motors designed for a variation of field strength.

Approved: Acceptable to the Inspection Department having jurisdiction. In order to avoid the necessity for repetition of examinations by different examiners, frequently with inadequate facilities for such work, and to avoid the confusion which would result from conflicting reports as to the suitability of devices examined for a given purpose, it is necessary that such examinations should be made under standard conditions, and the record made generally available through promulgation by organizations properly equipped and qualified for experimental testing, inspections of the run of goods at factories, and service-value determinations, through field inspections.

Automatic Door: One which closes automatically by means of a device operated by heat.

Branch Circuit: That portion of the wiring system extending beyond the final set of fuses or circuit breakers protecting it, and at points on which current is taken to supply fixtures, lamps, heaters, motors and current consuming devices generally.

Building: A structure which stands alone or which is cut off from adjoining structures by unpierced fire walls.

Cabinet: An enclosure designed either for surface or flush mounting, and provided with a frame, mat or trim, in which swinging doors are hung. (See cutout box.)

Cable: A stranded conductor (single-conductor cable) or a combination of conductors insulated from one another (multiple-conducted cable).

Concealed: Rendered permanently inaccessible by the structure or finish of the building.

Conductor: A wire or cable suitable for carrying an electric current.

Cutout Box: An enclosure designed for surface mounting and having swinging doors or covers secured directly to and telescoping with the walls of the box proper. (See cabinet.)

Disconnecting Switch; Disconnecter: A switch which is intended to open a circuit only after the load has been thrown off by some other means.

Dustproof: So constructed or protected that an accumulation of dust will not interfere with its successful operation.

Dust-tight: So constructed that dust will not enter the inclosing case.

Enclosed: Surrounded by a case which will prevent accidental contact of a person with live parts.

Factory Yard: A plot containing an assemblage of buildings served by an isolated plant, or by a sub-station, or by a master service, and permitting access from building to building within the yard.

Guarded: Covered, shielded, fenced, enclosed or otherwise protected, by means of suitable covers or casings, barriers, walls or screens, mats or platforms, to remove the liability of dangerous contact or approach by persons or objects to a point of danger.

Isolated: Not readily accessible to persons unless special means of access are used.

Isolated Plant: A private electrical installation deriving energy from its own generator driven by a prime mover.

Outlet: A point on the wiring system at which current is taken to supply fixtures, lamps, heaters, motors and current consuming devices generally.

Panelboard: A panel containing busses and fuses with or without switches for the control of light, heat or power circuits of small individual as well as aggregate capacity and usually placed in or against a wall or partition and accessible only from the front. (See switchboard.)

Qualified Person: One familiar with the construction and operation of the apparatus and the hazards involved.

Readily Accessible: Able to be reached quickly without climbing over or removing obstructions or resorting to chair, box or portable ladder. (See accessible.)

Service: That portion of the supply conductors which extends from the street main to the service switch of the building supplied.

Special Permission: The written consent of the head of the inspection department having jurisdiction.

Switchboard: A large, single panel, frame or assembly of panels, on which are mounted, on the face or back or both, switches, fuses, or other automatic protective devices, busses and usually instruments. Switchboards are generally used in generating stations, sub-stations or isolated plants for the direct control of energy derived from generators or transforming apparatus. (See panelboard.)

Totally Enclosed Motor: A motor which is so completely enclosed by integral or auxiliary covers as to practically prevent the circulation of air through the interior. Such a motor is not necessarily air tight.

Ventilated: Provided with a means to permit circulation of the air sufficiently to remove an excess of heat, fumes or vapors.

Waterproof: So constructed or protected that moisture will not interfere with its successful operation.

Watertight: So constructed that moisture will not enter the enclosing case.

ARTICLE 2. GENERAL.

The following recommendations, as well as other recommendations throughout this code, shall be considered advisory, but not mandatory:

It is recommended that in all electric work conductors, however well insulated, be always treated as bare, to the end that under no conditions, existing or likely to exist, can a ground or short circuit occur, and so that all leakage from conductor to conductor, or between conductor and ground, may be reduced to the minimum.

It is recommended that in all wiring special attention be paid to the mechanical execution of the work. Careful and neat running, connecting, soldering, taping of conductors, and securing and attaching of fittings, are especially conducive to security and efficiency.

It is recommended that in laying out an installation, except for constant-current systems, every reasonable effort be made to secure distribution centers located in easily accessible places, at which points the cutouts and switches controlling the several branch circuits can be grouped for convenience and safety of operation. The load should be divided as evenly as possible among the branches, and all complicated and unnecessary wiring avoided.

It is recommended that wire-ways be used for rendering concealed wiring permanently accessible.

It is recommended that architects when drawing plans and specifications make provision for the channelling and pocketing of buildings for electric light or power wires, and also for telephone, district messenger and other signal system wiring.

201. Gauges.

- a. All wire sizes are given in the Brown and Sharpe (American) gauge.

202. Voltages.

- a. Low potential shall mean 600 volts or less.
- b. High potential shall mean between 601 volts and 5000 volts.
- c. Extra high potential shall mean above 5000 volts.
- d. In the preceding paragraphs the potential considered is that at which the circuit operates, whether it is supplied by a generator or by a transformer.
- e. Throughout this code, unless otherwise specifically stipulated, the requirements shall be considered to be based upon the use of low-potential wiring, devices, apparatus and appliances. High potential and extra-high-potential systems are considered in articles 3 and 50.

203. Wire Terminals, Splice and Joints.

- a. Wires larger than No. 8 shall be connected to terminals by soldering into lugs or by solderless connectors, except that branch or tap connections from which not more than 30 amperes are taken may be made by means of suitable clamps. Stranded wires, other than those used in flexible cords, shall be soldered together before being fastened under clamps or binding screws.
- b. Wires shall be so spliced or joined as to be mechanically and electrically secure without solder. The joints shall then be soldered, unless made with a splicing device, and shall be covered with an insulation equal to that on the wires.

204. Railway Systems.

- a. Lighting and power from railway wires shall not be permitted under any pretence from a system to which are connected trolley wires with a ground return, except in electric railway cars, electric car houses, power houses, passenger and freight stations connected with the operation of electric railways.

205. Approved Material, etc.

- a. This code shall be understood to treat only of approved materials, devices, fittings, appliances, machinery, apparatus and methods.

206. General Plan of Investigations.

- a. Materials, devices, fittings, apparatus and appliances designed for use under this code shall be judged chiefly with reference to the following five considerations which also determine the classification by types, sizes, voltages, current capacities and specific uses:

1. Suitability for installation and use in conformity with the requirements of this code.

2. Mechanical strength and durability, including for appliances designed to enclose and protect other equipment, the adequacy of the protection thus provided.

3. Electrical insulation.

4. Heating effects under normal conditions of use and also under abnormal conditions liable to arise in service.

5. Arcing effects.

b. Bases for the mounting of live parts shall be composed of approved non-combustible, non-absorptive insulating material, and the design shall be such that, considering the material used, the base will withstand the most severe conditions liable to arise in service. Holes for supporting screws shall be so located or counter-sunk that there will be at least 1/2 inch, measured over the surface, between the screw head or washer and the nearest live metal part, and in all cases, where between parts of opposite polarity, the screw head or washer shall be countersunk. Holes for supporting screws in link fuse cutout bases shall be kept outside the area included by the outside edges of the fuse terminals. Nuts or screw heads on the under side of the base shall be countersunk and sealed with a waterproof compound.

c. Terminal parts by which wire connections are made shall insure thoroughly good connections even under hard usage. For currents above 30 amperes, lugs into which the connecting wires may be soldered, or approved solderless connectors, shall be provided. For currents of 30 amperes or less the parts to which wiring connections are made shall securely grip the conductors. Heavy clamps or screws with terminal plates having upturned lugs, or solderless connectors, may be used. Lugs or clamps are not required when leads are provided as part of the device.

d. The set screw form of contact shall not be used.

e. All devices provided with terminals for the attachment of wires and intended for connection to more than one side of the circuit shall, unless specifically excepted, have a pair of connecting terminals properly marked for identification, unless the electrical connection between the pair of terminals intended to be connected to the grounded conductor is clearly evident. This requirement shall become effective April 1, 1926.

f. The terminals of devices having a normal current rating of over 30 amperes need not be marked for identification.

g. The terminals of utilization devices need not be marked to indicate the proper connection to the grounded conductor. If the terminals on utilization devices, including single-pole switches are marked, the switch shall not be placed in the identified side of the circuit.

h. The terminals of portable devices need not be marked for identification.

i. Devices, to the terminals of which only one side of the line is connected, need not have terminals marked for identification.

j. Rosettes, attachment plug receptacles without screw shells, and attachment plug caps need not have their terminals marked for identification. When terminals of polarized receptacles for attachment plugs and attachment plug caps are marked for identification, the terminal intended for connection to the grounded wire shall be the marked terminal.

k. Three-wire attachment plug receptacles and three-wire attachment plug caps in which one terminal may be used for the connection of a grounding conductor, shall have such terminal identified in a manner differing from that specified in paragraph m of this section.

l. In the case of devices with Edison screw shells, the identified terminal shall be the one connected to the screw shell. This does not apply to screw shells which serve as plug fuse receptacles.

m. The marking of terminals shall be done by means of a metallic plated coating substantially white in color, as nickel or zinc, or the terminals may be of material substantially white in color. The other terminals shall be of a readily distinguishable difference in color.

n. In the case of screw shell devices with attached leads, the wire attached to the screw shell shall have white or natural gray finish. The finish of the braid on the other conductor shall be of a solid color that will not be confused with the white or natural gray finish which is to indicate the grounded conductor.

o. The maker's name, trademark or other identification symbol shall be placed on fittings and materials, together with such other markings giving voltage, current, wattage or other appropriate ratings as are prescribed elsewhere in this code.

ARTICLE 3. OUTSIDE SUPPLY LINES.

301. Line Wires.

- a. Line wires shall be so placed that moisture is not liable to form a cross connection between them. They shall not be in contact with anything but their supports. They shall be not less than one foot apart except when in conduit or multiple-conductor cable or on approved racks or brackets.
- b. Line wires shall be at least eight feet above the nearest point of buildings over which they pass, and if attached to roofs the roof structures

shall be substantially constructed. Wherever feasible, wires crossing over buildings shall be supported on structures which are independent of the buildings.

302. Joint Lines.

- a. Electric light and power wires shall not be placed on the same cross-arm with telegraph, telephone or other signal wires which enter any building. An exception is made for wires used only for operating purposes by an operating utility and entering buildings used for such purposes. When placed on the same pole with such wires the distance between the two inside pins of each cross-arm shall be not less than 24 inches for circuits operating at a potential to ground not exceeding 300 volts, and shall be not less than 30 inches for higher potentials.
- b. The grounding of metallic sheaths of cables shall conform to the requirements of article 9 of this code.

303. Trolley Wires.

- a. Trolley wires shall be doubly insulated from the ground, wooden poles being considered as one insulation.
- b. Trolley wires and feeders shall be provided with switches which will either disconnect them from the power station, or will so sectionalize them that they may be rendered dead in case of fire along the route.

304. General.

Accidental crosses between different conductors on the same or different pole lines may allow the higher-voltage currents concerned to enter buildings over the lower-voltage conductors over a large section of adjoining territory.

Overhead conductors, if carried close to buildings, tend to hamper the work of firemen in case of fires in the buildings if the raising of ladders is a part of the fire fighting methods employed. With the higher-voltage lines this hampering effect is greater.

It is fully understood that it is impracticable to include in this code rules which will cover in detail all conceivable cases that may arise in overhead line work of such an extended and varied nature, and it is recommended that the inspection department be freely consulted as to the specific methods to be followed in any case of doubt, and that the rules of the National Electrical Safety Code, part 2, be followed.

a. In arranging routes for overhead conductors every reasonable precaution shall be taken to secure locations likely to be permanently useful for the circuits concerned and for necessary developments, including the limitation of present and future proximity to other electrical circuits or other pole lines and the appropriate strength, clearances and separations for the proximity concerned.

b. When separate pole lines are carried in nearer proximity than a distance equal to the height of the taller pole line, or where joint poles are used, the appropriate precautions to limit liability of contact shall include the use of wires, cross-arms, pins, insulators, conductor fastenings and poles of appropriate strength. In each such case the minimum clearances and strength shall be those required by the construction rules of the National Electrical Safety Code, part 2.

c. Open wires of less than 7500 volts between conductors shall be at least three feet horizontally from buildings unless 8 feet higher than the roof. Open wires 7500 volts or more between conductors shall not be installed over buildings other than central stations, sub-stations and transformer vaults. Open wires of voltages between 7500 and 15,000 volts between conductors shall be kept at least 8 feet horizontally, and open wires of more than 15,000 volts between conductors shall be kept at least 10 feet horizontally, from all buildings except those which they serve or central stations, sub-stations and transformer vaults.

d. Where buildings exceed three stories, or 50 feet in height, overhead lines shall be arranged where practicable so that a clear space (or zone) at least 6 feet wide will be left either adjacent to the buildings or beginning not over 8 feet from them, to facilitate the raising of ladders when necessary for fire fighting.

e. Where the lines approach to within 25 feet of a building they shall be so placed that their height from ground will equal the height of the cornice of the building. For closer approach, the heights shall conform to the following table:

Distance of Wire from Building	Elevation of Wire Above Cornice of Building'
Feet	Feet
25	0
20	2
15	4
10	6
5	8

It is evident that where the roof of the building continues nearly in line with the walls, as in Mansard roofs, the height and distance of the line must be reckoned from some part of the roof instead of from the cornice.

ARTICLE 4. SERVICES.

401. General.

a. Wires shall not be so interconnected as to form a shunt around any street fuse or switch.

b. No overhead service, no underground service from a subway, and no service from an isolated plant shall supply more than one building except under one of the following conditions:

- 1. In properties and buildings under single occupancy or management;
- 2. If the service wires are kept out of all buildings but those served; Conductors in conduit or duct placed under 2 inches of concrete beneath a building, or buried in 2 inches of brick or concrete within a wall, are considered outside the building.
- 3. By special permission.

402. Overhead, from Main to Building.

a. Approved weatherproof or approved rubber covering shall be employed on single wires, and approved rubber covering on multiple-conductor cables. Wires shall not be smaller than No. 10 if of soft copper, or smaller than No. 12 if of medium or hard-drawn copper.

b. Wires or cables shall not approach nearer than 8 feet to buildings over which they pass, and, if attached to roofs thereof, shall be supported on substantial structures.

It is recommended that wires passing over a building be supported on structures which are independent of the building.

c. When a service from overhead supply wires to a building is carried underground, the portion of the wires underground and running up the pole to a point at least 8 feet above the ground shall be lead-covered and suitably protected from mechanical injury.

403. On Exterior of Building.

a. Wires or cables which are liable to contact with awnings, swinging signs, shutters or other movable objects shall be enclosed in approved conduit made weatherproof.

b. Wires or cables exposed to the weather shall be supported on petticoat insulators placed at intervals not exceeding 15 feet, this interval being decreased if the wires are subject to disturbance; and the insulators shall be so designed or located as to hold individual wires at least 1 foot apart and at least 2 inches from the surface wired over; provided, however, that brackets, racks, supports or insulators especially approved for the location may be used if they separate individual wires at least 6 inches and are placed at intervals not exceeding 9 feet.

c. Multiple-conductor cables shall be kept at least 6 inches from adjacent woodwork and at least 12 inches from overhanging projections of combustible material, unless approved fittings which afford equivalent protection are used.

d. Wires not exposed to the weather may be supported on glass or porcelain knobs placed at intervals not exceeding 4 1/2 feet and retaining the wires at least 1 inch from the surface wired over. Weatherproof or rubber covering shall be employed on conductors thus run.

404. Entrance.

a. All service wires shall enter the building at a point as near as practicable to the location of the service switch. They shall be rubber-covered from the point of support on the outside of the building nearest the entrance to the service switch and cutout, and shall not be smaller than No. 10.

It is recommended that conductors entering buildings from overhead lines be encased in approved rigid metal conduit having weatherproof threaded joints and equipped with approved service head, and that all wires of same circuit be placed in the same conduit. (See section 503, table 1, for number and size of conductors permitted in service conduit.)

b. The inner end of service conduit shall enter a terminal box or service switch cabinet, or be made up directly to an equivalent device enclosing all live metal parts, but need not be electrically connected to it if free from metallic contact with the ground, and, if necessary, isolated or guarded.

c. Where conduit is not used, drip loops shall be formed on the individual wires which shall then pass upward and inward through slanting non-combustible, non-absorptive, insulating tubes.

d. Where a conduit enters from an underground distribution system, the end within the building shall be sealed with suitable insulating compound so as to prevent the entrance of moisture and gases.

e. In services operating at more than 600 volts, all ungrounded conductors shall, except as provided below, be controlled and protected by an automatic overload circuit-breaker which shall be of suitable rupturing capacity and which shall be located as near as possible to the point where the service enters the building and so that the point from which it is opened or closed will be readily accessible. Each service lead shall have an air-break disconnecter which will disconnect from the supply line all apparatus within the building. If the service does not supply, at the primary voltage, any equipment not contained in a fireproof transformer vault or if it enters only a detached transformer house or inclosure, then suitable disconnectors and suitable fuses may be used and may be installed in the transformer inclosure. If in such cases the voltage does not exceed 2300 volts to ground and the installed transformer capacity does not exceed 50 k.v.a. per phase, suitable fuses without disconnectors may be installed in the transformer inclosure. In all cases where automatic overload circuit-breakers are not installed in the primaries and arranged so that they may be tripped manually from a readily accessible point outside of the transformer vault or inclosure, suitable circuit-breakers or switches and suitable fuses shall be provided in the secondaries as required for low-voltage services elsewhere in this article. Air-break disconnectors and fuses shall be accessible only to qualified attendants.

405. Service Equipment, within Building.

a. In this section the word "switch" shall be construed as including a circuit-breaker that is capable of manual operation.

b. A switchboard, panelboard, oil switch, or an approved cabinet containing a service switch, shall be placed at the nearest readily accessible point to the entrance of the service, either within the building or outside the building wall in a location protected from the weather. Outside service cabinets shall be of an approved weatherproof type.

c. A service switch shall be provided which shall indicate plainly whether it is open or closed. This switch shall be installed in one of the following ways:

1. As an air-break or oil-immersed switch inclosed in a grounded metal case;
2. As an air-break or oil-immersed switch mounted on a switchboard or panelboard which is accessible to qualified persons only.

d. The service switch shall interrupt all conductors of the circuit and disconnect all devices within the building except that:

1. Where the switch, fuses and meter are combined in an approved device or compact combination of such devices having no live parts or wiring exposed, and capable of being sealed or locked, the switch may be so connected that it will not disconnect the fuses or the meter from the supply line; and the potential coils of the meter may be connected on the supply side of the service cutout;
2. Where the switch and fuses are mounted in an approved cabinet having no live parts or wiring exposed and capable of being sealed or locked, the switch blade may be omitted in any grounded conductor if other means is provided within the cabinet for disconnecting such conductor.

e. An enclosed service switch shall be externally operable unless additional switches are provided for control of individual circuits, as recommended below.

It is recommended that where the current of a single circuit, or group of circuits, is separately metered, as in apartment house installations, a switch and cutout be installed to control each such separately metered installation, the switch and cutout being enclosed and the switch being externally operable. The location of this switch and cutout may, or may not, be close to the meter.

f. A switch controlling a 3-wire direct-current or a single-phase system may be so designed that one outside conductor can be opened without opening the other.

g. A fuse or automatic overload circuit-breaker shall be placed in each ungrounded service conductor. When fuses are used they shall be controlled by the service switch except when they are located at the outer end of the service conduit or as provided in paragraph d (1) of this section.

h. No fuse or circuit-breaker shall be placed in a grounded service wire except a circuit-breaker which simultaneously opens all conductors of the circuit.

i. Where not located on a switchboard, live parts of cutout bases or circuit-breakers shall be enclosed.

j. An automatic overload circuit-breaker may be used in place of both service switch and fuse and when not subject to competent supervision shall be of a type specially approved for service conditions.

k. In properties having generating plant or which are served by a master service, the wires running from building to building shall not be considered as service wires, so that fuses or circuit-breakers will not be required where these wires enter buildings, provided the fuse or circuit-breaker next back on the line properly protects the wires within the buildings.

l. Where a group of buildings is supplied from one service or generating plant, provision shall be made so that the service to any one of the buildings may be disconnected. This may be accomplished by a disconnecting switch within the building served or by a feeder switch.

406. Hazardous Locations.

a. Service entrance equipment shall not be located in the extra-hazardous locations described in paragraph b of section 3201 of this Code. If placed where combustible dust or flyings are liable to be present in sufficient quantities to produce an explosive or flammable mixture, such equipment shall be totally inclosed in grounded metal cabinets or cases, with provision for external control only or shall be located in a fire-resistive room provided with a self-closing door.

ARTICLE 5. WIRING METHODS.

501. Open Wiring.

a. Supports shall be composed of approved non-combustible, non-absorptive insulating material, free from checks, rough projections or sharp edges which might injure the insulation on the conductor. If the supports are designed to grip the wires, either screws or nails may be used to fasten the supports in place, but nails shall be long enough to penetrate the woodwork not less than 1/2 the depth of the knob and fully the thickness of the cleat. Cushion washers shall be used with nails.

b. Supports shall provide at least 1/4 inch separation between the securing screw or nail and the wire, and shall be designed for two securing screws if of the split knob (or single-wire cleat) type intended for wires larger than No. 4.

c. Multiple-wire cleats shall be so designed as to separate the wires at least 2 1/2 inches and maintain them at least 1/2 inch from the surface wired over. Such cleats shall not be employed to support wires operating at a potential exceeding 300 volts.

d. Knobs shall be so designed as to maintain the wire at least 1 inch from the surface wired over, and shall conform to the following minimum dimensions.

Size of Wire Inclusive	Size of Base, Inches			Solid Knobs		*Split Knobs Inches
	Circular Diameter	Square or Single Wire Cleats Width	Knobs Length	Depth	Groove Inches Diam.	
14-10	1 1/8	3/4	1 3/4	3/16	7/8	7/8
8-4	1 1/2	1	2	3/16	5/8	5/8
2-00	2	1 1/2	2 1/4	3/16	5/8	5/8
000-3,000,000 C. M. }	2 1/2	1 1/2	2 3/4	3/16	5/8	7/8
400,000-1,000,000 C. M. }	3	1 1/2	3 3/4	3/16	1 1/4	1

*Thickness of cap from top of wire groove.

e. Tubes and bushings shall conform to the following minimum dimensions:

Diameter of Hole Inches	External Diameter Inches	Thickness of Wall Inches	External Diameter of Head, Inches	Length of Head Inches
3/16	3/8	1/16	1 1/2	1/2
3/8	1/2	1/16	1 3/4	1/2
1/2	5/8	1/16	2	1/2
5/8	3/4	1/16	2 1/4	1/2
3/4	7/8	1/16	2 1/2	1/2
1	1 1/8	1/16	2 3/4	1/2
1 1/8	1 1/4	1/16	3	1/2
1 1/4	1 3/8	1/16	3 1/4	1/2
1 1/2	1 5/8	1/16	3 1/2	1/2
1 3/4	2	1/16	3 3/4	1/2
2	2 1/4	1/16	4	1/2
2 1/4	2 3/4	1/16	4 1/4	1/2
2 1/2	3	1/16	4 1/2	1/2

An allowance of 1/64 of an inch for variation in manufacturing will be permitted, except in the thickness of the wall.

f. Wires located in dry places shall be of approved rubber-covered (R), slow-burning weatherproof (SBW), varnished cloth insulated (VC) or slow burning (SB) type.

g. Wires located in damp places or in buildings especially subject to moisture shall be of the rubber-covered type. Wires subjected to corrosive vapors shall be of the weatherproof, varnished cloth or rubber-covered type, as may be directed by the inspection department. Where the environment is such that rapid deterioration of conductors or insulation is probable, the inspection department may require the wires to be suitably enclosed, coated or otherwise protected to better withstand the particular conditions of service.

h. Wires shall not be laid in plaster, cement or similar finish, nor fished for any great distance or where the inspector cannot satisfy himself that the rules have been complied with. Wires shall not be fastened with staples.

i. Twin wires shall not be used, except in conduit or where flexible conductors are necessary.

j. Wires of No. 8 or larger supported on solid knobs shall be securely tied thereto. If wires are used for typing, they shall have an insulation of the same type as that of the wires which they confine.

k. Wires in dry places shall be rigidly supported and for voltages not exceeding 300 volts shall be separated 2 1/2 inches from each other and 1/2 inch from the surface wired over. For voltages from 301 to 600 volts the wires shall be separated 4 inches from each other and 1 inch from the surface wired over. In damp places a separation of at least 1 inch from the surface wired over shall be maintained for all voltages.

Rigid supporting requires under ordinary circumstances, when wiring over flat surfaces, supports at least every 4 1/2 feet, this interval being shortened if the wires are liable to be disturbed. In buildings of mull construction, mains not smaller than No. 8, where not liable to be disturbed, may be separated about 6 inches and run direct from timber to timber, being supported from each timber only.

l. Wires shall not be dead-ended at a rosette, socket or receptacle unless the last support is within 12 inches of the same.

m. Wires exposed to mechanical injury shall be suitably protected by running boards not less than 1/2 inch in thickness and 3 inches in width, or by guard strips not less than 3/8 inch in thickness and at least as high as the insulating supports, placed on each side of and close to the wiring.

Protection may also be secured by resorting to another method of wiring, such as approved conduit or armored cable. This is desirable when crossing floor timbers.

n. Wires in vertical conduits shall be supported at the following intervals:

No. 14	No. 0	Not greater than 100 feet.
No. 00	No. 0000	" " " 80 "
No. 0000	350000 C. M.	" " " 60 "
350001 C. M.	500000 C. M.	" " " 50 "
500001 C. M.	750000 C. M.	" " " 40 "
	above 750000 C. M.	" " " 35 "

The following methods of supporting cables are recommended:

1. By approved clamping devices constructed of or employing insulating wedges inserted in the ends of the conduits.
 2. By inserting junction boxes at the required intervals in which insulating supports of approved type are installed and secured in a satisfactory manner to withstand the weight of the conductors attached thereto, the boxes being provided with covers.
 3. In approved junction boxes, by deflecting the cables not less than 90 degrees and carrying them horizontally to a distance not less than twice the diameter of the cable, the cables being carried on two or more insulating supports, and additionally secured thereto by tie wires if desired.
- o. Vertical wires of No. 2 or larger, shall not be deflected where they enter or leave a cabinet; provided, however, that wires of No. 2 to 250000 C. M. inclusive, if brought into a cabinet or box opposite the panel lugs in which they terminate, may be deflected sufficiently to permit their attachment to these lugs, if the gutter of the cabinet is not less than 4 inches in width.

504. Other Wire Raceways.

- a. Raceways shall be used only in exposed dry locations and where the maximum difference of potential between wires therein does not exceed 300 volts. They shall not be placed in elevator shafts.
- b. Wooden raceways shall be coated, externally and internally, with 2 layers of waterproofing, or shall be impregnated with a moisture repellent. The raceway shall be composed of two parts, a backing and a capping and shall afford suitable protection against abrasion of wires. It shall be so constructed as to thoroughly encase the wire, having a barrier of not less than 1/2 inch in thickness between wires, and having exterior walls which under grooves shall be not less than 3/8 inch in thickness and on sides not less than 1/4 inch in thickness.

It is recommended that only hardwood be used.

c. Metal raceways shall be of such construction as will distinguish them from metal conduit. All surfaces of raceway, elbows, bends and similar fittings shall be suitably protected from corrosion.

d. Metal raceways and their elbows, couplings and similar fittings shall be so designed that the sections can be electrically and mechanically coupled together, while protecting the wires from abrasion. Holes for screws or bolts inside the raceway shall be so designed that when screws or bolts are in place their heads will flush with the metal surface.

e. Wires shall be of approved rubber-covered type, and shall be continuous from outlet to outlet, or from fitting to fitting, no joints or taps being located in the raceway proper.

f. Not more than 4 No. 14 wires, nor any circuit protected by fuses larger than 20 amperes at 125 volts or 10 amperes at 250 volts, shall be placed in any metal raceway.

g. Where alternating current is to be employed in connection with metal raceway work, all wires of a circuit shall be placed in one raceway.

It is recommended that this course be pursued in the case of direct current also, in order to obviate induction troubles if a change is made to alternating current at some later date.

h. Metal raceway shall be continuous from outlet to outlet, or from approved fitting to approved fitting. It may be extended through dry walls or dry partitions if in unbroken lengths where passing through; but, where the wall or partition is damp, or where the raceway passes through a floor, an iron pipe sleeve shall be placed over the raceway and shall extend clear of either side of the wall or partition, or from the ceiling below to a point at least 3 inches above the flooring. Where protection from mechanical injury is necessary, the iron pipe sleeve shall extend to a point at least 5 feet above the flooring.

i. Metal raceways shall be grounded as prescribed in article 9 of this Code, and at a point as near as practicable to the source of supply; provided, however, that this requirement shall not apply to isolated raceway runs not exceeding 25 feet, when these runs are free from metallic contact with the ground and from adjacent grounded metal and are guarded when within reach from grounded surfaces.

j. When combination metal raceways are used both for signal and for lighting and power circuits, the different systems shall be run in separate compartments and the same relative position of compartments shall be maintained throughout the premises, in which case the provisions of paragraph j, section 503, and of paragraphs a to d inclusive, section 6003, of this Code shall be considered as having been observed. When such combination metal raceways are used, ten No. 14 wires shall be permitted in the compartment for light, heat and power circuits. In all other respects, the provisions of this section covering single compartment raceways, shall apply.

505. Armored Cable.

a. Wires of armored cables shall be of rubber-covered type. The armored cable shall carry a distinctive marker throughout its entire length.

b. Where alternating current is to be employed, all conductors of a circuit shall be contained within one armor; provided, however, that concealed extensions from branch circuit outlets in buildings of fireproof construction may be made by means of single, double or triple conductor armored cable with suitable fittings at outlets. This cable shall not be run in concealed spaces but may be laid on the face of the fireproofing and may be plastered over. Such extensions shall be confined to the room or suite in which they originate.

It is recommended that in the case of direct current also all conductors of a circuit be placed within one armor, in order to obviate induction troubles if a change is made to alternating current at a later date.

c. Cable shall be continuous from outlet to outlet, or from fitting to fitting, and the armor shall be mechanically connected to all fittings, the entire cable system being securely fastened in place.

Ordinarily, this involves carrying service cables and house cables into the cut-out box or cabinet, but the requirement may be waived in the case of an underground service.

It is recommended that for all sidewall and partition outlets in concealed work in new buildings under construction outlet boxes having a depth of approximately 1 1/2 inches be provided.

d. A lead sheath shall be interposed between the outer braid and the steel armor where cable is installed in so-called fireproof buildings in course of construction or in such buildings when completed if the cable will be exposed to moisture, or where the cable is exposed to the weather, or in breweries, stables or other damp places; provided, however, that the lead sheath shall not be required if the cable is laid against a brick wall or laid within an ordinary plaster wall, unless these walls are continuously damp.

e. All bends shall be so made that the armor of the cable will not be injured, and the radius of the curve of the inner edge of any bend shall not be less than 1 1/2 inches.

f. The armor shall be grounded as prescribed in article 9 of this Code, and at a point as near as practicable to the source of supply; provided, however, that this requirement shall not apply to service runs of any length or to isolated cable runs not exceeding 25 feet, when these runs are free from metallic contact with the ground and from adjacent grounded metal and are guarded when within reach from grounded surfaces.

506. Decorative Lighting Systems.

a. Temporary installations of approved systems of decorative lighting shall be used only when permission therefor has been granted by the inspection department and where the difference of potential between the wires of any circuit does not exceed 150 volts and where the number of outlets and lamps connected to them is in no case such as to place more than 15 amperes on a branch circuit fuse.

507. Insulation Resistance.

a. A completed installation shall have a resistance between conductors, and between all conductors and ground, not less than:

Up to	5 amperes	4,000,000 ohms
10	"	2,000,000 "
" 25	"	800,000 "
" 50	"	400,000 "
" 100	"	200,000 "
" 200	"	100,000 "
" 400	"	50,000 "
" 800	"	25,000 "
" 1,600	"	12,000 "

b. The above values shall be determined with all cutouts and safety devices in place. If lamp sockets, receptacles, fixtures and other appliances are also connected, the minimum resistance required shall be one half that specified in the table.

ARTICLE 6. CONDUCTORS.

601. Classification and Construction.

a. Wires, cables and cords of all kinds except weatherproof wire shall have a distinctive marking the entire length of the coil so that they may be readily identified in the field. All wires, cables and cords shall also be plainly tagged or marked as follows:

1. The maximum working pressure or voltage for which the wire was tested or approved. This may be omitted for slow-burning, slow-burning weatherproof, and weatherproof wires.
2. The words "National Electrical Code Standard."
3. Name of the manufacturing company and, if desired, trade name of the wire.
4. Month and year when manufactured. This may be omitted for slow-burning, slow-burning weatherproof, and weatherproof wires.
5. The proper type letter for the particular style of wire or cable as given in the following sections for each type of insulation.

b. Conductors, whether solid or stranded, shall not be of smaller size than No. 14 except as allowed for fixture work and for flexible cords.

c. Conductors, whether solid or stranded, shall not be of smaller size than No. 14 except as allowed for fixture work and for flexible cords.

602. Rubber-covered Wire.

a. Classification.

R	..... Rubber covered for voltages	0-600
R15	..... " " " max. voltages	1500
R25	..... " " " "	2500
R35	..... " " " "	3500
R50	..... " " " "	5000
R70	..... " " " "	7000
RL	..... Rubber-covered, leaded.	
AC	..... Wires for use in armored cable.	
ACL	..... Leaded wires for use in armored cable.	

b. All National Electrical Code Standard rubber-covered wires shall be examined and tested at the factory and shall be labeled before shipment.

c. All conductors and the individual wires of stranded conductors shall be tinned.

d. Conductors shall be insulated for their entire length with a properly applied and properly vulcanized rubber compound. The insulation shall be of the nominal thickness given in the following table, the requirements of which vary according to the sizes of conductors and the maximum working pressure.

Table of Thickness of Rubber Insulation for Rubber-covered Wires and Cables in 64th Inches.

American or B. & S. Gauge	Size of Conductor	Type					
		R	R-15	R-25	R-35	R-50	R-70
		For Working Pressures	For Working Pressures	For Working Pressures	For Working Pressures	For Working Pressures	For Working Pressures
		600	1500	2500	3500	5000	7000
		Volts	Volts	Volts	Volts	Volts	Volts
		3	6	8	10	12	16
		4	7	9	10	12	16
		5	8	10	10	12	16
		6	9	10	11	12	16
		7	10	10	12	12	16
		8	10	10	12	14	18

*The second column above refers to wires and cables having standardized stranding as given in Table II of section 610. The first column refers to solid conductors and to wires and cables stranded otherwise than in Table II.

For installation rules, see Article 5 of this code.

e. All single conductor rubber-covered wires and cables shall have a covering of fibrous material applied directly to the surface of the insulating wall. For any single conductor wire there shall be at least one braid for sizes from No. 14 to and including No. 8. For all single-conductor cables larger than No. 8 there shall be at least two braids or a tape and a braid. For twin wires and twisted pair wires and for all multiple conductor cables there shall be a fibrous covering on each individual wire and in addition a braid enclosing the bunched conductors. For certain special service conditions, one or more additional coverings of fibrous material or of lead may be required. Fibrous coverings may be either braid or tape, but tape shall not be used for the final outer covering. All braids shall be impregnated with a moisture-proof compound.

f. Lead coverings may be applied to single or multiple conductors. Lead-covered multiple conductor cable with more than two conductors shall, in all cases, have the conductors spirally laid. In all cases, the individual conductors of lead-covered cable shall have a fibrous covering and, except for two conductor cables with conductors parallel, there shall be a fibrous covering over bunched conductors.

g. For conductor sizes No. 8 and smaller the neutral conductor on all 3-wire circuits and one conductor on all 2-wire circuits shall have a continuous identifying marker readily distinguishing it from the other conductors. For rubber-covered wire the identification shall consist of a white or natural gray covering. When one of the circuit wires is to be grounded, the ground connection shall be made to this identified wire.

603. Flexible Cords.

a. All National Electrical Code Standard rubber-covered flexible cords shall be examined and tested at the factory and shall be labeled before shipment.

b. Each conductor shall have a carrying capacity not less than that of a No. 18 wire.

c. The insulation, except for heater cord (Type H), shall consist of a properly applied and properly vulcanized rubber compound of the nominal thickness given in the following table:

Gauge	Thickness, Inches
18 and 16	1/32
14 to 8	3/64

Exceptions: For Types PO, P and PWP with conductors of No. 18 gauge, the rubber insulation may be 1/64 inch in thickness. When Type PO cord has 1/64 inch insulation its use shall be confined to portable lamp fixtures.

When used where the voltage between any two conductors or from any conductor to the ground is over 300 volts, the insulation on flexible cords shall be at least 1/64 inch in thickness for all conductor sizes No. 8 or less, except where Type S cord is used.

d. Each conductor shall, except for heater cord and hard-service cord, be covered with a tight, close wind of fine cotton, or some other method shall be employed to prevent a broken strand puncturing the insulation. Cords of the several types shall conform to the descriptions given in subparagraphs 1-11 inclusive and the table following:

- (Type C.) For general use as pendants in dry places: as portables for use where not exposed to hard usage.
- (Types CB and CC.) These cords should hang freely in air.
- (Type P.) For No. 18 conductors, rubber insulation on this type of cord may be 1/64 inch in thickness.
- (Types PD and PO.) These cords are for use only in offices, dwellings and similar places where not liable to hard usage. When Type PO cord has 1/64 inch insulation its use shall be confined to portable lamp fixtures.
- For Type PD the conductors are twisted together; for Type PO the conductors are laid parallel under the outer braid.
- (Type PWP.) For No. 18 conductors, rubber insulation on this type of cord may be 1/64 inch in thickness.
- (Type E.) For elevator lighting this cord consists of conductors not smaller than No. 14 and for elevator control of conductors not smaller than No. 16.
- (Type SJ.) For general use pendant or portable in wet or dry locations.
- (Type S.) For general use pendant or portable in wet or dry locations and where extra hard service conditions exist, including theatre stages, elevator lighting and control cables and garages.
- (Types SJ and S.) The rubber compounds for the insulation and jacket on these cords is of superior quality.
- (Type H.) For Portable Heating Apparatus: This cord is for use with all smoothing and sad-irons and with other heating devices requiring over 250 watts. The covering may consist of a layer of rubber or other approved material, a covering of asbestos and an outer braid enclosing either all the conductors as a whole, or each conductor separately.

As Pendants or Portables in Dry Places Where not Subject to Hard Usage

Type	Trade Name	Braid on Each Conductor	Reinforcement or Filler	Outer Cover
C	Lamp Cord	Cotton or Silk		
PD	Twisted Portable	" "		Cotton or Silk
PO	Parallel Cord	" "		" "
SJ	Type SJ	No Braids	Spec. Rub. Jkt.	No Outer Braid

For Hard Usage

Type	Trade Name	Cotton or Silk	Rubber Jkt.	Cotton or Silk
P	Reinforced Cord	Cotton or Silk	Rubber Jkt.	Cotton or Silk
S	Hard Service Cord	No Braids	Spec. Rub. Jkt.	No Outer Braid
CA	Armored Cord	Cotton or Silk		Armor
PA	Armored Reinf. Cord	" "	Rubber Jkt.	Cotton and Armor

Pendants—Damp Places

Type	Trade Name	Cotton Wp.	No Outer Braid
CB	Brewery Cord	Cotton Wp.	
CC	Canvasite Cord	" "	Cotton Wp.
S	Hard Service Cord	No Braids	No Outer Braid
SJ	Type SJ	" "	" "

Portable—Damp Places

Type	Trade Name	Cotton	Rubber Jkt.	Cotton Wp.
PWp	Reinf. Cord Wp.	Cotton	Rubber Jkt.	Cotton Wp.
Pkwp	Packinghouse Cord	" "	Filler	2 Cotton both Wp.
PAWp	Armored Reinf. Cord Wp.	" "	Rubber Jkt.	Cotton Wp. and Armor
S	Hard Service Cord	No Braids		No Outer Braid
SJ	Type SJ	" "	" "	" "

Theatre Stages

Type	Trade Name	Cotton Wp.	2 Cotton, both Wp.
Pkwp	Stage Cable	Cotton Wp.	2 Cotton, both Wp.
S	See Type S above	" "	" "

Theatre Borders

Type	Trade Name	Cotton Wp.	2 Cotton, both Wp.
B	Border Light Cable	Cotton Wp.	2 Cotton, both Wp.

Elevator Lighting and Control

Type	Trade Name	Cotton	Rubber Jkt.	1 or more Cotton both Wp.
E	Elevator Cable	Cotton	Rubber Jkt.	1 or more Cotton both Wp.
S	See Type S above	" "	and or	3 Cotton, outer one Wp.

Portable Heaters

Type	Trade Name
H	Heater Cord

See also further descriptions subparagraphs 1-11 incl. of paragraph d, above.

e. Other types of coverings shall be submitted for special examination and shall be approved before being used.

f. When polarity marking of flexible cords is provided, one conductor shall have a continuous identifying marker readily distinguishing it from the other conductors. This marker shall be a tracer in the braid of any color contrasting with that of the braid or, in the case of cords having no braids the insulation of one conductor shall be of a color readily distinguishing it from the other conductors.

604. Fixture Wire. Types F-32 and F-64.

For construction and installation of fixtures, see article 14.

a. Fixtures shall be wired with approved flexible cord or approved rubber-covered wire; provided, however, that in wiring fixtures where the insulation will be subjected to temperatures in excess of 120 degrees F. (49 degrees C.), wires having approved slow-burning or other heat-resisting coverings shall be used.

b. All National Electrical Code rubber-covered fixture wire shall be examined and tested at the factory and shall be labeled before shipment.

c. The conductors of fixture wires may be either solid or stranded but shall not be smaller than No. 18 gauge. If stranded conductor is used each conductor shall be covered with a tight close wind of fine cotton or some other method shall be used to prevent a broken strand puncturing the insulation. Solid conductors shall be tinned.

d. The insulation shall consist of properly applied and properly vulcanized rubber compound. The thickness of insulation shall be not less than 1/64 inch for No. 18 wire and not less than 1/2 inch for No. 16.

3. Coverings shall be of braided cotton or silk or of other approved material and shall be sufficiently tenacious to withstand abrasion when being pulled into fixtures.

605. Armored Cables and Cord. Types AC, CA, PA and PAWP.

For installation of armored cable see section 505.

606. Varnished Cloth Insulated Wire. Type VC.

For installation see article 5.

607. Slow-burning Weatherproof Wire. Type SBW.

For installation, see article 5. This insulation is not as burnable as weatherproof, nor as subject to softening under heat. It is not suitable for outside work.

a. The insulation shall consist of two coatings, one to be fireproof and the other weatherproof. The fireproof coating shall be on the outside and shall comprise about six-tenths of the total thickness of the wall.

b. The thickness of the completed covering shall be not less than that prescribed in section 602 of this code for rubber insulation of 0-600 volt rubber-covered wires.

608. Slow-Burning Wire. Type SB.

For installation, see article 5. This insulation is especially useful in hot, dry places where ordinary insulations would perish, and where wires are bunched, as on the back of a large switchboard or in a wire tower, so that the accumulation of rubber insulation would result in an objectionable large mass of highly inflammable material.

609. Weatherproof Wire. Type WP.

For installation, see article 5. This wire is for use outdoors, where moisture is certain, and where fireproof qualities are not necessary.

610. Carrying Capacities of Conductors.

a. The following tables, giving the allowable carrying capacities of copper wires and cables of 98 per cent. conductivity, according to the standard adopted by the American Institute of Electrical Engineers, shall be followed in placing interior conductors.

b. For insulated aluminum wire the allowable carrying capacities shall be taken as 81 per cent. of those given in the table for the respective sizes of copper wire with the same kind of insulation.

c. Conductors of size Nos. 18 and 16 shall be used only for flexible cords and for fixture wires.

d. Conductors may be placed in multiple only by permission of the inspection department.

e. Varnished cloth insulated wires smaller than No. 6 shall be used only by permission of the inspection department.

TABLE I. ALLOWABLE CARRYING CAPACITIES OF WIRES.

R. & S. Gauge	Diameter of Solid Wires, Mils	Area in Circular Mills	Table A	Table B	Table C
			Rubber Insulation Amperes	Varnished Cloth Insulation, Amperes	Other Insulation Amperes
18	40.3	1,624	3	5	5
16	50.8	2,583	6	10	10
14	64.1	4,107	15	18	20
12	80.8	6,530	20	25	25
10	101.9	10,380	25	30	30
8	128.5	16,510	35	40	50
6	162.0	26,250	50	60	70
5	181.9	33,100	55	65	80
4	204.3	41,740	70	85	90
2	229.4	52,830	80	95	100
2	257.6	66,370	100	110	125
1	280.3	83,690	120	130	150
0	325.	105,500	125	150	200
00	364.8	133,100	150	180	225
000	409.6	167,800	175	210	275
		200,000	200	240	300
0000	460.	211,600	225	270	325
		250,000	250	300	350
		300,000	275	330	400
		350,000	300	360	450
		400,000	325	390	500
		500,000	400	480	600
		600,000	450	540	680
		700,000	500	600	760
		800,000	550	660	840
		900,000	600	720	920
		1,000,000	650	780	1,000
		1,100,000	690	830	1,080
		1,200,000	730	880	1,150
		1,300,000	770	920	1,220
		1,400,000	810	970	1,290
		1,500,000	850	1,020	1,360
		1,600,000	890	1,070	1,430
		1,700,000	930	1,120	1,490
		1,800,000	970	1,160	1,550
		1,900,000	1,010	1,210	1,610
		2,000,000	1,050	1,260	1,670

1 Mil = 0.001 inch.

TABLE II. STANDARDIZED STRANDING.

Strands		Cable		Allowable Carrying Capacities, Amperes Table B		
No. of Strands	B. & S. Mills Dia.	Area in Cir. Mils	Outside Dia. over Copper	Table A Rubber Insulation	Table B Cloth Insulation	Table C Other Insulation
7/25	22	4,490	.075	15	18	20
7/32	20	7,150	.096	20	25	25
7/40	18	11,370	.120	25	30	35
7/51	16	18,080	.153	35	40	50
7/64	14	28,740	.192	50	60	70
7/81	12	45,710	.253	70	85	90
7/91	11	58,000	.273	80	95	110
7/102	10	72,680	.306	90	110	130
19/64	14	78,030	.320	100	120	150
19/72	13	98,380	.360	125	150	175
19/81	12	124,900	.405	150	180	210
19/91	11	157,300	.455	175	210	250
19/107	*	217,500	.540	225	270	325
19/114	9	248,700	.570	250	300	350
37/91	11	306,400	.637	275	330	400
37/97	*	347,500	.679	300	360	450
37/102	10	381,200	.714	325	390	500
37/116	*	484,300	.798	400	480	600
61/102	10	633,300	.918	475	565	700
61/107	*	698,000	.965	500	600	750
61/114	9	798,300	1.030	550	660	825
61/121	*	893,100	1.090	600	720	900
61/128	8	1,007,000	1.150	650	780	1000
91/114	9	1,191,000	1.250	725	870	1125
91/128	8	1,502,000	1.410	850	1020	1350
127/114	8	1,660,000	1.480	900	1100	1400
127/128	8	2,097,000	1.660	1100	1300	1700

*These individual strands are odd sizes not listed in the American or B. & S. Wire Tables.

611. General Requirements for Use of Conductors.

a. This article shall apply to wires, cables and cords generally, but the requirements of the other articles of this code shall be complied with as to the selection of conductors and the method of their installation and use in particular locations and classes of work.

b. No wires of size smaller than No. 14 shall be used except as permitted for fixture work and for flexible cords.

c. All splices and joints in conductors shall be made both mechanically and electrically secure without solder. The joints shall then be soldered unless made with some form of approved splicing device. All joints shall be covered with an insulation equal to that on the conductors.

d. Stranded wires, except in flexible cords, shall be soldered before being fastened under clamps or binding screws and, whether stranded or solid, when they have a conductivity greater than that of No. 8 shall be soldered into lugs for all terminal connections, except where an approved solderless terminal connector is used.

e. Wires shall be separated from contact with walls, floors, timbers or partitions through which they may pass by non-combustible non-absorptive insulating tubes, such as glass or porcelain, except at outlets where approved flexible tubing is required.

f. The bushings used shall be long enough to bush the entire length of the hole in one continuous piece, or else the hole shall first be bushed by a continuous waterproof tube. This tube may be a conductor, such as iron pipe, but in that case an insulating bushing shall be pushed into each end of it, extending far enough to keep the wire absolutely out of contact with the pipe.

g. Where not enclosed in approved conduit, raceways or armored cable, and where liable to come in contact with gas, water, or other metallic piping or other conducting material, wire shall be separated therefrom by some continuous and firmly fixed non-conductor creating a permanent separation.

h. In wet places wires shall be so placed that an air space will be left between conductors and pipes in crossing, and the former shall be run in such a way that they cannot come in contact with the pipe accidentally.

It is recommended that wires be run over, rather than under, pipes upon which moisture is likely to gather or which, by leaking, might cause trouble on a circuit.

i. Wires for electric light or power circuits shall not come nearer than 2 inches to any other unenclosed electric light, power or signal wire without being permanently separated therefrom by some continuous and firmly fixed non-conductor. The non-conductor used as a separator shall be in addition to the regular insulation on the wire. Where tubes are used, they shall be securely fastened at the ends to prevent movement along the wire. Departure from the requirements of paragraphs g, h, and i of this section may be permitted, where necessary, by the inspection department.

j. Where exposed to mechanical injury wires shall be suitably protected.

k. When crossing floor timbers in cellars or rooms where they might be exposed to injury, wires shall be installed in approved conduit or armored cable or be otherwise properly guarded. Where running boards are acceptable, they shall be not less than 1/2 inch in thickness and not less than 3 inches in width; where guard strips are acceptable they shall be not less than 3/8 inch in thickness and at least as high as the insulator, and shall be placed on each side of and close to the wires.

l. Protection on side walls shall extend not less than 7 feet from the floor and shall consist of substantial boxing, retaining an air space of 1 inch around the conductors, closed at the top, the wires passing through bushed holes; or approved metal conduit or pipe of equivalent strength may be used.

m. When metal pipe is used in short runs to protect wires the insulation of each wire shall be reinforced by approved flexible tubing extending from the insulator next beyond the pipe at one end to the insulator next beyond the pipe at the other end. The two or more wires of a circuit, each with its flexible tubing, if carrying alternating currents shall, or if direct current, may be placed within the same pipe.

In damp places the wooden boxing may be preferable because of the precautions which would be necessary to secure proper insulation if the pipe were used. With this exception, however, iron piping is considered preferable to the wooden boxing, and its use is recommended. It is especially suitable for the protection of wires near belts, pulleys, etc.

n. When run in unfinished attics, or roof spaces wires shall be considered to be concealed, and when run in close proximity to water tanks or pipes, wires shall be considered to be exposed to moisture. In un-

finished attics or roof spaces, wires shall be considered to be exposed to mechanical injury, and shall not be run on knobs on upper edge of joists, except that in inaccessible roof spaces where wires are run across joists, they may be supported on knobs on the upper edge of each joist.

o. Wires shall not be laid in plaster, cement or similar material.

p. Wires shall not be fastened by staples.

q. Wires shall not be fished for any great distance, nor where the inspector cannot satisfy himself that the requirements of this code have been complied with.

r. Twin wires shall be used only in conduits, or where flexible conductors are necessary.

s. In 3-wire (not three-phase) systems, the neutral shall be of sufficient capacity to carry the maximum current to which it may be subjected.

t. When one of the circuit wires is to be grounded, the circuit shall be so arranged that the grounded conductor is the one identified as prescribed in section 601 b of this code.

u. In alternating current systems in conduit, armored cable and metal raceways, the two or more wires of a circuit shall be placed in the same conduit, armor or raceway.

It is recommended that this course be pursued in the case of direct current also, in order to obviate induction troubles if a change is made to alternating current at some later date.

v. The wiring in any building or group of buildings, including the service connections thereto, shall be so arranged as not to serve as a shunt around any street fuse or switch.

w. Conductors in raceways or on insulators shall not be installed in elevator shafts.

612. Special Requirements for Use of Flexible Cords.

a. When used where the voltage between any two conductors or from any conductor to the ground is over 300 volts, the insulation on flexible cords shall be at least 3/64 inch in thickness for all conductor sizes No. 8 or less, except where Type "S" cord is used.

b. Flexible cord shall be used only for pendants, wiring of fixtures, portable lamps or motors, portable heating apparatus or other portable devices.

c. For all portable work, including those pendants which are liable to be moved about sufficiently to come in contact with surrounding objects, flexible wires and cables especially designed to withstand this severe service shall be used; provided, however, that for portable lamps or other devices which are not liable to be moved about sufficiently to cause abrasion of the insulation, approved flexible cord of Type C may be used.

d. When necessary to prevent portable lamps from coming into contact with inflammable materials, or to protect them from breakage, their flexible cord leads shall be equipped with handle, socket and substantial guard, the guard being securely attached to socket or handle.

e. Unless provided with approved metal armor, flexible cords shall not be used in show windows or in show cases, except that approved portable cord may be used for the purpose of supplying current to portable amps and other devices for exhibition purposes, and flexible cord may be used for chain fixtures.

f. Flexible cords shall be protected by approved insulating bushings where they enter sockets.

g. Flexible cords shall be so connected to all fittings that the strain will be taken from the joints and binding screws.

h. Flexible cords shall, where passing through covers of outlet boxes, be protected by approved bushings especially designed for this purpose; or the cover shall be provided with a smooth, well-rounded surface on which the cord will bear. So-called hard rubber or composition bushings shall not be used.

613. Special Requirements for Use of Conductors in Central and Sub-stations; Including Motor, Transformer and Storage Battery Rooms, etc.

a. Wires shall be exposed to view and supported on approved non-combustible, non-absorptive insulators or, except in storage battery rooms, may be placed in approved metal conduit, tile or other fireproof ducts. Conductors installed in conduit or ducts where exposed to moisture shall be lead sheathed and the sheathing shall be grounded. Except for low potential systems the insulation of the several conductors where leaving the metal sheath of cables shall be thoroughly protected from moisture and mechanical injury by means of a pothead or some equivalent method.

See also article 50.

b. Wires not in conduit shall be kept so rigidly in place that they cannot come in contact. Where they pass through floors or fire walls they shall be carried through individual openings in non-combustible, non-absorptive insulating tubes or their equivalent and not through a common open space.

c. Where conductors are closely grouped as on switchboards, in wire towers, cableways, etc., the conductors shall each have a substantial flameproof outer covering. Flameproofing shall be stripped back on all conductors a sufficient distance from the terminals to give the necessary insulation for the voltage of the circuit on which the conductor is used.

ARTICLE 7. OUTLET BOXES AND CABINETS.

701. Outlet Fittings.

a. Outlet boxes and plates, switch, junction and pull boxes and metal cabinets shall be well galvanized, enameled or otherwise properly coated, inside and out, to prevent oxidation; provided, however, that hardwood may be used for cabinets housing devices of electric railway systems, or of open or concealed work, or wooden raceway.

It is recommended that the protective coating be of conductive material such as tin or zinc, in order to secure better electrical contact.

b. Unused openings in outlet fittings or cabinets shall be effectively closed by metal plugs or plates, affording protection substantially equivalent to that of the wall of the fitting.

c. Openings in outlet fittings or cabinets shall be equipped, either separately or as a part of the fitting, with couplings or bushings which will serve to secure the conduit, raceway or armored cable to the fitting and at the same time protect the wires from abrasion. Where a hardwood cabinet is used with open work or knob and tube work, each open-

ing shall be equipped with a non-combustible, non-absorptive insulating bushing which shall fit securely in the opening and be so closed by the wire and tape, if necessary, as to be dust-tight. In dry places approved flexible tubing may be employed as an insulating bushing if it extends from the last insulating support and is firmly secured in place.

d. Covers of outlet fittings through which flexible cords or duplex wire pendants pass shall be provided with approved bushings, or shall have smooth, well rounded holes upon which the cord or wire may bear. Where wires, other than flexible cord or duplex wire, pass through a metal cover, there shall be provided a separate hole for each wire, said hole being equipped with a non-combustible, non-absorptive insulating bushing.

e. Outlet fittings, and junction or pull boxes not over 150 cubic inches in size, shall be composed of pressed steel not less than 0.078 inch (No. 14 U. S. sheet metal gauge) in thickness, or of cast metal having a wall thickness not less than 1/8 inch.

f. Junction or pull boxes of over 150 cubic inches in size shall be composed of metal and shall conform to the requirements for cabinets and cutout boxes, except that the covers may consist of single flat sheets secured to the box proper by screws or bolts instead of hinges.

Boxes having covers of this form are for use only for enclosing joints in wires or to facilitate the drawing in of wires or cables. They are not intended to inclose switches, cutouts or other control devices.

g. Outlet boxes intended for use where gas outlets are present shall be so designed that they may be securely fastened to the gas pipes in an approved manner.

h. A fixture stud which is not an integral part of the outlet box shall be composed of malleable iron or other approved material.

i. Switch and outlet boxes shall be so designed that they can be securely fastened in place independently of the support furnished by the conduit; provided, however, that approved boxes having threaded connection to exposed conduit may be supported by the conduit itself if the latter is firmly secured in place.

j. Switch and receptacle boxes shall completely enclose the devices on sides and back, and shall provide a substantial support for them. The screws supporting the box shall not be used for the attachment of the device contained therein. Floor outlet boxes shall be so designed as to protect receptacles and attachment plugs from mechanical injury and moisture.

k. Metal covers of outlet boxes shall be of thickness equal to that of the wall of the box, or shall be lined with firmly attached insulating material not less than 1/2 inch in thickness. Covers of porcelain or other approved material may be used if of such form and thickness as to afford the requisite protection and strength.

l. Flush switch and receptacle plates shall be not less than .04 inch in thickness.

m. At each outlet of conduit, metal raceway, armored cable or knob and tube work an approved box or plate shall be employed. In completed installations, the box or plate shall be provided with a cover, unless a fixture canopy is present.

n. At the ends of conduit, armored cable or metal raceway from which wires extend to open wiring or to appliances and where a box or plate is provided as required in the preceding paragraph, approved terminal fittings having a separate bushed hole for each wire shall be provided through which fitting the wires shall pass without splice, joint or tap. This construction shall not be employed at fixture outlets.

o. In buildings already constructed, where conditions are such that neither box nor plate can be installed, these fittings may be omitted by permission of the inspection department, provided the conduit or armored cable is properly bushed and secured in place.

p. Junction boxes, shall be so installed as to be accessible without removing any part of the building except as provided for terminal fittings in section 502, paragraph f of this Code.

An attic which has sufficient headroom but which is reached only by a portable ladder and permanent hatch, is considered permanently accessible.

q. Outlet boxes or plates, switch boxes and cabinets shall be so installed in walls or ceilings composed of plaster on wooden joists or studs that the front edge of the fitting will not set back of the finished surface of the plaster more than 1/4 inch. On wooden walls or ceilings the front edges of the fitting shall be flush with the finished surface, or project therefrom. A plaster surface which is broken or incomplete shall be repaired, so that there will be no gaps or open spaces at the edge of the fitting.

These requirements do not apply to walls or ceilings composed of concrete, tile or other non-combustible material.

r. In making a surface extension from an existing outlet of concealed conduit or armored cable, a box, extension ring or blank cover shall be mounted over the original box and electrically and mechanically secured to it. The extension shall then be connected to this box in the manner prescribed for the method of wiring employed in making the extension.

702. Cabinets and Cutout Boxes.

a. Cabinets and cutout boxes intended for outdoor use shall be of weatherproof type.

b. Cabinets and cutout boxes which contain devices or apparatus connected within the cabinet or box to the wires of more than four circuits, including branch circuits, meter loops, sub-feeder circuits, power circuits from lighting panels and similar circuits, but not including the supply circuit or a continuation thereof, shall have back wiring spaces or one or more side wiring spaces, side gutters or wiring compartments, unless the wires leave the cabinet or cutout box directly opposite their terminal connections.

c. The design and construction of cabinets and cutout boxes shall be such as to secure ample strength and rigidity.

d. The spacing within cabinets and cutout boxes shall be sufficient to provide ample room for the distribution of wires and cables placed in them, and for a separation between metal parts of cabinets or cutout boxes and current carrying parts of devices and apparatus mounted within them as follows:

1. There shall be an air space of at least 1/16 inch, except at points of support, between the base of the device and the wall of any metal cabinet or cutout box on which the device is mounted.

2. There shall be an air space of at least 1 inch between any live metal part (including live metal parts of enclosed fuses) and the door,

unless the door is lined with an approved insulating material or is of a thickness of metal not less than No. 12 U. S. sheet metal gauge (0.109 inch), when the air space shall be not less than 1/2 inch.

3. There shall be a space of at least 2 inches between open link fuses and metal lined walls or metal, metal lined or glass paneled doors.

4. Except as noted above, there shall be an air space of at least 1/2 inch between the walls, back, gutter partition, if of metal, or door of any cabinet or cutout box and the nearest exposed current-carrying part of devices mounted within the cabinet where the potentials do not exceed 251 volts. This spacing shall be increased to at least 1 inch where the potentials exceed 250 volts.

e. Cabinets and cutout boxes shall be deep enough to allow of the closing of the doors when 30 ampere branch circuit panelboard switches are in any position, or when combination cutout switches are in any position, or when other single throw switches are opened as far as their construction will permit.

f. Side wiring spaces, side gutters or side wiring compartments of cabinets shall be rendered tight enclosures by means of covers, barriers or partitions extending from the bases of the devices contained in the cabinet to the door, frame or sides of the cabinet; provided, however, that where the enclosure contains only those wires or cables which are led from the cabinet at points directly opposite their terminal connections to devices within the cabinet, such covers, barriers or partitions may be omitted. Partly enclosed back wiring spaces shall be provided with covers to complete the enclosure.

g. Wooden or composition cabinets, whether for flush or surface mounting, shall be of rigid and substantial design. Doors shall fit closely. The requirements for spacings, barriers and other details of construction, given elsewhere in this section, shall be followed, so far as they apply. Wooden cabinets shall be composed of well seasoned material, at least 3/4 inch in thickness thoroughly filled and painted. They shall be lined throughout with a non-combustible material such as 1/4 inch rigid asbestos board firmly secured in place. Linings of slate, marble or approved composition shall be at least 1/4 inch in thickness. Sheet metal lining shall be at least .063 inch in thickness (No. 16 U. S. sheet metal gauge).

h. Composition cabinets shall conform to the requirements for wooden cabinets, and shall be submitted for approval prior to installation.

ARTICLE 8. AUTOMATIC PROTECTION OF CIRCUITS AND APPLIANCES: Cutout Bases, Fuses, Circuit Breakers; Protection of Wires, Circuits, Motors; Ground Detectors, Other Appliances.

801. Cutout Bases.

a. The requirements of this article shall not apply to attachment plugs, car lighting cutouts or protective devices for signal systems. Cutout bases for link fuses shall be approved only in capacities above 300 amperes and their spacing shall be at least as great as those given in the following table, which applies only to plain, open fuse blocks mounted on slate, marble or composition bases. If the fuse tips overhang the edges of the fuse block terminals, the spacings shall be measured between the nearest edge of the tips.

Ampere Capacity	Minimum Separation of Nearest Metal Parts of Opposite Polarity	Minimum Break Distance
Not over 125 Volts		
301-1500	1 1/2	1 1/2
Not over 250 Volts		
301-1500	2 1/2	2

b. A space shall be maintained between the fuse terminals of link fuses of the same polarity of at least 1/2 inch for voltages up to 125 and of at least 3/4 inch for voltages from 126 to 250. This is the minimum distance allowable, and greater separation shall be provided when practicable.

c. For 3-wire systems link fuse cutouts shall have the break-distance required for circuits of the potential of the outside wires, except that in 125-250-volt systems with grounded neutral the cutouts in 2-wire, 125-volt branch circuits may have the spacings specified for not over 125 volts.

d. Except for sealable service and meter cutouts the fuse terminals of enclosed fuse cutout bases (plug and cartridge types) shall be of either the Edison plug, spring clip or knife blade type, to take the corresponding standard enclosed fuses. They shall be secured to the base by two screws, or the equivalent, so as to prevent them from turning, and shall be so made as to secure a thoroughly good contact with the fuse.

e. End stops shall be provided to insure the proper location of the cartridge fuse in the cutout base.

f. Cutout bases for enclosed fuses shall be classified as regards both current and voltage as given in the following table, and shall be so designed that the bases of one class cannot be used with fuses of another class rated for a higher current or voltage.

STANDARD PLUG OR CARTRIDGE CUTOUTS

Not over 250 Volts	Not over 600 Volts.
0-30 amperes	0-30 amperes
31-60 "	31-60 "
61-100 "	61-100 "
101-200 "	101-200 "
201-400 "	201-400 "
401-600 "	401-600 "

SEALABLE SERVICE AND METER CUTOUTS.

Not over 250 Volts	Not over 600 Volts
0-30 amperes	0-30 amperes
31-60 "	31-60 "
61-100 "	61-100 "
101-200 "	101-200 "

802. Link Fuses.

a. Link fuses shall not be used when of capacities of 300 amperes or less. When used in capacities of from 311 to 1500 amperes, they shall be rated to correspond to the ratings of cutout bases as given in the table of paragraph a, section 801, of this code.

b. Contact surfaces or tips of link fuses shall be of copper or aluminum, having good electrical connections with the fusible part of the strip.

c. Link fuses shall be stamped with 80% of the maximum current which they can carry indefinitely, thus allowing about 25% overload before the fuse melts.

803. Enclosed Fuses.

a. The requirements of paragraphs c to g inclusive, of this section, do not apply to fuses for attachment plugs, ear-lighting cutouts, nor to protective devices for signal systems.

b. The casings of enclosed fuses shall be sufficiently tight so that lint and dust cannot collect around the fusible link and become ignited when the fuse is blown. For non-renewable fuses the fusible wire shall be attached to the terminals in such a way as to make it difficult for it to be replaced when melted.

c. Enclosed fuses shall be classified to correspond with the different classes of cutouts, and shall be so designed that it will be impossible to put any fuse of a given class into a cutout which is designed for a current or voltage lower than that of the class to which the fuse belongs.

d. Enclosed fuses shall be marked with the words "N. E. Code Std." All fuses shall be marked with the ampere capacity. On ferrule contact fuses this marking shall be on the tube or ferrules, and on knife blade fuses on the tubes or caps. In addition to the above marking each cartridge enclosed fuse shall be provided with a paper label, red for 600-volt fuses, navy blue for 250-volt fuses of 15 amperes or less capacity and green for 250-volt fuses of over 15 amperes capacity. The label for cartridge fuses shall bear the following: the name or trademark of the manufacturer and the voltage for which the fuse is designed.

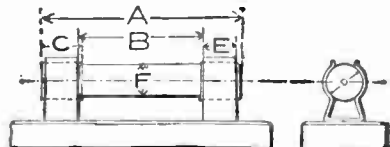
e. Plug fuses of 15 amperes capacity or less shall be distinguished from those of larger capacity as follows: by an hexagonal opening in the cap through which the mica or similar window shows; or by an hexagonal shaped recess in the top of fuses having porcelain or moulded composition tops, and when labels are used with such plug fuses the labels shall also be hexagonal in shape and fill the recess; or on plugs having solid metal caps, by an hexagonal impression either raised or lowered on the caps.

f. The fuse terminals shall be sufficiently heavy to insure mechanical strength and rigidity. The styles of terminals, except for use in sealable service and meter cutouts, shall be as follows:

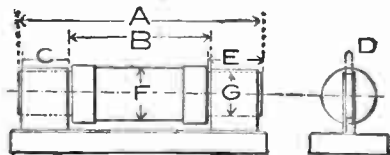
0-30 Amps.	A. Cartridge fuse (ferrule contact).
	B. Approved plugs or cartridge fuses in approved casings for Edison plug cutouts not exceeding 125 volts, but including any circuit of a three-wire 125-250-volt system with grounded neutral.
31-60 "	Cartridge fuse (ferrule contact) for use also in approved casings for large size Edison plug type 250-volt cutouts.
61-100 "	Cartridge fuse (knife blade contact).
101-200 "	
201-400 "	
401-600 "	
Not over 600 volts.	
0-30 Amps.	Cartridge fuse (ferrule contact).
31-60 "	Cartridge fuse (knife blade contact).
61-100 "	
101-200 "	
201-400 "	
401-600 "	

Cartridge enclosed fuses and corresponding cutout bases, except for sealable service and meter cutouts shall conform to the dimensions given in the table attached.

TABLE OF DIMENSIONS OF THE NATIONAL ELECTRICAL CODE STANDARD CARTRIDGE ENCLOSED FUSE.



Form 1. Cartridge Fuse—Ferrule Contact



Form 2. Cartridge Fuse—Knife Blade Contact Voltage Not Over 250

Rated Capacity Amperes	Length Over Term. Inches	Distance Between Contact Clips Inches	Width of Contact Clips Inches	Diam. of Ferrules or Thick. of Blades Inches	Mn. Outside Tube, In.	Lgh. of Ferrules or Blades, In.	Diam. Tube, Inches	Width Term. Blades, Inches	
									A	B	C	D	E	F	G
0-30	2	1	1/2	3/16	5/8	1/2	1/2	...	
31-60	3	1 1/2	1/2	1/16	5/8	5/8	3/4	...	
Form 2									
61-100	5 1/2	4	1 1/2	1/8	1 1/2	1	1 1/2	3/4	
101-200	7 1/2	4 1/2	1 3/4	3/16	1 3/4	1 1/2	2 1/2	1 1/2	
201-400	8 1/2	5	1 3/4	1/4	1 3/4	1 3/4	2 1/2	1 3/4	
401-600	10 1/2	6	2 1/4	1/4	2 1/4	2 1/4	3	2	
Voltage Not Over 600									
Form 1									
0-30	5	4	1 1/2	1 3/16	1 1/2	1 1/2	1 1/2	...	
31-60	5 1/2	4 1/4	1 1/2	1 1/16	1 1/2	1 1/2	1 1/2	...	
Form 2									
61-100	7 1/2	6	1 3/4	1/8	1 3/4	1 1/2	2 1/2	3/4	
101-200	9 1/2	7	1 3/4	3/16	1 3/4	1 3/4	2 1/2	1 1/2	
201-400	11 1/2	8	1 3/4	1/4	1 3/4	1 3/4	2 1/2	1 3/4	
401-600	13 1/2	9	2 1/4	1/4	2 1/4	2 1/4	3	2	

804. Circuit Breakers.

a. Automatic overload circuit breakers shall be substantial in construction, and shall have ample metal for stiffness. The contact parts shall be arranged so that thoroughly good bearings are obtained. All breakers

shall be provided with easily accessible means of tripping them by hand with out injury to the operator.

805. General: Fuses and Circuit-Breakers.

a. Fuses or circuit-breakers shall be provided on constant potential circuits to protect all ungrounded wires. A circuit-breaker having one of its poles in the grounded wire of the circuit may be used if it simultaneously opens all the wires of the circuit.

For the use of fuses for lighting and appliance branch circuits, see section 807. For use of fuses or circuit breakers on motor circuits, see sections 808 and 809.

b. Fuses and circuit-breakers shall be of types approved for the specific service and capacity for which they are to be used. The term circuit-breaker as used in this and other sections of this article shall be construed as meaning a device which automatically opens one or more conductors of a circuit with predetermined minimum current overload.

c. A fuse or circuit-breaker shall be placed at every point where a change is made in the size of an ungrounded wire, unless the fuse or circuit-breaker in the larger wire will protect the smaller.

For carrying capacities of conductors, see section 610, and also see reference to capacities of conductors contained in section 808, with special reference to motor circuits.

d. No fuse or circuit-breaker shall be placed in any permanently grounded wire, except a circuit-breaker which simultaneously opens all conductors of the circuit and except as provided in sections 807 and 808 of this Code.

e. Except when placed on switchboards or the equivalent which are located in approved rooms or fireproof electric closets, all cutout bases, circuit-breakers and fused switches shall be enclosed in approved cabinets or cutout boxes or shall be so designed or otherwise protected or located so that live parts will not be exposed to accidental contact. They shall, in all cases, be placed in readily accessible locations.

f. In general, such cabinets shall be placed in a vertical position. By special permission of the Inspection Department such cabinets containing fuses or switches only may be installed horizontally on ceilings, but in such cases, special precautions shall be taken to prevent fuses falling out, or switches opening, due to vibration or other causes. Doors or covers of such ceiling mounted cabinets shall be arranged so as to prevent their accidental opening.

g. Cutout bases, fused switches and circuit-breakers when installed in locations exposed to moisture shall be mounted in approved weather-proof cutout boxes or cabinets.

h. Cutout bases and circuit-breakers shall not be placed where exposed to mechanical injury nor in the vicinity of easily ignitable material nor in places where combustible dust or flyings are liable to be present in the air in sufficient quantities to produce an explosive or flammable mixture. If the occupancy of the premises is such that the last two conditions cannot be avoided all fuses and all circuit-breakers, unless of the dust-tight, oil-immersed type, shall be enclosed in approved metal cabinets. If the occupancy of the building is such that a suitable location free from exposure to mechanical injury cannot be found, an approved metallic inclosure shall be provided.

For equipments in extra-hazardous locations, see article 32.

i. Except as provided in sections 807, 803 and 803 of this code the rated capacity of fuses shall not exceed the allowable carrying capacity of the wire as given in section 610 of this code; and circuit-breakers shall not be set more than 3 per cent. above the allowable carrying capacity of the wire unless a fuse of a rating which properly protects the wires is also installed on the circuit.

j. For the protection of wires having safe carrying capacities exceeding the rated capacity of the largest approved enclosed type fuses, approved enclosed fuses arranged in multiple may be used, provided as few fuses as possible are used and the fuses are of equal capacity and provided the cutout terminals are mounted on a single continuous pair of substantial bus bars. The total capacity of the fuses shall not exceed the safe carrying capacity of the wires. This paragraph shall not apply to motor circuits.

k. Fixture wires or flexible cords of No. 16 or No. 18 gauge shall be considered as protected by 15 ampere fuses.

l. Link fuses may be used only when mounted on approved bases which, except on switchboards, shall be placed in approved cutout boxes or cabinets. A space of at least 2 inches shall be provided between the open-link fuses and metal, or metal lined walls or metal, metal lined or glass paneled doors of cabinets or cutout boxes.

m. Fused rosettes shall not be used.

n. An automatic circuit-breaker, except as provided for generators in article 1002 of this code, when installed without other automatic overload protective devices, shall have one pole in each ungrounded conductor.

o. For all automatic circuit-breakers, the number of overload trip coils shall not be less than shown in the following table:

SYSTEM	NUMBER AND LOCATION OF OVERLOAD PROTECTIVE DEVICES
3 wire 3 phase A.C. ungrounded or with one conductor grounded	2 trip coils, one in each of two ungrounded conductors
3 wire 3 phase A.C. with grounded neutral	3 trip coils, one in each conductor or two trip coils and one fuse
4 wire 3 phase A.C.	3 trip coils, one in each phase, or two trip coils and one fuse
4 wire 2 phase A.C. ungrounded	2 trip coils, one in each phase
3 wire 2 phase A.C.	2 trip coils, one in each outside conductor
4 wire 2 phase A.C. with grounded neutral	4 trip coils, one in each ungrounded conductor, or two trip coils and two fuses
5 wire 2 phase A.C.	4 trip coils, one in each ungrounded conductor, or two trip coils and two fuses
3 wire 1 phase A.C. or D.C.	2 trip coils, one in each outside conductor
2 wire A.C. or D.C. ungrounded or with one conductor grounded	1 trip coil, in ungrounded conductor
2 wire A.C. or D.C. with grounded neutral	2 trip coils, one in each conductor

p. A fuse or a trip coil shall be placed in every ungrounded wire of all grounded circuits except as provided for branch circuits in section 837 of this code.

q. Nothing in this section shall be considered as prohibiting the use of two single-pole circuit-breakers for the protection of ungrounded two-wire circuits.

806. At Services.

For particular equipment at services, see also section 406 of this code.

a. Fuses or circuit-breakers shall be placed in all ungrounded service wires, either overhead or underground, in the nearest readily accessible place to the point where they enter the building, and arranged to cut off

motor name plate current rating, or (e) for circuits having a maximum capacity greater than that for which approved enclosed fuses are rated.

8. Circuit-breakers shall have a continuous current capacity of at least 110% of the name plate current rating of the motor. If the circuit-breaker is of the time limit type its setting shall not exceed 125% and if of the instantaneous type not over 160% of the name plate current rating of the motor.

9. Circuit-breakers shall open all ungrounded conductors of the circuit simultaneously except that for D.C. and single phase A.C. motors on ungrounded circuits one single pole circuit-breaker may be used in each conductor or a single pole circuit-breaker may be provided in one conductor and a fuse in the other. One pole of the circuit-breaker may be placed in a permanently grounded conductor provided the breaker is so designed that the pole in the grounded conductor cannot be opened without opening simultaneously all of the conductors of the circuit.

c. The number of overload trip coils, relays or thermal cutouts shall not be less than shown in the table of section 805 o.

d. A controller for a D.C. motor which has an overload release device operative during the starting as well as the running period may also serve as the automatic overload protective device required by paragraph b.

e. The controller for an A.C. motor may also serve as the automatic overload protective device required by paragraph b, if it is equipped with the number of trip coils called for in the table of section 805 o and if it is operative when in the running position to open all of the ungrounded conductors automatically under overload.

f. Motor running protective devices may be shunted or cut out during the period for starting the motor and the motor shall be considered sufficiently protected during this starting period by the next overload protective device back on the line if the rating of this fuse or the setting of this circuit-breaker is not over 500% of the name plate current rating of the motor.

g. When a switch is used to shunt the motor running protective device during the starting period, it shall be of a type that cannot be left in the starting position.

For motors having large starting currents, such as the squirrel cage type, the shunting or cutting out of service of the running protective device is necessary to avoid opening the circuit during the starting period, unless a time limit circuit-breaker or similar device is used which will prevent the opening of the circuit during this period.

h. Continuous rated motors of 2 horse power or less shall be considered sufficiently protected by the fuses or circuit-breakers protecting the conductors of the motor circuits provided in section 808 of this code.

i. Motors of other than continuous rating or used on other than continuous load duty shall be considered as being sufficiently protected by the fuses or circuit breakers used to protect the conductors of the motor circuits.

810. Protection of Generators.

See section 1002.

811. Protection of Electrically Heated Appliances.

a. Electrically heated appliances each of 6 amperes or 660 watts or less, may be used on branch lighting circuits; appliances each of 1320 watts or less, may be grouped on a special circuit protected by fuses having a rated capacity not greater than 15 amperes. Each complete electrically heated appliance, whether containing one or more heating elements, which is of more than 1320 watts total capacity, shall be supplied by a separate branch circuit.

b. Subdivided circuits of electrically heated appliances need not be separately fused, but individual heating elements of such electrically heated appliances shall be fused if they are rated at more than 30 amperes.

812. Protection of Theatre Footlights and Border Lights.

a. Theatre footlights and border lights shall be so wired that the number of outlets and the lamps connected to them shall in no case be such as to place more than 15 amperes on a branch circuit fuse.

813. Protection of Signs and Outline Lighting.

a. Circuits shall be so arranged that the number of outlets and the lamps connected to them shall in no case be such as to place more than 15 amperes on the branch circuit fuse.

814. Protection of Switchboard Instruments.

a. Enclosed fuses shall be used to protect instruments and pilot lights on switchboards. N. E. Code standard enclosed fuses are preferred but other types may be used provided the rating of such fuses does not exceed two amperes.

815. Protection of Feeders at Supply Stations.

a. Each constant potential circuit entering or leaving a supply station, except grounded neutral conductors of three wire systems, shall be protected from excessive current by an approved automatic overload circuit breaker or by an equivalent device of approved design. Such protective devices shall be located as near as practicable to point where conductors enter or leave the building. For outgoing circuits not connected with other sources of power, however, the protective devices may be placed on the supply side of transformers or similar devices.

ARTICLE 9. GROUNDING.

901. General.

a. Where low potential circuits, arresters, equipment, conduit, armored cable, metal raceways and the like are grounded in accordance with this article, they shall be so arranged that under normal conditions of service there will be no objectionable passage of current over the grounding conductor. Where an objectionable flow of current over a grounding conductor occurs due to the use of multiple grounds, one or more of such grounds shall be abandoned or their locations shall be changed.

b. The connection and contact with the ground shall be permanent and effective, and shall always be made on a water piping system if one is available. The protective grounding of electrical circuits and equipment to water piping systems, when performed in accordance with this article, should always be permitted, since such grounding offers the most efficient protection to life and property and is not injurious to the piping systems.

c. Artificial grounds, such as buried plates, driven pipes or driven rods, shall be embedded below permanent moisture level, where practicable. Each ground shall present not less than 2 square feet of surface to exterior soil. Ground plates of copper shall be at least .06 inch in thickness. Ground plates of iron shall be at least ¼ inch in thickness. Ground pipes of iron or steel shall be galvanized and shall be not less than ¾ inch internal diameter. Approved ground rods shall not be less than ½ inch in diameter. Driven pipes or rods shall be of only one piece when of less than standard commercial length and shall be driven to a depth of at least eight feet regardless of size or number of pipes or rods used.

It is recommended that artificial grounds be located where the ground water level is nearest to the surface.

Additional area will generally be necessary, to meet the requirement of paragraph c of this section.

d. Where a system grounding wire is employed, it shall be effectually grounded at intervals which will satisfy the requirements as to current carrying capacity and resistance prescribed in this article.

e. The combined resistances of the grounding wire and the connection with the ground shall not exceed 3 ohms for water pipe connections nor 25 ohms for buried or driven grounds. Where it is impracticable to obtain with one ground artificial ground resistance as low as 25 ohms, this requirement shall be waived, and two artificial grounds, at least 6 feet apart and with combined area of not less than 4 square feet, shall be provided.

902. Distribution Systems.

a. Two-wire direct current systems shall be grounded as provided herein, if fed from overhead circuits and the voltage of the system does not exceed 300 volts.

It is recommended that 2-wire direct current systems be grounded if a neutral point can be established and if the maximum difference of potential between the neutral point and any other point on the circuit does not exceed 300 volts.

It is recommended that 2-wire direct current systems be not grounded if the potential to ground of either conductor exceeds 300 volts.

b. Three-wire direct current systems shall be grounded as provided in this article and at the neutral, at one or more supply stations but not at individual services.

c. Alternating current systems shall be grounded as provided in this article, if the maximum difference of potential between the grounded point and any other point on the circuit does not exceed 150 volts. Electric furnace circuits need not be grounded.

It is recommended that such systems also be grounded as provided herein if the difference of potential exceeds 150 volts but does not exceed 300 volts.

d. On single phase alternating current systems the ground shall be made at each service on the line side of the service switch before the service is connected to the line. On multiphase alternating current systems the ground shall be made as described for single phase systems if the grounded conductor of the multiphase supply system is brought to the premises for rendering service. By permission of the inspection department the grounding connection for either single phase or multiphase systems may be made on or near the transformer or transformers, or by connection to a system ground wire.

e. For alternating current systems, the point to be grounded shall be selected as follows:

Single phase, 2-wire: on either conductor, and at that point of the system which brings about the lowest voltage from ground of unguarded current-carrying parts of connected devices and also permit of most convenient grounding.

Single phase, 3-wire: on neutral conductor.

Two phase or
Three phase,
Three, four
or five wire
systems.

At that point of the system which brings about the lowest voltage from ground of unguarded current-carrying parts of connected devices and also permits of most convenient grounding.

f. Where only one phase of a 2-phase or 3-phase secondary system is employed for lighting, that phase shall be grounded, and at the neutral conductor if one is used.

g. Where transformers supply a common set of mains, such fuses as are installed shall be so placed as not to leave any portion of the secondary without ground protection after they have been blown.

h. The grounded conductor of an interior wiring system shall have but one grounding connection within the building, except as provided in paragraph b of section 906 of this article.

903. Lightning Arresters and Ground Detectors.

a. The ground connection shall be made at such a point that the grounding conductor will be as short and straight as practicable.

904. Equipment and Metal Raceways.

a. The point of attachment of the grounding conductor to generators, motors, transformers, conduit, armored cable, metal raceway and the like shall, if practicable, be readily accessible.

b. The point of attachment of the grounding conductor to conduit, armored cable and metal raceways shall be as near as practicable to the point where the conductors in the equipment receive their supply.

c. Where the service conduit is grounded, its grounding conductor shall be run from it directly to the ground, no portion of the house conduit being used as a part of the grounding conductor.

905. Grounding Conductors.

a. The grounding conductor shall be of copper or of other metal which will not corrode excessively under the existing conditions and where practicable shall be without joint or splice.

b. No automatic cutout shall be placed in a grounding conductor or its connections, except in a grounding conductor from equipment where its operation will result in the automatic disconnection from all sources of energy of the circuit leads connected to the equipment so grounded.

c. The insulation and installation of the grounding wire for circuits, when not protected by metallic piping, shall comply with all requirements of this code applying to wires of the voltage of the circuit to which the grounding wire is attached. When a circuit grounding wire is installed in metallic piping and is bonded to it at both ends, a bare copper conductor may be used.

d. Ground clamps and all grounding wires which are smaller than No. 4 in size shall be protected from ordinary mechanical injury by being paced where they are not liable to be damaged or by being inclosed in metal, wood or equivalent protective covering. In the case of a lightning arrester grounding wire the protection shall be composed of non-magnetic material, unless the grounding conductor is electrically connected to both ends of the protective covering.

e. Where a secondary system is grounded at the service, the equipment, conduit, armored cable, metal raceway and the like may, with the permission of the inspection department, be connected to the circuit grounding conductor, but otherwise shall have a separate grounding conductor of their own.

f. The path to ground provided for a circuit shall, in general, have ampere capacity sufficient to insure the continuity and continued effectiveness of the path under conditions of excess current caused by accidental grounding of any normally ungrounded conductor of the circuit.

g. The grounding conductor for a direct current system shall have a current capacity not less than that of the largest feeder of the same system leaving the station. In no case shall the grounding conductor be smaller than No. 8.

h. The grounding conductor for an alternating current system shall have an ampere capacity not less than one-fifth that of the conductor to which it is attached. In no case shall the grounding conductor be smaller than No. 8 and it need not be larger than No. 0.

i. The conductor grounding a lightning arrester shall not be connected to an artificial ground provided for circuits or equipment, but shall be kept at a distance of at least 20 feet where practicable. The grounding conductor shall have an ampere capacity sufficient to insure the continuity and continued effectiveness of the path to ground under conditions of excess current caused by or following the discharge of the arrester. No individual grounding conductor shall have an ampere capacity less than No. 6.

j. The size of a conductor (wire or pipe) grounding conduit, armor cable, metal raceways and equipment shall be not less than that given in the following table:

Capacity of Nearest Cutout Protecting Conductors in Conduit Armored Cable Metal Raceway or Equipment	Size of Copper Wire Grounding Conductor	Size of Grounding Pipe
0 to 100 amperes	No. 10	½ inch
101 " 200	" 6	½ "
201 " 500	" 4	¾ "
Over 500	" 2	1 "

No. 18 copper may be used as a conductor grounding portable equipment, the conductors to which are protected by fuses not greater than 15 amperes. For portable equipment using more than 15 amperes, the above table shall be followed.

k. Where instruments, meters, or relays operate with windings or working parts, at a potential of 150 volts or above to ground, the cases and other exposed bare metal parts of these devices insulated from the current carrying parts shall be grounded unless isolated by elevation or protected by suitable insulating barriers or guards or where inaccessible to other than qualified persons, in which case grounding is required only when the voltage exceeds 75 V. The grounding conductor shall be not less than No. 12. Where instruments, meters or relays are operated from current or potential instrument transformers, the cases and other exposed bare metal parts which are insulated from the current carrying parts shall be grounded. The grounding conductor shall be not less than No. 12. If exposed to higher voltages through transformer windings or otherwise, secondary circuits of current and potential transformers of less than 750 volts shall be isolated or grounded unless placed in grounded conduit or other suitable duct, or identified and guarded as required for conductors of the highest voltage to which they are exposed. When a grounding conductor is used it shall be not smaller than the conductor of the secondary circuit.

l. Sections of conduit, armored cable, metal raceways or other equipment shall be bonded together and the whole grounded, or each section shall be separately grounded. Equipment in the immediate vicinity of gas pipes shall be bonded thereto. This requirement shall not apply to service runs or to isolated lengths of conduit, armored cable or metal raceway not exceeding 25 feet, provided the runs are free from metallic contact with the ground and adjacent grounded metal and are guarded when within reach from grounded surfaces.

m. The conductor used for grounding a circuit wire may be used also for grounding equipment, conduit, armored cable, metal raceway and the like where the inspection department has granted permission and the secondary system is grounded at the service; otherwise, separate grounding conductors shall be used for grounding the circuit and for grounding the equipment, conduit, armored cable, metal raceway and the like.

906. Ground Connections.

a. Where a non-conductive protective coating, such as enamel, is provided for equipment, couplings and fittings, such coating shall be completely removed from threads and other surfaces in order to insure a good contact between ground clamp and equipment. Pipes or rods used to provide a ground shall be cleaned of rust, scale, paint, etc., at the point of attachment of the ground clamp. The connection and contact with the ground shall be permanent and effective, and shall always be made on a water piping system if one is available.

The protective grounding of electrical circuits and equipment to water piping systems, when performed in accordance with this article, should always be permitted, since such grounding offers the most efficient protection to life and property and is not injurious to the piping systems.

b. At supply stations, grounding conductors for circuits, equipment and lightning arresters shall be permanently and effectively connected to all available active, continuous, metallic underground piping systems between which no appreciable difference of potential normally exists; otherwise, to one system only. Elsewhere than at supply stations, the grounding conductor shall be connected to at least one such piping system, if available. Gas piping shall be avoided wherever practicable, except as provided in paragraph c of this section. Where underground metallic piping systems are not available, other grounds, which will provide the desired permanence and conductance, may be permitted.

c. The point of connection to the piping system shall be located on the street side of water meters except where the conductor serves as a ground only for equipment, conduit, armored cable, metal raceway; and the like or as a multiple ground for an alternating current secondary. In these latter cases the point of connection may be located near the equipment to be grounded, and care shall be taken to keep the connection with the underground piping system continuous and permanent, by bonding all parts of the piping system which are liable to become physically disconnected, such as at meters and service unions, by means of a shunt consisting of two approved clamps and a conductor of the same size as the grounding conductor. Where practicable, the point of connection shall be in plain sight and readily accessible. When water meters are located outside of buildings or in pits within buildings where piping connections are under concrete or other substantial flooring, the ground connection may be made on the building side of the meters but as close to them as is practicable.

d. The ground conductor shall be attached to the pipe or rod (a) by means of an approved bolted clamp to which the conductor is soldered or otherwise connected in an approved manner, or (b) by means of a brass plug screwed into the pipe and provided with a lug to receive the conductor, or (c) by other approved means.

e. Gas piping systems within buildings shall be used as a ground only when water piping is not available, and then only for grounding equipment; provided, however, that gas piping may serve as the sole ground for small fixtures located at a considerable distance from water piping. Where gas piping is so utilized, it shall be bonded to the water piping system at their point of entrance. Gas piping need not be insulated from otherwise well grounded fixtures.

f. Rails or other grounded conductors of electric railway circuits shall not be used as a ground for other than railway lightning arresters and railway equipment, conduit, armored cable, metal raceway and the like when other effective grounds are available.

ARTICLE 10. ROTATING MACHINERY AND ITS CONTROL APPARATUS.

1001. General.

a. The frame, except for portable motors, shall be grounded if the machine operates at a potential in excess of 150 volts and is accessible to other than qualified persons. Grounding shall be performed in the manner prescribed in article 9 of this code. When the frame is not grounded, owing to the voltage being below 150 or the generator being accessible only to qualified persons or the motor being portable, the frame shall be permanently and effectively insulated from ground.

b. The frames of portable motors which operate at more than 150 volts shall be guarded or grounded.

It is recommended that the frames of portable motors which operate at less than 150 volts be grounded when this can be readily accomplished.

c. If terminal blocks are used, they shall be composed of approved non-combustible, non-absorptive insulating material, such as slate, marble or porcelain.

d. Soft rubber bushings may be used to protect lead wires where they pass through the frame, provided they will not be exposed to oils, grease, oily vapors or other substances having a deleterious effect on rubber. Where so exposed, bushings composed of porcelain, micanite or hardwood treated with a preservative shall be used.

1002. Generators.

a. Generators shall be located in dry places. They shall not be placed in a room where any hazardous process is carried on, nor where they will be exposed to inflammable gases or flyings of combustible materials.

It is recommended that waterproof covers be provided for use in an emergency.

b. Where wooden base frames or wooden floors serve to insulate frames from ground they shall be kept filled with moisture repellent and be kept clean and dry.

c. Direct current, constant potential generators, other than exciters for alternating current machines, shall be protected from excessive current by automatic cutouts of approved design; provided, however, that in central stations where the type of apparatus used and the nature of the system operated make protective devices inadvisable and unnecessary, their omission may be permitted by the inspection department. Single pole protection shall be accepted for 2-wire, direct current generators, if the protective device is actuated by the entire generator current and will completely open the generator circuit.

d. If a generator not electrically driven supplies a 2-wire grounded system, the protective device shall be so placed as to disconnect the generator from all wires of the circuit.

e. Two-wire, direct current generators, used in conjunction with balancer sets to obtain neutrals for 3-wire systems, shall be equipped with protective devices which will disconnect the 3-wire systems in the case of excessive unbalancing of voltages.

f. Three-wire, direct current generators, whether compound or shunt wound, shall be equipped with protective devices, one in each armature lead and so connected as to be actuated by the entire current from the armature. Such protective device shall consist either of a double-pole, double-coil, overload circuit-breaker, or of a 4-pole circuit-breaker connected in the main and equalizer leads and tripped by two overload devices, one in each armature lead. Such protective devices shall be so interlocked that no one pole can be opened without simultaneously disconnecting both leads of the armature from the system.

g. Where a generator and a transformer are intended to operate as a unit for stepping up or stepping down the voltage, and are both located in the same building, a protective device between them shall not be required.

h. Each generator shall be provided with a name-plate giving the maker's name, the rating in kilowatts, if direct current, or kilowatt amperes, if alternating current, the normal volts and amperes corresponding to the rating, and the revolutions per minute.

1003. Motors.

a. Motors shall not be operated in series-multiple or multiple-series except on constant-potential systems where permission has been granted by the inspection department.

b. Motors having brushes or sliding contacts exposed to combustible dust shall be located in separate dust-tight rooms or non-combustible housings provided with effective ventilation from a source of clean air.

c. In places where combustible dust is thrown into suspension in the air in sufficient quantity to produce explosive mixtures, such as in flour mills, grain elevators, etc., or where it is impracticable to prevent dust or flying material collecting in dangerous quantities on or in motors, all motors shall be either of the totally enclosed type or placed in separate dust-tight rooms or non-combustible housings. Such rooms or housings shall be effectively ventilated from a source of clean air.

d. Motors permanently located on wooden floors shall be provided with suitable drip pans, if so required by the inspection department.

e. Adjustable speed motors, if controlled by means of field regulation shall be so equipped and connected that they cannot be started under weakened field, unless this safeguard is incorporated in the design of the machine.

f. Each motor shall be provided with a name-plate giving the maker's name, the ratings in volts and amperes, the normal full-load speed and the interval during which it can operate, starting cold. The time interval given shall be either 5, 10, 15, 30, 60 or 120 minutes, or continuous.

g. Each motor with its starting device shall be controlled by an indicating switch so arranged that the opening of the switch will disconnect all ungrounded leads; provided, however, that this requirement shall not apply to crane motors, considered in article 30 of this code. The switch shall have a continuous duty rating at least equal to 110% of the motor name plate current rating. A double-throw switch used to shunt the motor protective device during the starting period shall be of such type that it cannot be left in the starting position. An automatic circuit-breaker which disconnects all ungrounded wires of the circuit may serve also as a switch. The switch and starting device shall be located within sight of the motor, unless permission to locate them elsewhere is given by the inspection department. A single pole switch may be used to control a 2-wire motor of not over ¼ horsepower operating at a potential not exceeding 300 volts.

h. The switch called for in the preceding paragraph may be omitted if the motor starting device disconnects all ungrounded wires of the circuit, except when auto-transformer starters are used. When auto-transformer starters are used a switch shall be provided on the supply

side of each auto-transformer starter or group of auto-transformer starters and shall be located within sight of the starter or starters controlled.

i. This switch may be of the disconnecting type if it is not intended to be operated under load and if it is so located or locked that it cannot be readily operated by unqualified persons.

j. Alternating current motors operating freight or passenger elevators or cranes that are dependent on phase relation for the direction of rotation shall be protected by approved automatic circuit-breakers (or reverse phase relays) operative in the event of any phase reversal that would cause a reverse motor rotation, or in the event of the motor being connected to the line single phase.

1004. Auto-transformer Starters.

a. Control apparatus, other than auto-transformer starters, shall conform to the requirements of article 17 of this code.

b. The coils and switches of auto-transformer starters used in places where combustible dust or flyings are liable to be present in the air in sufficient quantities to produce an explosive or flammable mixture shall be completely inclosed in a substantial dust proof metal case. All load carrying contacts of such switches shall be oil immersed unless inclosed in a dust-tight metal case.

c. Cases for coils or switches shall afford access to the interior for inspection and oil renewal, and shall be so constructed that when mounted on a plane surface the case will make contact with such surface only at points of support. An air space of at least 1/4 inch shall be maintained between case and surface.

d. The oil tank shall be marked in a suitable manner to indicate the proper oil level. When such device carries a visual oil indicator, the marking shall be for the proper oil level with the starter assembled. If the visual indicator is not used, markings shall indicate the oil level prior to assembling.

e. The switch shall provide an off position, a running position and at least one starting position. It shall be so designed that it cannot rest in a starting position, or in any position which will render inoperative the overload protective devices in the circuit.

ARTICLE 11. TRANSFORMERS: UNDER 600 VOLTS.

1101. Exception.

a. Nothing in this article shall be construed to apply to apparatus or fittings, the operation of which depends either wholly or in part upon special air-cooled transformers embodied in the devices; but all such apparatus or fittings shall be submitted for special examination and approval before being installed.

1102. General.

a. No oil-filled transformer shall be placed within any building other than a central station or a sub-station, except by permission of the inspection department; nor shall such a transformer be attached to a building except by permission of the inspection department and when separated therefrom by substantial supports.

Table 1. (See Article 1201 f.)

Spacings between Parts of Opposite Polarity and Break Distances within the area bounded by contact parts of the switch mechanism.

Voltage	Amps.	Spacing—Inches		Fuses	Marking
		Opposite Polarity	Break Distance		
125 V. DC or AC For switchboards and panelboards only	30	1	3/4	With or Without	—A.125V.
	60	1 1/4	1		
125 V. DC or AC	30	1 1/4	1	With or Without	—A.125V.
	60	1 1/2	1 1/4		
	100	1 1/2	1 1/4		
	200 and *300	2 1/4	2		
	400 and 600	2 3/4	2 1/2		
800 to 6000 incl.	3	2 3/4			
250 V. DC or AC	30	1 3/4	1 1/2	With or Without	—A.250V.
	60	2 1/4	2		
	100	2 1/4	2		
	200 and *300	2 1/2	2 1/2		
	400 and 600	2 3/4	2 1/2		
800 to 6000 incl.	3	2 3/4			
For both 250 V. DC and 500 V. AC	30	2 1/4	2	Without See also paragraph 270	—A.250V. DC, 500V. AC
	60	2 1/4	2		
	100	2 1/4	2		
	200 and *300	2 1/2	2 1/2		
	400 and 600	2 3/4	2 1/2		
800 to 6000 incl.	3	2 3/4			
500 V. A	Same as in IV			With	—A.500V. AC.
600 V. DC or AC	30	4	3 1/2	With or Without	—A.600V.
	60	4	3 1/2		
	100 to 6000 incl.	4 1/2	4		

*The 300-ampere switches, with spacings of the 200-ampere switches, may be used only on switchboards.

Triple-pole switches with 125-volt spacings between blades for use on three-wire systems having 125 volts between adjacent wires and not over 250 volts between outside wires shall be spaced as in II of Table 1 and be marked —A. 125V.

Triple-pole switches with 250-volt spacings between blades, for use on three-wire systems having 250 volts between adjacent wires and not over 500 volts between outside wires, shall be spaced as in III of Table 1, except 30-ampere fused switches to be spaced as in IV; they shall be marked —A. 250V. and if equipped with fuses, fuses shall be of the 600-volt classification.

b. No air-cooled transformer operating at a potential exceeding 600 volts shall be placed within any building other than a central station or a sub-station.

c. The construction of an air-cooled transformer shall be such that when mounted on a plane surface the casing will make contact with such surface only at the points of support, providing elsewhere an air space of at least 1/4 inch between casing and surface. If the surface is composed of combustible material, the air space shall be increased to at least 1 foot, unless a slab of non-combustible, non-absorptive insulating material is interposed.

This will require a slab of slate, marble or soapstone, somewhat larger than the transformer.

This section shall not be construed to apply to bell ringing and other signalling transformers, which operate at a primary voltage not exceeding 250 volts.

d. Transformer cases shall be grounded as provided in article 9 of this code.

ARTICLE 12. SWITCHES.

1201. Construction of Knife Switches.

a. A knife switch shall be deemed to be a switch having electrical connecting parts in the form of hinged or pivoted bars or blades and designed for manual operation.

b. Under the term knife switch shall be included single or multiple pole switches, either with or without fuse terminals, switches having individual bases designed for either front or rear wiring connections; also switch parts without separate bases intended for mounting on switchboards and panelboards.

c. Knife switches shall be plainly marked where the marking can be read after the switch is installed, with the current and the voltage for which the switch is designed. For switches of capacities above 1200 amperes, where the alternating current rating will generally be less than the direct current rating, the marking shall indicate the ampere rating definitely as A. C. or D. C. The frequency in cycles shall also be stated.

d. Pieces carrying or used to hold the break and hinge jaws shall be secured to the base or mounting surface in such a manner as to prevent possible turning.

e. The cross bar shall be secured to each blade in such a manner as to prevent turning and twisting.

f. The spacing given in Table 1 on page 341 and Table 2 below, shall be considered standard and as the minimum allowable, except as otherwise provided for in this article.

When Mounted on Same Surface	When Clear of Surface
Not over 125 V. 3/4 inch	1/2 inch
" " 250 V. 1 1/4 inches	3/4 "
" " 600 V. 2	1 "

It is recommended that switches above 1000 ampere capacity be not used to break currents, but only as disconnecting switches.

g. When fuse terminals are provided the spacings for such terminals shall conform to the requirements of article 8 of this code.

h. Switches rated above 600 amperes at 600 volts and 600 amperes at 250 volts, and therefore exceeding the capacities of standard sizes of cartridge enclosed fuses, may be arranged for fuses in multiple, provided as few fuses as possible are used, and the fuses are of equal capacity, and the multiple terminals for each pole are mounted in common.

i. Switches marked with the combined rating, 250 volts, D. C. or 500 volts, A. C. shall not be provided with fuse terminals.

j. Switches having fuse terminals and intended for use in ungrounded branch circuits shall have fuse terminals in each pole.

k. Auxiliary contacts of a renewable or quickbreak type or the equivalent shall be provided on all 600-volt switches designed for use in breaking currents from 200 to 1000 amperes, inclusive.

It is recommended that such auxiliary contacts be provided on all direct current switches rated at over 250 volts.

l. Barriers designed to be placed between the poles of switches and not located within the influence of the arc formed by the opening of the switch shall be of non-absorptive insulating material. Barriers placed between the poles of switches and located within the influence of the arc shall be of non-combustible, non-absorptive, insulating material.

m. Barriers designed to be placed between poles of switches at hinge jaws shall be of such size and so located as to provide a separation between contact parts measured in the shortest insulating surface path over the barrier equal to that required for switches without barriers, and to provide a separation between other current-carrying parts, as provided in paragraph f of this section.

n. Barriers placed between the poles of switches at the break jaws, and, therefore, located within the influence of the arc formed by the opening of the switch, shall be of such size and so located as to provide a separation between contact parts measured in the shortest path through air over the barrier equal to that required for switches without barriers.

o. Switches designed for double throw and having three or more poles, shall not have front-connected terminals for the hinge contacts of the inner poles unless standard switch spacings between adjacent live metal parts of opposite polarity are secured either by increased spacing between poles or by the use of barriers as provided for in paragraphs l, m and n, of this section.

1202. Installation of Switches; General.

a. Switches shall not be placed where exposed to mechanical injury nor in the immediate vicinity of easily ignitable material, nor be located in places where combustible dust or flyings are liable to be present in the air in sufficient quantities to produce an explosive or flammable mixture. When the occupancy of the building is such that the above conditions cannot be complied with, switches, circuit-breakers and similar devices, unless of the dust-tight, oil-immersed type shall be inclosed in approved metal boxes or cabinets and shall be of the externally operable type.

See article 32 for switches in extra hazardous locations.

b. Switches shall always be placed in dry, accessible places, and be grouped as far as possible.

c. Switches when located where exposed to moisture as in basements and similar places, shall be mounted in approved boxes or cabinets, and when located in wet places or outside buildings shall be mounted in approved weatherproof switch boxes or cabinets.

1203. Position and Connection of Knife Switches.

a. Single-throw knife switches shall be so placed that gravity will not tend to close them. Double-throw knife switches may be mounted so that the throw will be either vertical or horizontal as preferred, but if the throw be vertical a locking device shall be provided, so constructed as to insure the blades remaining in the open position when so set.

b. When practicable switches shall be so wired that blades will be dead when the switch is open.

It is recommended that up to 250 volts and thirty amperes, approved in-detecting snap switches, instead of knife switches, be used on lighting circuits.

1204. Number of Poles Required for Switches.

a. Single pole switches shall never be used as service switches, except as permitted in section 405 of this code, nor be placed in any neutral or grounded wire. Three-way and four-way switches shall be classed single-pole switches and shall be so wired that only one pole of the circuit will be carried to the switch.

b. On constant potential circuits, all service switches and all switches controlling circuits supplying current to motors or heating devices, unless otherwise provided in this code, shall be so arranged that the opening of the switch will disconnect all the ungrounded wires.

c. Where a circuit-breaker serves as a switch, it shall conform to the requirements of this section as to the number of poles.

1205. Mounting of Snap Switches and Flush Switches.

a. Surface mounted snap switches shall be supported at outlets when possible by 3/4-inch blocks, fastened between studs flush with back of lath, except when approved fittings or outlet boxes which will give proper support are used. When this cannot be done, base blocks not less than 3/4 inch in thickness securely screwed to the lathing shall be provided.

b. Sub-bases of non-combustible, non-absorptive insulating material, which will separate the wires at least 1/2 inch from the surface wired over, shall be installed under all snap switches used in exposed knob and cleat work. Sub-bases shall also be used in raceway work; but they may be made of hardwood or they may be omitted if the switch is approved for mounting directly on the moulding.

c. Where flush switches or receptacles are used, whether with conduit systems or not, they shall be enclosed in an approved switch or outlet box constructed of iron or steel, in addition to the porcelain enclosure of the switch.

1206. Special Types of Switches.

a. In central stations and sub-stations oil circuit-breakers and switches shall, wherever practicable, be isolated from other switches and electrical apparatus.

b. Time switches, sign flashers and similar appliances shall be of approved design and enclosed in approved cabinets.

ARTICLE 13. SWITCHBOARDS AND PANELBOARDS.

(This Article does not apply to switchboards or portions thereof used exclusively to control signal circuits operated by batteries, but does apply to the charging panels where current is taken from light or power circuits.)

1301. Switchboards: Location and Accessibility.

a. Switchboards shall be so placed as to reduce to a minimum the danger of communicating fire to adjacent combustible material.

b. Switchboard shall not be built up to the ceiling, a space of 3 feet being left, if possible, between the ceiling and the board. The space back of the board shall be kept clear of rubbish and shall not be used for storage.

c. Switchboards shall be accessible from all sides when the connections are on the back.

It is recommended that all switchboards be set out from the wall, but they may be placed against a brick or stone wall when the wiring is entirely on the face.

d. Switchboards shall be so located that they will not be exposed to moisture.

1302. Switchboards: Material and Wiring.

a. The bases of switchboards shall be made of non-combustible material.

b. Bus-bars, if rigidly mounted, may be of bare metal.

c. If the wiring is on the back, there shall be a clear space of at least 18 inches between the wall and the apparatus on the rear of board.

d. Insulated conductors where closely grouped as in rear of switchboards shall each have a substantial flameproof outer covering.

e. Flameproofing shall be stripped back on all conductors a sufficient distance from the terminals to give the necessary insulation for the voltage of the circuit on which the conductor is used.

f. In wiring switchboards, the ground detector, voltmeter, pilot lights and potential transformers shall be connected to a circuit that is protected by 15 ampere fuses. This circuit shall not carry over 660 watts.

g. On switchboards where instruments, meters, or relays operate with windings or working parts, at a potential of 150 volts or above to ground, the cases and other exposed bare metal parts of these devices insulated from the current carrying parts shall be grounded unless isolated by elevation or protected by suitable insulating barriers or guards or where inaccessible to other than qualified persons, in which case grounding is required only when the voltage exceeds 750. The grounding conductor shall be not less than No. 12. Where instruments, meters or relays are operated from current or potential instrument transformers, the cases and other exposed bare metal parts which are insulated from the current carrying parts shall be grounded. The grounding conductor shall be not less than No. 12. If exposed to higher voltages through transformer windings or otherwise, secondary circuits of current and potential transformers of less than 750 volts shall be isolated or grounded unless placed in grounded conduit or other suitable duct, or identified and guarded as required for conductors of the highest voltage to which they are exposed. When a grounding conductor is used it shall be not smaller than the conductor of the secondary circuit.

h. When instruments, meters or relays are operated from current or potential instrument transformers, the cases and other exposed bare metal parts which are insulated from the current carrying parts shall be grounded. The grounding conductor shall be not less than No. 12. If exposed to higher voltages through transformer windings or otherwise, secondary circuits of current and potential transformers of less than 750 volts shall be isolated or grounded unless placed in grounded conduit or other suitable duct, or identified and guarded as required for conductors of the highest voltage to which they are exposed. When a grounding conductor is used it shall be not smaller than the conductor of the secondary circuit.

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are used, the spacings shall be at least as great as those prescribed in articles 8 and 12 respectively, of this code.

The spacings given in the second column shall apply to the distance between the raised main bars and between these bars and the branch bars over which they pass.

It should be noted that the above distances are the minimum allowable, and it is recommended that greater distances be adopted wherever the conditions will permit.

ARTICLE 14. FIXTURES, LAMP SOCKETS AND RECEPTACLES, PLUG RECEPTACLES AND OTHER OUTLET DEVICES.

1401. Construction of Fixtures.

a. Fixtures shall be composed of metal or wood, or such other material as may have been submitted for examination and approved. Materials other than metal shall be reinforced by metal or the fixtures shall be otherwise constructed to secure the requisite mechanical strength.

b. In all fixtures not made entirely of metal, wireways shall be lined with metal unless approved armored conductors with suitable fittings are used. This requirement shall not apply to wireways in glass, marble or similar non-absorptive, non-combustible insulating materials.

c. All methods of fastening arms, sockets, bodies, supports, and receptacles by threading, soldering, brazing or otherwise, shall be such as to secure in every case ample strength and reliability, and to prevent turning. Screw joints shall have not less than five threads engaging. Tubing used in making threaded arms and stems shall be composed of metal having a thickness not less than .04 inch. It shall not be kinked, flattened or cracked.

d. All burrs and fins in wireways shall be removed and all sharp edges rounded, where practicable, so that wires may be drawn in and withdrawn without injury. Fittings having smooth, rounded edges, shall be placed at entrance to casings of fixture stems.

e. Fixtures exposed to moisture, whether located indoors or outdoors, shall be so constructed that water cannot enter the wireways, sockets or other electrical parts.

f. Fixture studs which are not parts of outlet boxes, hickeyes, tripods and crowfeet shall be made of malleable iron or other approved material.

g. All fixtures shall, where practicable, be sufficiently ventilated. All forms of fixtures in which the wiring is liable to be exposed to temperatures in excess of 120 degrees F. (49 degrees C.) shall be so designed or ventilated and installed as to operate at temperatures which will not cause deterioration of the wiring.

h. Canopies and outlet boxes or plates shall, taken together, provide ample space for the reception of the wires and their connecting devices.

i. Receptacles having exposed terminals shall not be placed in canopies unless completely enclosed in metal.

j. Canopy insulators, used where insulating joints are required, shall be of approved type and shall be securely fastened in place, so as to separate the canopies effectively and permanently from the conducting surfaces from which they are intended to be insulated.

A strip of a good grade of hard fiber, 1/8 inch in thickness, securely attached to the canopy at the ends and at intermediate points in such a manner that the strip will extend at least 3/8 inch beyond the upper edge of the canopy rim, will be accepted. Where this is impracticable, a flat sheet of said fiber, cut to conform to the general outline of the canopy and having the edges of the sheet at least flush with the edges of the canopy may be employed, if permanently attached to the canopy.

k. Insulating joints shall be composed of materials especially approved for the purpose. Those which are not designed to be mounted with screws or bolts shall have a substantial exterior metal casing, insulated from both screw connections.

1402. Wiring of Fixtures.

a. No conductor shall be smaller than No. 18. On chains or other movable parts stranded conductors shall be used, unless the wires are completely enclosed in metal. Where the fixture is externally wired, wires shall be secured in a manner which will not tend to cut or abrade the insulation, and shall be protected from abrasion where they pass through sheet metal pans, canopies, etc. No splice or tap shall be located within an arm or a stem.

It is recommended that approved splicing devices or approved plug connections be used for attaching the fixture wires to the circuit wires.

b. Each fixture shall be so wired that all screw shells of sockets are connected to the same fixture stem wire or supply wire or terminal. A fixture stem wire or supply wire connected to the screw shells of sockets shall be identified by means of a white or natural gray covering, or by means of a tracer thread contrasting with the color of the covering, or by means of a band of paint contrasting with the color of the covering and located as near as possible to the point where the wire leaves the fixture. If a white or natural gray covering is employed the covering of all other fixture stem or supply wires in the fixture shall be of a contrasting color. If a tracer thread is employed there shall be no such thread in the covering of any other fixture stem or supply wire. A terminal attached to the screw shells of sockets shall be marked in the manner specified in section 206 e to n of this code.

It is recommended that the wire connected to the screw shells be identified by means of a white or natural gray covering.

c. Chain fixtures shall be wired with flexible conductors so arranged that the weight of the fixture will not put tension on the conductors.

d. Approved fixture wire, approved flexible cord or approved rubber-covered wire shall be employed, unless the wiring is exposed to temperatures in excess of 120 degrees F. (49 degrees C.) in which case conductors having slow-burning or other heat-resisting covering shall be used. Fixtures intended for outdoor use shall be wired with approved rubber-covered conductors. Wires shall always be so disposed as to avoid exposure to high temperatures as far as practicable. Fixtures intended for use in rooms where inflammable gases may exist shall consist of rigid stems, internally wired with approved rubber-covered conductors, soldered directly to the circuit, and shall be equipped with vaportight globes.

e. Fixture wires or the individual conductors of flexible cords used where the voltage between any two conductors or between any conductor and the ground is over 300 volts, shall have insulation at least 3/64 inch in thickness for sizes No. 8 and smaller, unless Type S cord is used.

f. Wires of different systems shall not be contained in or attached to a fixture; nor shall electric gas lighting wiring, other than for the frictional system, be attached thereto.

g. All wiring shall be free from short circuits and grounds, and shall be tested for these defects prior to being connected to the circuit.

1403. Installation of Fixtures.

a. Straight electric fixtures shall be grounded except as described in 1 and 2 below.

1. Fixtures mounted on metal ceilings or side walls, or on walls or ceilings containing metal lathing, shall be grounded or shall be insulated from their supports by approved insulating joints or by ap-

When Mounted on the Same Surface	When Held Free in Air
Not over 125 volts 3/4 inch	1/2 inch
" " 250 " 1 1/4 inches	3/4 "
" " 600 " 2 "	1 "

At switches or enclosed fuses, parts of the same polarity may be placed as close together as convenience in handling will allow.

At link fuses at not over 125 volts the spacings between parts of the same polarity shall be not less than 1/2 inch and at not over 250 volts, not less than 3/4 inch.

These spacings are intended to prevent the melting of a link fuse by the blowing of an adjacent fuse of the same polarity.

The spacings given in the first column shall apply to the branch conductors where enclosed fuses are used. Where link fuses or knife switches

proved insulating fixture supports, and canopy insulators shall be used.

2. Fixtures in open wiring, knob-and-tube work or wooden raceways and not on metal ceilings or side walls nor on plaster walls or ceilings containing metal lathing need be neither grounded nor insulated.

b. Fixtures shall be considered as grounded when mechanically connected in a permanent and effective manner to metal conduit, armored cable or metal raceway systems or to a separate grounding wire not smaller than No. 14, or to gas piping which is grounded in the manner specified in Article 9 of this code.

c. Combination gas and electric fixtures shall be insulated from their supports by approved insulating joints, placed as close as possible to the ceiling or wall, and canopy insulators shall be used.

d. Fixtures having so-called flat canopies, tops or back shall not be installed where outlet plates are used.

It is recommended that for all sidewall and partition outlets in concealed work in new buildings under construction outlet boxes having a depth of approximately 1½ inches be used.

e. No externally wired fixture shall be located in the immediate vicinity of especially inflammable material; nor shall any externally wired fixture other than of the chain type be placed in a show window. Armored cord pendants shall be considered to be internally wired fixtures.

f. Where a gas pipe, outlet box, plate or other fitting which will provide proper support is required by this code or is present, the fixture shall be attached thereto; otherwise the fixture shall be attached to a ¾-inch block fastened between studs or floor timbers and flush with the back of the lathing, or if this method can not be employed a wooden base block not less than ¾ inch in thickness shall be provided.

g. Gas pipes shall be covered with insulating tubing back of the insulating joint or blind hickey. Where outlet tubes are used, they shall be of sufficient length to extend beyond the joint or hickey, and shall be firmly secured in place.

h. Fixtures shall be so installed that the connections between the fixtures and the branch circuit wires will be easily accessible for inspection without requiring the disconnecting of any portion of the wiring, unless the fixture is attached by an approved plugging device.

1404. Lamp Sockets and Receptacles.

a. Lamp holding devices shall be classed according to diameters of lamp bases, as candelabra, medium and mogul base, to be known respectively as ½-inch, 1-inch and 1½-inch nominal sizes, with ratings as specified in the table following this paragraph. Switched sockets shall be of such construction that the switching mechanism interrupts the electrical connection to the center contact. The switching mechanism shall not interrupt the electrical connection to the screw shell unless connection to the center contact is simultaneously interrupted. This requirement shall become effective September 1, 1926.

Class	Nominal Diam.	Key			Keyless		
		Watts	Volts	Max. amp. at Any Voltage	Watts	Volts	Max. Amp. at Any Voltage
		75	125	2½	75	125	1
Candelabra	½ in.	250	250	2½	660	250	6
Medium	1 in.	(a)	660	250	660	600	6
		(b)			1500	250	
Mogul	1½ in.				1500	600	

(a) This rating may be given only to sockets having a switch mechanism which produces both a quick "make" and a quick "break" action.

(b) Ratings to be assigned later, pending further discussion with manufacturers.

Miniature sockets and receptacles having screw shells smaller than the candelabra size may be used for decorative lighting systems, Christmas tree lighting outfits, and similar purposes.

For exceptions for medium base key sockets and receptacles see Article 40, Small Isolated Plants.

It is recommended that 660-watt sockets and receptacles be used wherever the attachment of flexible cords thereto is likely.

Receptacles for attachment plugs (appliance and convenience outlets) are strongly recommended in order to facilitate the use of electrical appliances which, otherwise, must be connected to sockets designed primarily only as lamp holders.

b. The inside of metal shells shall be lined with insulating material, which shall absolutely prevent the shell from becoming a part of the circuit, even though the wires inside the sockets should become loosened or detached from their position under the terminal screws.

c. The lining shall not extend beyond the metal shell more than ¼ inch, but shall prevent any current-carrying part of the lamp base from being exposed when a lamp is in the socket.

d. The cap shall be lined.

In sockets and receptacles of standard forms a ring of any material inserted between an outer metal shell of the device and the inner screw shell for insulating purposes and separable from the device as a whole, is considered an undesirable form of construction. This does not apply to the use of rings in lamp clusters or in devices where the outer shells is of porcelain, where such rings serve to hold the several porcelain parts together, and are thus a necessary part of the whole structure of the device.

e. The socket as a whole shall be so put together that parts will not rattle loose or fall apart under the most severe conditions they are likely to meet with in practice. The base of the socket shall be secured or held in the shell in such a manner as to prevent turning or displacement relative to the shell.

f. Lead wires furnished as a part of sockets and intended to be exposed after installation shall be of approved stranded, rubber-covered wire, not less than No. 14 gauge (No. 18 gauge for candelabra sockets), and shall be sealed in place.

g. If the socket is not attached to a fixture, the inlet shall be equipped with an approved insulating bushing which, if threaded, shall be not smaller than ¾ inch in size. The edges of bushings shall be rounded and all inside fins removed in order to provide a smooth bearing surface for the wire.

It is recommended that bushings having holes ½ inch in diameter be employed with plain pendant cord, and holes ⅝ inch in diameter with reinforced cord.

h. In places where combustible dust or flyings are liable to be present in the air in sufficient quantities to produce an explosive or inflammable mixture, dust-tight fixtures enclosing lamps and sockets shall be used. Such fixtures shall be supported by conduit hangers or chains to prevent any strain on the wires. Where rubber-covered wire is used it shall have insulation not less than 3/64 inch thick.

i. Sockets and receptacles installed over specially inflammable material shall be of the keyless type and, unless individual switches are provided, shall be located at least 7½ feet above the floor, or shall be otherwise so located or guarded that the lamps cannot readily be backed out by hand.

j. When necessary to prevent portable lamps from coming into contact with inflammable materials, or to protect them from breakage, their flexible cord leads shall be equipped with handle, socket and substantial guard, the guard being securely attached to socket or handle.

k. Weatherproof sockets, especially approved for the location, shall be employed in damp or wet places or where corrosive vapors exist. If not attached to fixtures, they shall be hung from separate stranded wires not less than No. 14 which are soldered directly to the circuit wires but supported independently thereof.

It is recommended that these wires be twisted together, if the pendant is longer than 3 feet.

l. Receptacles shall be supported in the same manner as specified for fixtures in section 1403-f of this code.

m. Flush receptacles shall be enclosed in approved metal boxes in addition to the insulating enclosure of the receptacle mechanism.

n. Attachment plugs and receptacles located in floors shall be enclosed in approved metal boxes especially designed for the purpose. Where the location is free from mechanical injury or moisture, a departure from this requirement may be permitted by the inspection department.

o. Receptacles of the Edison base type shall be located not less than four feet from the floor unless for use only as lamp holding devices.

1405. Rosettes.

a. When designed for use with exposed wiring, rosettes shall be provided with bases which shall have at least 2 holes for supporting screws, shall be high enough to keep the wires and terminals at least ½ inch from the surface wired over, and shall have a porcelain lug under each terminal to prevent the rosette being placed over projections which would reduce the separation to less than ½ inch.

b. When designed for use with conduit boxes or wire raceways, rosette bases shall be high enough to keep wires and terminals at least ¾ inch from the surface wired over.

c. Fuseless rosettes shall be rated at 660 watts, 250 volts, with a maximum current rating of 6 amperes.

d. Fused rosettes shall not be used.

ARTICLE 15. LAMPS.

1501. Arc Lamps.

a. Arc lamps shall be equipped only with such resistances or regulators as are enclosed in non-combustible cases, said resistances or regulators being treated as sources of heat. An incandescent lamp shall not be used as resistance or regulator. Economy and compensator coils shall be mounted on non-combustible, non-absorptive insulating supports, such as glass or porcelain, providing an air space of at least 1 inch between frame and support. Such coils shall generally be treated as sources of heat.

b. Arc lamps shall be equipped with globes and spark arresters. The globe shall be guarded by a wire netting having a mesh not exceeding 1¼ inches. The globe, netting and spark arrester shall not be required where the lamp is of enclosed arc type.

c. Outdoor arc lamps shall be suspended at least 8 feet above the sidewalk. Indoor arc lamps shall be hung out of reach, or be suitably protected.

d. Leads to arc lamps shall have a current carrying capacity approximately 50 per cent. in excess of the normal current of the lamp. If the leads are larger than No. 14 and the lamp suspension provides for raising and lowering, the leads shall be composed of stranded wires.

e. There shall be provided a cutout for each lamp or series of lamps.

1502. Mercury Vapor Lamps.

a. Enclosed mercury vapor lamps shall be equipped with only such resistances or regulators as are enclosed in non-combustible cases, such resistances or regulators being treated as sources of heat. Where these resistances or regulators are subject to flyings of lint or combustible material, all openings in their casings shall be covered by fine wire gauze.

b. A cutout shall be provided for each enclosed mercury vapor lamp or series of lamps, except where not more than five lamps are contained in a single frame and lighted by a single operation. By permission of the inspection department, lamps may be so grouped that not more than 4000 watts will be dependent upon one cutout.

c. Fixtures carrying enclosed mercury vapor lamps shall be wired with insulated conductors not smaller than No. 12. Taps from circuit wires to points of suspension of fixtures shall not exceed 18 inches in length.

1503. Gas-filled Incandescent Lamps.

a. Gas-filled incandescent lamps shall not be equipped with medium bases if above 250 watts rating, nor with mogul bases if above 1500 watts rating. They shall not be located in show windows nor where liable to contact with inflammable material unless installed in approved fixtures equipped with shades or guards or suitably designed to operate at a safe temperature.

b. Indoor fixtures carrying gas-filled incandescent lamps shall be wired with conductors having approved heat-resisting insulation. Outdoor fixtures shall be wired with conductors having approved rubber covering.

ARTICLE 16. ELECTRICALLY HEATED APPLIANCES.

1601. Exception.

a. This article shall be construed to apply only to electrically heated appliances intended for use on circuits operating at a potential exceeding 50 volts.

1602. General.

a. Each electrically heated appliance shall be provided with a name plate, giving the maker's name and the normal capacity in volts and amperes or in volts and watts.

b. Each smoothing iron, sad-iron and other portable electrically heated appliance, which is intended to be applied to combustible material, shall be equipped with an approved stand.

It is strongly recommended that each such electrically heated appliance or group of electrically heated appliances be used with an approved signal or with an approved protective device.

c. Wires supplying smoothing irons, sad-irons and all portable electrically heated appliances requiring more than 250 watts shall conform to the requirements for heater cord, as prescribed in section 603, article 6 of this code. Wires supplying stationary electrically heated appliances shall conform to the requirements for rubber-covered wire, as prescribed in section 602, article 6 of this code; provided, however, that heat-resisting covering shall be used in place of rubber where wires outside the terminal box are subjected to a temperature in excess of 120 degrees F. (49 degrees C.)

d. Electrically heated appliances each of 6 amperes or 660 watts or less may be used on branch lighting circuits. Electrically heated appliances each of 1320 watts or less may be grouped on a separate branch circuit equipped only with approved plug receptacles and not with lamp sockets. This separate branch circuit shall be protected by fuses having a rated capacity not greater than 15 amperes.

c. Each complete electrically heated appliance, whether containing one or more heating elements which is of more than 1320 watts total capacity shall be supplied by a separate branch circuit and shall be controlled by an indicating switch readily accessible, which switch shall disconnect all ungrounded wires supplying the appliance.

f. Switches controlling the individual units of electric ranges, etc., shall not be considered as taking the place of the switch required by paragraph e of this section, but an approved attachment plug and receptacle may serve in lieu of the switch.

g. Portable electrically heated appliances having a capacity not exceeding 6 amperes or 660 watts may be connected individually to lighting circuits.

h. Subdivided circuits of electrically heated appliances need not be separately fused, but individual heating elements of such electrically heated appliances shall be fused if they are rated at more than 30 amperes.

i. Each portable electrically heated appliance shall be equipped with an approved plug connector so designed that the plug may be pulled out to open the circuit without leaving any live parts so exposed as to render likely accidental contact therewith. The connector may be located at either end of the flexible conductor or inserted in the conductor itself.

1603. Stationary Electrically Heated Appliances.

a. Each electrically heated appliance which is obviously intended by size, weight and service to be secured in a fixed position shall be so placed as to furnish ample protection between the appliance and adjacent combustible material.

b. Metal frames of stationary electrically heated appliances, operating on circuits above 150 volts to ground shall be grounded; provided, however, that where this is impracticable, grounding may be omitted by permission of the inspection department, in which case the frame shall be permanently and effectively insulated.

It is recommended that the frame be grounded in all cases.

c. Wires supplying stationary electrically heated appliances shall, if not in conduit, be so located as to be protected from mechanical injury and moisture.

It is recommended that conduit be employed.

ARTICLE 17. RESISTANCE DEVICES.

1701. Construction.

a. Rheostats, resistance boxes and equalizers intended for use in dusty or liny places or where exposed to flyings of combustible material shall be so constructed as to confine and quickly extinguish any arc or flame caused by the burning out of the resistive conductor and shall be equipped with dustproof face plates. For locations other than those above specified, these devices may be of any approved type.

b. Reactance coils shall be composed of non-combustible material, mounted on non-combustible bases and treated generally as sources of heat.

c. Condensers shall be provided with non-combustible cases and supports, and shall be installed in the manner provided for other apparatus operating with equivalent voltages and currents.

d. Resistance devices shall be so constructed that when mounted on a plane surface the casing will make contact with such surface only at the points of support, an air space of at least 1/4 inch being maintained between the casing and the surface.

e. The terminals of motor-starting rheostats shall be marked to indicate the part of the circuit to which each terminal is to be connected, as "line," "armature" and "field."

f. Fixed and movable contacts shall be so designed and so connected to the resistive conductor that there will be a minimum of arcing and consequent roughening of the contacts, even with careless handling or in the presence of dirt. In motor-starting rheostats, the point or plate on which the arm rests when in the starting position shall have no electrical connection with the resistive conductor.

g. Motor-starting rheostats shall be so designed that the contact arm cannot be left on intermediate segments. Such rheostats, if intended for use on direct current circuits, shall be equipped with automatic devices which will interrupt the supply before the speed of the motor has fallen to less than one-third its normal value.

h. Where insulated wire is used for connections between resistance elements and the contact device of a rheostat, except for motor starting service, the insulation shall be of the slow-burning type. For large rheostats and similar resistances where the contact devices are not mounted upon them the connecting wires having slow-burning insulation may be so arranged in groups that the maximum difference of potential between any two wires in any group shall not exceed 75 volts. Each group of wires shall either be mounted on non-combustible, non-absorptive insulators giving at least 1/2 inch separation from the surface wired over, or especially where it is necessary to protect the wires from mechanical injury, each group of wires may be encased in flexible tubing and placed in approved conduit, the flexible tubing extending at least 1 inch beyond the ends of the conduit.

1702. Installation.

a. Resistance devices shall be placed on a switchboard, or at a distance of at least 1 foot from combustible material, or shall be separated therefrom by a slab or panel of non-combustible, non-absorptive material, such as slate, soapstone or marble. This slab shall be somewhat larger in area than the resistance device and shall be secured in position by its own supports which shall be independent of those fastening the resistance device to the slab. Bolts which support the resistance device shall be countersunk at least 1/2 inch below the rear surface of the slab and shall be covered with insulating material. The slab shall have a thickness proportioned to the size and weight of the resistance device, in order to provide proper mechanical strength, and this thickness shall be not less than 1/2 inch.

b. Where exposed live parts of an auto-transformer starter are liable to accidental contact, a railing shall be placed around them.

1703. Lamp Resistances.

a. Where protective resistances are necessary in connection with automatic rheostats, incandescent lamps may be used, provided they do not carry or control the main current nor constitute the regulating resistance of the device.

b. When used as resistance, lamps shall be mounted in porcelain receptacles attached to non-combustible supports and shall be so arranged that they cannot have impressed upon them a voltage greater than that for which they are rated. They shall in all cases be provided with a name plate, which shall be permanently attached beside the porcelain receptacle or receptacles and stamped with the wattage and voltage of the lamp or lamps to be used in each receptacle.

c. Incandescent lamps may be used for the purpose of resistances in series with other devices, by permission of the inspection department and

when mounted in porcelain receptacles upon non-combustible supports and when so arranged that they cannot have impressed upon them a voltage greater than that for which they are rated.

ARTICLE 18. STORAGE OR PRIMARY BATTERIES.

1801. General.

a. Wiring and appliances supplied by storage or primary batteries shall be subject to the general requirements of this code which apply to wiring and appliances fed from generators developing the same difference of potential.

For battery installations for small isolated plants of less than 50 volts, see article 40 of this code.

1802. Special Requirements.

a. The battery room shall be thoroughly ventilated.

b. Wiring shall be exposed, and shall be installed in accordance with the requirements of section 501 of this code, except that in battery rooms, varnished cloth or tape insulations on conductors shall not be permitted.

c. Storage batteries shall be mounted on non-absorptive, non-combustible insulators, such as glass or thoroughly vitrified glazed porcelain.

d. Metal susceptible to corrosion unless suitably protected against attack from acid or acid spray, shall not be employed in the cell connections of storage batteries.

ARTICLE 19. LIGHTNING ARRESTERS.

1901. In Stations.

a. A lightning arrester shall be connected to each overhead wire entering a station.

b. Lightning arresters shall be located in readily accessible places, away from combustible materials and as near as practicable to the point where the wires enter the station.

c. Lightning arresters shall be well isolated from other equipment and, if of the oil-filled type, shall be placed in a fireproof room or compartment.

d. Lightning arresters shall be grounded as provided in article 9 of this code.

e. All choke coils, or other attachments inherent to the lightning protection equipment, shall have an insulation from the ground or other conductors at least equal to the insulation required at the points of the circuit in the station.

f. Kinks, coils and sharp bends in the wires between arresters and outdoor lines shall be avoided as far as practicable.

1902. Radio Equipment.

See article 37.

1903. Signal Systems.

See article 60.

1904. Grounding.

See section 903.

ARTICLE 30. CRANES AND HOISTS.

3001. General.

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

3002. Wires.

a. Wires, other than bare collector wires, shall be of approved rubber-covered or of approved slow-burning type.

b. Rubber-covered wire shall be not smaller than No. 12.

c. Slow-burning wire shall be employed only between resistance and contact plates of rheostats or where exposed to severe external heat. Wires between resistances and contact plates shall conform to the requirements of section 1701, paragraph h, of this code, except that such wires, if exposed to moisture, shall be of the rubber-covered type.

3003. Installation of Wires.

a. Exposed wiring, other than collector wires, shall be supported 1 inch from the surface wired over, 2 1/2 inches apart for voltages up to 300, and 4 inches apart for voltages between 301 and 600; provided, however, that in dry places where space is limited, each wire may be separately encased in approved flexible tubing securely fastened in place.

3004. Collector Wires.

a. Collector wires shall be secured at the ends by means of approved strain insulators, and shall be so mounted on approved insulators that the extreme limit of displacement of the wire will not bring the latter within less than 1 1/2 inches from the surface wired over.

b. Main collector wires carried along runways shall be rigidly and securely attached to insulating supports placed at intervals not exceeding 20 feet. When run horizontally, such wires shall be separated not less than 6 inches; when run otherwise, not less than 8 inches. Where necessary, intervals between insulating supports may be increased up to 40 feet, the separation between wires being increased proportionately.

c. Bridge collector wires shall be kept at least 2 1/2 inches apart and, where the span exceeds 80 feet, insulating saddles shall be placed at intervals not exceeding 50 feet.

It is recommended that the distance between wires be greater than 2 1/2 inches, where practicable.

d. Sizes of collector wire shall conform to the following table:

Distance Bet. Rigid Supports	Size of Wire
0—30 Feet	No. 6
31—60 "	" 4
Over 60 "	" 2

3005. Collectors.

a. Collectors shall be so designed as to reduce to a minimum the sparking between them and the collector wire.

3006. Switches and Cutouts.

a. The main collector wires shall be protected by a cutout and the circuit shall be controlled by a switch. The cutout and switch shall be so located as to be readily accessible from the floor.

b. Where cranes are operated from cabs, the cutout and switch specified in paragraph a of this section shall be inserted in the leads from the main collector wires, and shall be so located in the cab as to be readily accessible to the operator.

c. Where more than one motor is employed on a crane, each motor with its leads shall be separately protected by a cutout in accordance with the provisions of articles 8 and 10 of this code; provided, however, and are controlled as a unit by one controller, the pair of motors with their leads may be protected by a single cutout. This cutout shall be located in the cab if there is one.

3007. Controllers.

a. If the crane operates over readily combustible material, the resistances shall be placed in a well ventilated cabinet composed of non-combustible material, so constructed that it will not emit flame or molten metal.

If the resistances are located in a cab, this requirement may be met by constructing the latter of non-combustible material enclosing the sides of the cab from the floor to a point at least 6 inches above the tops of the resistances.

3008. Grounding.

a. Motor frames, tracks and the entire frame of the crane shall be grounded as prescribed in article 9 of this code.

ARTICLE 31. ELEVATORS.**3101. General.**

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

3102. Wires and Cables.

a. The flexible or traveling cables of the operating and lighting circuits shall be of approved rubber-covered types, and shall have a substantial flameproof outer covering. They may be run in properly bushed approved conduit where attached to the car, or may be run exposed and attached directly to the outer surface of the car extending thence to switches or fixtures within the car.

b. Conductors for lighting cables shall be not smaller than No. 14, and for control cables not smaller than No. 16.

c. Conductors, other than lighting and control cables, where located in shafts shall be encased in approved conduit or armor. Split tees and elbows may be used on conduit work except where the pipe contains feeders.

d. Signal wires, other than those receiving energy from primary batteries or approved bell transformers, shall be encased in approved conduit equipped with approved terminal bushings having an individual outlet hole for each wire.

e. The wires of motor circuits between motors and control panel may be grouped together without any extra insulation of the separate wires, provided the complete group is either taped or corded and painted in a manner to make same a rigid, self-supporting form, not over 3 feet long and not in a position liable to mechanical damage or subject to a temperature in excess of 120 degrees F. (49 degrees C.)

f. All wires between main circuit resistances and the back of control panels shall each have a flameproof outer covering as prescribed in section 1701, paragraph h, of this code. All other wiring on control panels may be of the rubber-covered type, provided the wires are laid flat against the panel and held in such a manner as to be immovable and free from mechanical injury, and are not subjected to a temperature exceeding 120 degrees F. (49 degrees C.)

In a few cases it may be necessary to bunch wires of the operating circuit on the rear of the control panel. This is permitted, provided the wires are taped, and painted with an insulating paint.

3103. Switches.

a. A switch disconnecting all ungrounded wires of the motor circuit shall be located within sight of the motor, unless permission to locate it elsewhere is given by the inspection department.

b. In garages, hatch limit switches and other spark-emitting devices shall be placed at least 4 feet above the line of the lowest floor level.

3104. Grounding.

a. Conduit or armored cable attached to elevator cars need not be grounded.

b. Motor and motor generator sets mounted on metal beams which form part of the structural metal frame of a building shall be deemed to be grounded.

c. The shifting cable need not be grounded if provided with approved strain insulators.

ARTICLE 32. EXTRA-HAZARDOUS LOCATIONS.**3201. General.**

a. Extra-hazardous locations shall comprise rooms or compartments in which highly inflammable gases, liquids, mixtures or other substances are manufactured, used or stored in other than original containers.

b. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

See also:

Service equipment, section 406, par. a.
Fuses and circuit-breakers, section 805, par. h.
Motors and control, section 1003, par. c; section 1004, par. b.
Switches, section 1202, par. a.
Lamps and receptacles, section 1404, par. h, i and j.
Resistance devices, section 1701, par. a.

3202. Wiring.

a. Armored cable or conduit shall be employed as the wiring method.

3203. Enclosure of Lamps and Devices.

a. Lamps shall be inclosed in guarded vapor-proof globes.

b. Devices and apparatus which tend to create sparks or arcs and thus ignite the highly inflammable contents shall not be placed in extra-hazardous locations unless such devices and apparatus are of the totally enclosed type, especially approved for the location.

3204. Special Precautions.

a. Switches and motors shall not be located under any hood or in any vent pipe.

ARTICLE 33. GARAGES.**3301. General.**

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19 inclusive, of this code.

b. A garage shall be deemed to be a building or portion of a building in which one or more self-propelled vehicles carrying volatile, inflammable liquid for fuel or power are kept for use, sale, storage, rental, repair, exhibition or demonstration purposes, and all that portion of a building which is on or below the floor or floors on which such vehicles are kept and which is not separated therefrom by tight, unpierced fire walls and fire resistive floors.

3302. Wiring.

a. Where floor area is sufficient to permit the storage of more than two vehicles, approved conduit or approved armored cable shall be employed as the wiring method; provided, however, that approved metal moulding may be employed in offices and show rooms. Where the floor space will accommodate not more than two vehicles, any approved wiring method may be employed.

b. Outlet and junction boxes shall be located at least 4 feet above the floor.

c. A approved reinforced cord shall be used for pendant lamps.

3303. Portables.

a. Approved portable cord designed for rough usage, such as hard service cord, stage cable or packinghouse cord, shall be used to connect portable lamps, motors or other appliances. The portable cord shall carry the male end of an approved pin-plug connector, or equivalent, the female end being of such design or so hung that the connector will break apart readily at any position of the cable. The connector shall be kept at least 4 feet above the floor.

b. Portable lights shall be equipped with approved keyless sockets of moulded composition or metal-sheathed porcelain type, the socket being provided with handle, hook and substantial guard.

3304. Charging Cables.

a. Approved stage cable shall be used for charging purposes.

b. Connectors shall be of approved type and of at least 50 amperes capacity, and shall be so designed or so hung that at least one will break apart readily at any position of the cable. Live parts shall be guarded from accidental contact. The fixed, or wall, connector shall be kept at least 4 feet above the floor and, if not located on a switchboard or charging panel, shall be guarded from accidental contact.

3305. Switchboards and Charging Panels.

a. Where spark producing devices are not located at least 4 feet above the floor, or placed in vaporproof enclosures, switchboards and charging panels shall be located in a room or inclosure provided for the purpose.

3306. Generators and Motors.

a. Generators or motors which do not actually form part of the vehicle equipment shall be of the totally enclosed type, or located at least 4 feet above the floor. When the motor is located more than 4 feet above the floor and is not of the totally enclosed type, it shall be equipped with wire screens of not less than No. 14 mesh, placed over openings at the commutator end.

3307. Special Precautions.

a. Cutouts, switches and receptacles shall be placed at least 4 feet above the floor. Cutouts and switches attached to portable apparatus shall be placed in approved cabinets.

b. Cutouts and switches shall be enclosed in approved boxes or cabinets unless placed on switchboards of charging panels in the manner prescribed in section 3305 of this code.

c. Hatch limit switches of elevators shall be located at least 4 feet above the lowest floor level.

ARTICLE 34. MOTION PICTURE STUDIOS.**3401. General.**

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

b. A motion picture exchange, factory, laboratory or studio shall be deemed to be that building or portion of a building in which moving picture films are manufactured, exposed, developed, printed, rewound, repaired, stored, etc.

3402. Wiring.

a. Approved conduit, metal raceway or armored cable shall be employed as the wiring method.

b. Side wall lamp outlets shall consist of receptacles enclosed in approved outlet boxes equipped with open-end guards riveted to the covers of the boxes.

c. Pendant lamps shall be suspended by means of approved reinforced cord, armored cord or armored cable and shall be protected by substantial wire guards.

d. Each lamp portable shall be composed of approved hard service flexible cord, approved composition or approved metal-sheathed porcelain keyless socket, handle, hook and substantial guard. The cord shall carry the male end of an approved pin-plug connector or equivalent, the female end being of such design or so hung that the connector will break apart readily at any position of the cord. The connector shall be kept at least 1 foot above the floor.

e. At patching tables, approved composition or metal-sheathed porcelain keyless sockets shall be employed and shall be equipped with suitable means to guard lamps from mechanical injury.

f. In film-storage vaults lamps shall be installed on rigid fixtures and inclosed in vaporproof globes. Such lamps shall be controlled by a double pole switch, located outside the vault. Electric motors or portable lamps shall not be placed in the vault.

g. Motors shall be of the enclosed type. Rheostats shall be placed in cabinets which enclose all live parts, leaving only the operating handles exposed.

ARTICLE 35. MOTION PICTURE PROJECTORS AND EQUIPMENT.**3501. General.**

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

b. The so-called professional types of projectors, such as are commonly used in theatres and motion picture houses, shall be located in fireproof booths.

The professional projector employs a film which is 1 3/4 inches wide and has on each edge 5.4 perforations per inch.

c. Projectors of the non-professional or miniature type, if employing only approved slow-burning (cellulose acetate or equivalent) film, may be operated without a booth.

3502. Projectors of Professional Type.

a. The arc lamp house shall be composed entirely of metal having a thickness not less than No. 24 U. S. sheet metal gauge (.025 inch) except where the use of approved insulating material is necessary. Details of construction shall conform to the requirements of section 1501 of this code. An incandescent lamp inclosure shall conform to the above requirements so far as may be practicable.

b. Wires not smaller than No. 4 shall be employed to supply the projector outlet.

c. Rheostats, transforming devices and any substitute therefor, shall be of types expressly designed and approved for the purpose. They shall be judged as component parts of the projector equipment as to installation and location.

d. Top and bottom magazines shall be so designed in some approved manner as to prevent the entrance of flame. No solder shall be used in their construction. The front side of each magazine shall consist of a door swinging horizontally and equipped with a substantial latch.

e. An automatic shutter shall be provided and permanently attached to the gate frame. The construction of the shutter shall be such as to shield the film from the beam of light whenever the film is not running at operating speed.

f. Motor-driven projectors shall be of a type expressly designed and approved for such operation. Such projectors shall be used only by permission of the inspection department, and when the projector is in charge of a qualified operator.

3503. Enclosures for Projectors of Professional Type.

a. The enclosure shall be constructed of suitable fireproof material, shall be properly lighted and shall be large enough to permit the operator to walk freely on either side of or back of the projector.

b. Ventilation shall be provided by means of a vent pipe having a cross-sectional area of not less than 78 square inches, and such vent pipe shall lead to the outside of the building or to a special non-combustible flue. The vent pipe shall be kept at least 1 inch from combustible material or separated therefrom by approved non-combustible, heat-insulating material not less than ½ inch in thickness.

c. Draft in vent pipe shall be maintained by an exhaust fan having a capacity of at least 50 cubic feet per minute. The fan motor shall be so installed that fumes passing through the flue cannot come in contact with it, shall be connected to the emergency service and shall not be controlled from the booth.

d. Openings in the enclosure shall be equipped with doors or shutters of fire-resisting material equivalent to that of the enclosure. Such door or shutter shall entirely close its opening, and shall be arranged to be held in the closed position by spring hinges or equivalent devices.

e. Rewinding of films shall be performed in the enclosure if practicable; otherwise, in a separate fireproof room provided for the purpose. Extra films shall be kept in individual metal boxes having tight-fitting covers. Reels carrying films under examination or in process of rewinding shall be enclosed in magazines or approved metal boxes similar to those of the projector, and not more than 2 feet of film shall be exposed.

f. A motor-generator installed in the projector enclosure shall have the commutator end or ends suitably protected from mechanical injury by wire screens or other suitable means.

3504. Projectors of Non-professional Type.

a. Motion picture projecting machines not intended for installation and use in permanent and ventilated booths shall be permitted only for projecting film of an approved slow-burning (cellulose acetate or equivalent) type.

b. All such equipment shall be expressly approved, including current-controlling devices and other essential operating parts.

c. The source of illumination of the projected view shall be an incandescent lamp of a pattern expressly intended for steroptic use or for motion picture projection.

d. Rheostats, transformers, switches and other current controlling devices shall be attached to and form an integral part of the projector or its housing and shall have no live parts exposed.

e. The slow-burning (cellulose acetate or equivalent) film shall have a permanent distinctive marker for its entire length identifying the manufacturer and the slow-burning character of the film stock.

f. Machines shall be marked with the name or trademark of the maker, and with the voltage and current rating for which they are designed, and shall also be plainly marked, "For use with slow-burning films only."

ARTICLE 36. ORGANS.

3601. General.

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19 inclusive, of this code. They shall be deemed to apply to those electrical circuits and parts of electrically operated organs which are employed for the control of the sounding apparatus and keyboards.

3602. Source of Energy.

a. The source of energy shall be either a self-excited generator rated at not over 15 volts, or a primary battery.

b. The generator shall either be permanently and effectively insulated both from ground and from the motor driving it, or both generator and motor frames shall be grounded as prescribed in article 9 of this code.

3603. Cables.

a. All wires, except common return wires inside the organ proper, the organ sections and the organ console, shall be cabled.

b. The separate wires of the cable shall be not smaller than No. 26, and shall have either rubber, cotton or silk insulation. The cotton or silk may be saturated with paraffine, if desired.

c. The separate wires shall be either bunched or cabled. In either event they shall be enclosed in one or more braided outer coverings. A tape may be substituted for an inner braid. The outside covering of a cable not run in conduit shall either be flameproof, or covered with a closely wound fireproof tape.

d. The common return wire shall be not smaller than No. 14, shall be of either the rubber-covered or the slow-burning type and shall not be contained in the cable. It may be run in contact with the cable or placed under an additional covering inclosing both cable and return wire.

3604. Workmanship and Material.

a. All wiring and devices within the organ or any of its parts shall be neatly disposed and securely fastened.

b. It is not found to be either necessary or feasible in organ structures to require the use of non-combustible, non-absorptive insulating material for the supports or enclosures of current carrying parts.

c. Cables between parts of the organ and between the console and the organ shall be installed in a workmanlike manner, shall be securely fastened in position and shall be kept from contact with other wires. Conduit may be used, but shall not be required.

3605. Fuses.

a. Circuits shall be so subdivided and protected at the source by approved enclosed fuses of not over 30 amperes rating that every wire will be protected by one or more such fuses. No other fuses in the organ circuits shall be required.

ARTICLE 37. RADIO EQUIPMENT.

3701. General.

a. The requirements of this article shall not apply to equipment installed on shipboard, but shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

b. Transformers, voltage reducers, keys and other devices employed shall be of types expressly approved for radio operation.

3702. For Receiving Stations Only.

a. Antenna and counterpoise outside buildings shall be kept well away from all electric light or power wires of any circuit of more than 600 volts, and from railway, trolley or feeder wires, so as to avoid the possibility of contact between the antenna or counterpoise and such wires under accidental conditions.

b. Antenna and counterpoise where placed in proximity to electric light or power wires of less than 600 volts, or signal wires, shall be constructed and installed in a strong and durable manner, and shall be so located and provided with suitable clearances as to prevent accidental contact with such wires by sagging or swinging.

c. Splices and joints in the antenna span shall be soldered unless made with approved splicing devices.

d. The preceding paragraphs, a, b, and c, shall not apply to light and power circuits used as receiving antenna, but the devices used to connect the light and power wires to radio receiving sets shall be of approved type.

e. Lead-in conductors shall be of copper, approved copper-clad steel or other metal which will not corrode excessively, and in no case shall they be smaller than No. 14, except that bronze or copper-clad steel not less than No. 17 may be used.

f. Lead-in conductors on the outside of buildings shall not come nearer than 4 inches to electric light and power wires unless separated therefrom by a continuous and firmly fixed non-conductor which will maintain permanent separation. The non-conductor shall be in addition to any insulating covering on the wire.

g. Each lead-in conductor shall enter the building through a non-combustible, non-absorptive, insulating bushing slanting upward toward the inside or by means of an approved device designed to give equivalent protection.

h. Each lead-in conductor shall be provided with an approved protective device (lightning arrester) which will operate at a voltage of 500 volts or less, properly connected and located either inside the building at some point between the entrance and the set which is convenient to a ground, or outside the building as near as practicable to the point of entrance. The protector shall not be placed in the immediate vicinity of easily ignitable stuff, or where exposed to inflammable gases or dust or flyings of combustible materials.

i. If an antenna grounding switch is employed, it shall in its closed position form a shunt around the protective device. Such a switch shall not be used as a substitute for the protective device.

It is recommended that an antenna grounding switch be employed, and that in addition a switch rated at not less than 30 amperes, 250 volts, be located between the lead-in conductor and the receiver set.

j. If fuses are used, they shall not be placed in the circuit from the antenna through the protective device to ground.

k. The protective grounding conductor may be bare and shall be of copper, bronze or approved copper-clad steel. The protective grounding conductor shall be not smaller nor have less conductance per unit of length than the lead-in conductor and in no case shall be smaller than No. 14 if copper nor smaller than No. 17 if of bronze or copper-clad steel. The protective grounding conductor shall be run in as straight a line as possible from the protective device to a good permanent ground. Preference shall be given to water piping. Other permissible grounds are grounded steel frames of buildings or other grounded metal work in the building, and artificial grounds such as driven pipes, rods, plates, cones, etc. Gas piping shall not be used for the ground.

l. The protective grounding conductor shall be guarded where exposed to mechanical injury. An approved ground clamp shall be used where the protective grounding conductor is connected to pipes or piping.

m. The protective grounding conductor may be run either inside or outside the building. The protective grounding conductor and ground, installed as prescribed in the preceding paragraphs k and l, may be used as the operating ground.

It is recommended that in this case the operating grounding conductor be connected to the ground terminal of the protective device. If desired, a separate operating grounding connection and ground may be used, this operating grounding conductor being either bare or provided with an insulated covering.

n. Wires inside buildings shall be securely fastened in a workmanlike manner and shall not come nearer than 2 inches to any electric light or power wire not in conduit unless separated therefrom by some continuous and firmly fixed non-conductor, such as porcelain tubes or approved flexible tubing, making a permanent separation. This non-conductor shall be in addition to any regular insulating covering on the wire.

o. Storage battery leads shall consist of conductors having approved rubber insulation. The circuits from storage batteries shall be properly protected by fuses or circuit-breakers rated at not more than 15 amperes and located preferably at or near the battery.

3703. For Transmitting Stations Only.

a. Antenna and counterpoise outside buildings shall be kept well away from all electric light or power wires of any circuit of more than 600 volts, and from railway trolley or feeder wires, so as to avoid the possibility of contact between the antenna or counterpoise and such wires under accidental conditions.

b. Antenna and counterpoise where placed in proximity to electric light or power wires of less than 600 volts, or signal wires, shall be constructed and installed in a strong and durable manner, and shall be so located and provided with suitable clearances as to prevent accidental contact with such wires by sagging or swinging.

c. Splices and joints in the antenna and counterpoise span shall be soldered unless made with approved splicing devices.

d. Lead-in conductors shall be of copper, bronze, approved copper-clad steel or other metal which will not corrode excessively and in no case shall be smaller than No. 14.

e. Antenna and counterpoise conductors and wires leading therefrom to ground switch, where attached to buildings, shall be firmly mounted 5 inches clear of the surface of the building, on non-absorptive insulating supports such as treated pins or brackets, equipped with insulators having not less than 5 inches creepage and air-gap distance to inflammable or conducting material, except that the creepage and air-gap distance for continuous wave sets of 1000 watts and less input to the transmitter, shall be not less than 3 inches.

f. In passing the antenna or counterpoise lead-in into the building a tube or bushing of non-absorptive, insulating material, slanting upward

toward the inside, shall be used and shall be so insulated as to have a creepage and air-gap distance of at least 5 inches to any extraneous body, except that the creepage and air-gap distance for continuous wave sets of 1000 watts and less input to the transmitter, shall be not less than 3 inches. If porcelain or other fragile material is used it shall be protected where exposed to mechanical injury. A drilled window pane may be used in place of a bushing provided creepage and air-gap distance as specified above is maintained.

g. A double-throw knife switch having a break distance of at least 4 inches and a blade not less than $\frac{1}{4}$ inch by $\frac{1}{2}$ shall be used to join the antenna and counterpoise lead-in to the grounding conductor. The switch may be located inside or outside the building. The base of the switch shall be of non-absorptive insulating material. This switch shall be so mounted that its current-carrying parts will be at least 5 inches clear of the building wall or other conductors, except that for continuous wave sets of 1000 watts and less input to the transmitter, the clearance shall be not less than 3 inches. The conductor from grounding switch to ground shall be securely supported.

It is recommended that the switch be located in the most direct line between the lead-in conductors and the point where grounding connection is made.

h. Antenna and counterpoise conductors shall be effectively and permanently grounded at all times when station is not in actual operation and unattended, by a conductor at least as large as the lead-in and in no case smaller than No. 14 copper, bronze, or approved copper-clad steel. This protective grounding conductor need not have an insulated covering or be mounted on insulating supports. The protective grounding conductor shall be run in as straight a line as possible to a good permanent ground. Preference shall be given to water piping. Other permissible protective grounds are the grounded steel frames of buildings and other grounded metal work in buildings and artificial grounding devices such as driven pipes, rods, plates, cones, etc. The protective grounding conductor shall be protected where exposed to mechanical injury. A suitable approved ground clamp shall be used where the protective grounding conductor is connected to pipes or piping. Gas piping shall not be used for the ground.

It is recommended that the protective grounding conductor be run outside the building.

i. The operating grounding conductor shall be of copper strip not less than $\frac{1}{4}$ inch wide by 1/32 inch thick, or of copper, bronze, or approved copper-clad steel having a periphery, or girth, of at least $\frac{3}{4}$ inch, such as a No. 2 wire, and shall be firmly secured in place throughout its length.

j. The operating grounding conductor shall be connected to a good permanent ground. Preference shall be given to water piping. Other permissible grounds are grounded steel frames of buildings or other grounded metal work in the building, and artificial grounding devices such as driven pipes, rods, plates, cones, etc. Gas piping shall not be used for the ground.

k. When the current supply is obtained directly from lighting or power circuits, the conductors whether or not lead covered shall be installed in approved metal conduit, armored cable or metal raceways.

l. When necessary to protect the supply system from high-potential surges and kick-backs there shall be installed in the supply line as near as possible to each radio-transformer, rotary spark gap, motor and generator in motor generator sets and other auxiliary apparatus one of the following:

1. Two condensers (each of not less than 1/10 microfarad capacity and capable of withstanding 600-volt test) in series across the line with mid-point between condensers grounded; across (in parallel with) each of these condensers shall be connected a shunting fixed spark-gap capable of not more than 1/32 inch separation.

2. Two vacuum tube type protectors in series across the line with the mid-point grounded.

3. Resistors having practically zero inductance connected across the line with mid-point grounded.

It is recommended that this third method be not employed where there is a circulation of power current between the mid-point of the resistors and the protective ground of the power circuit.

4. Lightning arresters such as the aluminum cell type.

ARTICLE 38. SIGNS AND OUTLINE LIGHTING.

3801. General.

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

3802. Material.

a. Metal used in the construction of sign boxes, cabinets or outline troughs shall be not less than No. 28 U. S. sheet metal gauge (0.156 inch). It shall be galvanized, treated with at least three coats of anti-corrosive paint, or otherwise suitably protected from corrosion.

b. With the exception of wood employed for the external decoration of signs and kept at least 2 inches distant from the nearest socket or receptacle, signs shall be constructed entirely of metal or other approved non-combustible material.

c. The design shall be such as to afford ample strength and rigidity, to render the box or trough practically weatherproof, to enclose all terminals and wiring other than the leads, and to provide drainage for each compartment by means of one or more holes, each not less than $\frac{1}{4}$ inch in diameter.

d. A separate, completely enclosed, accessible weatherproof approved box or cabinet shall be provided to contain cutouts, flashers, non-weatherproof transformers or other similar devices placed on or within the body or structure of a sign or on the exterior of a building.

e. Raceways shall not be employed for outline lighting.

3803. Sockets and Receptacles.

a. Sockets and receptacles for sign and outline lighting shall be of the keyless porcelain type, and if for sign use shall be so designed as to afford permanent and reliable means to prevent turning. Terminals of sign receptacles shall be kept at least $\frac{1}{2}$ inch from metal of the sign; provided, however, that where open work is employed as the wiring method, this separation shall be at least 1 inch. Miniature receptacles shall not be employed for outdoor work.

3804. Wiring.

a. Wire of approved rubber-covered type, and not smaller than No. 14, shall be used.

b. Wires shall be neatly run, and so disposed and fastened as to be mechanically secure.

c. Wires shall be soldered to terminals of receptacles, and exposed parts of wires and terminals shall be treated to prevent corrosion.

d. Approved bushings shall be employed to protect wires passing through walls or partitions of the structure. Sign leads not encased in conduit or metal armor may be cabled before passing through non-combustible, non-absorptive bushings.

e. Wires on outside of sign structure, except as provided in section 3805 of this code, shall be enclosed in approved conduit or metal armor. Where armor is employed an approved lead sheath shall be placed over the wire insulation.

f. Outline lighting shall be protected by its own cutout and controlled by its own switch.

g. Circuits shall be so arranged that the number of outlets and the lamps connected to them shall in no case be such as to place more than 15 amperes on the branch circuit fuse.

3805. Open Wiring.

a. Open work may be employed as the wiring method for outline lighting and for signs on roofs or open ground, where not subject to mechanical injury.

b. Where wires are connected to approved receptacles which hold them at least 1 inch from the surface wired over, and which are placed at intervals not exceeding 1 foot, the receptacles themselves shall be considered to afford the necessary support and spacing of the wires. Where the interval between receptacles exceeds 1 foot but is less than 2 feet, an additional non-combustible, non-absorptive insulator maintaining a separation and spacing equivalent to the receptacle shall be used.

c. Where flexible tubing must be employed in outline lighting, the ends shall be sealed and painted with a moisture repellent and the tubing shall be kept at least $\frac{1}{2}$ inch from the surface wired over.

3806. Grounding.

a. Troughs used for outline lighting shall be grounded as provided in article 9 of this code.

ARTICLE 39. THEATRES; INCLUDING MOTION PICTURE HOUSES.

3901. General.

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

b. A theatre shall be deemed to be that building, or part of a building, regularly or frequently used for dramatic, operatic, motion picture or other performances or shows, or which has a stage for such performances used with scenery or other stage appliances.

c. Emergency lights shall be deemed to be exit lights and all lights necessary to properly illuminate lobbies, stairways, corridors and other portions of the theatre to which the public has access, which are normally kept lighted during the performance.

3902. Services.

a. Where the supply can be obtained from two separate street mains, two separate and distinct services shall be installed, one service being of sufficient capacity to supply current for the entire equipment of the theatre, the other service being of sufficient capacity to supply current for all emergency lights. Where the supply cannot be obtained from two separate sources, the feed for the emergency lights shall be taken from a point on the street side of the main service fuses.

b. Where the source of supply is an isolated plant located in the building an auxiliary service of capacity sufficient to supply all emergency lights shall be obtained from some outside source, or from an adequate storage battery installed upon the premises.

3903. Auditorium.

a. Approved conduit, metal raceway or armored cable shall be employed as the wiring method.

b. Receptacles shall be inclosed in boxes.

c. Not more than one set of fuses shall be interposed between service fuses and exit lights.

d. Emergency lights shall not be connected to or controlled by the stage lighting control, but from the lobby or other convenient place in the front of the theatre.

e. All fuses shall be enclosed in approved cabinets.

3904. Stage.

a. Approved conduit or armored cable shall be employed as the wiring method.

b. The switchboard shall be of the dead-front type, and shall carry a metal hood running the full length of the board and protecting the latter from falling objects.

c. Dimmers shall be so connected that they will be dead when their respective circuit switches are open.

d. Footlights shall be wired by either the conduit or the armored cable method, receptacles being inclosed in approved boxes, or the wires shall be encased in metal trough composed of No. 20 U. S. sheet metal gauge (.375 inch), treated to prevent oxidation. Conductors shall be soldered to receptacle terminals, which shall be kept at least $\frac{1}{2}$ inch from the metal of the trough.

e. Footlights, border lights and proscenium side lights shall be so wired that the number of outlets and the lamps connected to them shall in no case be such as to place more than 15 amperes on a branch circuit fuse.

f. Borders and proscenium sidelights shall be constructed as prescribed in paragraph d of this section, shall be suitably stayed and supported, and shall be so designed that the flanges of the reflectors or other adequate guards will protect the lamps from mechanical injury and from accidental contact with scenery or other combustible material.

g. Border cables shall be of approved type and suitably supported. They shall be employed only where flexibility is required.

h. Approved slow-burning wire shall be used for wiring the border.

i. Borders shall be suitably suspended. If wire rope is used each length shall be insulated by at least one strain insulator, placed close to the border.

j. Stage and gallery pockets shall be of approved type, and controlled from the switchboard. Feeds for arc pockets shall be not smaller than No. 6, and the receptacles shall have a capacity of not less than 35 amperes. Feeds for incandescent pockets shall be not smaller than No. 12, and the receptacles shall have a capacity of not less than 15 amperes. Feeds to pockets shall be of ample size to supply all receptacles therein at full rating. Plugs for arc and incandescent pockets shall not be interchangeable.

k. Lamps installed in scene docks shall be so located and guarded as to be free from mechanical injury.

l. Curtain motors shall be of the inclosed type.

m. Where stage flue dampers are released by an electrical device, the circuit operating the latter shall be normally closed, and shall be controlled by at least two approved single-pole switches enclosed in approved iron

boxes having self-closing doors without locks or latches, one switch being placed at the electrician's station and the other where designated by the inspection department. The device shall be designed for the full voltage of the circuit to which it is connected, no resistance being inserted. It shall be located in the loft above the scenery and shall be enclosed in a suitable iron box having a tight, self-closing door.

3905. Dressing Rooms.

a. Approved conduit or armored cable shall be employed as the wiring method.

b. Pendants for lights shall be composed of approved reinforced cord, armored cable or armored cord.

c. Lamps shall be protected by approved guards sealed or locked in place.

3906. Portable Arc Lamps.

a. Arc lamps shall be substantially constructed entirely of metal not less than No. 20 U. S. sheet metal gauge (.0375 inch), except where approved insulating material is necessary. The design shall be such as to provide proper ventilation while retaining sparks, and to prevent carbons or other live parts of lamp from making contact with metal of hood.

b. Hoods for other than lens lamps shall have the front opening equipped with a self-closing hinged door frame carrying either wire gauze or glass. Hoods for lens lamps may have a stationary front, and a solid door on either back or side.

c. Mica shall be used for the insulation of the lamp frame.

d. Arc lamp frames and standards shall be so installed and guarded as to prevent their becoming grounded.

e. The switch on the standard shall be of such design that accidental contact with any live part will be impossible.

f. Stranded connections in lamp and at switch and rheostat shall be provided with approved lugs.

g. Rheostats shall be enclosed in a substantial properly ventilated metal case affording a clearance of at least 1 inch between case and resistance element. If the rheostat is mounted on the standard, a clearance of 3 inches above the floor shall be maintained.

h. A qualified operator shall be employed for each lamp, or for each two lamps not more than 10 feet apart and so placed that one operator can properly watch and care for both.

3907. Portable Bunches.

a. Substantial metal shall be employed and the wiring shall not be exposed.

b. Where the cable passes through the metal, an approved bushing shall be employed, and the cable shall be so anchored as to relieve the connections of any mechanical strain.

3908. Portable Strips.

a. Portable strips shall conform to the requirements of paragraphs d, e and f of section 3904, of this code.

b. Where the cable passes through the metal an approved bushing shall be employed, and the cable shall be so anchored as to relieve the connections of serious mechanical strain.

3909. Portable Plugging Boxes.

a. The construction shall be such that no current-carrying part will be exposed.

b. Each receptacle shall have a current carrying capacity of 30 amperes, and shall be protected by approved fuses mounted on slate or marble bases enclosed in a fireproof cabinet equipped with self-closing doors.

c. Bus-bars shall have a current carrying capacity equal to the sum of the ampere ratings of all the receptacles. Approved lugs shall be provided for the connection of the master cable.

3910. Portable Conductors.

a. Pin-plug connectors shall be so designed that tension on the cable will not cause serious mechanical strain on the connections. The female half shall be attached to the live end of the cable.

b. Flexible conductors used from receptacles to arc lamps, bunches and other portable equipments shall be approved stage cable except that for the purpose of feeding a stand lamp under conditions where conductors are not liable to severe mechanical injury, an approved reinforced cord may be used, provided cutout designed to protect same is not fused over 15 amperes capacity.

3911. Lights on Scenery.

a. Brackets shall be wired internally, and the fixture stem shall be carried through to the back of the scenery, where a suitable bushing shall be placed on the end of the stem. Fixtures shall be securely fastened in place.

3912. String or Festooned Lights.

a. Joints in wiring shall be staggered where practicable.

b. Lamps enclosed in lanterns or similar devices shall be equipped with approved guards.

3913. Special Electrical Effects.

a. Devices used for simulating lightning, waterfalls, etc., shall be so constructed and located that flames, sparks, etc., cannot come in contact with combustible material.

ARTICLE 40. SMALL ISOLATED PLANTS.

4001. General.

a. The requirements of this article shall be deemed to be additional to, or amendatory of, those prescribed in articles 1 to 19, inclusive, of this code.

b. This article shall be deemed to apply particularly to isolated plants which employ as their prime mover a stationary internal-combustion engine, with its necessary fittings, connected to an electric generator either with or without an auxiliary storage battery with its control devices, and operating at a potential of less than 50 volts.

c. Attention shall be given to the relatively low voltage at which these plants operate, thus requiring a greater current for equivalent energy and making necessary a greater ampere capacity of conductors, fittings, devices and appliances, as compared with those of the standard 0-600 volt classification used on commercial circuits.

4002. Sockets and Receptacles.

a. Standard lamp sockets and receptacles of the 250-volt classification shall be used. Sockets and receptacles of the 250-volt, 25-watt classification shall not be used for currents greater than 3½ amperes.

b. Lamp sockets and receptacles shall be rated at not less than 40 watts each, for purposes of installation.

4003. Automatic Cutouts.

a. Fuses shall be so placed that no set of small motors, small heating appliances or incandescent lamps, nor more than 8 lamp socket or receptacles, requiring more than 320 watts, shall be dependent upon one cutout.

b. The fuses in the branch circuit shall not exceed 10 amperes rating.

4004. Batteries.

a. Batteries shall be located in rooms or spaces having natural means of ventilation.

b. Battery jars and cells, if not composed of insulating material such as glass or hard rubber, shall be mounted on insulating supports of glass or porcelain.

4005. Grounding.

a. The grounding of circuits or frames of engine or generator shall not be required.

ARTICLE 50. SYSTEMS AND VOLTAGES OF OVER 600 VOLTS.

5001. Series Arc Lighting.

a. Constant current systems shall not be installed in buildings, except by permission of the inspection department.

b. Wires shall be of approved rubber-covered type and shall be kept in plain sight except where the inspection department requires that they be encased.

c. Wires shall be supported on glass or porcelain insulators which rigidly separate the wires at least 8 inches and maintain them at least 1 inch from the surface wired over. This requirement shall not apply to locations where such separations are impracticable, as inside lamps, on hanger boards, etc.

d. Wires on sile walls shall be encased in a boxing as provided in section 501, paragraph o, of this code.

e. Wires crossing floor timbers in cellars or rooms where they might be exposed to injury shall be installed on running boards or protected by guard strips as provided in section 501, paragraph m, of this code.

f. The service shall enter through an approved double-contact switch, mounted in a moisture-proof non-combustible case, so located as to be readily accessible to police or firemen. This switch shall be of the indicating type, shall close the main circuit and disconnect the branch wires when turned "off" and shall be so designed that it will automatically continue its action when once started. It shall prevent an arc between the points under all circumstances.

g. Arc lamps shall conform generally to the requirements of article 1501, of this code. When hanger boards are not used, lamps shall be hung from insulating supports other than their conductors.

h. Incandescent lamps shall be suspended from hanger boards by rigid pipes, and shall not be attached to gas fixtures. Each lamp shall be provided with an automatic cutout. No electro-magnetic switching device shall be employed, nor shall the lamps be connected in multiple-series or series-multiple.

5002. Vacuum Tube Systems.

a. The tube shall be so installed as to be free from mechanical injury or contact with inflammable material. Coils and regulating apparatus shall be mounted on approved non-combustible non-absorptive insulating bases and inclosed in a well ventilated grounded approved steel cabinet having walls not less than 1/10 inch in thickness, the ventilation being so designed as to prevent the emission of flame or sparks.

b. Wiring leading to the above cabinet shall conform to the requirements of article 5 of this code, if such wires operate at a potential not exceeding 300 volts.

5003. Wiring.

a. Circuits operating at more than 7500 volts between conductors shall not be installed in buildings other than central stations, sub-stations or transformer vaults.

b. Elsewhere than in central stations, sub-stations, and generator, transformer, switching, and motor rooms, all apparatus and wiring connected to circuits of more than 600 volts shall be completely inclosed by substantial shields or casings, and when these shields or casings are of metal they shall be grounded as prescribed for the grounding of equipment in article 9 of this code, and the conduit shall properly enter and be secured to such shield or casing, or to suitable terminal boxes secured or bolted to the casing.

c. Generator, switching and motor rooms containing apparatus operating at more than 600 volts shall be securely locked to limit access to qualified persons only.

d. Elsewhere than in central stations, sub-stations, and generator, transformer, switching and motor rooms, all wiring of circuits of more than 600 volts shall consist of approved multiple-conductor, grounded metal-sheathed cable inclosed in approved grounded conduit. Where the cable is not exposed to moisture, the metal sheath may be omitted by permission of the inspection department. Where moisture is absent, the metal sheath need not be continued over splices; but where the metal sheath is required over the rest of the cable the ends of the sheath shall be belled out and bounded around the splices by No. 6 copper wire and ground clamps.

e. Air-break disconnectors shall be installed between oil switches used as service switches and the supply wires.

f. Where a cable emerges from its metal sheath, the insulation of the several conductors shall be thoroughly protected from moisture and mechanical injury by a pothead or equivalent device.

g. Open work may be employed in central stations, sub-stations, generator, transformer and switching rooms and motor rooms adjoining an outside wall where the wires entering the motor room are not in conduit, provided the wires are rigidly supported on glass or porcelain insulators which keep them at least 1 inch from the surface wired over and 8 inches apart except at apparatus and devices.

Rigid supporting requires supports about 4½ feet apart when wiring along the flat surfaces under ordinary conditions.

5004. Motors.

a. Motors operating at a potential exceeding 2500 volts to ground shall not be installed elsewhere than in central stations, sub-stations and generator and motor rooms.

5005. Transformers and Apparatus.

a. Transformers installed in central stations and sub-stations shall be so located that fire and smoke from burning coils or boiling oil will be unlikely to do harm.

It is recommended that air cooled transformers be isolated as much as possible, and that, if air blast is employed, the ducts be fireproof.

It is further recommended that oil-filled transformers be placed in a compartment constructed in accordance with section 5007 of this code.

b. Transformers shall not be installed in buildings other than central stations or sub-stations, except by permission of the inspection department. Where such permission has been granted, transformers shall be located as near as possible to the point at which the primary wires enter the building and shall be contained in an enclosure of fire-resistive material large enough

to provide an air space of at least 6 inches on every side of the transformers. This enclosure shall be securely locked, access being allowed only to authorized persons, and shall be thoroughly ventilated.

It is recommended that ventilation be secured by means of a chimney or flue leading out of doors.

c. Transformer cases shall be grounded as prescribed for the grounding of equipment in article 9 of this code; provided, however, that cases or frames of transformers used exclusively to supply current to switch-board instruments need not be grounded if they are installed and guarded as required for the maximum potential at which they operate.

d. For oil-filled transformers which are not located in central stations or substations, the inclosure required by paragraph b of this section shall consist of fireproof vault construction in accordance with section 5007 of this code. This shall not apply to the control circuit transformer furnished with control equipment. These transformers shall be considered as subject to the requirements applying to the equipments with which they are used.

e. For transformers in electric furnace rooms, the requirements of this section and of section 5007 shall be followed so far as practicable; provided, however, that by permission of the inspection department, oil-filled transformers having a total rating of 75 k.v.a. or less, may be located in electric furnace rooms of fire-resisting construction, if surrounded by concrete curbs not less than 6 inches high and forming a basin of sufficient capacity to retain all the oil used in such transformers.

This is to guard against the possibility of molten metal from the furnace coming in contact with the transformer casing, and also to prevent oil from the transformers reaching the furnace.

5006. Switches.

a. Oil circuit-breakers and switches shall be isolated from other switches and electrical apparatus wherever practicable. When operated at a potential exceeding 7500 volts, they shall be of the remote control type, and shall be placed in separate fireproof cells or compartments.

It is recommended that oil switches used to control transformers be located in the transformer vault.

b. All switches including disconnectors shall be so located that the point from which they are operated is safely accessible to qualified and authorized persons.

5007. Transformer Vaults.

a. The enclosure shall consist of concrete not less than 6 inches in thickness, or of brick not less than 8 inches in thickness, except that when the total transformer capacity so enclosed is not over 100 kilo-volt-amperes the above thickness may be reduced to 4 inches, provided approved fireproof material is employed and the construction of the vault is specifically approved by the inspection department.

It is recommended that outside walls of the building, if of fireproof construction, constitute one or more of the walls of the vault or enclosure.

b. The enclosure shall be provided with means for ventilation which will prevent the development of room temperatures in excess of those at which the transformers installed therein may be safely operated. Limiting temperatures shall be determined in accordance with and in the manner prescribed by the standardization rules of the American Institute of Electrical Engineers, and temperatures under full load shall not exceed the values given in such rules. All ventilating openings not connected to chimneys or flues shall be provided with automatic or manually controlled dampers to prevent the emission of smoke or fire.

It is recommended that damper controls be arranged to be operated from a point outside the vault.

c. Where practicable, a suitable drain shall be provided which will carry off any accumulation of oil or water that may collect in the vault. Floor and drain shall have a pitch of not less than $\frac{1}{4}$ inch per foot. In vaults containing transformers having a total capacity of 100 kilo-volt-amperes or less the drain may be omitted if the enclosure is so constructed as to retain all the oil used within the vault.

d. Unless access is from outside the building only, the doorway to the vault shall be thoroughly closed by means of an approved tight-fitting fire door. A door sill not less than 4 inches in height shall be provided. In all cases the sill shall be of sufficient height to confine within the vault the oil from the largest transformer installed.

5008. Static Condensers.

a. Static condensers of the type made up of small units, each of which contains less than three gallons of oil, may be installed in power houses or factory buildings if combustibles are kept well away from them. In rooms containing combustible dust or flying material, condensers shall be inclosed.

If condensers are accessible to other than qualified persons a non-combustible grille or guard around them may be desirable.

b. Condensers which have all units in single tanks filled with oil shall be installed as required for transformers in section 5005.

c. For transformers used with static condensers, the requirements of section 5005 shall be followed; provided, however, that by permission of the Inspection Department, oil-filled transformers intended for and used only with static-condenser installations and not subject to lightning disturbances may be installed in rooms of non-combustible construction and occupancy. Such transformers shall be of sufficient capacity to allow for ordinary rises in voltage; they shall be surrounded by concrete curbs not less than 6 inches high which form a basin of sufficient capacity to retain all the oil contained in the transformers; and be protected by an automatic overload circuit-breaker (or other protective device and switch) set to operate at a current corresponding to not over 150% of the rated capacity of the condenser.

5009. Service Equipment.

In services operating at more than 600 volts, all ungrounded conductors shall, except as provided below, be controlled and protected by an automatic overload circuit-breaker which shall be of suitable rupturing capacity and which shall be located as near as possible to the point where the service enters the building and so that the point from which it is opened or closed will be readily accessible. Each service lead shall have an air-break disconnecter which will disconnect from the supply line all apparatus within the building. If the service does not supply, at the primary voltage, any equipment except that contained in a fireproof transformer vault, or if it enters only a detached transformer house or inclosure, then suitable disconnectors and suitable fuses may be used and may be installed in the transformer inclosure. If in such cases the voltage does not exceed 2300 volts to ground and the installed transformer capacity does not exceed 5) k.v.a. per phase, suitable fuses without disconnectors may be installed in the transformer inclosure. In all cases where automatic overload circuit-breakers are not installed in the primaries and arranged so that they may be tripped manually from a readily accessible point outside of the transformer vault or inclosure, suitable circuit-breakers or switches and suitable fuses shall be provided in the secondaries as required for low-voltage services in article 4 of this code.

Air-break disconnectors and fuses shall be accessible to qualified attendants only.

ARTICLE 60. SIGNAL SYSTEMS.

6001. General.

a. The provisions of this article shall apply to telephone, telegraph (except radio), district messenger and call-bell circuits, fire and burglar alarm and similar systems.

Such systems are hazardous only because of their liability to become crossed with electric light, heat or power circuits.

6002. Outside Wires.

a. Outside wires shall be placed in underground ducts or strung on poles. They shall not be run across or attached to roofs except by permission of the inspection department.

b. Underground wires shall not be placed in a duct, handhole or manhole containing electric light or power wires. Where a handhole or a manhole is divided into sections by means of partitions of brick, concrete or tile, each compartment shall be considered as a separate handhole or manhole.

c. Overhead wires shall not be attached to a crossarm carrying electric light or power wires, nor shall they, when on the exterior walls of buildings, be brought closer than 4 inches to electric light or power wires unless one system is in conduit or is permanently separated from the other system by a continuous and firmly fixed non-conductor, additional to the insulation on the wires.

d. The metal sheath of aerial cables which are liable to contact with electric light or power wires shall be interrupted close to the entrance to a building by an insulating joint or equivalent device.

e. The distance between the two inside pins of any crossarm of a pole carrying signal and electric light and power wires shall be not less than 24 inches.

It is recommended that signal wires, being smaller and more liable to break and fall, be placed on the lower crossarms.

f. Aerial cables of the metal-sheathed type may have paper or other suitable insulation. If the metal sheath is omitted each wire shall have $\frac{1}{2}$ inch rubber insulation and the bunched wires shall be covered with a substantial braid.

g. Wires from the last outdoor support to the protector, and wires attached to buildings shall conform to the requirements of paragraph f of this section, and in addition shall carry a substantial braid on each wire. Where not in conduit, such wires shall be separated from woodwork and supported on glass or porcelain insulators.

h. Wires shall enter buildings either through non-combustible, non-absorptive, insulating bushings, or through approved rigid conduit. Conduit or bushings shall slope upward from the outside, or, where this cannot be done, drip loops shall be formed in the wires immediately outside the point of entrance. The conduit shall be equipped with an approved service head. More than one wire may enter through one conduit or bushing.

6003. In Buildings; Generally.

a. Wires beyond the protector, or wires inside buildings where no protector is employed, shall be neatly arranged and secured in place in a convenient, workmanlike manner. They shall not approach nearer than 2 inches to any electric light or power wire unless one system is in conduit or the two systems are permanently separated by a continuous and firmly-fixed non-conductor, additional to the insulation on the wires.

The wires would ordinarily be insulated, but the kind of insulation is not specified, as reliance is placed on the protector to stop all dangerous currents. Porcelain tubes or approved flexible tubing are considered suitable non-conductors.

b. Wires bunched together in a vertical run shall have a fire-resisting covering sufficient to prevent the carrying of fire from floor to floor. This requirement shall not apply if the wires are encased in non-combustible tubing, or are located in a fireproof shaft having fire stops at each floor.

c. Signal wires and electric light and power wires may be run in the same shaft if the two systems are separated at least 2 inches, or if either system is encased in non-combustible tubing.

d. Signal wires shall not be placed in a tube containing electric light or power wires.

e. Transformers or other devices supplying current to signal systems from electric light or power circuits shall be of a type expressly approved for such service. The secondary wiring shall conform to the requirements of this article, and the primary or the charging circuit wiring to the requirements of articles 1 to 19, inclusive, of this code.

6004. In Buildings; Where the Distribution System Consists of Aerial Wires.

a. An approved protector shall be placed as near as practicable to the point of entrance to the building. The protector shall be mounted on a non-combustible, non-absorptive insulating base and shall consist of an arrester between each line wire and ground and a fuse in each line wire, the fuses protecting the arrester. The protector terminals shall be plainly marked to indicate "line," "instrument" and "ground."

b. The protector shall not be placed in the immediate vicinity of easily ignitable material or inflammable gases, or dust or flyings of combustible material.

c. Where the entire street circuit is run underground a protector shall not be required unless the circuit within the block is so placed as to be liable to accidental contact with electric light or power wires operating at a potential exceeding 250 volts.

6005. Grounding.

a. The ground conductor of the protector shall consist of not less than No. 18 copper, having $\frac{1}{2}$ inch rubber insulation, covered with a substantial braid. Where necessary it shall be guarded from mechanical injury.

b. The ground conductor shall be run in as straight a line as possible to a permanent and effective ground. Where connection is made to a gas pipe, attachment shall be made between the meter and the street main. In every case the attachment shall be made as close to the earth as practicable.




































A suitable ground may be obtained by connection to either a water pipe or a gas pipe, preferably to the former. A ground rod or pipe driven into permanently damp earth is acceptable, in the absence of a piping system.

c. The ground conductor shall be attached to the pipe by means of an approved bolted clamp to which the conductor is soldered or otherwise connected in an approved manner, or the pipe shall be tinned with rosin flux solder after which the conductor shall be wrapped around the pipe and thoroughly soldered to it.

d. Steam or hot water pipes shall not be employed as a ground for protectors.

Standard Symbols for Wiring Plans



































As recommended and adopted by the Association of Electricians, International, The American Institute of Architects and the American Institute of Electrical Engineers, and approved by the American Engineering Standards Committee on March 6, 1924. Reprinted by permission.

-  Ceiling outlet.
-  Ceiling outlet (gas and electric).
-  Ceiling lamp receptacle. Specifications to describe type such as key, keyless or pull chain.
-  Ceiling outlet for extensions.
-  Ceiling fan outlet.
-  Pull Switch.
-  Drop cord.
-  Wall bracket.
-  Wall bracket (gas and electric).
-  Wall outlet for extensions.
-  Wall fan outlet.
-  Wall lamp receptacle. Specifications to describe type such as key, keyless or pull chain.
-  Single convenience outlet.
-  Double convenience outlet.
-  Junction box.
-  Special purpose outlet. Lighting, heating and power as described in specifications.
-  Special purpose outlet. Lighting, heating and power as described in specifications.
-  Special purpose outlet. Lighting, heating and power as described in specifications.
-  Exit light.
-  Floor outlet.
-  Floor elbow.
-  Floor tee.
- S¹** Local switch—single pole.
- S²** Local switch—double pole.
- S³** Local switch—3 way.
- S⁴** Local switch—4 way.
- S^D** Automatic door switch.
- S^K** Key push button switch.
- S^E** Electrolier switch.
- S^P** Push button switch and pilot.
- S^R** Remote control push button switch.
-  Tank switch.
-  Motor.
-  Motor Controller.
-  Lighting panel.
-  Power panel.
-  Heating panel.
-  Pull box.
-  Cable supporting box.
-  Meter.
-  Transformer.
-  Branch circuit, run concealed under floor above.
-  Branch circuit, run exposed.
-  Branch circuit, run concealed under floor.

Standard Symbols for Wiring Plans

Continued

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- " This character marked on top circuits indicates 2 No. 14 conductors in 1/2-inch conduit.
- ''' Indicates 3 No. 14 conductors in 1/2-inch conduit.
- '''' Indicates 4 No. 14 conductors in 3/4-inch conduit unless marked 1/2-inch.
- ''''' Indicates 5 No. 14 conductors in 3/4-inch conduit.
- '''''' Indicates 6 No. 14 conductors in 1-inch conduit unless marked 3/4-inch.
- ''''''' Indicates 7 No. 14 conductors in 1-inch conduit.
- '''''''' Indicates 8 No. 14 conductors in 1-inch conduit.
- Note.—If larger conductors than number 14 are used, use the same symbols and mark the conductor and conduit size on the run.
-  Feeder run concealed under floor above.
-  Feeder run exposed.
-  Feeder run concealed under floor.
-  Pole line.
-  Push Button.
-  Buzzer.
-  Bell.
-  Annunciator.
-  Interior telephone.
-  Public telephone.
-  Clock (secondary).
-  Clock (master).
-  Time stamp.
-  Electric door opener.
-  Local fire alarm gong.
-  City fire alarm station.
-  Local fire alarm station.
-  Fire alarm central station.
-  Speaking tube.
-  Nurse's signal plug.
-  Maid's plug.
-  Horn outlet.
-  District messenger call.
-  Watchman station.
-  Watchman central station detector.
-  Public telephone—PBX switchboard.
-  Interconnection telephone central switchboard.
-  Interconnection cabinet.
-  Telephone cabinet.
-  Telegraph cabinet.
-  Special outlet for signal system. As described in specifications.
-  Battery.
-  Signal wires in conduit. Concealed under floor.
-  Signal wires in conduit. Concealed under floor above.

Tables

Units of Measure

The electrical units are derived from the following mechanical units of the metric system:

METER.—A unit of length equal, approximately, to one ten-millionth part of a quadrant of a meridian of the earth taken through Paris; or, approximately, to 39.37 inches.

GRAMME.—Unit of weight. Weight of a cubic centimeter of water at a temperature of 4 degrees centigrade.

SECOND.—Unit of time. The time of one swing of a pendulum making 86,400 swings in a solar day.

Electrical Units

VOLT.—Such an electromotive force as would cause a current of one ampere to flow against a resistance of one ohm. Such an electromotive force as would charge a condenser of the capacity of one farad with a quantity of electricity equal to one coulomb.

OHM.—The practical unit of electric resistance. Such a resistance as would limit the flow of electricity under an electromotive force of one volt, to a current of one ampere, or one-coulomb-per-second.

MEGOHM.—1,000,000 ohms.

AMPERE.—The practical unit of electric current. A rate of flow of electricity transmitting one coulomb per second. The current of electricity which would pass through a circuit whose resistance is one ohm, under an electromotive force of one volt.

COULOMB.—The practical unit of electric quantity. Such a quantity of electricity as would pass in one second through a circuit conveying one ampere. The quantity of electricity contained in a condenser of one farad capacity, when subjected to the E. M. F. of one volt.

FARAD.—The practical unit of electric capacity. Such a capacity of a conductor or condenser that one coulomb of electricity is required to produce therein a difference of potential of one volt.

MICROFARAD (MFD).—One-millionth of a farad.

WATT.—A unit of electric power. A volt-ampere. The power developed when 44.25 foot-pounds of work are done in a minute, or 0.7375 foot-pound of work is done in a second.

JOULE.—A volt-coulomb or unit of electric energy or work. The amount of electric work required to raise the potential of one coulomb of electricity one volt. Ten million ergs.

Ohm's Law

Ohm's law is a method of expressing relationship existing between the electromotive force, current and resistance, and is practically the basis of most electrical computations. It is expressed in various forms, as follows:

$$\text{Current Flow} = \frac{\text{Electromotive Force}}{\text{Resistance}} \text{ or, } I = \frac{E}{R}$$

Electromotive force equals the current flow multiplied by resistance.

Electromotive Force = Current Flow x Resistance, or $E = I \times R$.

Resistance equals the electromotive force divided by the current flow.

$$\text{Resistance} = \frac{\text{Electromotive Force}}{\text{Current Flow}} \text{ or, } R = \frac{E}{I}$$

I = Amperes. E = Volts. R = Ohms.

Electromotive force varies directly as the current and resistance.

Resistance varies directly with the electromotive force and inversely as the current.

Current varies directly with the electromotive force and inversely as the resistance.

Mil

The "mil," whose expressed value is $\frac{\text{One}}{\text{One-Thousandth}}$ (.001)

of an inch, is the practical basis for determining the diameters and thereby the area of all wires used as electric conductors. The diameters being given, the area is obtained by the well-known rule, "the area of a circle, in circular units, is equal to the square of its diameter"; hence the square of the diameter of a wire expressed in mils equals the area of its cross section.

$D^2 = A$, which area is expressed in Circular Mils or CM. hence $D^2 = CM$.

Tables

Metric System of Weights and Measures

Measures of Lengths			
1 Millimeter =	0.001 Meter	=	0.0394 Inch
1 Centimeter =	0.01 Meter	=	0.3937 Inch
1 Decimeter =	0.1 Meter	=	3.937 Inch
1 Meter =	1 Meter	=	39.37 Inch
1 Dekameter =	10 Meters	=	393.7 Inch
1 Hectometer =	100 Meters	=	328 Feet 1 Inch
1 K lometer =	1000 Meters	=	3280 Feet 10 In.
1 Myriameter =	10000 Meters	=	6.2137 Miles

It will be noticed that 10 Millimeters equal 1 Centimeter, 10 Centimeters equal 1 Decimeter and so on.

Measures of Volumes			
1 Milliliter =	0.001 Liter	=	0.061 Cu. In.
1 Centiliter =	0.01 Liter	=	0.6102 Cu. In.
1 Deciliter =	0.1 Liter	=	6.1022 Cu. In.
1 Liter =	1 Liter	=	0.9081 Quarts
1 Dekaliter =	10 Liters	=	9.081 Quarts
1 Hectoliter =	100 Liters	=	2 Bu. 3.35 Pks.
1 Kiloliter =	1000 Liters	=	1.308 Cu. Yds.

Weights			
1 Milligrm. =	0.001 Gramme	=	0.0154 Grain
1 Centigrm. =	0.01 Gramme	=	0.1543 Grain
1 Decigrm. =	0.1 Gramme	=	1.5432 Grains
1 Gramme =	1 Gramme	=	15.432 Grains
1 Dekagrme. =	10 Grammes	=	0.3527 Ounce
1 Hectogrme. =	100 Grammes	=	3.5274 Ounces
1 Kilogramme =	1000 Grammes	=	2.2046 Pounds
1 Myriagrme. =	10000 Grammes	=	22.046 Pounds

Measures of Surface			
1 Hectare =	10000 Sq. Meters	=	2.471 Acres
1 Are =	100 Sq. Meters	=	119.6 Sq. Yds.
1 Centiare =	1 Sq. Meter	=	1.550 Sq. Ins.

Metric and English Equivalents

Inches	=	Millimeters	×	25
Feet	=	Meters	×	3.2803
Yards	=	"	×	1.09361
Miles	=	Kilometers	÷	1.60935
Square Inches	=	Sq. Millimeters	×	.00155
Square Feet	=	Square Meters	×	10.7641
Acres	=	Sq. Kilometers	×	247.114
Cubic Inches	=	Cu. Centimeters	÷	16.3870
Cubic Feet	=	Cubic Meters	×	35.3140
Lbs. Avoirdupois	=	Kilogrammes	×	2.40262
Tons (2000 lbs.)	=	Kilogrammes	÷	907.18
Lbs. per foot	=	Kilo per meter	×	.67196
Lbs. per cw. ft.	=	Kilo per cu. meter	×	.06243
Square Millimeters	=	Square inches	×	645.137
Square Meter	=	Square Feet	×	.929
Grammes	=	Ounces	×	28.3495
Grammes	=	Pounds	×	453.5926
K kilogrammes	=	Pounds	×	.45359

Field Current in D. C. Dynamos

It has been found that a fair average for the field amperes of different sized dynamos, is as follows:—

K. W.	1	5	10	20	30	50	75	100
Per Cent	8	6	5	4	3.5	3	3	2.75

The field current (expressed as a percentage of full load current on lines) is determined with all of the resistance out, that is, with rheostat on first notch.

Copper Wire Resistance

The basis for computation of resistance of copper wires is a wire one foot long and one circular mil of cross section known as a mil-foot, and which has a resistance of 24° C., or 75° F., of about 10.7 Ohms. The resistance of a copper wire varies directly as its length and inversely as its cross section: hence,

The resistance (R) of a copper wire is equal to its length (D) multiplied by the resistance of a mil-foot and divided by the cross section in circular mils (CM).

$$\text{Or, } R = \frac{D \times 10.7}{CM} \text{ also}$$

The cross section (CM) in circular mils of a wire is equal to its length (D) multiplied by the resistance of a mil-foot, divided by its resistance (R).

$$CM = \frac{D \times 10.7}{R} \text{ also}$$

The length (D) of a wire is equal to the cross section in circular mils (CM) multiplied by its resistance (R) and divided by the resistance of a mil-foot.

$$D = \frac{CM \times R}{10.7}$$

Equivalent Values in Different Units

Equivalent Values in Different Units

Continued

1 H.P. =	{	746 watts
		.746 K.W.
1 H.P. Hour =	{	33,000 ft.-lbs. per minute
		550 ft.-lbs. per second
1 Kilo-watt =	{	2,515 heat-units per hour
		42.4 heat units per minute
1 Watt per Sq. In. =	{	.707 heat-units per second
		.175 lbs. carbon oxidized per hour
1 Kilo-gram Meter =	{	2.64 lbs. water evaporated per hour from and at 212° F.
		746 K.W. hours
1 H.P. Hour =	{	1,980,000 ft.-lbs.
		2,515 heat-units
1 Watt per Sq. In. =	{	273,740 k.g.m.
		.175 lbs. carbon oxidized with perfect efficiency
1 Kilo-watt =	{	2.64 lbs. water evaporated from and at 212° F.
		17.0 lbs. water raised from 62° to 212° F
1 Watt per Sq. In. =	{	1,000 watts
		1.34 H.P.
1 Kilo-gram Meter =	{	2,654,200 ft.-lbs. per hour
		44,240 ft.-lbs. per minute
1 Watt per Sq. In. =	{	737.3 ft.-lbs. per second
		3,412 heat-units per hour
1 Kilo-gram Meter =	{	56.9 heat-units per minute
		.918 heat-units per second
1 Watt per Sq. In. =	{	2275 lb. carbon oxidized per hour
		3.53 lbs. water evaporated per hour from and at 212° F.
1 Kilo-gram Meter =	{	8.9 heat-units per sq. ft. per minute
		6.371 ft.-lbs. per sq. ft. per minute
1 Watt per Sq. In. =	{	.193 H.P. per sq. ft.
		7.233 ft.-lbs.
1 Kilo-gram Meter =	{	.00000365 H.P. hour
		.00000272 K.W. hour
1 Watt per Sq. In. =	{	.0093 heat-units
		.283 K.W. hour
1 Lb. Water Evaporated from and at 212° F. =	{	.379 H.P. hour
		965.7 heat-units
1 Lb. Water Evaporated from and at 212° F. =	{	103,900 k.g.m.
		1,019,000 joules
1 Lb. Water Evaporated from and at 212° F. =	{	751,300 ft.-lbs.
		.0664 lb. of carbon oxidized
1 Heat-Unit =	{	1,055 watt seconds
		778 ft.-lbs.
1 Heat-Unit =	{	107.6 kilogram meters
		.000293 K.W. hour
1 Heat-Unit =	{	.000393 H.P. hour
		.0000688 lbs. carbon oxidized
1 Heat-Unit =	{	.001036 lbs. water evaporated from and at 212° F.
		.122 watts per sq. in.
1 Heat-Unit per Sq. Ft. per Min. =	{	.0176 K.W. per sq. ft.
		.0236 H.P. per sq. ft.

1 Watt =	{	1 joule per second
		.00134 H.P.
1 Watt =	{	3,412 heat-units per hour
		.7373 ft.-lbs. per second
1 Watt =	{	.0035 lb. water evaporated per hour
		44.24 ft.-lbs. per minute
1 K.W. Hour =	{	1,000 watt hours
		1.34 H.P. hours
1 K.W. Hour =	{	2,654,200 ft.-lbs.
		3,600,000 joules
1 K.W. Hour =	{	3,412 heat-units
		367,000 kilogram meters
1 K.W. Hour =	{	.235 lb. carbon oxidized with perfect efficiency
		3.53 lbs. water evaporated from and at 212° F.
1 K.W. Hour =	{	22.75 lbs. of water raised from 62° to 212° F.
		1 watt second
1 Joule =	{	.000000278 K.W. hour
		.102 k.g.m.
1 Joule =	{	.0009477 heat-units
		.7373 ft.-lb.
1 Ft.-Lb. =	{	1.356 joules
		.1383 k.g.m.
1 Ft.-Lb. =	{	.000000377 K.W. hours
		.001285 heat-units
1 Ft.-Lb. =	{	.0000005 H.P. hour
		14,544 heat-units
1 lb. Carbon Oxidized with Perfect Efficiency =	{	1.11 lb. anthracite coal oxidized
		2.5 lbs. dry wood oxidized
1 lb. Carbon Oxidized with Perfect Efficiency =	{	21 cu. ft. illuminating gas
		4.26 K.W. hours
1 lb. Carbon Oxidized with Perfect Efficiency =	{	5.71 H.P. hours
		11,315,000 ft.-lbs.
1 lb. Carbon Oxidized with Perfect Efficiency =	{	15 lbs. of water evaporated from and at 212° F.

Equivalent of Electrical Units

1 H.P. =	{	33,000 foot-pounds per minute
		746 watts
1 H.P. =	{	42.746 B.T.U. (British Thermal Unit) per minute
		2564.76 B.T.U. per hour
1 K.W. =	{	44,235 foot-pounds per minute
		1.34 H.P.
1 K.W. =	{	0.955 B.T.U. per second
		57.3 B.T.U. per minute
1 K.W. =	{	3,438 B.T.U. per hour
		772 foot-pounds
1 B.T.U. =	{	17,452 watt minutes
		0.2909 watt hours
1 Watt =	{	44.236 foot-pounds per minute
		2,654.16 foot pounds per hour

Wiring Formula

Ohm's law is practically the basis for the various formulae in general use for determining the proper size of wire to use to carry various currents. It is essential to know the amount of current expressed in amperes, the distance, and to decide upon the loss to allow in transmission; the best rule is as follows:

The cross section (CM) of the necessary wire is found by multiplying twice the distance one way (2D) by the amount of current expressed in amperes (C) and this by the resistance of one mil-foot (10.7) and dividing by the loss in transmission expressed in volts (v).

or, $CM = \frac{2D \times C \times 10.7}{v}$ or, $CM = \frac{D \times C \times 21.4}{v}$

Latent heat of evaporation of water = 966 B.T.U.
 Latent heat of melting of water = 142 B.T.U.
 To evaporate 1 lb. water from and at 212° = 16.859 K.W. minutes
 To evaporate 1 lb. water from and at 212° = 0.281 K. W hours
 Weight per cu. ft. of water = 62.42 lbs.
 Weight per gallon of water = 8.33 lbs.

Bare Copper Wire

How to Remember the Wire Table

Hard or Soft Drawn

Dimensions, Weights and Resistances

Am. Gauge B. & S. No.	Diam. Mils.	Circular Mils.	Pounds per 1000 Ft.	Pounds per Mile	Feet per Pound
0000	460.	211600.	639.33	3375.7	1.56
000	409.640	167805.	507.01	2677.	1.97
00	364.800	133079.40	402.09	2123.	2.49
0	324.950	105592.50	319.04	1684.5	3.13
1	289.300	83691.20	252.88	1335.2	3.95
2	257.630	66373.	200.54	1058.8	4.99
3	229.420	52634.	159.03	839.68	6.29
4	204.310	41712.	126.12	665.91	7.93
5	181.940	33102.	100.01	528.05	10.
6	162.020	26250.50	79.32	418.81	12.61
7	144.280	20816.	62.90	332.11	15.90
8	128.490	16509.	49.88	263.37	20.05
9	114.430	13094.	39.56	208.88	25.28
10	101.890	10381.	31.37	165.63	31.38
11	90.742	8234.	24.88	137.37	40.20
12	80.808	6529.90	19.73	104.18	50.69
13	71.961	5178.39	15.68	82.792	63.78
14	64.084	4106.76	12.44	65.658	80.42
15	57.068	3256.76	9.86	52.069	101.40
16	50.820	2582.67	7.82	41.292	127.87
17	45.257	2048.20	6.20	32.746	161.24
18	40.303	1624.33	4.92	25.970	203.31
19	35.890	1288.09	3.90	20.594	256.39
20	31.961	1021.44	3.09	16.331	323.32
21	28.462	810.09	2.45	12.952	407.67
22	25.347	642.47	1.95	10.272	514.03
23	22.571	509.45	1.54	8.1450	648.25
24	20.100	404.01	1.22	6.4593	817.43
25	17.900	320.41	.97	5.1227	1030.71
26	15.940	254.08	.77	4.0623	1299.77
Am. Gauge B. & S. No.	Ohms. per 1000 Feet	Ohms per Mile	Feet per Ohm	Ohms per Pound	
0000	.04906	.25903	20383.	.00076736	
000	.06186	.32664	16165.	.0012039	
00	.07801	.41187	12820.	.0019423	
0	.09831	.51909	10409.	.0030772	
1	.12404	.65490	8062.3	.0048994	
2	.15640	.82582	6393.7	.0078045	
3	.19723	1.0414	5070.2	.012406	
4	.24869	1.3131	4021.	.019721	
5	.31361	1.6558	3188.7	.031361	
6	.39546	2.0881	2528.7	.049868	
7	.49871	2.6331	2005.2	.079294	
8	.62881	3.3201	1590.3	.12608	
9	.79281	4.1860	1261.3	.10042	
10	1.	5.2800	1000.	.1330	
11	1.2607	6.6568	793.18	.150682	
12	1.5898	8.3940	629.02	.180585	
13	2.0037	10.5798	499.06	.227788	
14	2.5266	13.3405	375.79	.293180	
15	3.1860	16.8223	313.87	.37079	
16	4.0176	21.2130	248.90	.473737	
17	5.0660	26.7485	197.39	.61839	
18	6.3880	33.7285	156.54	.80764	
19	8.0555	42.5329	124.14	1.065312	
20	10.1584	53.6362	98.44	1.384374	
21	12.8088	67.6302	78.07	1.721775	
22	16.1504	85.2343	61.92	2.201819	
23	20.3674	107.540	49.10	2.830312	
24	25.6830	135.606	38.94	3.69405	
25	32.3833	170.984	30.88	4.837780	
26	40.8377	215.623	24.49	6.507946	

SUMMARY.—The things to be remembered regarding B. & S. gauge copper wire are the following:

A wire which is three sizes larger than another wire has half the resistance, twice the weight and twice the area. A wire which is ten sizes larger than another wire has one-tenth the resistance, ten times the weight and ten times the area.

No. 10 wire is 0.10 inch in diameter (more precisely, 0.102); it has an area of 10,000 circular mils (more precisely, 10,380); it has a resistance of 1 ohm per thousand ft., at 20 degrees Centigrade (68 degrees Fahrenheit), and weighs 32 pounds (more precisely, 31.4 pounds) per thousand feet.

The weight of one thousand feet of No. 5 wire is 100 pounds.

The relative values of resistance (for decreasing sizes) and of weight and area (for increasing sizes) for consecutive sizes are: .50, .63, .80, 1.00, 1.25, 1.60, 2.00.

The relative values of the diameter of alternate sizes of wire are: .50, .63, .80, 1.00, 1.25, 1.60, 2.00.

CIRCULAR MILS.—The conductors of large sizes are usually specified in circular mils. For example, 500,000 circular mils, 750,000 circular mils.

To find resistance, drop one cypher from the number of mils; the result is the number of feet per ohm.

To find weight, drop four cyphers from the number of circular mils and multiply by the weight of No. 10 wire.

Decimal Equivalents

Of eighths, sixteenths, thirty-seconds and sixty-fourths of an inch.

Fractions of an Inch	Decimals of an Inch	Fractions of an Inch	Decimals of an Inch	Fractions of an Inch	Decimals of an Inch	Fractions of an Inch	Decimals of an Inch
1/8 =	.125	17/64 =	.265625	33/64 =	.515625	49/64 =	.765625
3/8 =	.375	9/32 =	.28125	13/32 =	.53125	25/32 =	.78125
5/8 =	.625	19/64 =	.296875	35/64 =	.546875	51/64 =	.796875
7/8 =	.875	5/16 =	.3125	7/16 =	.5625	11/16 =	.8125
1/4 =	.25	21/32 =	.328125	27/32 =	.578125	33/32 =	.828125
3/4 =	.75	11/32 =	.34375	19/32 =	.59375	27/32 =	.84375
1/2 =	.50	23/64 =	.359375	31/64 =	.609375	39/64 =	.859375
3/2 =	1.50	3/8 =	.375	5/8 =	.625	7/8 =	.875
5/2 =	2.50	25/64 =	.390625	41/64 =	.640625	57/64 =	.890625
7/2 =	3.50	13/32 =	.40625	37/32 =	.65625	45/32 =	.90625
9/2 =	4.50	17/64 =	.421875	43/64 =	.671875	59/64 =	.921875
11/2 =	5.50	7/16 =	.4375	11/16 =	.6875	15/16 =	.9375
13/2 =	6.50	29/64 =	.453125	45/64 =	.703125	61/64 =	.953125
15/2 =	7.50	15/32 =	.46875	23/32 =	.71875	31/32 =	.96875
17/2 =	8.50	31/64 =	.484375	47/64 =	.734375	63/64 =	.984375
19/2 =	9.50	1/2 =	.5	3/4 =	.75		

Feet Expressed in Decimal Parts of a Mile

	Units	Tens	Hundreds	Thousands
1	.000189	.001893	.01893	.1893
2	.000378	.003787	.03787	.3787
3	.000567	.005681	.05681	.5681
4	.000757	.007574	.07574	.7574
5	.000946	.009468	.09468	.9468
6	.001136	.011362	.11362	.....
7	.001325	.013255	.13255	.....
8	.001514	.015148	.15148	.....
9	.001704	.017042	.17042	.....

Wiring for D.C. Motor Services

Carrying Capacity Copper Wire

Size B. & S.	Diameter Inches	Pounds Bare Copper per 1000 Feet	Carrying Capacity Rubber Insulation Amperes
14	.064	12.4	15
12	.081	19.7	20
10	.102	31.4	25
8	.128	49.9	35
6	.162	79.4	50
4	.204	126	70
3	.229	159	90
2	.258	201	90
1	.289	253	100
0	.325	319	125
00	.365	492	150
000	.410	507	175
0000	.460	640	225

Wiring for D. C. Motors

How to Use Motor Tables

The table shown on previous page is compiled on a basis of 1 volt loss for convenience in using the table on other percentages of loss. It is usual to allow a loss of more than 1 volt for motor service. In such case, divide the distance by the loss allowed, which will give the number of feet in which a loss of 1 volt will occur. Find this number of feet on the table at the horse power and voltage required and you will have necessary size of wire.

EXAMPLE.—A 5 horse power 220-volt motor, 400 feet from service, at 8 volts loss.

EXPLANATION.—A loss of 8 volts for 400 feet would be equal to a loss of 1 volt for 50 feet (400 divided by 8 equals 50). By referring to table we find that to carry a 5 horse power, 220-volt motor, 50 feet with a volt loss, a 6 B. & S. wire is required, which means that the same wire would be required to do the work called for by the example.

Always take the nearest number above rather than below in the table to the number of feet actually required. Do not use a smaller wire than given in following table.

Transmission of Horse Powers with 1 Volt Loss

Horse Power at 110V	Horse Power at 220V	Horse Power at 500V	Load of Motor Amps.	DISTANCE IN FEET DIFFERENT HORSE POWERS CAN BE TRANSMITTED —With 1 Volt Loss—					
				1	2	3	4	5	10
...	...	1/2	1	192	308	490	778	1232	1920
...	...	1	2	96	154	245	389	616	960
...	...	1/2	2.30	83	135	213	348	535	834
...	...	2	4	48	77	122	194	308	480
1/2	1	...	4.50	43	68	108	173	273	426
...	...	3	6	32	51	81	127	205	320
...	...	4	7.50	25	40	65	104	164	258
1	2	...	9	21	34	54	86	137	213
...	...	9	9.30	20	33	53	84	132	206
...	3	7 1/2	12.50	15	24	40	61	100	153
...	...	10	16.50	...	18	29	47	76	118
2	4	...	18	...	...	27	43	68	106
...	5	...	21.10	...	...	23	37	58	91
3	...	15	25	...	...	20	30	50	76
...	7 1/2	...	28.20	...	...	...	27	43	68
4	...	20	33.15	...	...	...	23	37	58
...	10	...	37.60	...	...	...	...	32	51
5	...	25	42	...	...	...	...	29	45
...	30	...	49.70	...	...	...	...	...	39
7 1/2	15	...	56.50	...	...	...	...	...	34
...	...	40	66.30	...	...	...	...	...	...

Minimum Size Wire for Motor Service

Horse Power	—SIZE OF WIRE, B. & S.—			Horse Power	—SIZE OF WIRE, B. & S.—		
	110 Volts	220 Volts	500 Volts		110 Volts	220 Volts	500 Volts
1/2	14	14	14	10	2	5	10
1	14	14	14	15	00	3	8
2	10	14	14	20	000	2	6
3	8	12	14	25	0000	1	5
4	6	10	14	30	...	00	4
5	5	8	14	40	...	000	2
7 1/2	3	6	12	50	...	0000	1

Amperes per Motor

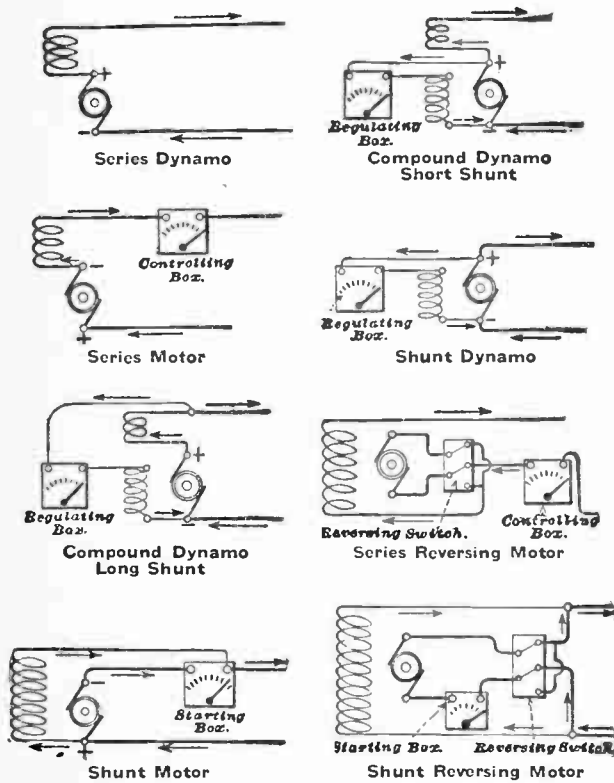
Horse Power	Per Cent of Efficiency	Watts	—OPERATING VOLTAGE—			
			110	220	500	600
1/2	75	497	4.5	2.25	1	.83
3/4	75	746	6.78	3.38	1.48	1.24
1	75	995	9	4.5	2	1.66
1 1/2	80	1492	13.56	6.78	2.98	2.48
2	80	1865	16.9	8.5	3.8	3.1
3	80	2797	25.4	12.7	5.59	4.66
4	80	3730	33.8	16.9	7.5	6.2
5	80	4662	42.3	21.1	9.32	7.77
7 1/2	90	6217	56.5	28.2	12.43	10.36
10	90	8288	75.3	37.6	16.57	13.81
15	90	12433	113	56.5	24.86	20.72
20	90	16578	150	75.3	33.15	27.63
25	90	20722	188	94.1	41.6	34.5
30	90	24866	226	113	49.7	41.4
40	90	33155	301	150	66.3	55.2
50	90	41444	376	188	82.8	69
60	90	49733	452	226	99.4	82.8
70	90	58022	527	263	116	96.7
80	90	66311	602	301	132	110
90	90	74599	678	339	149	124
100	90	82888	753	376	165	138
120	90	99459	904	452	198	165
150	90	24312	1131	565	248	207

Amperes per Horse Power in D. C. Motors

Voltage	—Efficiency of Motor—			
	75 Per Cent	80 Per Cent	85 Per Cent	90 Per Cent
110	9	8.4	7.9	7.5
220	4.5	4.2	3.95	3.75
500	1.98	1.86	1.75	1.66

Horse Power at 110V	Horse Power at 220V	Horse Power at 500V	Load of Motor Amps.	DISTANCE IN FEET DIFFERENT HORSE POWERS CAN BE TRANSMITTED —With 1 Volt Loss—					
				1	2	3	4	5	10
...	...	1/2	1	2433	3122	3940	4928	6271	
...	...	1	2	1216	1561	1970	2464	3135	
...	...	1/2	2.30	1057	1357	1713	2142	2726	
...	...	2	4	608	780	985	1232	1567	
1/2	1	...	4.50	540	700	875	1095	1395	
...	...	3	6	405	520	656	821	1045	
...	...	4	7.50	328	416	525	657	836	
1	2	...	9	270	347	438	547	697	
...	...	9	9.30	261	335	423	530	674	
...	3	7 1/2	12.50	194	250	315	394	501	
...	...	10	16.50	147	189	239	298	380	
2	4	...	18	135	173	219	273	348	
...	5	...	21.10	115	146	186	233	297	
3	...	15	25	97	125	157	197	250	
...	7 1/2	...	28.20	86	110	140	174	222	
4	...	20	33.15	76	94	119	148	189	
...	10	...	37.60	64	83	104	131	164	
5	...	25	42	58	73	93	116	143	
...	30	...	49.70	49	64	79	99	126	
7 1/2	15	...	56.50	43	55	70	87	111	
...	...	40	66.30	36	47	60	79	95	
10	20	...	75.30	32	41	52	65	82	
...	...	50	82.80	...	37	47	59	75	
...	25	...	94.10	...	...	41	52	66	
...	...	60	99.40	...	...	39	49	63	
15	30	...	113	...	...	43	55	70	
...	...	70	116	...	...	42	54	70	
...	...	80	132	...	...	...	47	61	
20	40	90	150	...	...	...	41	53	

Connections and Data on D.C. Generators and Motors



The various types of direct current motors and generators are known relatively by the field windings, as series, shunt, compound and interpole. They are generally self-exciting but can be separately excited, in which case they are usually supplied with current from an outside source, such as a storage battery or another generator.

SERIES.—The field flux increases as the load current increases. In a series wound machine the field winding is in series with the armature. The speed of a series motor varies with the load. Its torque also increases with the increase of load and decreases with speed. The armature is at the highest speed at no load, and minimum speed at full load. Series motors are mostly used for driving exhaust fans, traction work, etc.

SHUNT.—The field flux is practically constant at all loads. In a shunt wound machine a small portion of the current is shunted through the field winding. Shunt wound motors run at almost constant speed, with constant E. M. F. even though the load varies. Shunt wound generators are used for storage batteries, or any duty which requires a variation of E. M. F. Shunt wound motors are most suited for general work such as driving counter shafts, and constant speed machinery.

COMPOUND.—The field flux increases slightly with the load current. In a compound wound machine the field has two sets of windings, a shunt winding and a series winding. The shunt winding furnishes the initial field strength, while the series winding furnishes a varying field strength, increasing or decreasing with the load. This automatic variation of field excitation maintains a constant voltage if from a generator, and an automatic speed control if used as a motor on constantly varying loads requiring automatic torque variation. Mostly used for elevator service.

INTERPOLE.—The interpole motor or generator is sometimes known as "commutating pole type," because of its having an extra set of poles for the purpose of producing sparkless operation under extreme conditions of service. The field windings of the interpole machine are made series, shunt or compound. Highly recommended for all classes of service in preference to other types.

Alternating Current Generators and Motors

ALTERNATING CURRENT GENERATORS are built in two types, known respectively as revolving field and revolving armature. The common names of the two sets of windings are rotor and stator. The revolving field type machine is the most commonly used type, because of the field current having only to pass through the brushes and collector rings and the high tension wires are all stationary. Alternating Current Generators are separately excited. That is, the field current is supplied from an auxiliary D. C. generator, known as an exciter. The current supplied from an A. C. Generator alternates in direction at regular intervals, and from this characteristic is derived the terms "frequency" or "cycles," which always has a numerical value which defines the period of the alternations. The most generally adopted systems operate at either 60 cycles, 7200 alternations, or 25 cycles, 3000 alternations, while there are some Central Stations which supply either 40 cycle, 50 cycle, or 133 cycle current. Alternating current is generated single, two or three phase, two and three phase systems being the most generally used, because of their being better adapted for the operation of large motors.

ALTERNATING CURRENT MOTORS are constructed single, two and three phase, and of many different types, and for all frequencies and synchronous speeds.

SINGLE-PHASE MOTORS.—Single-phase motors are built in several different types, viz.: Repulsion, Repulsion Induction, and Induction Types, and are for constant or variable speed service. The Repulsion Induction Type is the most generally used of all single-phase motors and furnished for constant and variable speed.

POLYPHASE INDUCTION MOTORS.—Polyphase Induction Motors are built in two types viz.: Squirrel Cage and Slip-Ring or Wire Wound Rotor Types. The Squirrel Cage Rotor Type motor has a nearly constant speed (starting torque high), and is the type most generally used for driving machinery. The Slip-ring motor is adapted for speed variation ranging from 50% to 100% and is also used for constant speed service. Both Squirrel Cage and Slip-ring type motors can be supplied for any frequency or voltage and for different speeds.

STARTING TORQUE.—The starting torque of a constant speed motor is twice full load torque on full voltage. In general, the torque varies as the square of the applied voltage. The reason for using a reduced E. M. F. at starting is to reduce the sudden shock which may throw off belts or cause mechanical injury, and to reduce the starting current. When 50% voltage is applied to the motor, half full load torque is given.

SYNCHRONOUS MOTORS are principally used for power factor correction and are also sometimes called "Synchronous Condensers," because they can be operated at a leading current to raise the power factor of an A. C. system. Synchronous motors for driving power are equipped with an extra starting winding, which will give from 30% to 50% full load torque, and will operate at a constant or synchronous speed with no slip. It is advisable to have one or more synchronous motors on all A. C. systems.

STARTING OF SYNCHRONOUS MOTORS.—The starting of synchronous motors differs from the starting of induction motors, due to the fact that they have a field which is supplied from an auxiliary, known as an exciter. Before starting the motor, first see that the field discharge switch is open from the field of the motor, but the motor field must be short circuited through the field discharge resistance. To stop the motor, first turn the rheostat back to the zero power factor position, then open the field switch and throw off the compensator, the switches and rheostat being in position for next starting. If a synchronous motor which has sufficient starting torque to meet the load conditions should fail to start when the current is thrown into the stator windings, it is probably due to the "standing" relation of the field to the stator windings, because of there being an equal number of stator to rotor coils, and should they both be in a central position to each other, the rotor will not have any starting torque. To remedy this move the rotor a slight distance in either direction, and the motor will then start.

Wiring Data for Three-phase Motors

Where two or more motors are installed on one circuit, wire used should be equivalent to that needed for running loads of all motors plus 50 per cent of running load of the largest motor on the circuit.

110 Volts

H. P. of Motor	Approx. Full Load Current Amperes	Amperes of Starting Fuses	Amperes of Running Fuses	Amperes of Switch	Size of Wire H. & S. Gauge
1	6	15	10	30	14
2	12	25	20	30	12
3	18	35	25	30	8
5	30	60	40	60	6
7½	42	80	60	100	4
10	56	100	75	100	2
15	84	150	125	200	0
20	104	200	150	200	00
30	156	250	200	200	300000 C.M.

220 Volts

H. P. of Motor	Approx. Full Load Current Amperes	Amperes of Starting Fuses	Amperes of Running Fuses	Amperes of Switch	Size of Wire H. & S. Gauge
1	3	10	6	30	14
2	6	15	10	30	14
3	9	20	15	30	12
5	15	30	20	30	10
7½	21	40	30	60	8
10	28	60	40	60	6
15	42	80	60	100	4
20	52	100	75	100	2
30	78	150	125	200	0
40	105	200	150	200	00
50	133	225	175	200	000
75	181	300	250	400	300000 C.M.
100	245	400	350	400	500000 C.M.

440 Volts

H. P. of Motor	Approx. Full Load Current Amperes	Amperes of Starting Fuses	Amperes of Running Fuses	Amperes of Switch	Size of Wire H. & S. Gauge
1	1.5	5	3	30	14
2	3	10	6	30	14
3	4.5	10	6	30	14
5	7.5	15	10	30	14
7½	10.5	25	15	30	12
10	14	30	20	30	10
15	21	40	30	60	8
20	26	60	40	60	6
30	39	80	60	100	4
40	52.5	100	75	100	2
50	66.5	125	100	100	1
75	92	150	125	200	00
100	122.5	225	175	200	000
150	181	300	250	400	300000 C.M.
200	236	400	350	400	500000 C.M.

Fusing Effects of Currents

Table Showing the Amperes Required to Fuse Wires of Various Sizes and Materials

Size B. & S.	Diam. d	Copper a=10244	Aluminum a=7585	Platinum a=5172
14	.08	.022627	231.8	171.6
16	.064	.016191	165.8	122.8
18	.048	.010516	107.7	79.75
20	.036	.006831	69.97	51.18
22	.028	.004685	48	35.53
24	.022	.003263	33.43	24.23
26	.018	.002415	24.74	16.88
28	.0148	.001801	18.44	12.49
30	.0124	.001381	14.15	10.47
32	.0108	.001122	11.5	8.512

Size B. & S.	Diam. d	Nickel Silver a=5230	Iron a=13148	Lead a=1379
14	.08	.022627	118.3	71.22
16	.064	.016191	84.68	50.96
18	.048	.010516	54.99	33.1
20	.036	.006831	35.72	21.5
22	.028	.004685	24.5	14.75
24	.022	.003263	17.06	10.27
26	.018	.002415	12.63	7.602
28	.0148	.001801	9.416	5.667
30	.0124	.001381	7.222	4.347
32	.0108	.001122	5.87	3.533

Wiring Tables

Two Per Cent Loss on 110 Volts

Wire sizes given are B. & S. gauge.

Capacity Amperes	DISTANCE IN FEET TO CENTER OF DISTRIBUTION									
	20	30	40	50	60	70	80	90	100	
1	..	..	..	..	..	..	..	..	..
1.5	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	16	15	15
4	..	..	..	..	16	15	15	14	14
5	..	..	..	16	15	14	14	13	13
6	..	..	16	15	14	14	13	12	12
7	..	16	15	14	14	13	12	12	11	
8	..	16	15	14	13	12	12	11	11	
9	..	15	14	13	12	12	11	11	10	
10	16	15	14	13	12	11	11	10	9	
12	16	14	13	12	11	11	10	9	9	
14	15	14	12	11	11	10	9	9	8	
16	15	13	12	11	10	9	9	8	8	
18	14	12	11	10	9	9	8	8	7	
20	14	12	11	10	9	8	8	7	7	
25	13	11	10	9	8	7	7	6	6	
30	12	10	9	8	7	7	6	6	5	
35	11	10	8	7	7	6	5	5	4	
40	11	9	8	7	6	5	5	4	4	

Capacity Amperes	DISTANCE IN FEET TO CENTER OF DISTRIBUTION									
	120	140	160	180	200	240	280	320	360	
1	..	..	..	..	..	16	15	15	14
1.5	..	..	16	15	15	14	14	13	12
2	16	15	15	14	14	13	12	12	11	
3	14	14	13	12	12	11	11	10	9	
4	13	12	12	11	11	10	9	9	8	
5	12	11	11	10	10	9	8	8	7	
6	11	11	10	9	9	8	8	7	7	
7	11	10	9	9	8	7	7	6	6	
8	10	9	9	8	8	7	7	6	5	
9	9	9	8	8	7	7	6	5	5	
10	9	8	8	7	7	6	5	5	4	
12	8	8	7	7	6	5	5	4	4	
14	7	7	6	6	5	5	4	3	3	
16	7	7	6	5	5	4	3	3	2	
18	7	6	5	5	4	4	3	2	2	
20	6	5	5	4	4	3	2	2	1	
25	5	4	4	3	3	2	1	1	0	
30	4	4	3	3	2	1	1	0	0	
35	4	3	2	2	1	1	0	00	00	
40	3	2	2	1	1	0	00	00	000	
45	3	2	1	1	0	00	00	000	000	
50	2	1	1	0	0	00	000	000	0000	
60	1	1	0	0	00	000	000	0000	0000	
70	1	0	00	00	000	000	0000	0000	.....
80	0	00	00	000	000	0000	0000	.....	.....
90	00	00	000	000	0000	0000	.....	.....	.....
100	00	000	000	0000	0000	.....	.....	.....	.....
120	00	000	0000	0000	.....	.....	.....	.....	.....

Wiring Tables

Two Per Cent Loss on 220 Volts

Wire sizes given are B. & S. gauge.

Cap. Amps.	DISTANCE IN FEET TO CENTER OF DISTRIBUTION								
	20	30	40	50	60	70	80	90	100
1	..	..	..	..	..	..	..	..	..
1.5	..	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..
3	..	..	..	..	..	..	..	..	..
4	..	..	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..	..	16
6	..	..	..	..	..	..	16	15	15
7	..	..	..	..	..	16	15	14	14
8	..	..	..	..	16	15	15	14	14
9	..	..	..	..	15	15	14	14	13
10	..	..	..	16	15	14	14	13	13
12	..	..	16	15	14	14	13	12	12
14	..	16	15	14	14	13	12	12	11
16	..	16	15	14	13	12	12	11	11
18	..	15	14	13	12	12	11	11	10
20	16	15	14	13	12	11	11	10	10
25	16	14	13	12	11	10	10	9	9
30	15	13	12	11	10	10	9	9	8
35	14	13	11	10	10	9	8	8	7
40	14	12	11	10	9	8	8	7	7
45	13	12	10	9	9	8	7	7	6
50	13	11	10	9	8	7	7	6	6
60	12	10	9	8	7	7	6	6	5
70	11	10	8	7	7	6	5	5	4
80	11	9	8	7	6	5	5	4	4
90	10	9	7	6	6	5	4	4	3
100	10	8	7	6	5	4	4	3	3
120	9	7	6	5	4	4	3	3	2

Cap. Amps.	DISTANCE IN FEET TO CENTER OF DISTRIBUTION								
	120	140	160	180	200	240	250	320	360
1	..	..	..	..	..	..	..	..	..
1.5	..	..	..	..	..	..	..	16	15
2	..	..	..	..	..	16	15	15	14
3	..	..	16	15	15	14	14	13	12
4	16	15	15	14	14	13	12	12	11
5	15	14	14	13	13	12	11	11	10
6	14	14	13	12	12	11	11	10	9
7	14	13	12	12	11	11	10	9	9
8	13	12	12	11	11	10	9	9	8
9	12	12	11	11	10	9	9	8	8
10	12	11	11	10	10	9	8	8	7
12	11	11	10	9	9	8	8	7	7
14	11	10	9	9	8	7	7	6	6
16	10	9	9	8	8	7	7	6	6
18	9	9	8	8	7	7	6	5	5
20	9	8	8	7	7	6	5	5	4
25	8	7	7	6	6	5	4	4	3
30	7	7	6	6	5	4	4	3	3
35	7	6	5	5	4	4	3	2	2
40	6	5	5	4	4	3	2	2	1
45	6	5	4	4	3	3	2	1	1
50	5	4	4	3	3	2	1	1	0
60	4	4	3	3	2	1	1	0	0
70	4	3	2	2	1	1	0	00	00
80	3	2	2	1	1	0	00	00	000
90	3	2	1	1	0	00	00	000	000
100	2	1	1	0	0	00	000	000	0000
120	1	1	0	0	00	000	000	0000	0000

Minimum Sized Wire for Motor Services

When Concealed or Partly Concealed Wires are Used

Horse Power	SIZE OF WIRE, B. & S.			Horse Power	SIZE OF WIRE, B. & S.		
	110 Volts	220 Volts	500 Volts		110 Volts	220 Volts	500 Volts
1/2	14	14	14	25	000	1	6
1	14	14	14	30	0000	0	5
2	12	14	14	40	....	00	3
3	10	14	14	50	....	000	2
4	8	12	14	60	....	0000	1
5	6	10	14	70	....	....	0
7 1/2	4	8	14	80	....	....	00
10	3	6	12	90	....	....	00
15	0	5	10	100	....	....	000
20	00	3	8	120	....	....	0000

General Wiring Formula

For Alternating and Direct Current Circuits

The following general formula may be used to determine the size of copper conductors, volts loss in lines, current per conductor, and of copper per circuit for any system of electrical distribution.

$$\text{Area of conductor, circular mils} = \frac{D \times W \times C}{P \times E^2}$$

$$\text{Volts loss in lines} = \frac{P \times E \times B}{100}$$

$$\text{Current in main conductors} = \frac{W \times T}{E}$$

$$\text{Pounds copper} = \frac{D^2 \times W \times C \times A}{P \times E \times 1000000}$$

W = Total watts delivered.

D = Distance of transmission (1 way) in feet.

P = Loss in line in per cent of power delivered, that is, of W.

E = Voltage between main conductors at receiving or consumer's end of circuit.

For continuous current C = 2160, T = 1, B = 1, and A = 6.04.

System	Value of A	PER CENT POWER FACTOR				
		100	95	90	85	80
Single-phase	6.04	2160	2400	2660	3000	3380
Two-phase (4-wire)	12.08	1080	1200	1330	1500	1690
Three-phase (3-wire)	9.06	1080	1200	1330	1500	1690

System	Value of A	PER CENT POWER FACTOR				
		100	95	90	85	80
Single-phase	1.00	1.05	1.11	1.17	1.25	
Two-phase (4-wire)	.50	.53	.55	.59	.62	
Three-phase (3-wire)	.58	.61	.64	.68	.72	

The value of C for any particular power factor is obtained by dividing 2160, the value for continuous current, by the square of that power factor for single-phase, and by twice the square of that power factor for three-wire three-phase, or four-wire two-phase.

The value of B depends on the size of wire, frequency and power factor. It is equal to 1 for continuous current, and for alternating current with 100 per cent power factor and sizes of wire given in the preceding table of wiring constants.

The figures given are for wires 18 inches apart and are sufficiently accurate for all practical purposes provided the displacement in phase between current and E. M. F. at the receiving end is not very much greater than that at the generator. For example, the constants should not be applied at 125 cycles if the largest conductors are used and the loss 20 per cent or more of the power delivered. At lower frequencies, however, the constants are reasonably correct even under such extreme conditions. They represent about the true values at 10 per cent line loss, are close enough at all losses less than 10 per cent, and often, at least for frequencies up to 40 cycles, close enough for even much larger losses. Where the conductors of a circuit are nearer each other than 18 inches, the volts loss will be less than given by the formula, and if close together, as with multiple conductor cable, the loss will be only that due to resistance.

The value of T depends on the system and power factor. It is equal to 1 for continuous current and for single-phase current of 100 per cent power factor.

The value of A and the weights of the wires in the table are based on .00000302 pound as the weight of a foot of copper wire of 1 circular mil area.

In using the above formula and constants, it should be particularly observed that P stands for the per cent loss in the line of the delivered power, not for the per cent loss in the line of the power at the generator; and that E is the potential at the end of the line and not at the generator.

When the power factor cannot be more accurately determined, it may be assumed to be as follows for any alternating system operating under average conditions: Incandescent lighting and synchronous motors, 95 per cent; lighting and induction motors together, 85 per cent; induction motors alone, 80 per cent.

In continuous current three-wire systems, the neutral wire for feeders should be made of 1/2 the section obtained by the formula for either of the outside wires. In both continuous and alternating current systems, the neutral conductor for secondary mains and house wiring should be taken as large as the other conductors. The three wires of a three-phase circuit and the four wires of a two-phase circuit should be made all the same size, and each conductor should be of the cross section given by the first formula.

General Wiring Formula

For Alternating and Direct Current Circuits

25 Cycles

Table with columns: Size of Wire B. & S., Area Wire Cir. Mils, Wt., Lbs. Bare Wire per 1000 Ft., Resistance Ohms per 1000 Ft. at 20° C., and VALUE OF B PER CENT POWER FACTOR (95, 90, 85, 80).

40 Cycles

Table with columns: Size of Wire B. & S., Area Wire Cir. Mils, Wt., Lbs. Bare Wire per 1000 Ft., Resistance Ohms per 1000 Ft. at 20° C., and VALUE OF B PER CENT POWER FACTOR (95, 90, 85, 80).

60 Cycles

Table with columns: Size of Wire B. & S., Area Wire Cir. Mils, Wt., Lbs. Bare Wire per 1000 Ft., Resistance Ohms per 1000 Ft. at 20° C., and VALUE OF B PER CENT POWER FACTOR (95, 90, 85, 80).

125 Cycles

Table with columns: Size of Wire B. & S., Area Wire Cir. Mils, Wt., Lbs. Bare Wire per 1000 Ft., Resistance Ohms per 1000 Ft. at 20° C., and VALUE OF B PER CENT POWER FACTOR (95, 90, 85, 80).

Amperes in Alternating Current Circuits

By Permission of the Electrical World

The following tables give the amperes per lead wire per kilowatt for single-phase and three-phase balanced loads. The single-phase table can be used for two-phase balanced loads by using a current value corresponding to twice the stated potential of the circuit or by dividing the current value at the potential of the circuit by two.

This table was derived from the following formulas:

For single-phase circuits: Amperes per wire = watts ÷ (volts × power factor).

For three-phase circuits: Amperes per wire = total watts ÷ (volts between wires × power factor - √3).

For two-phase circuits: Amperes per wire = total watts ÷ (volts between wires of one phase × power factor × 2).

In making the computations the number of watts was assumed as 1000, and the amperes were computed for various values of e.m.f. to a sufficient number of decimal places to insure accuracy.

The values for intermediate power factors can be approximated from the tables. For lower power factors, the value of the current for unity power factor can be divided by actual power factor of the circuit or multiplied by the reciprocal of this power factor.

Single-phase Circuits

Amperes for One Kilowatt at Different Power Factors

Table with columns: Volts, POWER FACTOR IN PER CENT (100, 95, 90, 85, 80), and 75, 70. Rows list amperes for voltages from 100 to 800.

Amperes in Alternating Current Circuits

By Permission of the Electrical World

Single-phase Circuits—Continued

Amperes for One Kilowatt at Different Power Factors

Table with columns for Volts (900-1300, 1400-1800, 1900-2300, 2400-3500, 4000-6600, 7000-11000, 12000-16000, 17000-25000, 30000-45000, 50000-60000) and rows for Power Factor in Per Cent (100, 95, 90, 85, 80, 75, 70).

Three-phase Circuits

Amperes per Wire for One Kilowatt at Different Power Factors

Table with columns for Volts (100-170, 180-220, 210-220) and rows for Power Factor in Per Cent (100, 95, 90, 85, 80, 75, 70).

Amperes in Alternating Current Circuits

By Permission of the Electrical World

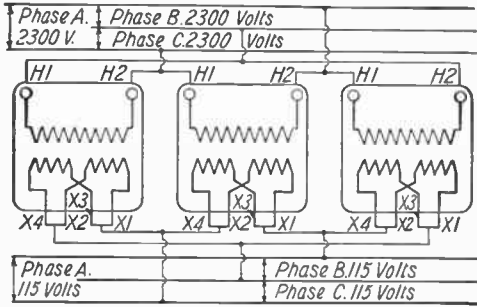
Three-phase Circuits—Continued

Amperes per Wire for One Kilowatt at Different Power Factors

Table with columns for Volts (225-350, 240-250, 330-450, 500-800, 900-1300, 1400-1800, 1900-2300, 2400-3500, 4000-6600, 7000-11000, 12000-16000, 17000-25000, 30000-45000, 50000-60000) and rows for Power Factor in Per Cent (100, 95, 90, 85, 80, 75, 70).

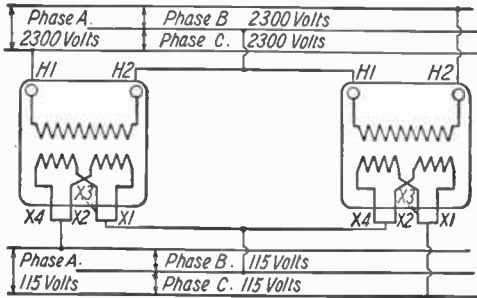
Transformer Connections

No. 1



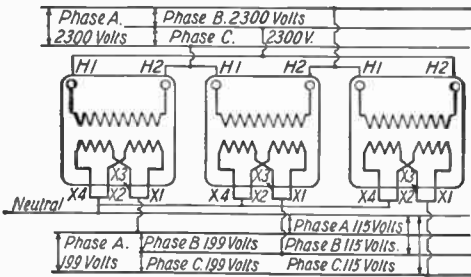
Three phase 3 wire "Closed Delta" primary to three phase 3 wire "Closed Delta" secondary.

No. 2



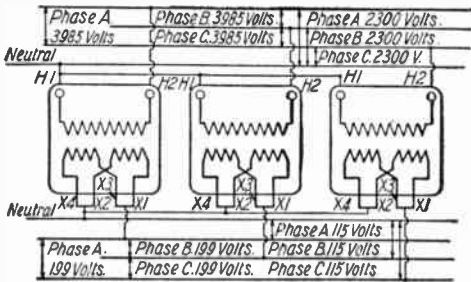
Three phase 3 wire "Open Delta" primary to three phase 3 wire "Open Delta" secondary. "Open Delta" connection, as shown, will deliver only 87 per cent of rated capacity and may cause line disturbance due to unbalancing. Only recommended in case of emergency.

No. 3



Three phase 3 wire "Closed Delta" primary to 3 phase 4 wire "Star" secondary.

No. 4



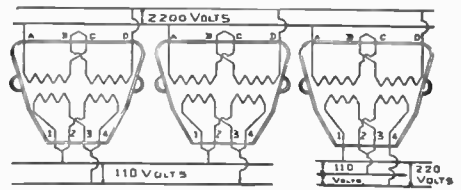
Three phase 4 wire "Star" primary to three phase 4 wire "Star" secondary.

NOTE.—Connections shown are for 2300 volts primaries, with secondaries arranged for 20 to 1 ratio. To change secondaries for 230 volts or 10 to 1 ratio, connect X2 and X3 together (in series) in each transformer, first disconnecting X2 and X3 from X1 and X4.

Transformer Connections

Continued

No. 5

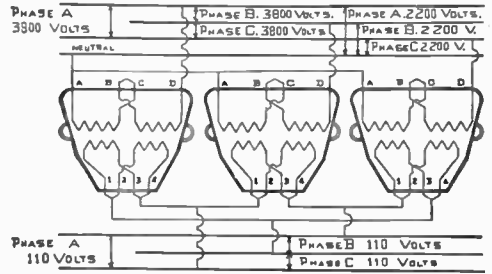


Single-phase 2-wire primary to single-phase 3-wire and also 3-wire secondary.

See note.

Two-phase 4-wire primary to two-phase 4-wire secondary. Connect transformers, one on each phase as per diagram Fig. 5. See note.

No. 6



Three-phase 4-wire "Star" primary to three phase 3-wire "Closed Delta" secondary.

See note.

No. 7

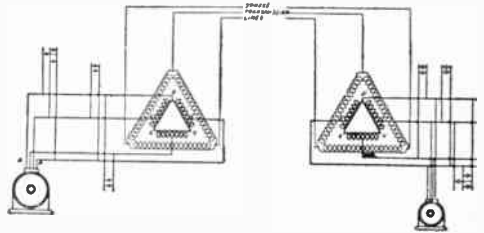


Diagram showing connections of Pittsburgh method of transformation, three-phase 3-wire to two-phase 4-wire and three-phase 3-wire. Transformers are here connected in "Closed Delta," using three single-phase units.

No. 8

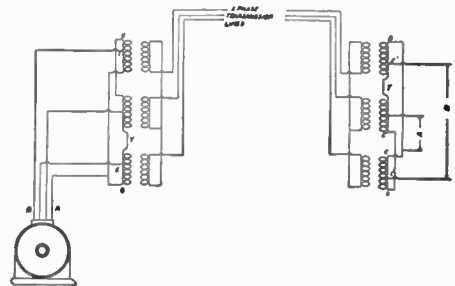


Diagram showing connections of Pittsburgh method of transformation, three-phase 3-wire to two-phase 4-wire. Transformers are here connected in "Star," using three single-phase units.

Transformer Capacity for Motors

In selecting proper size transformers for motors for either 1, 2 or three-phase 1-KVA transformer capacity should be allowed for each motor horse power.

NOTE.—Connections shown are for 2200 volts primaries, with secondaries arranged for 20 to 1 ratio. To change secondaries for 220 volts or 10 to 1 ratio, connect 2 and 3 together (in series) in each transformer, first disconnecting 2 and 3 from 1 and 4. To change primaries from 2200 volts line as shown to 1100 volts line, disconnect B and C, and connect B to A and C to D in each transformer.

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
CR-7051J-1	Compensators	DS-108	Covers	F-4005	Fuses	FSC-32	Condulets
	174 to 176	DS-131	Covers	F-4025	Fuses	FSC-33, FSC-34	Condulets
CR-7051K-1	Compensators	DS-1082	Covers	F-4505	Fuses	FSC-37	Condulets
	174, 176, 177	DSOC-1 to DSPC-3	Condulets	F-4525	Fuses	FSC-222	Condulets
CR-7051L-1	Compensators	DSS-8 to DSS-100	Covers	F-5005	Fuses	FSCA-2302S	Condulets
CR-8000, CR-8001	Rheostats	DT	Bonds	F-5025	Fuses	FSCC-1 to FSCC-3	Condulets
CR-9000	Resistor Units	DT	447 to 449	F-5505	Fuses	FSD-12 to FSD-312	Condulets
CR-9006	Resistor Units	DT-1	Relays	F-5525	Fuses	FSL, FSL-3	Conductors
CR-9155	Resistors	DT-4 to DT-12	Bells	F-6005	Fuses	FSL-1 to FSS-3	Condulets
CRC-274 to CRC-3714	Condulets	DTT-40	Plates	F-6025	Fuses	FSS-222	Condulets
CRSE-1	Holders	DTT-60	Plates	F-6310 to F-6344T	Switches	FST-1 to FST-3	Condulets
CS	Gongs	DU-1	Cabinets	F-6505	Fuses	FSX-1 to FSX-3	Condulets
CS, CS-3	Meters	DU-1	Gongs	F-6525	Fuses	FT to FT-10	Bonds
CS-4 to CS-14	Gongs	DV-4-1 to DVW-12-1	Bells	F-6533 to F-6544T	Switches	FTT-40	Plates
CT	Gongs	DY	Yokes	F-6610 to F-6644T	Switches	FTT-60	Plates
CT-3	Fittings	DY-90	Sockets	F-7005	Fuses		Clamps
CT-4 to CT-12	Gongs	E	Anchors	F-7025	Fuses	G	Crossings
CTS-6 to CTS-12	Gongs	E	Arms	F-7505	Fuses	G	Frogs
CUB-12 to CUB-67	Condulets	E	Boxes	F-7525	Fuses	G	Generators
CW to CW-14	Gongs	E	Bonds	F-8005	Fuses	G	Plates
CWS to CWS-14	Gongs	E	Chestnut Poles	F-8025	Fuses	G	Thermocouples
CWT to CWT-12	Gongs	E	Cord	F-8505	Fuses	G-2	Frogs
CWTS-6 to CWTS-12	Gongs	E	Cyress Poles	F-8525	Fuses	G-3	Meters
CX	Caps 251, 257, 263, 268	E	Generators	F-9005	Fuses	G-5	Projectors
CX-10 to CX-15	Sockets	E	Meters	F-9025	Fuses	G-6 to G-51	Cable
CX-16, CX-17	Sockets	E	Pine Poles	F-9505	Fuses	G-117, G-127	Condulets
CX-19	Switches	E	Plates	F-9525	Fuses	G-151	Condulets
CX-20 to CX-28	Switches	E	Rings	F-10005	Fuses	G-157 to G-227	Condulets
CX-29	Receptacles	E	Sleeves	F-10025	Fuses	G-250	Projectors
CX-31 to CX-33	Sockets	E	Thermocouples	F-10310 to F-10344	Switches	G-252	Condulets
CX-34, CX-35	Sockets	E	Transformers	F-10533 to F-10544T	Switches	G-257 to G-327	Condulets
CX-50 to CX-55	Switches	E-1	Bonds	F-10610 to F-10644T	Switches	G-353	Condulets
CY	Yokes	E-2	Bonds	F-11005	Fuses	G-357	Condulets
CY-90	Sockets	E-1 to E-8	Condulets	F-11025	Fuses	G-505L, G-523	Fixtures
D	Arms	E-2	Plates	F-12005	Fuses	G-542	Fixtures
D	Bonds	E-2	Sleeves	F-12025	Fuses	G-1101 to G-3203	Condulets
D	Boxes	E-2 1/2	Boxes	F-12505	Fuses	G-15754 to G-25772	Condulets
D	Chestnut Poles	E-8 to E-18	Gongs	F-12525	Fuses	GA-151 to GA-3203	Condulets
D	Clamps	E-24	Indicators	F-15005	Fuses	GASK-208	Gaskets
D	Cyress Poles	EA	Meters	F-15025	Fuses	GJC-1 to GJX-3	Condulets
D	Fuses	EC	Fittings	F-17505	Fuses	GL-117, GL-127	Condulets
D	Generators	ED	Drill Stands	F-17525	Fuses	GL-151	Condulets
D	Gongs	EET-40	Plates	F-20005	Fuses	GL-257 to GL-227	Condulets
D	Pine Poles	EET-60	Plates	F-20025	Fuses	GL-252	Condulets
D	Plates	EET-60	Plates	F-20310 to F-20344T	Switches	GL-257 to GL-327	Condulets
D	Switches	EL-1 to EL-495	Elbows	F-20533 to F-20544T	Switches	GL-353	Condulets
D	Thermocouples	ELB-1 to ELB-5	Condulets	F-20610Q to F-20644QT	Switches	GL-357	Condulets
D	Trailers	EMB	Alarm Systems			GL-502	Condulets
D	Transformers					GL-1101 to GL-3203	Condulets
D	Vibrators					GRB-14 to GRB-141	Condulets
D-1 to D-10	Condulets	EMB	Panels	F-22525	Fuses	GRB-146	Condulets
D-2	Boxes	EMBD	Alarm Systems	F-25005	Fuses	GRB-241	Condulets
D-3, D-4	Hammers	EP-8 to EP-18	Gongs	F-25025	Fuses	GRB-246	Condulets
D-4 to D-18	Bells	EPP-40	Plates	F-27505	Fuses	GRB-371	Condulets
D-7	Meters	EPP-60	Plates	F-27525	Fuses	GRB-376	Condulets
D-9	Hammers	EPS	Panels	F-30005	Fuses	GRB-376	Condulets
D-23	Indicators			F-30025	Fuses	GRC-14 to GRC-371	Condulets
D-122 to D-422	Switches	ER	Meters	F-32505	Fuses	GRC-146	Condulets
D-501 to D-507	Switches	ET	Bonds	F-35005	Fuses	GRC-172 to GRC-174	Condulets
D-1220 to D-1260	Switches	ET-1	Bonds	F-35025	Fuses	GRC-246	Condulets
D-1675	Rings	ET-2	Bonds	F-37505	Fuses	GRC-272, GRC-273	Condulets
D-2200 to D-4220	Switches	ET-1 to ET-64	Condulets	F-37525	Fuses	GRC-282 to GRC-284	Condulets
D-5010 to D-5070	Switches	ETT-40	Plates	F-40005	Fuses	GRC-372 to GRC-374	Condulets
D-17624	Coils	ETT-60	Plates	F-40025	Fuses	GRC-376	Condulets
D-21141	Buzzers	EY-1 to EY-64	Condulets	F-45005	Fuses	GRC-382 to GRC-384	Condulets
DA-1 to DAX-3	Condulets	EZ	Benders	F-45025	Fuses	GRC-482 to GRC-484	Condulets
DB-1	Relays	F	Alarm Systems	F-50005	Fuses	GRC-1714	Condulets
DB	Panels	F	Bonds	F-50025	Fuses	GRC-1762 to GRC-2764	Condulets
DE	Bases 254, 260, 266, 270	F	Boxes	F-55005	Fuses	GRC-2814, GRC-3814	Condulets
DE-10 to DE-15	Sockets	F	Connectors	F-55025	Fuses	GRC-3762 to GRC-3764	Condulets
DE-16, DE-17	Sockets	F	Generators	F-60005	Fuses	GRC-4814	Condulets
DE-19	Switches	F	Lugs	F-60025	Fuses	GRC-17614 to GRC-37614	Condulets
DE-20 to DE-28	Switches	F	Panels	FA	Arms	GRC-14 to GRC-371	Condulets
DE-29	Receptacles	F	Plates	FA-124 to FAC-329	Condulets	GRL-146	Condulets
DE-31 to DE-33	Sockets	F	Rings	FB	Boxes	GRL-172 to GRL-274	Condulets
DE-34, DE-35	Sockets	F	Switches	FB-5, FB-345	Boxes	GRL-246	Condulets
DE-41	Plates	F	Thermocouples	FB-5, FB-345	Boxes	GRL-282 to GRL-484	Condulets
DE-50 to DE-55	Switches	F	Transformers	FC-2/4	Boxes	GRL-372 to GRL-374	Condulets
DF	Bases 254, 260, 266, 270	F	Vibrators	FC-327 to FC-341	Plugs	GRL-376	Condulets
DF-1	Relays	F	Plates	FDB	Boxes	GRL-382 to GRL-484	Condulets
DF-1 to DF-3	Condulets	F-2	Boxes	FD-1 to FD-X	Condulets	GRL-1714	Condulets
DF-10 to DF-15	Sockets	F-2 1/4	Bonds	FE-011 to FE-10	Condulets	GRL-1762 to GRL-2764	Condulets
DF-16, DF-17	Sockets	F-5 to F-10	Cables	FF	Supports	GRL-2714	Condulets
DF-19	Switches	F-6 to F-303	Indicators	FF-1332 to FFA-4602	Condulets	GRL-2814	Condulets
DF-20 to DF-28	Switches	F-1525	Terminals	FH-110 to FHF-220	Condulets	GRL-3714	Condulets
DF-29	Receptacles	F-33 to F-66	Condulets	FJC	Supports	GRL-3814, GR-4814	Condulets
DF-31 to DF-33	Sockets	F-152 to F-263	Condulets	FK-5	Breakers	GRL-3762 to GRL-3764	Condulets
DF-34, DF-35	Sockets	F-305	Fuses	FK-15	Breakers	GRLA-14 to GRLA-141	Condulets
DF-50, DF-55	Switches	F-325	Fuses	FK-35	Breakers	GRLA-146	Condulets
DFB-1, DFH-1	Relays	F-331 to F-364	Blocks	FK-35Y	Breakers	GRLA-241	Condulets
DFI-1	Relays	F-362 to F-364	Condulets	FP	Supports	GRLA-246	Condulets
DG-51	Switches	F-405 to F-605	Fuses	FP-7	Breakers	GRLA-371	Condulets
DHU	Protection Systems	F-425 to F-625	Fuses	FP-110	Breakers	GRLA-376	Condulets
		F-631 to F-664	Blocks	FP-40	Plates	GRN-9	GRN-8614 Boxes
DHU-1, DHU-2	Cabinets	F-806	Fuses	FPP-60	Plates	GRT-14 to GRT-371	Condulets
DHUN	Protection Systems	F-825	Fuses	FR	Meters	GRT-146	Condulets
		F-1005	Fuses	FS	Condulets	GRT-172, GRT-173	Condulets
DK	Panels	F-1025	Fuses	FS-1 to FS-3	Condulets	GRT-174 to GRT-3714	Condulets
DM-1 to DM-3	Condulets	F-1031 to F-1064	Blocks	FS-12	Condulets	GRT-246	Condulets
DM	Panels	F-1205 to F-2505	Fuses	FS-17	Condulets	GRT-272, GRT-273	Condulets
DP	Switches	F-1225 to F-2525	Fuses	FS-22	Condulets	GRT-282 to GRT-284	Condulets
DP-162 to DP-3103	Plugs	F-3005	Fuses	FS-23, FS-24	Condulets	GRT-372 to GRT-374	Condulets
DPP-40	Plates	F-3025	Fuses	FS-27	Condulets	GRT-376	Condulets
DPP-60	Plates	F-3310 to F-3344T	Switches	FS-32	Condulets	GRT-382 to GRT-484	Condulets
DPS	Panels	F-3505	Fuses	FS-35	Condulets	GRT-1762 to GRT-2764	Condulets
DPT	Panels	F-3510 to F-3520T	Switches	FS-37, FS-34	Condulets	GRT-2814	Condulets
DR	Panels	F-3525	Fuses	FS-37 to FSA-3	Condulets	GRT-3762 to GRT-3764	Condulets
DS to DS-6	Boxes	F-3530, F-3530T	Switches	FSA-12 to FSA-32	Condulets	GRT-3814, GR-4814	Condulets
DS-6	Meters	F-3533, F-3533T	Switches	FSA-37 to FSA-32	Condulets	GRT-17614 to GRT-37614	Condulets
DS-7	Covers	F-3540, F-3540T	Switches	FSC-1 to FSC-3	Condulets	GRU-14 to GRU-141	Condulets
DS-7	Meters	F-3544, F-3544T	Switches	FSC-12	Condulets	GRU-146	Condulets
DS-8 to DS-108	Covers	F-3610 to F-3644T	Switches	FSC-17	Condulets		
				FSC-23, FSC-24	Condulets		
				FSC-27	Condulets		

Table with 4 columns: Cat. No., Page, Cat. No., Page, Cat. No., Page, Cat. No., Page. Lists various electrical components like trailers, condulets, panels, switches, and relays with their corresponding page numbers.

Table with 4 columns: Cat. No., Page, Cat. No., Page. Lists various electrical components such as Insulators, Motors, Saws, Screwwdrivers, and Transformers with their corresponding catalog numbers and page references.

Cat. No.	Covers	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	
212	Covers	588	235	Buttons	270	Tool Rolls	310	Fuses	436
212	Frames and Covers	873	235	Sleeves	271	Ammeters	310	Jacks	891
212	Fuses	436	235, 235D	Tapes	271	Frames and Covers	310	Locknuts	544
212 to 212-8	Pliers	903	235-6	Pliers	271	Milliammeters	310	Timers	417
212	Sleeves	874	236	Brackets	271	Millivoltmeters	310	Wattmeters	185
213	Covers	586	236	Fittings	271	Receptacles and Plugs	311	Covers	588
213	Sleeves	874	236	Sleeves	271	Tool Rolls	311	Locknuts	544
213A	Plates	19, 20	236	Socketts	271	Volts	311	Transformers	184
214	Covers	587	235, 236D	Tapes	271	Voltmeters	312	Brackets	868
214	Meters	193	236	Trips	272	Plates	312	Covers	588
214	Sleeves	874	237	Brackets	273	Ammeters	312	Locknuts	544
215	Annunciators	77	237, 238	Fittings	273	Milliammeters	312	Motors	137
215	Brackets	868	237, 238	Sleeves	273	Millivoltmeters	312	Transformers	186
215	Clocks	417	239	Fittings	273	Receptacles	312W	Transmitters	34
215	Covers	586	239	Latches	273	Voltmeters	313	Brackets	868
215	Fuses	436	239	Receptacles	275	Fuses	313	Covers	586
215	Meters	192	240	Connectors	275	Socketts	313	Links	277
215	Sleeves	874	240	Fuses	276	Racks	313	Locknuts	544
215M	Annunciators	77	240	Relays	277	Reflectors	313	Motors	137
216	Brackets	850	240	Sleeves	277FB, 277FBD	Boxes	313	Transformers	186
216	Covers	587	240, 240D	Tapes	278	Frames and Covers	313A	Plates	20
216	Jacks	892	241	Brackets	278	Racks	314	Brackets	868
216	Sleeves	874	241	Reamers	278	Reflectors	314	Cleats	535
216	Socketts	309	241	Relays	280	Ammeters	314	Covers	587
216	Wattmeters	192	241	Sleeves	280	Fuses	315	Brackets	868
217	Bells	110	241	Socketts	280	Milliammeters	315	Cleats	535
217	Brackets	865	241, 241D	Tapes	280	Millivoltmeters	315	Covers	586
217	Jacks	892	241 1/2	Switches	280	Testers	315	Drills	911
217	Sleeves	874	242	Brackets	280	Voltmeters	315	Motors	133
217	Spreaders	865	242	Reamers	280	Voltmeters	315H	Boxes	32, 40
218	Brackets	864	242	Relays	281	Receptacles	315J	Boxes	32
218	Jacks	892	242 1/2	Sleeves	281	Socketts	316	Brackets	868
218	Sleeves	874	242 1/2	Reamers	282	Reflectors	316	Covers	587
218k	Hangers	629	242-6	Pliers	282	Plugs	317	Brackets	865
219	Bells	109, 112	243	Brackets	286	Racks	317	Spreaders	865
219	Covers	588	243	Reamers	287	Receptacles	318	Jacks	890
219	Sleeves	874	243	Sleeves	288, 289	Receptacles	319	Covers	588
219AC to 219UAC	Bells	109	243, 243D	Tapes	290	Fuses	319	Receptacles	342
220	Brackets	864	244	Reamers	290	Treads	320	Bells	110
220	Buzzers	110	244	Sleeves	291	Cleats	320	Covers	588
220	Covers	588	244, 244D	Tapes	292	Covers	588, 629	Receptacles	342
220	Fuses	436	245	Fuses	292	Plugs	320	Socketts	277
220	Sleeves	874	245	Sleeves	294	Boxes	320	Switches	379
220	Switches	375, 379	245	Straps	295	Hooks	321	Brackets	864
220A, 220B	Buzzers	110	245, 245D	Tapes	295AS	Boxes	19, 21	Covers	588
220A, 220B	Buzzers	112	245FBD	Boxes	295BC	Boxes	19, 21	Receptacles	342
220 1/2	Switches	384	246	Reamers	295FD	Boxes	19, 22	Socketts	277
221	Covers	588	246, 246D	Tapes	296	Hooks	321	Switches	375, 379
221	Sleeves	874	246FB	Boxes	296	Wireholders	322	Covers	588
221	Switches	375, 379	246B	Racks	297	Hooks	322	Jacks	891
221A	Plates	19, 20	248	Socketts	297	Rosettes	314	Motors	137
222	Buzzers	106, 112	250	Bags	298	Hooks	322	Socketts	277
222	Covers	588	250	Battery Parts	298	Rosettes	314	Switches	375, 380
222	Portables	684	250	Brackets	299	Hooks	322	Tools	557
222	Sleeves	874	250	Fuses	299	Rosettes	314	Caps	551
222	Socketts	310	250	Racks	299	Wireholders	323	Motors	137
222	Switches	375, 389	250	Sleeves	299	Generator Boxes	41	Socketts	277
223	Break Arms	865	250 1/2	Switches	300	Adapters	555	Switches	375
223	Joint Caps	555	251	Ammeters	300	Augers	872	Transmitters	31, 32, 44
223	Sleeves	874	251	Brackets	300	Battery Parts	100	Fuses	436
223	Switches	375	251	Sleeves	300	Bells	110	Motors	133
224	Boxes	83	251	Voltmeters	300	Boxes	575	Racks	865
224	Break Arms	865	252	Ammeters	300	Brackets	864	Receptacles	277
224	Sleeves	874	252	Covers	300	Covers	536	Sleeves	874
224	Switches	375	252	Jars	300	Fuses	436	Switches	380
224A	Boxes	83	252	Sleeves	300	Hooks	897	Plates	20
224A	Tubes	52	252	Voltmeters	300	Locknuts	544	Motors	137
225	Break Arms	865	253, 253 1/2	Brackets	300	Motors	133	Racks	865
225	Fuses	436	253	Sleeves	300AA to 300N	Boxes	40	Sleeves	874
225	Sleeves	874	254, 254 1/2	Brackets	300AA to 300L	Boxes	32	Switches	380
225	Switches	375, 380	251	Sleeves	300, 300g	Covers	586	Motors	137
226	Sleeves	874	254	Socketts	301	Ammeters	190	Racks	865
226	Switches	375, 380	255	Clamps	301	Boxes	575	Sleeves	874
226	Synchrosopes	113	255	Sleeves	301	Brackets	865	Switches	384
227	Brackets	865	257	Socketts	301	Connectors	555	Racks	865
227	Sleeves	874	258	Racks	301	Locknuts	544	Sleeves	874
227	Switches	384	259 VP	Portables	301	Spreaders	865	328C6 to 328C24	Key Boxes
228	Brackets	856	260	Ammeters	301	Voltmeters	190	Jacks	890
228	Sleeves	874	260	Fuses	301H	Heads	872	Sleeves	874
229	Frames and Covers	873	260	Buttons	301-5	Pliers	902	Switches	381
229	Sleeves	874	260	Racks	302	Batteries	92	Wattmeters	186
229	Socketts	310	260	Sleeves	302	Drackets	865	Fuses	436
229	Switches	381	260	Voltmeters	302	Locknuts	544	Racks	865
229A	Plates	19, 20	260B, 260CB	Boxes	302	Motors	137	Saws	918
230	Break Arms	865	261	Ammeters	302	Spreaders	865	Sleeves	874
230	Clocks	417	261	Escutcheons	302-6	Pliers	904	Timers	417
230	Couplings	550	261	Voltmeters	302 1/2	Switches	384	Saws	918
230	Fuses	436	261B, 261CB	Boxes	303	Brackets	868	Sleeves	874
230	Sleeves	874	261VP	Portables	303	Floodlights	706	Switches	379
231	Break Arms	865	262	Brackets	303	Locknuts	544	Boxes	791
231	Couplings	550	262	Buttons	303	Motors	137	Couplings	551
231	Sleeves	874	263	Brackets	303A	Generators	4	Motors	137
231	Switches	379	263	Racks	303C	Blades	872	Saws	918
231, 231D	Tapes	919	263	Socketts	303-6	Pliers	904	Sleeves	874
232	Brackets	861	264	Brackets	303 1/2	Lugs	420	Boxes	20, 781
232	Clips	555	265	Fuses	304	Locknuts	544	Cleats	535
232	Couplings	550	265	Buttons	304-6	Pliers	904	Motors	137
232	Sleeves	874	266	Clocks	305	Covers	100	Sleeves	874
232 1/2	Pliers	903	267	Ammeters	305	Jars	514	Boxes	20
233	Couplings	550	267	Milliammeters	305	Locknuts	420	Fittings	555
233	Sleeves	874	267	Millivoltmeters	305	Lugs	420	Sleeves	874
233, 233D	Tapes	919	267	Voltmeters	305	Motors	133	Boxes	20
234	Couplings	550	268	Buttons	305-6	Motors	904	Fittings	555
234	Fittings	557	263	Ammeters	306	Locknuts	544	Fuses	436
234	Outlets	73	269	Ammeters	306	Brackets	868	Locknuts	544
234	Plugs	243	269	Milliammeters	307	Brackets	864	Locknuts	544
234	Sleeves	874	269	Millivoltmeters	307	Locknuts	544	Lamps	711
234, 234D	Tapes	919	269	Socketts	307	Locknuts	544	Locknuts	544
235	Brackets	868	269	Voltmeters	308	Bells	110	Covers	588
235	Couplings	550	269	Fuses	310	310			
235	Fittings	555	270	Plugs	310				
235	Fuses	436	270						

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
505	226	555	861	632 to 635	861	725	545
505	420	555	550	638, 639	781	725	378
505	312, 313	556	343	640	378, 379	726	319
505	558	556	325	641	850	726	545
506	226	557	550	641	323	726	378
506	834	558	327	641 to 643	379	727 to 729	545
506	312	559	439	642 to 644	365	730	106
506	376	560	863	644 to 647	380	730	545
506	558	560	275	645 to 647	365	730	378
507	376	560BS to 560CS	397	651	378	731	545
508	834	560M to 560MF	149	651	68	731	704
508	696	561	849	651C	68	732	545
509	36	561	550	652	325	732	312
509	696	565	550	653	861	733	321
510	83, 109	565	314	654	325	733 to 736	545
510	588	566, 567	550	654	861	734	321
510	678	567	872	654	313	736	545
510	834	568	550	655	861	737 to 740	345
510	277	570	860	655, 656	365	740	378
510	136	570	703	657	727	741	444
510	704	571	860	658R	872	741 to 747	545
510C	83	572	860	659 to 665	727	742 to 749	444
510 1/2	871	572	314	662, 663	365	750	107, 112
511	588	572	385	665, 666	364	750	444
511	678	573	860	670	911	750	705
511	834	573	314	672, 673	315	750	378
511	312	574	385	674	315	750	287
512	277	574	860	674	248	751	444
512	588	574	314	675	315	751 to 757	845
512	678	574	385	675	544	751	287
512	834	575	860	675	248	752	444
512	136, 142	575	703	676 to 678	544	752R	872
513	586	575	314	677	307	760	545
513	328	575	385	678	366	760	321
514	587	576 to 579	384	679 to 681	544	760	378
514B, 514WP	680	578	313	681	365	760A to 760C	91
515	586	580	703	682	544	761 to 763	545
515	705	582	67	682, 683	67	762	321
515	559	583	861	684, 685	365	763	97
516	277	585 to 587	876	684	315	763, 764	97
516	587	588	722	685	248	764	321
516	559	592 to 594	561	685	315	764	545
517	684	594, 595	324	686, 687	365	765	321
518	328	595	309	688	923	765	92
519	588	598	306	691 to 693	64	766	545
519	684	600	318	691	311	766	96
520	588	600	586	692	64	766	545
520	309	600	126	694, 695	315	767	97
520	780	600	704	695 to 698	311	767	92
521	32	600	389	696	703	767	545
521	588	600	561	698	722	768	97
521	313	600F, 600g	586	699	318	768	91
521	309	601	873	700	545	768	545
521	780	601	126	700	319	769	909
522	588	601	389	700	558	769	545
522	136	602	873	701	319	770	92
522	136	602	345, 378, 389	701	545	770	909
522	312	602	126	701	319	770	545
522	309	602	345, 378, 389	702	561	770	378
523	136	602TL	88	702	519	771	545
523	876	603	126	702	558	771	909
526	136	603	345, 378, 389	703	519	772	545
527	136, 142	603 1/2	420	703	545	772	345
528	684	604	126	703	558	772	96
628BW	43	604	316	704	572	772	909
530 to 532	860	604	345, 378, 389	704	876	772	545
532	136	605	420	706	392	772	91
532	312	605	389	707 to 709	876	773	315
532	380	605TL	88	709	106	773	909
533	910	606	873	710	876	773	545
533	860	606 to 608	345	710	777	773 to 777	91
533	136	607	316	710	876	777	319
533	312	609	389	710	545	777	545
534	860	610	780	710	703	778	545
534	312	610	704	710	248	778	703
534A to 534K	33	610	316	710	302	778	703
535	860	610	11	711	696	779 to 782	545
535	703	610	345, 378	711	519	780 to 782	378
535	312	611	519	711	876	788	92
536	136	611 to 613	780	711	876	790	15, 27
536	312	612R	872	711	392	790	378
538	20	613	323	712	106	790	15, 27
538	309	614, 615	780	712	696	791	896
539	324	614	323	712	519	798	15, 27
540	862	615 1/2, 615%	871	712	545	799	385
540	275, 309	616 to 618	780	712	392	800	872
540AW	51	616	324	713	619	800	575
540M to 540MP	149	618, 619	329	713	606	800	586
541	365	619	389	713	545	800	300
541 1/2	384	620	123	714	519	800	378, 385
542	909	620	911	714	106	800BS to 800GS	397
542	136	620	378	714	545	800 to 800g	586
542	309	620%	871	714B, 714WP	680	801	575
542	365	621	123	715	106	801	728
543W	51	621	325	715	545	802	300
544	863	621	780	716	545	802	695
546	136	621C	124	716	378	802	575
547	32, 40	622	123	717	545	802	728
548	550	622	325	717	545	803	300
548	32	623	325	717	281	803	695
549	550	625 to 627	780	718	545	803	135, 136
549	851	627	329	718	545	803	575
549	40	628	313	718, 719	378	803	728
550	851	628	780	719	545	803	300
550	40	629	313	720	106	803 1/2	420
550	30	629	870	720 to 722	106	804	575
550	917	630	861	722	106	804	728
550B, 550C	30	630	324	723	378	804	300
551, 552	851	630	378	724	106	805	575
552	136	631	861	724	378	805	420
553 to 555	550	631	248	725	106	805	869

Cat. No. Page Generators, Lugs, Condulet Covers, Fans, etc. Cat. No. Page Fixtures, Clevis Bolts, Plates, Portable, etc. Cat. No. Page Washers, Fans, Plugs, Connectors, etc. Cat. No. Page Clamps, Connectors, Fuses, etc.

Table with 5 columns: Cat. No., Page, Cat. No., Page, Cat. No., Page. Lists various electrical components like Trims, Switches, Fuses, Sockets, and Transformers with their respective page numbers.

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
2195971G1 to 2195973G3		2196012G1 to 2196016G2		2196044G1, 2196044G2		2515514G1	220
Breakers.....	231	Breakers.....	229	Breakers.....	231	Arresters.....	220
2195974G1, 2195974G2		2196018G1 to 2196019G2		2196045G1, 2196045G2		2515525G1 to 2515525G3	
Breakers.....	230	Breakers.....	231	Breakers.....	232	Coils.....	221
2195974G3, 2195974G4		2196021G1, 2196021G2		2196045G3, 2196045G4		2515571G1 to 2515571G4	
Breakers.....	229	Breakers.....	229	Breakers.....	230	Arresters.....	219
2195975G1, 2195975G3		2196022G1, 2196022G2		2196046G1, 2196046G2		2515571G1 to 2515571G4	
Breakers.....	231	Breakers.....	232	Breakers.....	230	Arresters.....	220
2195976G1, 2195976G2		2196022G3, 2196022G4		2196046G3 to 2196054G2		2516513 to 2593115	219
Breakers.....	230	Breakers.....	230	Breakers.....	231	Arresters.....	219
2195976G3, 2195776G4		2196023G1, 2196023G2		2196058G1, 2196058G2		2602714G1 to 2602714G10	
Breakers.....	229	Breakers.....	232	Breakers.....	232	Attachments..	240, 241
2195978G1 to 2195982G3		2196023G3, 2196023G4		2196058G3, 2196058G4		2602716G1 to 2602719G40	
Breakers.....	231	Breakers.....	230	Breakers.....	230	Attachments..	237
2195983G1, 2195983G2		2196024G1, 2196024G2		2196059G1, 2196059G2		26027230G1 to 26027230G26	
Breakers.....	230	Breakers.....	231	Breakers.....	232	Breakers.....	155
2195983G3 to 2195985G4		2196025G1, 2196025G2		2196059G3, 2196059G4		2602725G1 to 2602726G10	
Breakers.....	229	Breakers.....	230	Breakers.....	230	Breakers.....	156
2195984G1 to 2195982G2		2196026G1, 2196026G2		2196064G1, 2196064G2		2602727G1 to 2602733G26	
Breakers.....	230	Breakers.....	232	Breakers.....	231	Breakers.....	155
2195986G1, 2195989G4		2196026G3, 2196026G4		2196068G1, 2196068G2		2609820G1	223
Breakers.....	231	Breakers.....	230	Breakers.....	232	Breakers.....	223
2195991G1, 2195991G2		2196026G4 to 2196029G4		2196068G3, 2196068G4		2636280G1 to 2636281G21	
Breakers.....	230	Breakers.....	231	Breakers.....	230	Attachments..	233
2195991G3, 2195991G4		2196031G1 to 2196033G3		2196069G1, 2196069G2		2643024G1 to 2653054G1	
Breakers.....	229	Breakers.....	230	Breakers.....	232	Breakers.....	231
2195992G1 to 2195993G2		2196034G1, 2196034G2		2196069G3, 2196069G4		2666739, 2666740	160
Breakers.....	231	Breakers.....	231	Breakers.....	230	Switches.....	160
2195994G1, 2195994G2		2196035G1, 2196035G2		2196074G1, 2196074G2		2672275G1	223
Breakers.....	229	Breakers.....	232	Breakers.....	231	Switches.....	223
2195995G1 to 2195999G2		2196035G3, 2196035G4		2196078G1 to 2196079G1		2676923G3, 2676923G4	
Breakers.....	231	Breakers.....	230	Breakers.....	230	Relays.....	243
2196001G1, 2196001G2		2196036G1, 2196036G2		2196074G1, 2196074G2		2829014G3 to 2829015G36	
Breakers.....	230	Breakers.....	232	Breakers.....	231	Starters.....	157
2196001G4 to 2196002G4		2196036G3, 2196036G4		2196078G1 to 2196079G1		2829025G2 to 2829025G13	
Breakers.....	229	Breakers.....	230	Breakers.....	230	Switches.....	172
2196002G1, 2196002G2		2196038G1 to 2196039G2		2196084G4 to 2196094G4		2829035G2 to 2829035G25	
Breakers.....	230	Breakers.....	231	Breakers.....	231	Compensators... 176	
2196003G1, 2196003G3		2196041G1 to 2196043G2		2196979G2	230	2829136G2 to 2829139G11	
Breakers.....	231	Breakers.....	232	2202480G4 to 2202769G6		Compensators... 177	
2196004G1, 2196004G2		2196041G3 to 2196043G4		Rheostats..... 157		2829551G2 to 2829551G45	
Breakers.....	229	Breakers.....	230	2204799, 2204800	158	Compensators... 176	
2196005G1 to 2196011G1				Receptacles..... 158		2841462G1 to 2841462G4	
Breakers.....	231			2207461G2 to 2207576G6		Relays..... 244	
				Rheostats..... 157		2888163G2 to 2888165G14	
				2209002, 2209003	158	Compensators... 177	
				Cutouts..... 158		3106901 to 3106921	242
				2209364G2, 2209364G3		Transformers... 242	
				Rheostats..... 150			
				2515514G1	219		
				Arresters.....			

ALPHABETICAL INDEX, 1926 YEAR BOOK

A					
Acco Switches, Meter Service	412	Appliance Switch Plugs, Bryant	68	Balconies, Pole, Hubbard	846
Acorns, Socket Chain, Hubbell	293	Switches, Toggle, Hubbell	373	Ball Cord Adjusters	685
Adaptable Lamp Changers	685	Appliances, Heating, Crawford	57-59	Eyes, Hubbard	855
Adapter Bodies, Bryant	318	Heating, M-B	62-68	Globes, Street Lighting	753
Hickeys, Bryant	276	Arc Lamp Chain	530	Lamp Adapters	696
Adapters, Candelabra, Porcelain,		Lamp Suspension Insulators,		Balls, Exit, Triangular	702
P & S	303	Peirce	870	Glass	700
Chapman to Edison, Bryant	323	Welders, Rail Bonding	790	Socket, Bryant	271, 277
Conduit, Ovalduct	545	Arc-light Drop Brackets, Peirce	861	Bands, Pole, Hubbard	849
Cord, Spool	685	Arktite Plugs, Circuit-breaking,		Pole, Peirce	863
Duplex, Spartan	319	Non-watertight	615	Bank Hold-up Alarm Systems,	
Lamp, Ball	696	Plugs, Circuit-breaking, Water-		Edwards	84
Lamp, Curtis, X-Ray	706	tight	615	Protection Systems, Faraday	91, 92
Metal Molding, National	553, 555	Plugs and Receptacles, Circuit-		Bar Solder	926
Mogul, Benjamin	311	breaking	614, 615	Bare Wire, Copper	530
Outlet Box, P & S	305	Receptacles and Condulets, Cir-		Barrier Switches, H & H	384, 385
Ovalflex	548	cuit-breaking	617	Barrow Reels	893
Parallel Blade, Benjamin	338	Armored Cable, Habirshaw	514, 516	Bars, Crow	895
Receptacle, Hubbell	337	Cable, Ovalflex	548	Digging	895, 896
Spartan to Edison	318	Conductors, Flexsteel	548	Installing, Never-Creep	871
Thimble, Peirce	854	Lamp Cord, Flexsteel	548, 549	Pointed	839
Wiremold	560	Arms, Bo-Arrow, Hubbard	858	Tamping	896
Adjustable Bench Brackets	731	Break, Peirce	865	Base Couplings, Wiremold	558
Brackets, Faries	731	Cross, Benjamin	727	Bases, Attachment Plug, Hubbell	
Ceiling Fixtures	731	Mast, Benjamin	729		333, 334
Wall Brackets	731	Mast, Peirce	869, 870	Box, Porcelain, Bryant	314
Adjusters, Cord, Ball	685	Suspension, Trolley	793	Canopy, Metal Molding, National	553
Adjustable-lite Portable Lamps	708	Arresters, Lightning, Magnetic		Cutout, Convertible, Benjamin	430
Aerial Cable, Habirshaw	515	Blowout	221	Cutout, Fuse, Plug, Bryant	429
Aglite Lighting Fixtures	698	Lightning, Multigap	220	Lamp, Portable, Esrobert	712
Air Circuit Breakers	227-233	Lightning, Oxide Film	219, 220	Plug Receptacle, New Wrinkle	258-260
Aisle Light Condulets, Type LA	621	Lightning, Vacuum Tube	221	Projector, Floodlight, Crouse-	
Alarm Systems, Fire, Edwards	80-84	Assortments, Condulet	629	Hinds	741
Systems, Hold-up, Bank, Edwards	84	Attachment Plug Bases, Hubbell		Receptacle, Metal Molding,	
Aligners, Fixture, Benjamin	722		333, 334	National	553
Alley Braces, Hubbard	845	Plug Caps, Bryant	317, 318	Receptacle, New Wrinkle, Bryant	269, 270
All-Nite-Lite Transformers	218	Plug Caps, Hubbell	332, 333, 336	Receptacle, Porcelain, Bryant	281
Aluminum Sockets, Bryant	274	Plug Lamp Receptacles, Hubbell	333	Receptacle, Wiremold	559
Sockets, P & S	310	Plug Receptacles, Square D	404	Rosette, Condulet, Type GS	639
Amazon Friction Tape	927	Plug Rubber Casing	332	Socket, Bracket, Bryant	315
Rubber Tape	927	Plugs, Benjamin	338	Socket, K-W, Bryant	281
Ammeters, Battery Testing,		Plugs, Bryant	319	Socket, New Wrinkle	
Sterling	197	Plugs, Hubbell	332, 336, 337		252-254, 258-260, 269, 270
Dashboard, Weston	197	Plugs, Multiple, Hubbell	335	Socket, Porcelain, Bryant	279
Portable, Weston		Plugs, Square D	404	Socket, Porcelain, Hubbell	296
	181, 183, 185, 187, 188	Plugs, Wiremold	559	Socket, Quick Catch, Hubbell	290
Precision, Weston	183	Attachments, Burglar Alarm,		Switch, New Wrinkle	
Radio Frequency, Weston	197	Edwards	127		258-260, 264-266
Switchboard, Weston	189-191, 193-196	Dim-A-Lite	312	Switch, Porcelain, Bryant	366
Ammoniac, Sal, Soldering	926	Lock, Switch, H & H	386	Bases and Bodies, Receptacle, Por-	
Amperage of A. C. Circuits	964, 965	Pull, Hubbell	292, 293	celain, Bryant	320
Amplifiers, Telephone, Loud		Switch, Quick Break, FA	397	Basket Weave Armored Cable,	
Speaking	52	Auger Bits	909, 910	Habirshaw	516
Anchor Rods, Hubbard	840	Handles, Telescoping Black-		Habsirshaw	516
Wrenches	872	burn's	872	Bates Steel Poles	829
Anchors, Cable, Dossert	424, 425	Augers, Digging	872	Batteries, Carbon, Samson	105
Cable, Frankel	427	Telegraph	871	Dry, Blue Bell	96
Guy	840, 871-873	Auto Transformers	216, 217	Dry, Columbia	96
Screw, Rawlplug	916	Automobile Ignition Cable	519	Dry, Radio, Eveready	96, 97
Anderson Time Switches	416	Lighting Cable	519, 520	Flashlight, Eveready	94
Angle Iron Braces, Hubbard	845	Pole Derricks	882, 883	Gravity	105
Sockets, Bryant	274	Spark Plug Cable	519	Primary, Edison	98-101
Annunciator Cable	526	Starting Cable	519	Radio, Storage	97
Wire	526	Starting Cable, Habirshaw	515	Storage	144
Annunciators, Deveau	92	Automotive Winches	887	Storage, Titan	104
Edwards	75-78	Access Fixtures, Sampson	732-734	Battery Burners, Pyrotip	218
Fire Alarm, Edwards	82	Axes	918	Chargers	102-104
Fire Alarm, Faraday	92	B			
Inter-phone	12, 13	Back Braces, Crossarm, Hubbard	844	Charging Cable, Habirshaw	515
Antenna Insulators, Radio	834	Bags, Tool	907-909	Charging Clips	421
Apartment Inter-phones	18-26				

	Page		Page		Page
Battery Connectors, Fahnestock	105	Benjamin Diffusers	718	Blocks, Connection, Condulet,	Page
Coppers	105	Dust Proof Fixtures	727	Type FSCA	657
Hydrometers	146	Fixture Aligners	722	Connection, Condulet, Type GS	598
Lanterns	94	Fixture Fittings	729	Connection, Condulet, WD Series	609
Sets, Patterson	98, 99	Fixtures, Crossing	724	Connection, Conduletto, Type	
Stations, Watchman's	93	Fixtures, Viaduct	724	G-H	594
Switches, Edwards	125	Gas Proof Fixtures	724, 726	Fuse, Condulet, Type GS	598
Switches, Toggle, Hubbell	373	Goosenecks	729	Fuse, Enclosed, D & W	431
Switches, Trumbull	392	Lamp Clusters	713	Fuse, Enclosed, FA	431
Testers, Weston	182, 196	Lamp Guards, Portable	685	Fuse, Square D	404
Testing Instruments, Sterling	197	Marine Fittings	774-779	Linemen's	902
Testing Voltmeters, Weston	182, 196	Mast Arms	729	Protector, Telephone	42, 43
Zincs	105	Moisture Proof Fixtures	727	Push Button, Inter-phon	27
Bayonet Ediswan Socket Bodies,		Multiple Plugs	338, 339	Snatch, Manila Rope	899, 900
Bryant	275	Outdoor Fixtures	727-729	Snatch, Wire Rope	897, 899
Shell Sockets, Bryant	271	Outlet Box Lamp Guards	683	Stringing, Cable	900
Bayonets, Corner, Hubbard	858	Pole Fittings	727	Tackle, Manila Rope	898, 899
Ground Wire, Hubbard	856, 859	Pull Plugs	338	Tackle, Wire Rope	900
Beam-light Projectors,		Reflector Covers, Glass	725	Blow Torches, C & L	924, 925
Davis	736, 737	Reflector Fittings	722	Blowers, Portable, Sturtevant	74
Bed Lamps, Portable, Emeralite	710	Reflector Guards	683	Blowers and Cleaners, Vacuum,	
Beehive Reflectors, X-Ray	703	Reflectors, Bull's Eye	724	Premier Handy	50
Belcher Strain Yokes	859	Reflectors, Flat Cone	725	Blue Bell Dry Batteries	96
Bell Hoods, Edwards	111	Reflectors, Industrial	718-720, 723, 724	Vitriol	105
Push Plates, H & H	390	Reflectors, Parabolite	719	Boards, Panel, Benjamin-Starrett	
Relays, Signal	119	Reflectors, Sewing Machine	725	Panel, Crouse-Hinds	492-505
Resistances, Edwards	112	Reflectors, Shade Holder	723, 724	Panel, FA	446-457
Resistances, Faraday	117	Reflectors, Shallow Bowl	725		458-491
Ringing Transformers, Edwards	122	Reflectors, Show Case	707	Bo-Arrow Arms, Hubbard	858
Ringing Transformers, Jefferson	121, 122	Reflectors, Show Window	707, 725	Bodies, Adapter, Bryant	318
Bells, Double-gong, Faraday	117	Reflectors, Tubular	707	Conduit	665-668
Electro-mechanical, Edwards	111	Shade Holders	310	Cord Connector, Bryant	318, 319
End, Cable	226	Showcase Fixtures	707, 708	Current Tap, Bryant	319
Extension, Telephone	40	Socket Extensions	311	Current Tap, Hubbell	333
Faraday	113-117	Socket Reducers, Mogul	311	Interconnecting Block, Bryant	314
Fire Alarm, Edwards	83, 84	Socket Tops	311	Outlet Box, Bryant	319, 320
Iron Box, Edwards	106	Sockets, Locking	722	Outlet Box, Fullman	576
Lungen, Edwards	107	Sockets, Mogul	311	Plug Receptacle, New Wrinkle	
Marine, Benjamin	778	Sockets, Plug, Adjustable	339	255-260, 267	
Monitor, Edwards	107	Sockets, Porcelain	311	Plug Receptacle, Porcelain,	
Recti, Edwards	109, 110	Sockets, Pull Chain	310	Bryant	278, 280
Riot, Edwards	110	Sockets, Reflector	718-722	Receptacle, Lamp, Bryant	314
Signal	118	Sockets, Weatherproof	310	Receptacle, Plug, Bryant	314
Single Stroke, Edwards	108	Suspension Fittings	727	Receptacle, Porcelain, Bryant	320
Single Stroke, Signal	118	Suspension Fittings, Shock Absorber	722	Receptacle, Spartan, Bryant	321
Skeleton, Edwards	108	721		Rosette, Bryant	314
Skeleton, Ekla	115	Threaded Fixtures	721	Rosette, New Wrinkle, Bryant	267
Skeleton, Faraday	115	Vapor Proof Fixtures	724, 726	Socket, Candle, Bryant	276
Solenoid, Edwards	111	Wall Fittings	727	Socket, Electrolier, Hubbell	291, 292
Street Car, Edwards	108	Wireless Clusters	729, 730	Socket, Hubbell, Porcelain	295
Transformer, Edwards	109	Benjamin-Starrett Panels and		Socket, K-W, Bryant	281
Transformer, Faraday	113	Cabinets	492-505	Socket, Mogul, P & S	309
Trouble, Bank Protection,		Ben-ox Industrial Fixtures	714-716	Socket, Mogul, Porcelain, Bryant	
Faraday	91	Shade Holders	716	286, 287	
Trouble, Fire Alarm, Faraday	85-90	Sockets	715	Socket, New Wrinkle	249-260, 267
Watertight, Edwards	112	Bermico Conduit Field Machines	541	Socket, Porcelain, Bryant	278, 280
Bells and Push Buttons, Combina-		Fibre Conduit	540	Socket, Quick Catch, Hubbell	289
tion	126	Bezels, Reflector, Condulet	656	Socket, Wrinklet	272, 273
Combination, Edwards	107	Bierce Guy Anchors	873	Suspension, Trolley	792
Belts, Tool, Linemen's	906, 908	Binding Posts, Eby	423	Switch, New Wrinkle	255-268
Bench Brackets, Adjustable	731	Posts, Fahnestock	423	Switch, Quick Catch, Hubbell	289, 290
Grinders, Speedway	130, 131	Bit Braces	909	Switch, Wrinklet	272, 273
Benches, Pipe, Portable,		Carriers, Wiremen's	909	Bodies and Bases, Receptacle, Por-	
Henderson	922	Extensions	910	celain, Bryant	320
Pipe and Conduit, Turnbuckle	923	Stocks	909	Boiler Room Wire, Deltabeston	523
Benders, Conduit, Fullman	921	Bits, Auger	909, 910	Bolt Clevises	842
Conduit, Henderson	922	Screwdriver	910	Cutters	897
Pipe, Wiremold	561	Blackburn Boltless Guy Clamps	873	Shields, Expansion	915
Benders and Vise Stands, Pipe,		Cable Hangers	875	Bolts, Bracket, Telephone	
Portable	922	Strain Insulators	873	Hubbard	848
Bendhicks	545	Wire Splicers	873	Carriage, Hubbard	842
Bending Tools, Metal Molding,		Blades, Saw, Hack	913	Clevis, Hubbard	860
National	557	Switch, Matthews	215	Double Arming, Hubbard	844
Bends, Conduit, Fibre, Bermico	540	Blake Insulated Staples	546	Expansion, Diamond	915
Benjamin Adapters	338	Wood Cleats	546	Expansion, Di-En-Key	915
Attachment Plugs	338	Blank Joints, Macallen	735	Expansion, Peirce	913
Brackets	729	Plates, Bryant	350	Eye, Hubbard	844
Cargo Lights	779	Plates, H & H	390	Fork, Hubbard	849
Ceiling Guards	683	Blocks, Connecting, Benjamin	774	Hook, Hubbard	860
Convertible Cutout Bases	430	Connecting, Inter-phon	27	Machine, Hubbard	843
Cord Grips	311	Connection, Condulet	642, 655	Toggle, Metal Molding, National	555
Cross Arms	727	Connection, Condulet, Cab Ceil-	ing	U, Hubbard	859
Crossarms, Shock Absorber	722		639	Bond Terminals, Rail	788
				Bonding Tools, Rail	788-790

	Page		Page
Bonds, Rail	782-787	Brackets, Benjamin	729
Books, Meter, Loose Leaf	205	Break Iron, Hubbard	848
Booth Switches, Telephone	37	Corner, Hubbard	860
Booths, Telephone	37, 38	Corner, Telephone, Hubbard	848
Border Light Cable, Flexible	522	Crossarm, Peirce	864, 865
Borers, Increment	817	Distributing, Peirce	864
Boring Machines, Earth	878-881	Distributing, Telephone, Hubbard	848
Machines, Electricians'	912	Drive, Brick, Peirce	863
Bowls, Glass	700, 701	Hook, Peirce	868
Box Bases, Porcelain, Bryant	314	Hotel Sample Room, D.D.,	
Connectors, Conduit, Flexsteel	549	Bryant	324
Connectors, Metal Molding,		House, Peirce	867, 868
National	551, 556	Insulator, Suspension, Hubbard	860
Connectors, Wiremold	561	Lamp Lead, Peirce	868
Dimensions, Switch	445	Mine, Peirce	850
Fittings, Corner, Metal Molding,		Pole, Peirce	863, 864, 867
National	551	Pole Top, Peirce	855
Boxes, Cable, Dead Ground	550	Projector, Floodlight, Crouse-	
Cable, T & B	550	Hinds	741
Conduit, Ovalduct	545	Rack, Secondary, Peirce	862
Corner, Wiremold	559	Railway	790, 791, 797
Cutout, Columbia	440-445	Ridge Iron, Peirce	856
Device, Metal Molding, National	552	Screw, Peirce	868
Drop Cord, Metal Molding,		Signal, McKean	861
National	552	Spreader, Peirce	865
Extension, Wiremold	561	Street Lighting, King	750
Fire Alarm, Edwards	82, 83	Street Lighting, Novalux	764-766
Fire Alarm, Faraday	85-90	Telephone	44, 45
Fixture, Wiremold	561	Telephone, Peirce	864
Floor, Condulet, Type FJC	661	Transposition, Hubbard	847
Floor, FA	575	Transposition, Peirce	848
Floor, Fountain	575	Wall, Adjustable	731
Floor, Fullman	576	Wall, Peirce	867, 868
Floor, R & S	577, 578	Wood	832
Floor, Watertight, T & B	574	Bragdon Porcelain Sockets, Bryant	285
Generator, Telephone, Magneto	41	Break Arms, Peirce	865
Junction, Columbia	440-445	Iron Brackets, Hubbard	848
Junction, Marine, R & S	781	Breakers, Circuit, Air	227-233
Junction, Metal Molding,		Circuit, Oil	154-156, 234-241
National	552, 557	Breast Drills	910, 911
Junction, T & B	573, 574	Brewery Cord, Flexible	522
Junction, Watertight, Benjamin	774	Brick Drills	913
Laundry, Gem	573	Drive Brackets, Peirce	863
Letter, Inter-phone	18	Bridge Jacks, Simplex	892
Loom, T & B	550	Bridle Rings	875
Outlet	562-569	Telephone Wire	522
Outlet, Concrete	568	Bryant Adapter Bodies	318
Outlet, Floor, Patterson	577	Adapter Hickeys	276
Outlet, Fullman	576	Adapters	318
Outlet, R & S	577, 578	Appliance Switch Plugs	68
Outlet, Wiremold	560	Attachment Plug Caps	317, 318
Panel, Columbia	440-445	Attachment Plugs	319
Set-up, Union	569	Chapman to Edison Adapters	323
Switch, Columbia	440-445	Combinations, Bull's Eye	326, 328
Switch, Conduit	567	Combinations, Pilot Lamp	328
Switch, Conduit, Gem	571, 572	Cord Connector Bodies	318, 319
Switch, Conduit, National	571	Cord Connectors	319
Switch, Conduit, Union	572, 573	Current Tap Bodies	319
Switch, Metal Molding, National		Current Taps, Spartan	281
Switch, Wiremold	553, 554	D.D. Hotel Sample Room	
Telephone	40	Brackets	324
Utility, Metal Molding, National	552	Flush Device Information	352
Weatherproof, T & B	573, 574	Fuse Cutout Bases, Plug	429
Boxes and Switches, Distribution,		Fuseless Plugs	439
Square D	403	Heater Control Combinations	325
Braces, Alley, Hubbard	845	Insulating Links	277
Bit	909	Interconnecting Block Bodies	314
Crossarm, Hubbard	844, 845	Motor Connectors	319
Bracket Bolts, Telephone, Hubbard	848	Outlet Box Bodies	319, 320
Clamps, Telephone	44, 45	Outlet Box Covers	315
Fans, Western Electric	71-73	Pilot Caps	318
Feet, Peirce	867	Plates, Bakelite	350
Knobs, Telephone, Hubbard	848	Plug Fuses	430
Lighting Fixtures	694, 696	Plug Receptacle Bodies, New	
Mountings, Telephone	44, 45	Wrinkle	267
Outlets, Wiremold	562	Plugs, D.D.	324
Socket Bases, Bryant	315	Plugs, Receptacle, Chapman	323
Sockets, Bryant	274, 315	Plugs, 20-ampere	325
Sockets, P & S	309	Plates, Blank	350
Units, Street Lighting, Novalux	762	Plates, Combination	354, 355
Brackets, Adjustable, Faries	731	Plates, Special	353
Arc-light Drop, Peirce	861	Porcelain Box Bases	314
Bench, Adjustable	731	Receptacle Bases, New Wrinkle	
		.....	269, 270
		Bryant Receptacle Bases, Porcelain	281
		Receptacle Bodies, Lamp	314
		Receptacle Bodies, Plug	314
		Receptacle Bodies, Porcelain	320
		Receptacle Bodies and Bases,	
		Porcelain	320
		Receptacle Lamps, Flush, Bull's	
		Eye	322, 323
		Receptacle Plates	322, 323
		Receptacle Plates, Bull's Eye	326
		Receptacle Plates, Chapman	323
		Receptacle Plates, D.D.	324
		Receptacle Plates, Spartan	321
		Receptacles, Bull's Eye, Flush	329
		Receptacles, Cleat, Candelabra	277
		Receptacles, Cleat, Miniature	277
		Receptacles, Cleat, Porcelain	282
		Receptacles, Cleat, Temporary	284
		Receptacles, Concealed, Porce-	
		lain	282
		Receptacles, Conduit Box	270
		Receptacles, Flush, Chapman	323
		Receptacles, Flush, D.D.	324
		Receptacles, Fused, Porcelain	283
		Receptacles, Mogul	289
		Receptacles, Molding	283
		Receptacles, Porcelain	321
		Receptacles, Porcelain, Ceiling	285
		Receptacles, Porcelain, Outlet	
		Box	283-285
		Receptacles, Porcelain, Sign	283, 285
		Receptacles, Porcelain, Weather-	
		proof	285, 286
		Receptacles, Removable Ring,	
		Porcelain	282
		Receptacles, Screw Plug, Flush	322
		Receptacles, Sign, Candelabra	277
		Receptacles, Sign, Miniature	277
		Receptacles, 20-ampere	325
		Receptacles and Pilot Lamps,	
		Combination	329
		Receptacles and Plugs	325
		Receptacles and Plugs, D.D.	324
		Receptacles and Switches	329
		Rosette Bodies, New Wrinkle	267
		Rosette Bodies, Porcelain	314
		Rosette Caps, K-W	281
		Rosettes, Porcelain	314
		Shade Holders	312, 313
		Silent Call Signal Systems	79
		Socket Balls	277
		Socket Bases, Bracket	315
		Socket Bases, K-W	281
		Socket Bodies, Candle	276
		Socket Bodies, Ediswan, Bayonet	275
		Socket Bodies, K-W	281
		Socket Bodies, Mogul, Porcelain	
		.....	286, 287
		Socket Bodies, New Wrinkle	267
		Socket Bodies, Porcelain	280
		Socket Bodies, Wrinklet	273
		Socket Cap Wrenches	277
		Socket Caps, Mogul	287
		Socket Caps, New Wrinkle	268
		Socket Caps, Porcelain	280, 281
		Socket Caps, Side Outlet	248
		Socket Caps, Wrinklet	273
		Socket Cord	247
		Socket Handles	685
		Socket Hickeys	276
		Socket Lamp Grips	248
		Socket Locking Keys	248
		Socket Parts, Brass Shell	271
		Socket Yokes, Mogul	287
		Sockets, Aluminum	274
		Sockets, Angle	274
		Sockets, Art Key	247
		Sockets, Bayonet Shell	271
		Sockets, Bracket	274, 315
		Sockets, Brylock	248
		Sockets, Candelabra	277
		Sockets, Candle	275, 276
		Sockets, Composition, Weather-	
		proof	285, 286

	Page		Page		Page
Bryant Sockets, Covered Base	270	Burners, Lead, Pyrotip	218	Cable, Park, Habirshaw	512
Sockets, Decorative	277, 284	Burnley Soldering Paste	926	Picture Machine, Deltabeston	523
Sockets, Electrolier	274	Soldering Salts	926	Rubber Covered, Habirshaw	509, 510
Sockets, Extension Guide	247	Soldering Sticks	926	Spark Plug, Automobile	519
Sockets, Extra Long Chain	247	Burring Reamers, G T D	921	Stage, Flexible	522
Sockets, Extra Long Key	247	Bushcaps	544	Starting, Automobile	519
Sockets, Flat Pan	277	Bushings, Clamp, Porcelain	536	Starting, Automobile, Habirshaw	515
Sockets, Gas-filled Lamp	247	Conduit	544	Street Lighting, Habirshaw	512
Sockets, High-heat	275	Conduit, Ovalduet	545	Submarine, Habirshaw	514
Sockets, Left-hand Screw Shell	248	Fixture	311	Telephone, Lead Covered	46-50
Sockets, Metal Key	247	Metal Molding, National	552, 556	Tirex	517
Sockets, Miniature	277	Molding, Wiremold	558	Varnished Cambric, Habirshaw	515
Sockets, Mogul	287	Reducing	544	Weatherproof	527-530
Sockets, Multiple	270, 274, 275	Sleeve, Condulet, Type GTXB	645	Cable Anchors, Dossert	424, 425
Sockets, New Wrinkle	249-260, 270	Buss Fuse Strip	439	Anchors, Frankel	427
Sockets, Plug	274, 275	Fuse Wire	439	Annunciator	526
Sockets, Porcelain	278, 279	Fuses, Enclosed	436-438	Boxes, Dead Ground	550
Sockets, Porcelain, Bragdon	285	Fuses, Open Link	439	Boxes, T & B	550
Sockets, Porcelain, Weatherproof	285, 286	Portable Lamps	706	Clamps	870
Sockets, Porcelain Lined	274	Buttons, Push, Compound, Edwards	125	Connectors	874
Sockets, Reflector	282	Push, Directory, Edwards	125	Connectors, Dossert	424, 425
Sockets, Removable Push Button	247	Push, Edwards	123-126	Connectors, Frankel	426, 427
Sockets, Removable Ring	271	Push, Elevator, Edwards	126	Connectors, Mesco	422
Sockets, Streethood	286	Push, Floor, Edwards	124	Connectors, Sherman	419
Sockets, Switchboard	271	Push, Multiple, Edwards	125	Crossarms, Hubbard	846
Sockets, Temporary	284	Push, Pendant, Edwards	125	Duct Shields, Hubbard	847
Sockets, Titan	274	Push, Watertight, Benjamin	778	End Bells	226
Sockets, Unassembled	248	Push, Watertight, Edwards	112, 124	Grip Protectors	901
Sockets, Wall	271	Switch, Luminous, Bryant	348	Grips	901
Sockets, Wrinklet	270, 272	Buttons and Bells, Push, Combination, Edwards	107	Hangers	875
Special Finishes	351	Buttons and Buzzers, Push, Combination, Edwards	107	Ignition, Automobile	519
Splicing Links	277	Buz-a-bels, Edwards	106	Information	506-509
Switch Bodies, New Wrinkle	267, 268	Buzzers, Concealed, Edwards	107	Rack Portable Lamp Guards	684
Switch Bodies, Wrinklet	273	Enclosed, Faraday	115	Racks, Peirce	847
Switch Buttons, Luminous	348	Iron Box, Edwards	106	Reel Capacities	514
Switch Handles, Luminous	348	Loud Signal, Edwards	107	Reel Jacks	891, 893
Switch Handles, Rotary	361	Lungen, Edwards	107	Reel Trailers	884
Switch Keys	361, 362	Recti, Edwards	110	Reels	516
Switch Plates, Push	346, 348, 349	Street Car, Edwards	108	Rings	875
Switch Plates, Rotary	350	Transformer, Edwards	109	Rollers	875
Switch Plates, Trigle	348	Watchcase, Edwards	107	Saws	918
Switch Plates, Tumbler	348, 349	Watertight, Edwards	112	Sheath Splitting Knives	897
Switch Sub-bases, Porcelain	366	Buzzers and Push Buttons, Combination, Edwards	107	Splicing Sleeves	874
Switch Sub-bases, Range	363, 364	C & L Blow Torches	924, 925	Stringing Blocks	900
Switch Units, Range	363, 364	Fire Pots	925	Suspension Clamps, Hubbard	846
Switch Wiring Diagrams	370-372	Cab Ceiling Rosettes	633-639	Taps, Dossert	424
Switches, Canopy	364, 365	Cabinet Connectors, Square D	402	Taps, Frankel	426
Switches, Ceiling	367	Cabinets, Control, Bank Protection, Faraday	91, 92	Terminals, FA	420
Switches, Electrolier	345, 346	Control, Fire Alarm, Edwards	84	Terminals, Sherman	418, 419
Switches, Entrance, Fuse Plug	428	Control, Fire Alarm, Faraday	85-90	Terminals, Telephone	39
Switches, Expulsion	360, 361	Guttered Type, Columbia	443, 444	Calipers, Micrometer, Brown & Sharpe	923
Switches, Feed-through	366, 367	Panel, Benjamin-Starrett	492-505	Call Systems, Signal	119
Switches, Panel	368, 369, 428	Panel, Crouse-Hinds	446-457	Candelabra Adapters, Porcelain, P & S	303
Switches, Panelboard	346	Panel, FA	453-491	Cleat Receptacles, Bryant	277
Switches, Paragon	345	Steel, Columbia	440-445	Receptacles, Hubbell	295
Switches, Pendant	366, 367	Cable, Aerial, Habirshaw	515	Sign Receptacles, Bryant	277
Switches, Pull, New Wrinkle	255-266	Armored, Habirshaw	514, 516	Sockets, Bryant	277
Switches, Push, Flush	345-347	Armored, Ovalflex	548	Sockets, Hubbell	295
Switches, Range	362, 363	Border Light, Flexible	522	Candle Extensions, Hubbell	294
Switches, Surface	356-362	Charging, Battery, Habirshaw	515	Shields, Glass	700
Switches, Tumbler, Flush	347	Control, Habirshaw	513	Socket Bodies, Bryant	276
Switches, Tumbler, Surface	356	Corona-proof, Habirshaw	515	Sockets, Bryant	275, 276
Switches, Tumbler, Trigle	348	Deck, Flexible	522	Sockets, H & H	299
Switches, Wall	367	Duracord	518	Sockets, Hubbell	294
Switches, Wrinklet	272	Fire Alarm, Habirshaw	514	Socket's, P & S	303
Switches and Receptacles, Combination	320	Flameproof, Habirshaw	516	Canopy Bases, Metal Molding, National	553
Undark Luminous Pendants	287	Guy, Steel Strand	531	Switches, Bryant	364, 365
Brylock Sockets, Bryant	248	High Voltage, Habirshaw	513	Switches, P & S	364
Buffalo Grips	902	House, Rubber Covered, Habirshaw	510	Cant Hooks	897
Bulldog Portable Lamp Guards	684	Inter-phone	46	Canvas, Oiled	931
Switches, Compensator	410	Lead Covered, Habirshaw	511	Canvasite Cord, Flexible	522
Switches, Motor Starting	409	Lighting, Automobile	519, 520	Cap Wrenches, Socket, Bryant	277
Switches, Safety	407-411	Mast-arm, Habirshaw	513	Cap and Cone Insulators	797
Bull's Eye Combinations, Bryant	326-328	Mine, Habirshaw	516	Caps, Attachment Plug, Bryant	317, 318
Flush Receptacle Lamps, Bryant	329	Paper Insulated, Habirshaw	513	Attachment Plug, Hubbell	332, 333, 336
Receptacle Plates, Bryant	326			Color	680
Receptacles, Flush, Bryant	329			Conduit	544
Reflectors, Benjamin	724			Drive, Hubbard	839
Bunghole Lamps, R & S	684			Grounding, Dossert	425
Burglar Alarm Attachments, Edwards	127				

	Page
Caps, Joint, Metal Molding,	
National	551, 555
Pilot, Bryant	318
Plug Receptacle, New Wrinkle	
.....	255-260
Plug Receptacle, Porcelain,	
Bryant	278
Receptacle, Door, Hubbell	331
Rosette, K-W, Bryant	281
Socket, Bryant	271
Socket, Electroliner, Hubbell	292
Socket, Mogul, Bryant	287
Socket, New Wrinkle	249-260, 268
Socket, Porcelain, Bryant	278-281
Socket, Porcelain, Hubbell	295
Socket, Quick Catch, Hubbell	290
Socket, Side Outlet, Bryant	248
Socket, Wrinklet	272, 273
Switch, New Wrinkle	255-266
Switch, Wrinklet	272
Tap, Current, Hubbell	333
Car Bits, Auger	910
Jacks, Simplex	892
Vestibule Condulets	656
Wiring Condulets	656
Carbon Batteries, Samson	105
Lamps, Decorative	677
Lamps, Series	675
Lamps, Standard Lighting	675
Cargo Lights, Benjamin	779
Carriage Bolts, Hubbard	842
Carriers, Bit, Wiremen's	909
Carrying Hooks	897
Cases, Tool, Linemen's	905
Casing, Rubber, Attachment Plug	332
Casings, Fuse, Plug, D & W	430
Catches, Safety, Switch	223
Cedar Poles, Red	816, 817
Poles, White	817, 818
Cefco Lamp Coloring	678
Ceiling Fans, Western Electric	73
Fixtures, Adjustable	731
Fixtures, Watertight, Benjamin	777
Guards, Benjamin	683
Lighting Fixtures	694-696
Outlets, Wiremold	562
Receptacles, Porcelain, Bryant	285
Receptacles, Porcelain, Hubbell	296
Receptacles, Porcelain, P & S	306
Receptacles, Pull, Hubbell	293
Rosettes, Cab	633-639
Switches, Hubbell	291
Switches, Perkins	367
Cells, Dry, Blue Bell	96
Dry, Columbia	96
Primary, Edison	98-101
Cement, Commutator, Early's	927
Center Span Fixtures, Street Light-	
ing, Novalux	766
Centering Washers, Peirce	854
Central Battery Telephones	32, 33
Chafing Dish Parts, M-B	68
Dishes, M-B	66
Chain, Fixture	315
Fixture, Benjamin	729
Lamp, Arc	530
Socket, Bryant	271
Socket, Hubbell	293
Chain Tapes, Surveyors'	919, 920
Chairs, Safety, Linemen's	875
Changers, Lamp, Adaptable	685
Lamp, Matthews	685
Pole	45
Channel Pins, Rail Bond	787
Channels, Double Arming,	
Hubbard	859
Chapman Flush Receptacles,	
Bryant	323
Receptacle Plates, Bryant	323
Receptacle Plugs, Bryant	323
Chapman to Edison Adapters,	
Bryant	323
Chargers, Battery	102-104
Battery, Radio, Fansteel	104

	Page
Charging Cable, Battery,	
Habirshaw	515
Clips, Battery	421
Chart, Conduit Wiring	542
Chase Conduit Couplings	544
Conduit Nipples	544
Chatterton Compound	927
Chestnut Poles	826, 827
Chicago Grips	903
Street Lighting Fixtures	751-753
Choke Coils	221
Chucks, Drill Point, Peirce	914
Screwdriver, Ratchet	910
Circuit Breakers, Air	227-233
Breakers, Oil	154-156, 234-241
Circuit-breaking Plugs, Non-	
watertight, Arktite	615
Plugs, Watertight, Arktite	615
Plugs and Receptacles, Arktite	614, 615
Receptacles and Condulets,	
Arktite	617
Clamp Bushings, Porcelain	536
Insulator Supports	226
Pin Clamps, Peirce	852
Pins, Peirce	851, 852, 869
Clamping Ears, Trolley	801
Clamps, Bracket, Telephone	44, 45
Cable	870
Cable Suspension, Hubbard	846
Clamp Pin, Peirce	852
Conduit, Flexible	546
Conduit, New York	544
Conduit, Sherman	544
Crossover, Hubbard	846
Feeder, Railway	797
Fuse Block, Peirce	851
Ground, Metal Molding, National	
.....	551, 555
Ground, New York	544
Ground, Sherman	544
Ground Wire, Hubbard	859
Guy	873
Guy, Hubbard	841
Hauling, Wire, Trolley	808
Insulator, Clark	839
Rail Bond	789
Splicing, Klein's	901, 902
Table, Edwards	125
Clay Conduit, Vitrified	539
Cleaners, Vacuum,	
Western Electric	54
Cleaners and Blowers, Vacuum,	
Premier Handy	50
Clearsite Plug Fuses	430
Cleat Receptacles, Candelabra,	
Bryant	277
Receptacles, Miniature, Bryant	277
Receptacles, Porcelain, Bryant	282
Receptacles, Porcelain, Hubbell	296, 297
Receptacles, Porcelain, P & S	306, 307
Receptacles, Temporary, Bryant	284
Cleats, Porcelain	537
Porcelain, Telephone	535
Suspension, Socket, P & S	310
Wood, Blake	546
Clevis Bolts, Hubbard	860
Clevises, Bolt	842
Crossarm, Peirce	851
Dead Ending, Klauber	861
Dead Ending, Peirce	861
Hubbard	860
Insulated, Peirce	861
Insulator, Strain, Hubbard	860, 861
Thimble, Peirce	861
Climber Pads	905
Straps	905
Climbers, Pole, Linemen's	905
Clip Extensions, Frankel	421
Clips, Battery, Universal	421
Charging, Battery, Frankel	421
Charging, Battery, Universal	421
Radio, Universal	421

	Page
Clips, Supporting, Wiremold	558
Test, Frankel	422
Test, Universal	421
Wire Rope, Hubbard	841
Clock Paper Dials, Watchman's	93
Clocks, Tork	417
Closing Plates, Trough, Square D	403
Cloth, Micanite	931
Clothes Washers	55
Clusters, Lamp, Benjamin	713
Wireless, Benjamin	729, 730
Cobs, Wood	832
Code Rules, National	933-953
Coffee Percolator Parts, M-B	68
Percolators, M-B	62-66
Coils, Choke	221
Collars, Cable Grip	901
Candle, Hubbell	294
Collets, Frankel	427
Color Caps	680
Frames, X-Ray	704
Coloring, Lamp	678
Columbia Dry Batteries	96
Steel Cabinets	440-445
Combination Fittings, Metal Mold-	
ing, National	552
Plates, Bryant	354, 355
Plates, Diamond H	378
Plates, H & H	391, 392
Combinations, Bull's Eye, Bryant	326-328
Heater Control, Bryant	325
Pilot Lamp, Bryant	328
Commutator Cement, Early's	927
Lubricant	927
Compass Saws	917
Compensator Switches, Bull Dog	410
Compensator and Meter Test	
Switches, Square D	402
Compensators, Motor Starting	151-154, 174-177
Competition Black Tape	927
Composition Sockets, Weather-	
proof, Bryant	285, 286
Sockets, Weatherproof, Hubbell	296
Compound, Chatterton	927
Commutator	927
Insulating, M. I. C.	931
Pothead, Ajax	932
Compound Push Buttons, Edwards	125
Compressors, Rail Bonding	789
Concealed Receptacles, Porcelain,	
Bryant	282
Receptacles, Porcelain, P & S	306
Concrete Drills	913
Standards, Street Lighting,	
Chicago	751-753
Condensers, Telephone	39
Conductors, Armored, Flexsteel	548
Armored, Ovalflex	548
Conduit, Clay, Vitrified	539
Fibre, Bermico	540
Flexible, Flexsteel	548
Flexible, Non-metallic	546
Ovalduct	545
Sherarduct	542
Sizes of	542, 543
Steel, Rigid	542
Weights of	543
Wiremold	558
Wood, Creosoted	541
Conduit Benders, Fullman	921
Benders, Henderson	922
Bodies	665-668
Body Couplings	666
Body Covers	666, 668, 669
Body Plates	667
Box Bodies, Bryant	319, 320
Box Connectors, Flexsteel	549
Box Covers, Bryant	315
Box Covers, P & S	316
Box Hangers	570, 571
Box Receptacles, Bryant	270
Box Receptacles, Hubbell	334, 337

	Page
Conduit Box Straps, P & S	305
Boxes.....	562-569
Boxes, Concrete.....	568
Boxes, Ovalduct.....	545
Bushings.....	544
Chart.....	542
Clamps, Flexible.....	546
Clamps, New York.....	544
Clamps, Sherman.....	544
Connectors, Duplex, National.....	570
Connectors, T & B.....	550
Couplings, Chase.....	544
Couplings, Erickson.....	544
Couplings, Flexible, Flexsteel.....	549
Couplings, T & B.....	550
Dowel Pins.....	539
Elbow Formers.....	921
Elbows.....	545
Elbows, R & S.....	579
Elbows, T & B.....	579
Fasteners, Flexible.....	546
Field Machines, Bermico.....	541
Fittings, Ovalduct.....	545
Fittings, Wiremold.....	558-562
Floor Couplings, T & B.....	579
Hangers, T & B.....	545
Hickeys, Lakin.....	921
Hub Plates, MF Series.....	625
Hub Plates, Type MK.....	626
Hub Plates, Type RSMP.....	662
Hub Plates, Type RSP.....	662
Hub Plates, YYP Series.....	617, 623
Locknuts.....	544
Nipples, Chase.....	544
Straps, Hubbard.....	847
Switch Boxes.....	567
Switch Boxes, Gem.....	571, 572
Switch Boxes, National.....	571
Switch Boxes, Union.....	572, 573
Tees, R & S.....	577, 579
Tees, T & B.....	579
Wiring Transformers.....	216
Conduit and Pipe Benches, Turn- buckle	923
Condulet Assortments	629
Connection Blocks.....	642, 655
Connection Blocks, Cab Ceiling.....	639
Connection Blocks, Type FSCA.....	657
Connection Blocks, Type GS.....	598
Connection Blocks, WD Series.....	609
Connectors, CG Series.....	663
Connectors, Type CGB.....	663
Connectors, Type CGK.....	663
Cord Lamps.....	629
Couplings, Type CCB.....	664
Couplings, Type CCE.....	664
Couplings, Type CCD.....	664
Couplings, Type CCK.....	664
Couplings, Type CCL.....	664
Couplings, Type CCM.....	664
Covers, Hinged.....	664
Covers, Mogul.....	591
Covers, Obround.....	585-589
Covers, Switch, Type FS.....	600, 601, 603
Covers, Type FS.....	602
Covers, Type G-H.....	593
Covers, Type GS.....	598
Covers, Type OCB Extension.....	535
Covers, Type RS.....	662
Covers, Type S.....	607
Covers, Type SJ.....	608
Covers, Type SK.....	606
Covers, Type W.....	609
Covers, Type ZP.....	624
Covers, WD Series.....	609
Elbows.....	628
Elbows, Type EL.....	664
Extensions, Type OCB.....	585
Finishes.....	629
Fixture Hangers.....	629
Fixture Joints, Type ALC.....	629
Fixture Joints, Type AOC.....	629
Fixture Joints, Type UNJ.....	629
Fixture Receptacles, Type G-H.....	595

	Page
Condulet Fixtures, Type SRH	656
Floor Boxes, Type FJC.....	661
Fuse Blocks, Type GS.....	598
Gaskets, Obround.....	589
Gaskets, Type SK.....	606
Grounding Rings.....	617
Guard Fixtures, Type GS.....	598
Guards, Type G-H.....	595
Housings, Receptacle, Type BRG.....	599
Housings, Receptacle, Type BRY.....	624
Housings, Switch, Type BRD.....	601
Housings, Type BRD.....	602
Knife Switches, Type YKK.....	627
Lamp Globes, for VS.....	613
Lamp Guards, Portable, for VS.....	613
Lamp Receptacles.....	598, 653
Lamps, Portable, Type LPG.....	613
Lamps, Portable, Type LPH.....	613
Lamps, Portable, Type VS.....	613
Lanterns, Portable, Type LM.....	613
Lanterns, Portable, Type VSB.....	613
Pedestals.....	628
Plugs, Type BP.....	620, 621, 649, 659
Plugs, Type BPA.....	659
Plugs, Type BPF.....	658
Plugs, Type BPFA.....	658
Plugs, Type DP.....	626
Plugs, Type RQ.....	619
Reducers.....	628
Reflector Holders.....	655
Resistances, Type LHRM.....	664
Rosette Bases, Type GS.....	639
Rosette Caps, Type GS.....	639
Safety Switches, Type MK.....	626
Shade Fixtures, Type GS.....	598
Sleeve Bushings, Type GTXB.....	645
Sleeves, Type GTXS.....	645
Switches, Safety, Type MKS.....	626
Unions.....	628
Unions, Type UN.....	664
Unions, Type UNW.....	664
Vaporproof Fixtures, Type GS.....	598
Condulets	580-664
Aisle Light, Type LA.....	621
Battery Charging.....	658
Cab Ceiling Rosette.....	633-639
Car Wiring.....	656
Edison Base Receptacle.....	646
Engineers' Reading Light.....	653
Filler Hole Lamp.....	653
Gauge Lamp.....	650
Junction, Screw Cover.....	640
Junction Box.....	645
Junction Box, Type AD.....	662
Locomotive Deck Light.....	653
Main Line Fuse Cutout.....	660
Plug Receptacle.....	618-621, 626, 647-649
Railway.....	658
Rosette, Type G.....	639
Rosette, Type H.....	639
Screw Cover, Connection Block.....	641, 642
Service Entrance, Type FF.....	621
Stack Lamp.....	653
Switch, Mine Signal.....	656
Switch, Motor Starting, Type MK.....	626
Switch, Toggle.....	657
Telephone Jack.....	655
Tender Lamp.....	651, 652
Type A.....	581
Type AF.....	656
Type B.....	581
Type BC.....	590
Type BE.....	581
Type BEE.....	590
Type BLB.....	590
Type BLMC.....	654
Type BM.....	585
Type BO.....	655
Type BOC.....	655
Type BRH.....	659
Type BRHA.....	659
Type BRHE.....	659

	Page
Condulets, Type BRHS	659
Type BRM.....	648
Type BRME.....	648
Type BT.....	590
Type BTB.....	590
Type BU.....	590
Type BUB.....	590
Type BUF.....	590
Type BX.....	591
Type C.....	581
Type CL.....	654
Type CLC.....	654
Type CO.....	581
Type COV.....	581
Type CUB.....	584
Type D.....	581
Type DA.....	657
Type DAC.....	657
Type DAL.....	657
Type DAT.....	657
Type DAX.....	657
Type DF.....	585
Type DM.....	585
Type DSOC.....	654
Type DSPC.....	654
Type E.....	581
Type ELB.....	628
Type ET.....	628
Type EY.....	628
Type F.....	581
Type FA.....	607
Type FAC.....	607
Type FBC.....	661
Type FBL.....	661
Type FBR.....	661
Type FBX.....	661
Type FD.....	599
Type FDC.....	599
Type FDCT.....	599
Type FDL.....	599
Type FDR.....	599
Type FDT.....	599
Type FDX.....	599
Type FE.....	581
Type FF.....	621
Type FFA.....	621
Type FH.....	625
Type FHF.....	625
Type FJC.....	661
Type FS.....	600, 602, 603
Type FSA.....	600, 602
Type FSC.....	600, 602, 603
Type FSCA.....	657
Type FSCC.....	600
Type FSCT.....	600
Type FSD.....	602
Type FSL.....	600
Type FSR.....	600
Type FSS.....	600, 602
Type FST.....	600
Type FSX.....	600
Type G.....	592, 594
Type GA.....	592
Type GJ.....	657
Type GJC.....	657
Type GJL.....	657
Type GJT.....	657
Type GJX.....	657
Type GL.....	592, 594
Type GRB.....	640, 643
Type GRC.....	640-644
Type GRCA.....	640, 643
Type GRL.....	640-644
Type GRLA.....	640, 643
Type GRN.....	645
Type GRT.....	640-644
Type GRU.....	640, 643
Type GRX.....	640-644
Type GS.....	596, 646, 649
Type GSA.....	596, 646
Type GSB.....	597, 647
Type GSC.....	596, 597, 646, 647, 649
Type GSD.....	597, 647
Type GSE.....	597, 647

	Page
Condulets, Type GSG	661
Type GSL	596
Type GSS	596
Type GSSC	596
Type GST	596
Type GSX	596
Type GT	592, 594
Type GTF	645
Type GTT	645
Type GTX	645
Type GX	592
Type H	594
Type H	592
Type HA	592
Type HH	592
Type HHC	593
Type HLA	593
Type J	604
Type JA	604
Type JB	604
Type JRM	654
Type JRR	654
Type JRY	656
Type JRYA	656
Type JT	604
Type K	604
Type KC	604
Type KD	604
Type KRY	656
Type KRYA	656
Type LA	621
Type LAL	621
Type LAR	621
Type LB	582
Type LBA	584
Type LBB	582
Type LBL	584
Type LBR	584
Type LBV	584
Type LD	651, 652
Type LDBF	652
Type LDBJ	652
Type LDCF	651
Type LDCJ	651
Type LDJ	651
Type LEA	652
Type LEBF	652
Type LEBJ	652
Type LEF	652
Type LEJ	652
Type LF	582
Type LFB	582
Type LFM	584
Type LFT	584
Type LG	650
Type LGSA	652
Type LGUA	653
Type LGUB	653
Type LGWA	652
Type LL	582
Type LLB	582
Type LMA	653
Type LMD	653
Type LMG	653
Type LMH	653
Type LMKA	653
Type LMKB	653
Type LMKJ	653
Type LMKL	653
Type LO	654
Type LOC	654
Type LP	654
Type LPC	654
Type LR	582
Type LRB	582
Type LU	584
Type MD	659
Type MDA	659
Type MDH	659
Type MFC	626
Type MK	626
Type MOC	655
Type N	608
Type NC	608

	Page
Condulets, Type P	610
Type PC	610
Type PG	605
Type PGC	605
Type PGG	605
Type PGT	605
Type PJCA	662
Type PJX	662
Type PKC	662
Type PKCA	662
Type PL	610
Type PM	610
Type PMC	610
Type PML	610
Type PRC	661
Type PRT	661
Type PRX	661
Type QE	616, 620, 621
Type QEA	616
Type QEC	616, 620, 621
Type QED	616, 618-621
Type QEE	616, 618-621
Type QEEM	659
Type QEF	616, 618-621
Type QEG	616, 618, 619
Type QEGM	659
Type QEJ	616, 618-621
Type QEK	616, 618, 619
Type QEP	616
Type RF	656
Type RFA	656
Type RFC	656
Type RFCA	656
Type RJB	605
Type RJC	605
Type RJL	605
Type RJR	605
Type RJT	605
Type RK	605
Type RS	662
Type RSM	662
Type RSS	662
Type S	607
Type SA	607
Type SC	607
Type SE	608
Type SEC	608
Type SEL	608
Type SET	608
Type SEX	608
Type SJ	608
Type SJA	608
Type SJC	608
Type SJL	608
Type SJT	608
Type SJX	606
Type SK	606
Type SKC	606
Type SKL	606
Type SKT	606
Type SKX	606
Type SL	607
Type SOC	655
Type ST	607
Type SX	607
Type T	583
Type TA	583
Type TB	583
Type TJ	655
Type TJD	655
Type TL	583
Type TM	584
Type TR	583
Type U	583
Type UB	583
Type UF	584
Type UGCD	658
Type UGCF	658
Type UGEL	658
Type UGEM	658
Type UGEN	658
Type UGNF	658
Type V, Screw Guard	610, 612, 613
Type VA, Screw Guard	610, 612

	Page
Condulets, Type VC, Screw Guard	610
Type VCA, Screw Guard	612
Type VDA, Screw Guard	612
Type VE, Screw Guard	611
Type VF, Screw Guard	611
Type VG, Screw Guard	611
Type VJ, Screw Guard	611
Type VL, Screw Guard	611
Type VS	613
Type VT, Screw Guard	611
Type VX, Screw Guard	611
Type W	609
Type WC	609
Type WD	609
Type WDC	609
Type WDL	609
Type WDT	609
Type WDX	609
Type WL	609
Type WT	609
Type WX	609
Type X	584
Type Y	622
Type YAC	660
Type YAJ	660
Type YAL	660
Type YAN	660
Type YAR	660
Type YAX	660
Type YC	622
Type YE	660
Type YK	627
Type YKC	627
Type YKW	627
Type YKWC	627
Type YW	623
Type YWS	623
Type YWX	623
Type YY	622
Type YYS	622
Type YYX	622
Type Z	624
Type ZC	624
Type ZF	625
Type ZG	625
Type ZGC	625
Type ZP	624
Type ZPS	624
Type ZPX	624
Vestibule Car	656
Wedgnut Cover	643, 644
Condulets and Receptacles, Circuit-breaking, Arktite	617
Conduletto Connection Blocks, Type G-H	594
Cord Rosettes, Type G-H	595
Covers, Type G-H	595
Fixture Rosettes, Type G-H	594
Lamp Receptacles	605
Lamp Receptacles, Type G-H	594, 595
Condulettos, J-K Series	604
Obround	589
Type HV	595
Type RJ-RK	605
Type S	607
Cones, Ground, Paragon	870
Connecting Blocks, Benjamin	774
Blocks, Inter-phone	27
Links, Hubbard	860
Connection Blocks, Condulet	642, 655
Blocks, Condulet, Cab Ceiling	639
Blocks, Condulet, Type FSCA	657
Blocks, Condulet, Type GS	598
Blocks, Condulet, WD Series	609
Blocks, Conduletto, Type G-H	594
Covers, Wiremold	558
Connections, Transformer	966
Connectors, Adjustable, Wiremold	562
Battery, Fahnestock	105
Box, Metal Molding, National	551, 556
Box, Wiremold	561
Cabinet, Square D	402

	Page		Page		Page
Connectors, Combination,		Cord Sets, Lamp, Extension	712	Crossarm Brackets, Peirce	864, 865
Wiremold	561	Cord and Plug Parts, M-B	68	Clevises, Peirce	851
Conduit, Duplex, National	570	Cords, Telephone	40	Saddles, Peirce	855
Conduit, T & B	550	Cores, Spark Plug	105, 106	Shields, Linemen's	876
Conduit Box, Flexsteel	549	Corner Bayonets, Hubbard	858	Straps, Peirce	852, 869
Condulet, CG Series	663	Box Fittings, Metal Molding,		Crossarms, Benjamin	727
Condulet, Type CGB	663	National	551	Cable, Hubbard	846
Condulet, Type CGK	663	Boxes, Wiremold	559	Shock Absorber, Benjamin	722
Cord, Bryant	319	Brackets, Hubbard	860	Steel, Hubbard	856
Cord, Hubbell	335-337	Brackets, Telephone, Hubbard	848	Wood	829-831
Cord, Lamp, Flexsteel	549, 550	Irons, Peirce	867	Crosscut Saws	918
Cord, Mesco	422	Pins, Peirce	869	Crosses, Metal Molding, National	
Fixture, Ben-ox	715	Plates, Peirce	869		555, 557
Fixture, Sherman	419	Corona-proof Cable, Habirshaw	515	Wiremold	559
Four Wire, Wiremold	561	Cotton Sleaving	928	Crossing Fixtures, Benjamin	724
Line	220	Tape	928	Crossings, Trolley	805, 806
Marine, R & S	7-0	Counters, Revolution, Veeder	923, 924	Crossover Clamps, Hubbard	846
Metal Molding, National	555	Telephone, Veeder	923	Crouse-Hinds Floodlight Projector	
Motor, Bryant	319	Country Home Lighting Outfits		Bases	741
Set Screw, Sherman	420		144-146	Floodlight Projector Brackets	741
Stage, Mesco	422	Couplings, Base, Wiremold	558	Floodlight Projector Lenses	741
Stud, Dossert	424	Conduit, Chase	544	Floodlight Projectors	738-740
Test, Fahnestock	423	Conduit, Erickson	544	Floodlight Reflectors	740
Watertight, Benjamin	776	Conduit, Fibre, Bermico	540	Panels and Cabinets	446-457
Wire	874	Conduit, Flexible, Flexsteel	549	Crow Bars	895
Wire, Dossert	424, 425	Conduit, Ovalduct	545	Crowfeet, Insulated, Macallen	735
Wire, Frankel	426, 427	Conduit, Rigid Steel	542	Curling Irons, Ivory	
Wire, Mesco	422	Conduit, T & B	550	Irons, Torrid	61
Wire, Sherman	419	Conduit Body	666	Current Tap Bodies, Bryant	319
Constant Current Transformers 769-773		Condulet, Type CCB	664	Tap Bodies, Hubbell	333
Ringing Drops, Edwards	107	Condulet, Type CCD	664	Tap Caps, Hubbell	333
Construction Rules, Pole Line	828	Condulet, Type CCE	664	Tap Sockets, Hubbell	292
Contactors, Foot-rail, Tellers',		Condulet, Type CCK	664	Taps, Hubbell	334, 335
Bank Protection, Faraday	91	Condulet, Type CCL	664	Taps, Spartan	281
Push Button, Bank Protection,		Condulet, Type CCM	664	Transformers, Tripping	242
Faraday	91	Floor, Conduit, T & B	579	Transformers, Weston	184
Toggle Switch, Bank Protection,		Ground, Wiremold	558	Curtis Lamp Adapters, X-Ray	706
Faraday	92	Metal Molding, National		Cutout Bases, Convertible,	
Control Apparatus, Remote, Street			551, 555, 556	Benjamin	430
Lighting	773	Open Work, Wiremold	561	Bases, Fuse, Plug, Bryant	429
Cabinets, Bank Protection,		Pipe, Wiremold	561	Box Dimensions	445
Faraday	91, 92	Reducer, Condulet	628	Boxes, Columbia	440-445
Cabinets, Fire Alarm, Faraday	85-90	Cover Plates, Outlet Box, Fullman	576	Fuse Links, Transformer	214
Cable, Habirshaw	513	National	552, 557	Cutouts, Enclosed, Square D	404
Panels, Fire Alarm, Edwards	84	Conduit Body	666, 668, 669	Fuse, Enclosed, D & W	431
Stations, Push Button	161, 162	Condulet, Hinged	664	Fuse, Enclosed, FA	431
Switches, Pull Button	245	Condulet, Mogul	591	Fuse, Oil, D & W	214
Controls, Temperature, Range	59	Condulet, Obround	585-589	Fuse, Square D	404
Time, Range	59	Condulet, Switch, Type FS		Plug, Series	767
Convenience Outlet Plates,			600, 601, 603	Primary	213
Hubbell	330, 331	Condulet, Type FS	602	Protective, Motor	158
Outlets, Diamond H	329	Condulet, Type FSCA	657	Protector, Telephone	42
Outlets, Hubbell	330, 331, 337	Condulet, Type G-H	593	Transformer, Matthews	215
Outlets, Metal Molding, National	554	Condulet, Type GS	598	Cutters, Bolt	897
Convertible Cutout Bases,		Condulet, Type OCB Extension	585	Pipe	920
Benjamin	430	Condulet, Type RS	662	Wire	897
Coping Saws	918	Condulet, Type S	607	Cylinders, Ground, Paragon	870
Copper Data	957	Condulet, Type S.J.	608	Cypress Poles	827
Wire Information	958, 959	Condulet, Type SK	606		
Coppers, Battery	105	Condulet, Type W	609		
Soldering	926	Condulet, Type ZP	624		
Soldering, Trolley	803	Condulet, WD Series	609		
Cord, Brewery, Flexible	522	Conduletto, Type G-H	595		
Canvasite, Flexible	522	Connection, Wiremold	558		
Flexible	520-522	Cord Clamp, Condulet	629		
Heater, Deltabeston	523	Insulating, Dossert	424, 425		
Heater, Flexible	522	Metal Molding, National	552, 556		
Lamp, Armored, Flexsteel	548, 549	Outlet Box	562-569		
Lamp, Portable	520-522	Outlet Box, Bryant	315		
Packing House, Flexible	522	Outlet Box, P & S	316		
Portable, Duracord	513	Outlet Box, Wiremold	560		
Portable, Tirex	518	Plug, Elexit	341		
Socket, Bryant	247, 271	Reflector, Glass, Benjamin	725		
Socket, Hubbell	293	Switch, Surface, Bryant	359		
Cord Adjusters, Ball	635	Covers and Frames, Manhole	873		
Adjusters, Spool	685	Cow Gongs, Edwards	111		
Connector Bodies, Bryant	313, 319	Crane Motors	138		
Connectors, Bryant	319	Crawford Heating Appliances	57-59		
Connectors, Hubbell	335-337	Creosoted Wood Conduit	541		
Connectors, Lamp, Flexsteel	549, 550	Yellow Pine Poles	818-826		
Connectors, Mesco	422	Crescent Lamp Guards, Portable	684		
Grips, Benjamin	311	Wall Lamp Guards	681		
Lamps, Condulet	629	Crossarm Braces, Hubbard	844, 845		
Rosettes, Conduletto, Type G-H	595				

D

D.D. Flush Receptacles, Bryant	324
Hotel Sample Room Brackets,	
Bryant	324
Plugs, Bryant	324
Receptacle Plates, Bryant	324
Receptacles and Plugs, Bryant	324
D & W Enclosed Fuse Cutouts	431
Enclosed Fuses	432, 433
Outlet Hoods	438
Plug Fuse Casings	430
Switches, Service	438
Dashboard Ammeters, Weston	197
Data, Reflection, Industrial	687-639
Useful	955-956
Dating Nails, Pole, Hubbard	843
Davis Floodlight Projectors	735-737
Dead Ending Clevises	861
Ending Straps, Peirce	863
Ground Cable Boxes	550
Decimal Equivalents	959
Deck Cable, Flexible	522
Decorative Lighting Outfits	677
Sockets, Bryant	277, 284

	Page
Deltabeston Cable, Picture Machine.	523
Cord, Heater.....	523
Wire, Boiler Room.....	523
Wire, Fixture.....	523
Wire, Magnet.....	524
Wire, Stove.....	523
Derrick Jacks, Simplex.	891
Derricks, Pole, Automobile.	882, 883
Desk Fans, Western Electric.	71-73
Stands, Telephone.....	40
Detectors, Time, Watchman's, Edwards.	93
Deveau Annunciators.	92
Silent Call Signal Systems.....	79
Device Boxes, Metal Molding, National.	552
Devices, Fixture, Ben-ox.	714-716
Heating, Crawford.....	57-59
Heating, M-B.....	62-68
Diagrams, Wiring, Switch, Bryant	370-372
Wiring, Switch, Noark.....	415
Wiring, Switch, Square.....	407
Dials, Paper, Clock, Watchman's.	93
Diamond Drills.	913
Expansion Bolts.....	915
Diamond H Combination Plates.	378
Push Switch Plates.....	377
Receptacles, Flush.....	329
Switches, Door.....	378
Switches, Electrolier.....	375
Switches, Heater.....	376
Switches, Momentary Control.....	377
Switches, Push.....	377
Switches, Remote Control.....	378, 379
Switches, Rotary.....	378
Switches, Surface.....	375, 376
Switches, Toggle.....	377
Dies and Stocks, Pipe, Beaver	920
Pipe, Beaverette.....	920
Pipe, Trio.....	920
Diexco Drill Heads.	914
Diffusers, Benjamin.	718
Digging Augers.	872
Bars.....	895, 896
Spuds.....	896
Dim-A-Lamp Portable Lamps.	709
Dim-A-Lite Attachments	312
Sockets.....	312
Dimensions, Box, Switch.	445
Dinkeys, Pole.	886
Directory Push Buttons, Edwards.	125
Disc Stoves, M-B.	67
Disconnecting Switches.	222-225
Switches, Matthews.....	215
Dishes, Chafing, M-B.	66
Distributing Brackets, Peirce	864
Brackets, Telephone, Hubbard.....	848
Distribution Boxes and Switches,	403
Square D.....	403
Transformers.....	206-213, 217, 218
Dixie Floor Treads.	125
Relays.....	110
Door Openers, Edwards.	126, 127
Receptacles, Flush, Hubbell.....	331
Switch Boxes, Union.....	572
Switches, Diamond H.....	378
Switches, Edwards.....	364
Switches, H & H.....	388
Switches, Perkins.....	347
Trips, Burglar Alarm, Edwards.....	127
Dossert Connectors.	424, 425
Double Arming Bolts, Hubbard	844
Arming Channels, Hubbard.....	859
Arming Plates, Hubbard.....	857
Arming Sets, Hubbard.....	858
Double-gong Bells, Faraday.	117
Dowel Pins, Conduit.	539
Pins, Hubbard.....	847
Drawbridge Frogs.	803
Drawn Zinc Thimbles, Peirce.	854
Dreadnaught Portable Lamp	684
Guards.....	684

	Page
Drift Pins, Rail Bond.	787
Drill Heads, Diexco.	914
Holders, Diamond.....	913
Point Chucks, Peirce.....	914
Points, Diamond.....	913, 914
Points, Peirce.....	914
Stands, Speedway.....	129, 130
Drills, Automatic.	912
Breast.....	910, 911
Brick.....	913
Hammer, Peirce.....	914
Hand.....	910, 911
Plaster, Adjustable.....	910
Portable, Speedway.....	129
Rapid Fire.....	914
Rawplug.....	916
Roof, Mine.....	808
Screwdriver, Ratchet.....	910
Slate and Marble, Speedway.....	130
Track.....	788, 789
Drink Mixers, Hamilton Beach.	69
Drive Brackets, Brick, Peirce	863
Caps, Hubbard.....	839
Points, Hubbard.....	839
Drop Cord Boxes, Metal Molding,	552
National.....	552
Fixtures, Watertight, Benjamin.....	777
Wire.....	522
Drops, Constant Ringing, Edwards	107
Drum Hoists.	142
Switches, Motor.....	162-166
Dry Batteries, Blue Bell.	96
Batteries, Columbia.....	96
Batteries, Radio, Eveready.....	97
Dryers, Hair, Hamilton Beach.	69
Dubl-duty Sockets, Bryant.	270
Duck, Oiled.	931
Duct Shields, Cable, Hubbard.	847
Duolet Plugs, Benjamin.	339
Duplex Adapters, Spartan.	319
Conduit Connectors, National.....	570
Pins.....	832
Duracord Cable.	518
Portable Cord.....	518
Dust Proof Fixtures, Benjamin.	727

E

Ears, Trolley.	798-801
Earth Boring Machines.	878-881
Eby Binding Posts.	423
Economy Fuses, Enclosed.	434, 435
Edison Base Receptacle, Condulets	656
Primary Cells.....	99-101
Ediswan Socket Bodies, Bayonet,	275
Bryant.....	75-78
Edwards Annunciators	75-78
Bank Hold-up Alarm Systems.....	84
Bell Hoods.....	111
Bell Resistances.....	112
Bells, Iron Box.....	106
Bells, Lungen.....	107
Bells, Monitor.....	107
Bells, Recti.....	109, 110
Bells, Single Stroke.....	108
Bells, Skeleton.....	108
Bells, Solenoid.....	111
Bells, Street Car.....	108
Bells, Transformer.....	109
Bells, Watertight.....	112
Burglar Alarm Attachments.....	127
Buz-a-bels.....	106
Buzzers, Concealed.....	107
Buzzers, Iron Box.....	106
Buzzers, Loud Signal.....	107
Buzzers, Lungen.....	107
Buzzers, Recti.....	110
Buzzers, Street Car.....	108
Buzzers, Transformer.....	109
Buzzers, Watchcase.....	107
Buzzers, Watertight.....	112
Constant Ringing Drops.....	107
Door Openers.....	126, 127
Fire Alarm Annunciators.....	82

	Page
Edwards Fire Alarm Boxes.	82, 83
Fire Alarm Systems.....	80-84
Flush Push Escutcheons.....	123, 124
Gongs, Cow.....	111
Gongs, Electro-mechanical.....	111
Protective Grids.....	110
Push Button Plates.....	124
Push Buttons.....	123-126
Push Buttons, Watertight.....	112
Push Buttons and Bells, Combination.....	107
Push Buttons and Buzzers, Combination.....	107
Relays.....	108
Riot Bells.....	110
Switches, Battery.....	125
Switches, Door.....	364
Switches, Pole Changing.....	111
Table Clamps.....	125
Tape Registers.....	82, 83
Transformers, Bell Ringing.....	122
Watchman's Time Detectors.....	93
Ekla Bells, Skeleton.	115
Elbow Formers, Conduit.	921
Elbows, Conduit.	545
Conduit, Fibre, Bermico.....	540
Conduit, Ovalduct.....	545
Conduit, R & S.....	579
Conduit, Rigid Steel.....	542
Conduit, T & B.....	579
Condulet.....	628
Condulet, Type EL.....	664
Dossert.....	424
Floor Box.....	575
Frankel.....	426
Metal Molding, National.....	551, 555
Wiremold.....	559
Electrical Information.	955, 956
Electrode Holders, Arc Welding.	790
Electrolier Socket Bodies, Hubbell	291, 292
Socket Caps, Hubbell.....	292
Sockets, Bryant.....	274
Sockets, Hubbell.....	291
Switches, Diamond H.....	375
Switches, H & H.....	380-382, 388
Switches, Perkins.....	345, 346, 357-359
Electro-mechanical Gongs,	111
Edwards.....	111
Elevator Push Buttons, Edwards.	126
Elxits.	340, 341
Emeralite Machine Lamps.	710
Portable Lamps.....	709, 710
Emergency Jacks, Simplex.	891
Enameled Conduit.	542
Enclosed Cutouts, Square D.	404
Fuse Cutouts, D & W.....	431
Fuse Cutouts, FA.....	431
Fuses, D & W.....	432, 433
Fuses, Buss.....	436-438
Fuses, Economy.....	434, 435
Lighting Fixtures.....	690-693
End Bells, Cable.	226
Plates, Switch, Square D.....	402, 404
Walls, Meter, Square D.....	406
Walls, Switch, Noark.....	414
Walls, Switch, Square D.....	405
Engineers' Reading Light Condu-	653
lets.....	653
Entrance Switch End Plates,	402
Square D.....	402
Switches, D & W.....	438
Switches, Fuse Plug, Bryant.....	428
Switches, Square D.....	404
Equalizers, Frankel.	426
Equivalents, Decimal.	959
Erickson Conduit Couplings.	544
Escutcheons, Push, Flush,	123, 124
Edwards.....	123, 124
Esrobert Plexarms.	712
Portable Lamp Bases.....	712
Portable Lamp Stems.....	712
Portable Lamps.....	711, 712
Shades, Brass.....	712

	Page		Page		Page
Esrobert Shades, Greenalite	712	Feet, Bracket, Peirce	867	Fixtures, Moisture Proof, Benjamin	727
Etching Outfits, Lamp	677	Fibre, Sheet	929	Outdoor, Benjamin	727-729
Etech-O- Lite	677	Fibre Conduit, Bermico	540	Pole Top, Hubbard	857
Eureka Fibre Insulators	546	Insulators, Eureka	546	Shade, Condulet, Type GS	598
Eveready Flashlight Batteries	94	Rods	928	Showcase, Benjamin	707, 708
Flashlights	95	Tubes, Vulcanized	929	Steam Tight, R & S	779, 780
Radio Batteries	96, 97	Field Machines, Conduit, Bermico	541	Street Lighting, Chicago	751-753
Everstick Guy Anchors	872	Filler Hole Lamp Condulets	653	Street Lighting, King	743-750
Exit Balls, Triangular	702	Finders, Fault, Matthews	205	Street Lighting, Novalux	754-767
Lights	694	Fault, Weston	197	Threaded, Benjamin	721
Expansion Bolt Shields	915	Finishes, Condulet	629	Vapor Proof, Benjamin	724, 726
Bolts, Diamond	915	Socket, Special, Hubbell	288	Vaporproof, Condulet, Type GS	598
Bolts, Di-En-Key	915	Special, Bryant	351	Vaporproof, R & S	779
Bolts, Peirce	913	Special, Hubbell	374	Viaduct, Benjamin	724
Shields	915	Fir Crossarms	829-831	Wall, Watertight, Benjamin	777
Shields, Metal Molding, National	554	Fire Alarm Annunciators, Edwards	82	Flameproof Cable, Habirshaw	516
Expulsion Switches, Perkins	360, 361	Alarm Annunciators, Faraday	92	Telephone Wire	522
Extension Bells, Telephone	40	Alarm Boxes, Edwards	82, 83	Flashers, Sign	678, 679
Boxes, Wiremold	561	Alarm Boxes, Faraday	90	Flashing Plugs	678
Eyelets, Socket, Hubbell	288	Alarm Cable, Habirshaw	514	Flashlight Batteries, Eveready	94
Fixtures, Hubbell	845	Alarm Fixtures, Peirce	856	Flashlights, Eveready	95
Guide Sockets, Bryant	247	Alarm Gongs, Faraday	88	Flat Irons, American Beauty	60
Lamp Cord Sets	712	Alarm Systems, Edwards	80-84	Irons, M-B	60
Reels, Automatic	685	Alarm Systems, Faraday	85-90	Irons, Western Electric	60
Relays, Telephone	120	Extinguishers	94	Pan Sockets, Bryant	277
Extensions, Bit	910	Pots, C & L	925	Flexible Conduit, Flexsteel	548
Candle, Hubbell	294	Fish Tape	544	Conduit, Non-metallic	546
Clip, Frankel	421	Fittings, Conduit, Fibre, Bermico	540	Conduit Clamps	546
Pole, Peirce	855, 857	Conduit, Ovalduct	545	Conduit Couplings, Flexsteel	549
Screw, Switch, H & H	386	Conduit, Wiremold	558-562	Conduit Fasteners	546
Socket, Benjamin	311	Fixture, Benjamin	729	Cord	520-522
Extinguishers, Fire	94	Marine, Benjamin	774-779	Flexsteel Conduit Couplings, Flex- ible	549
Eye Bolts, Hubbard	844	Marine, R & S	779-781	Connectors, Conduit Box	549
Nuts	841	Molding, Metal, National	551-557	Connectors, Lamp Cord	549, 550
Eyelets, Extension, Socket, Hubbell	288	Ovallflex	548	Float Switches	160
Eyes, Ball, Hubbard	855	Pole, Benjamin	727	Floodlight Projector Bases, Crouse-Hinds	741
Hubbard	860	Reflector, Benjamin	722	Projector Brackets, Crouse- Hinds	741
		Suspension, Benjamin	727	Hinds	741
		Suspension, Benjamin, Shock Ab- sorber	722	Projector Lenses, Crouse-Hinds	741
		Wall, Benjamin	727	Projectors, Crouse-Hinds	738-740
		Fixture Aligners, Benjamin	722	Projectors, Davis	735-737
		Boxes, Wiremold	561	Reflectors, Crouse-Hinds	740
		Bushings	311	Flood Lights, Show Window, X-Ray	706
		Chain	315	Floor Box Elbows	575
		Connectors, Sherman	419	Box Tees	575
		Fittings, Benjamin	729	Boxes, Condulet, Type FJC	661
		Hangers, Condulet	629	Boxes, FA	575
		Hangers, Hickey	546	Boxes, Fountain	575
		Hickeys, Macallen	734	Boxes, Fullman	576
		Joints, Condulet, Type ALC	629	Boxes, R & S	577, 578
		Joints, Condulet, Type UNJ	629	Boxes, Watertight, T & B	574
		Joints, Condulet, Type AOC	629	Couplings, Conduit, T & B	579
		Joints, Macallen	734	Outlet Boxes, Patterson	577
		Loops, P & S	315	Outlets, R & S	579
		Receptacles, Condulet, Type G-II	595	Push Buttons, Edwards	124
		Rosettes, Conduletto, Type G-II	594	Treads, Dixie	125
		Studs, Macallen	735	Flush Device Information, Bryant	352
		Studs, National	546	Push Escutcheons, Edwards	123, 124
		Switches, Levolver	364	Receptacles, Hubbell	337
		Wire, Deltabeston	523	Switches, Tumbler, H & H	387
		Fixtures, Access, Sampson	722-734	Foot Pushes	125
		Ceiling, Adjustable	731	Foot-candle Meters	205
		Ceiling, Watertight, Benjamin	777	Foot-rail Contactors, Tellers', Bank Protection, Faraday	91
		Condulet, Type SRH	656	Fork Bolts, Hubbard	849
		Crossing, Benjamin	724	Forks, Insulated, Hubbard	849, 850
		Drop, Watertight, Benjamin	777	Formers, Elbow, Conduit	921
		Dust Proof, Benjamin	727	Fountain Floor Boxes	575
		Extension, Hubbard	845	Frames, Color, X-Ray	704
		Fire Alarm, Peirce	856	Saw, Hack	913
		Gas Proof, Benjamin	724, 726	Frames and Covers, Manhole	873
		Guard, Condulet, Type GS	598	Franco Lamp Coloring	678
		Industrial, Ben-ox	714-716	Frankel Battery Charging Clips	421
		Industrial Lighting, Novalux	768	Clip Extensions	421
		Knob, Single, Peirce	848	Connectors	426, 427
		Knob, Swinging, Peirce	866, 867	Test Clips	422
		Lighting, Aglite	698	Frequency Meters, Weston	193, 196
		Lighting, Bracket	694, 696	Friction Tape	927
		Lighting, Ceiling	694-696	Frogs, Drawbridge	803
		Lighting, Enclosed	690-693	Trolley	803, 804
		Lighting, Kitchen	697	Frosting, Lamp	677
		Lighting, Pendant	694-696		
		Lighting, X-Ray	689		

	Page
Fullman Conduit Benders	921
Floor Boxes.....	576
Furnaces, Soldering, C & L	925
Fuse Blocks, Condulets, Peirce	851
Blocks, Condulet, Type GS.....	598
Blocks, Square D.....	404
Casings, Plug, D & W.....	430
Cutout Bases, Plug, Bryant.....	429
Cutouts, Enclosed, D & W.....	431
Cutouts, Enclosed, FA.....	431
Cutouts, Oil, D & W.....	214
Links, Cutout, Transformer.....	214
Plug Entrance Switches, Bryant.....	428
Strip, Buss.....	439
Switches, Matthews.....	215
Terminals, FA.....	440
Wire, Buss.....	439
Fuseless Plugs, Bryant	439
Fuses, Enclosed, Buss	436-438
Enclosed, D & W.....	432, 433
Fuswitch, Matthews.....	215
Link, Buss.....	439
Plug.....	430
Tubular, Telephone.....	40
G	
Galvanized Conduit	542
Galvanometers, Radio Frequency,	
Weston.....	197
Students', Weston.....	193
Gaps, Horn	220
Garage Testing Instruments,	
Weston.....	182
Gas Engine Switches, Trumbull	392
Proof Fixtures, Benjamin.....	724, 726
Gas-filled Lamp Sockets, Bryant	247
Gaskets, Condulet, Obround	589
Condulet, Type SK.....	606
Outlet Box, Fullman.....	576
Gauge Lamp Condulets	650
Gauges, Wire, Brown & Sharpe	923
Gem Switch Boxes, Conduit	571, 572
Generator Boxes, Telephone, Mag-	
neto.....	41
Data.....	961
Ring Sets, Motor, Magneto.....	45
Generators, Alternating Current	
Direct Current.....	139, 140
Ringing, Magneto.....	141, 142
Telephone, Magneto.....	45
Telephone, Magneto.....	41
Giant Reflectors, X-Ray	705
Glass Balls	700
Bowls.....	700, 701
Candle Shields.....	700
Globes.....	698-701
Insulators, Hemingray.....	833, 834
Lanterns.....	700
Reflector Covers, Benjamin.....	725
Shades.....	699-702
Globe Strain Insulators	802
Globes, Ball, Street Lighting	753
Condulet, V Series.....	611
Glass.....	698-701
Lamp, Condulet, for VS.....	613
Gloves, Protector, Linemen's	876
Rubber, Linemen's.....	876
Glow Stoves, M-B	67
Glue Pots, American Beauty	60
Gongs, Bank Protection, Faraday	92
Cow, Edwards.....	111
Electro-mechanical, Edwards.....	111
Fancy, Faraday.....	115
Faraday.....	113-116
Fire Alarm, Faraday.....	85-90
Marine, Benjamin.....	778
Signal, Faraday.....	113, 114, 116
Single-stroke, Faraday.....	114
Underdome, Faraday.....	116
Goosenecks, Benjamin	729
Governors, Pressure	159
Gravity Batteries	105
Greenalite Portable Lamps	711, 712

	Page
Greenalite Shades, Esrobert	712
Greist Portable Lamps	708, 709
Grids, Protective, Edwards	110
Grills, M-B	67
Grimshaw Black Tape	927
Grinders, Bench, Speedway	130, 131
Rail Bonding.....	789
Tool Post, Speedway.....	130
Gripcon Lamp Guards	681
Grips, Cable	901
Benjamin.....	311
Lamp, Socket, Bryant.....	248
Linemen's.....	902, 903
Ground Clamps, Metal Molding,	
National.....	551, 555
Clamps, New York.....	544
Clamps, Sherman.....	544
Couplings, Wiremold.....	558
Pipes, Hubbard.....	839
Plates, Hubbard.....	839
Rod Caps, Hubbard.....	839
Rod Points, Hubbard.....	839
Rods, Hubbard.....	840
Wire Bayonets, Hubbard.....	856, 859
Wire Clamps, Hubbard.....	859
Wire Terminals, Peirce.....	840
Grounding Caps, Dossert	425
Rings, Condulet.....	617
Taps, Frankel.....	427
Grounds, Paragon	870
Guard Fixtures, Condulet, Type	
GS.....	598
Holders, Condulet, Type G-H.....	595
Guards, Ceiling, Benjamin	683
Condulet, Type G-H.....	595
Condulet, V Series.....	611
Hub, Hubbard.....	839
Lamp, Condulet, Portable, for VS.....	613
Lamp, Gripcon.....	681
Lamp, Hubbell.....	682, 683
Lamp, Loxon.....	681
Lamp, Matthews.....	680
Lamp, Outlet Box, Benjamin.....	683
Lamp, Portable.....	680, 684, 685
Lamp, Protector A.....	681
Lamp, Protector O.....	681
Lamp, Wall, Crescent.....	681
Manhole.....	873
Reflector, Benjamin.....	683
Reflector, Hubbell.....	682
Guides, Chain, Bryant	271
Guttered Type Cabinets,	
Columbia.....	443, 444
Guy Anchors	840, 871-873
Clamps.....	873
Clamps, Hubbard.....	841
Hooks, Hubbard.....	841
Shims, Hubbard.....	841
Thimbles, Hubbard.....	841
Wire, Galvanized.....	531
Wire Protectors, Peirce.....	841

H

H & H Metal Sign Pliers	299
Plates, Bell Push.....	390
Plates, Blank.....	390
Plates, Combination.....	391, 392
Plates, Receptacle.....	391
Plates, Switch, Push.....	390
Plates, Switch, Rotary.....	389
Plates, Switch, Special.....	390
Plates, Switch, Tumbler.....	387
Plates, Telephone.....	390
Plug Fuses.....	430
Receptacles, Outlet Box, Porcel-	
lain.....	299
Receptacles, Sign.....	299
Sockets, Candle.....	299
Switch Screw Extensions.....	386
Switch Handles.....	386
Switch Keys.....	386
Switch Lock Attachments.....	386
Switch Plates, Tumbler.....	387

	Page
H & H Switches, Barrier	384, 385
Switches, Door.....	388
Switches, Electric Railway.....	385
Switches, Electrolier.....	380-382, 388
Switches, Heater.....	382, 383
Switches, Momentary Contact.....	388
Switches, Pendent.....	366
Switches, Push.....	387, 388
Switches, Reciprocating.....	383
Switches, Rotary, Flush.....	389
Switches, Surface.....	379-384
Switches, Tumbler.....	386, 387
Habirshaw Cable	509-516
Wire.....	509, 510, 513-515
Hack Saw Blades	913
Saw Frames.....	913
Hair Dryers, Hamilton Beach	69
Wavers.....	61
Hammer Drills, Peirce	914
Hammers, Machinists'	
Nail.....	918
Portable, Speedway.....	131
Rail Bonding.....	789
Hand Drills	910, 911
Saws.....	917
Sets, Telephone.....	41, 42
Vises.....	912
Handles, Auger, Telescoping,	
Blackburn's.....	872
Saw, Crosscut.....	918
Socket, Bryant.....	685
Switch, FA.....	397
Switch, H & H.....	386
Switch, Luminous, Bryant.....	348
Switch, Rotary, Perkins.....	361
Hanger Outlets, Fan, FA	73
Screws, Hubbard.....	843
Tongs, Trolley.....	808
Wrenches, Trolley.....	808, 809
Hangers, Cable	875
Conduit, T & B.....	545
Fixture, Condulet.....	629
Fixture, Hickey.....	546
Hand Set, Telephone.....	41, 42
Inter-phon.....	27
Lamp, Insulated, Peirce.....	870
Messenger, Hubbard.....	846
Outlet Box.....	570, 571
Trolley.....	796-798
Harness, Safety, Linemen's	907
Harps, Trolley	809
Hatchets	918
Hauling Clamps, Wire, Trolley	808
Haven's Grips	902
Head Sets, Telephone	50
Headlight Switches, Locomotive	
Wire, Habirshaw.....	630-633
Wire, Habirshaw.....	515
Heads, Drill, Diexco	914
Nail, Leather.....	546
Heat Regulators, Minneapolis	61
Heater Control Combinations,	
Bryant.....	325
Cord, Deltabeston.....	523
Cord, Flexible.....	522
Switches, Diamond H.....	376
Switches, H & H.....	382, 383
Switches, Perkins.....	362
Heaters, Portable, Western Electric	59
Water, Hotvent.....	61
Heating Appliances, Crawford	57-59
Appliances, M-B.....	62-68
Pads, M-B.....	67
Pads, Meteor.....	67
Hemco Multiple Plugs	339
Hemingray Glass Insulators	833, 834
Glass Knobs.....	834
Hewlett Insulators, Porcelain	838
Hickey Fixture Hangers	546
Candle Socket, Hubbell.....	294
Conduit, Lakin.....	921
Fixture, Macallen.....	734
Socket, Bryant.....	276

	Page		Page		Page
High-heat Sockets, Bryant	275	Hubbard Clevises	860	Hubbell Receptacles, Lamp,	
Highway Lighting Units, Novalux ..	753	Conduit Straps.....	847	Attachment Plug.....	333
Reversible Trailers.....	888, 889	Connecting Links.....	860	Receptacles, Mogul.....	298
Hoist Motors	138	Corner Bayonets.....	858	Receptacles, Outlet, Porcelain	296, 297
Hoists, Drum	142	Crossarm Braces.....	844, 845	Receptacles, Plug.....	334, 335
Holders, Drill, Diamond	913	Crossarms, Steel.....	856	Receptacles, Sign, Porcelain.....	297
Guard, Condulet, Type G-II.....	592, 595	Crossover Clamps.....	846	Receptacles, Wall.....	336, 337
Reflector, Condulet.....	655	Double Arming Plates.....	857	Reflector Guards.....	682
Shade, Benjamin.....	310	Double Arming Sets.....	858	Reflectors.....	730
Shade, Ben-ox.....	716	Dowel Pins.....	847	Shade Holders.....	313
Shade, Bryant.....	312, 313	Drive Caps.....	839	Socket Bases, Porcelain.....	296
Shade, Hubbell.....	313	Drive Points.....	839	Socket Bases, Quick Catch.....	290
Tool, Rawplug.....	916	Extension Fixtures.....	845	Socket Bodies, Electrolier.....	291, 292
Wire, Peirce.....	866, 867	Eye Nuts.....	841	Socket Bodies, Porcelain.....	295
Hold-up Alarm Systems, Bank,		Eyes.....	860	Socket Bodies, Quick Catch.....	289
Edwards.....	84	Fork Bolts.....	849	Socket Caps, Electrolier.....	292
Holophane Refractors	767	Ground Pipes.....	839	Socket Caps, Porcelain.....	295
Refractors, Highway Lighting		Ground Plates.....	839	Socket Caps, Quick Catch.....	290
Unit.....	759	Ground Rods.....	840	Socket Chain.....	293
Hood Reflectors, X-Ray	704	Ground Wire Bayonets.....	856, 859	Socket Cord.....	293
Hoodette Reflectors, X-Ray	705	Ground Wire Clamps.....	859	Socket Extension Eyelets.....	288
Hoods, Bell, Edwards	111	Guy Clamps.....	841	Socket Parts.....	289
Outlet, D & W.....	438	Guy Hooks.....	841	Sockets, Candelabra.....	295
Service Switch, D & W.....	438	Guy Shims.....	841	Sockets, Candle.....	294
Threaded, Benjamin.....	721	Guy Thimbles.....	841	Sockets, Composition Weather-	
Hook Bolts, Hubbard	860	Hanger Screws.....	843	proof.....	296
Brackets, Peirce.....	868	Hub Guards.....	839	Sockets, Current Tap.....	292
Hooks, Cant	897	Insulated Forks.....	849, 850	Sockets, Electrolier.....	291
Carrying.....	897	Knobs, Bracket, Telephone.....	848	Sockets, Extra Long Key.....	288
Elexit.....	341	Lag Screws.....	843	Sockets, Insulated Chain.....	288
Guy, Hubbard.....	841	Links.....	860	Sockets, Lamp Base Attachment.....	292
Inter-phone.....	27	Manhole Ladders.....	847	Sockets, Miniature.....	295
Lug.....	897	Messenger Hangers.....	846	Sockets, Mogul.....	298
Switch.....	223	Pins, Short Shank.....	850	Sockets, Quick Catch.....	291
Hooks and Racks, Manhole	873	Pins, Standard.....	850	Sockets, Wall.....	292
Hooks and Strips, Manhole	873	Pins, Wood Top.....	850	Special Socket Finishes.....	288
Hope Tape	928	Pole Balconies.....	846	Splicing Links.....	293
Horn Gaps	220	Pole Bands.....	849	Switch Bodies, Quick Catch.....	289, 290
Horns, Industrial, Klaxon	121	Pole Dating Nails.....	843	Switch Plugs.....	335
Signal.....	120	Pole Protection Strips.....	839	Switches, Appliance, Toggle.....	373
Hospital Signal Systems	79	Pole Steps.....	842	Switches, Battery, Toggle.....	373
Hot Plates, Crawford	59	Pole Top Fixtures.....	857	Switches, Ceiling.....	291
Shot Batteries, Columbia.....	96	Pothead Supports.....	847	Switches, Flush, Toggle.....	372
Hotel Sample Room Brackets, D.D.,		Pulling-in Irons.....	847	Switches, Surface, Toggle.....	373
Bryant.....	324	Reinforcing Links.....	846	Toggle Switch Plates.....	372
Hotvent Water Heaters	61	Reinforcing Straps.....	846	Triple Table Taps.....	334
House Brackets, Peirce	867, 868	Ridge Irons.....	852	Wrenches, Sign Receptacle.....	297
Cable, Rubber Covered,		Rock Guy Anchors.....	840	Hydrometers, Battery	146
Habirshaw.....	510	Steelwing Anchors.....	840	Hydroproof Tape	927
Racks, Peirce.....	866	Strain Insulator Clevises.....	860, 861	Hylo Mazda Lamps	672
Wire, Rubber Covered, Habirshaw		Strain Plates.....	841		
510		Strain Yokes.....	859		
Housings, Condulet, Receptacle,		Stubbing Washers.....	843		
Type BRY.....	624	Turnbuckles.....	849		
Condulet, Switch, Type BRD.....	601	U Bolts.....	859		
Condulet, Type BRD.....	602	Washers.....	844		
Condulet, Receptacle, Type BRG		Wire Rope Clips.....	841		
599		Hubbell Adapters, Receptacle	337		
Hub Guards, Hubbard	839	Attachment Plug Bases.....	333, 334		
Plates, Conduit, MF Series.....	625	Attachment Plug Caps.....	332, 333, 336		
Plates, Conduit, Type MK.....	626	Attachment Plugs.....	332, 336, 337		
Plates, Conduit, Type RSMP.....	662	Attachment Plugs, Multiple.....	335		
Plates, Conduit, Type RSP.....	662	Candle Extensions.....	294		
Plates, Conduit, YYP Series.....	617, 623	Cord Connectors.....	335-337		
Hubbard Alley Braces	845	Convenience Outlets.....	330, 331		
Anchor Rods.....	840	Current Tap Bodies.....	333		
Ball Eyes.....	855	Current Tap Caps.....	333		
Bo-Arrow Arms.....	858	Current Taps.....	334, 335		
Bolt Clevises.....	842	Finishes, Special.....	374		
Bolts, Bracket, Telephone.....	848	Hickeys, Candle Socket.....	294		
Bolts, Carriage.....	842	Insulating Links.....	293		
Bolts, Clevis.....	860	Lamp Guards.....	682, 683		
Bolts, Double Arming.....	844	Metal Sign Pliers.....	297		
Bolts, Eye.....	844	Plates, Special.....	374		
Bolts, Hook.....	860	Porcelain Rings.....	297		
Bolts, Machine.....	843	Pull Attachments.....	292, 293		
Brackets, Break Iron.....	848	Receptacle Parts.....	289		
Brackets, Corner.....	860	Receptacle Plates.....	330, 331		
Brackets, Corner, Telephone.....	848	Receptacles, Candelabra.....	295		
Brackets, Distributing, Telephone		Receptacles, Ceiling, Porcelain.....	296		
848		Receptacles, Ceiling, Pull.....	293		
Brackets, Insulator, Suspension.....	860	Receptacles, Cleat, Porcelain.....	296, 297		
Brackets, Transposition.....	847	Receptacles, Conduit Box.....	334, 337		
Cable Crossarms.....	846	Receptacles, Flush.....	337		
Cable Duct Shields.....	847				
Cable Suspension Clamps.....	846				
Channels, Double Arming.....	859				

I

Ignition Cable, Automobile	519
Ignitor Batteries, Columbia	96
Increment Borers	817
Indicators, Speed, Starrett	924
Tank, Patterson.....	94
Industrial Fixtures, Ben-ox	714-716
Fixtures, Sampson.....	732-734
Horns, Klaxon.....	121
Lighting Fixtures, Novalux.....	768
Reflection Data.....	687-689
Reflectors, Benjamin	
710-720, 723, 724	
Reflectors, X-Ray.....	703
Information, Useful	955-966
Ink, Etching, Lamp	677
Installing Bars, Never-Creep	871
Instrument Transformers, Weston	
186, 188	
Instruments, Battery Testing,	
Sterling.....	197
Portable, Weston.....	181-188
Precision, Weston.....	183, 184
Switchboard, Weston.....	189-197
Testing, Garage, Weston.....	182
Insulated Clevises, Peirce	861
Crowfoot, Macallen.....	735
Forks, Hubbard.....	849, 850
Nails, Milonite.....	546
Staples, Blake.....	546
Turnbuckles.....	803
Insulating Compound, M.I.C.	931

Insulating Covers, Dossert . . .	424, 425
Joints, Macallen . . .	734, 735
Links, Bryant . . .	277
Links, Hubbell . . .	293
Paint, Ajax . . .	932
Paper . . .	929
Supports . . .	225, 226
Tape . . .	927
Transformers . . .	216
Insulator Brackets, Suspension,	
Hubbard . . .	860
Clamps, Clark . . .	839
Clevises, Strain, Hubbard . . .	860, 861
Pins, Mine . . .	795
Supports, Clamp . . .	226
Supports, Universal . . .	531
Insulators, Antenna, Radio . . .	834
Cap and Cone . . .	797
Feeder, Trolley . . .	807, 808
Fiber, Eureka . . .	546
Glass, Hemingray . . .	833, 834
Hewlett, Porcelain . . .	838
Link Type, Porcelain . . .	838
Porcelain . . .	532-536
Porcelain, High Voltage . . .	835, 836
Porcelain, Telephone . . .	835
Rack, Porcelain . . .	535
Secondary Rack, Peirce . . .	862
Section, Trolley . . .	806, 807
Spark Plug . . .	105, 106
Strain, Blackburn . . .	873
Strain, Globe . . .	802
Strain, Porcelain . . .	834, 837
Strain, Spherical . . .	802
Strain, Wood . . .	802
Suspension, Arc Lamp, Peirce . . .	870
Suspension, Porcelain . . .	837
Tree, Peirce . . .	867
Interconnecting Block Bodies,	
Bryant . . .	314
Interiors, Socket, Bryant . . .	271
Inter-phone Annunciators . . .	12, 13
Cable . . .	46
Connecting Blocks . . .	27
Hangers . . .	27
Hooks . . .	27
Letter Boxes . . .	18
Outfits . . .	24, 26
Push Button Blocks . . .	27
Inter-phones . . .	2-27
Iron Box Bells, Edwards . . .	106
Box Buzzers, Edwards . . .	106
Ironing Machines . . .	55
Irons, Corner, Peirce . . .	867
Curling, Ivory . . .	61
Curling, Torrid . . .	61
Flat, American Beauty . . .	60
Flat, M-B . . .	60
Flat, Western Electric . . .	60
Pulling-in, Hubbard . . .	847
Ridge, Hubbard . . .	852
Soldering, American Beauty . . .	60
Waffle, M-B . . .	66, 67
J	
Jack Reflectors, X-Ray . . .	704
Straps . . .	908
Jacks, Bridge, Simplex . . .	892
Car, Simplex . . .	892
Derrick, Simplex . . .	891
Emergency, Simplex . . .	891
Pole, Simplex . . .	890
Reel, Cable . . .	891, 893
Telephone . . .	42
Track, Simplex . . .	892
Truck, Simplex . . .	891
Utility, Simplex . . .	892
Jefferson Transformers, Bell Ring-	
ing . . .	121, 122
Transformers, Toy . . .	122
Transformers, Low Voltage . . .	122
Radio Tube Rejuvenators . . .	122

Jewels, Watthour Meter . . .	205
Jill Reflectors, X-Ray . . .	704
Joint Caps, Metal Molding,	
National . . .	551, 555
Joints, Blank, Macallen . . .	735
Fixture, Condulet, Type ALC . . .	629
Fixture, Condulet, Type AOC . . .	629
Fixture, Condulet, Type UNJ . . .	629
Fixture, Macallen . . .	734
Insulating, Macallen . . .	734, 735
Jove Reflectors, X-Ray . . .	704
Jumbo Reflectors, X-Ray . . .	703
Junction Box Condulets . . .	645
Box Condulets, Type AD . . .	662
Boxes, Columbia . . .	440-445
Boxes, Marine, R & S . . .	781
Boxes, Metal Molding, National . . .	552, 557
Boxes, T & B . . .	573, 574
Boxes, Watertight, Benjamin . . .	774
Condulets, Screw Cover . . .	640
Juniper Poles . . .	827
Jupiter Reflectors, X-Ray . . .	704

K

Kettles, Water, M-B . . .	66
Keyhole Saws . . .	918
Keys, Socket, Bryant . . .	271
Socket Locking, Bryant . . .	248
Switch, Bryant . . .	361, 362
Switch, H & H . . .	386
King Reflectors, X-Ray . . .	704
Street Lighting Fixtures . . .	743-750
Kitchen Lighting Fixtures . . .	697
Kits, Tool, Linemen's . . .	907
Klaxon Industrial Horns . . .	121
Knife Switches, Condulet, Type	
YKK . . .	627
Switches, FA . . .	393-399
Knives, Splitting, Sheath, Cable . . .	897
Knob Fixtures, Single, Peirce . . .	848
Fixtures, Swinging, Peirce . . .	866, 867
Racks, Peirce . . .	849
Knobs, Bracket, Telephone,	
Hubbard . . .	848
Glass, Hemingray . . .	834
Porcelain . . .	532-536
Rack, Telephone, Peirce . . .	848

L

Ladders, Manhole, Hubbard . . .	847
Ladles, Melting . . .	926
Lag Screw Rawplugs . . .	916
Screw Wrenches . . .	912
Screws, Hubbard . . .	843
Lamp Adapters, Ball . . .	696
Adapters, Curtis, X-Ray . . .	706
Bases, Portable, Esrobert . . .	712
Chain, Arc . . .	530
Changers, Adaptable . . .	685
Changers, Matthews . . .	685
Clusters, Benjamin . . .	713
Coloring . . .	678
Cord, Armored, Flexsteel . . .	548, 549
Cord, Portable . . .	520-522
Cord Connectors, Flexsteel . . .	549, 550
Cord Sets, Extension . . .	712
Etching Outfits . . .	677
Frosting . . .	677
Globes, Condulet, for VS . . .	613
Grips, Socket, Bryant . . .	248
Guard Shades, Matthews . . .	680
Guards, Condulet, Portable, for VS . . .	613
Guards, Gripon . . .	681
Guards, Hubbell . . .	682, 683
Guards, Loxon . . .	681
Guards, Matthews . . .	680
Guards, Outlet Box, Benjamin . . .	683
Guards, Portable . . .	680, 684, 685
Guards, Protector A . . .	681
Guards, Protector O . . .	681

Lamp Guards, Wall, Crescent . . .	681
Hangers, Insulated, Peirce . . .	870
Lead Brackets, Peirce . . .	868
Receptacle Bodies, Bryant . . .	314
Receptacles, Attachment Plug, Hubbell . . .	333
Receptacles, Condulet . . .	598, 653
Receptacles, Conduletto . . .	605
Receptacles, Conduletto, Type G-H . . .	594, 595
Stems, Portable, Esrobert . . .	712
Lamps, Bughole, R & S . . .	684
Carbon, Decorative . . .	677
Carbon, Series . . .	675
Carbon, Standard Lighting . . .	675
Condulet, Portable, Type LPG . . .	613
Condulet, Portable, Type LPH . . .	613
Condulet, Portable, Type VS . . .	613
Cord, Condulet . . .	629
Machine, Emeraldite . . .	710
Mazda, Decorative . . .	677
Mazda, Hylo . . .	672
Mazda, Miniature, Automobile . . .	676
Mazda, Miniature, Battery . . .	676
Mazda, Miniature, Christmas Tree . . .	676
Mazda, Miniature, Flashlight . . .	676
Mazda, Sunbeam . . .	669-675
Mazda, Sunbeam, All Frosted . . .	670, 671
Mazda, Sunbeam, Colored . . .	672
Mazda, Sunbeam, Country Home Lighting . . .	675
Mazda, Sunbeam, Daylight . . .	671
Mazda, Sunbeam, Decorative . . .	671
Mazda, Sunbeam, Floodlighting . . .	673
Mazda, Sunbeam, Inside Frosted . . .	670
Mazda, Sunbeam, Mill Type . . .	670, 672
Mazda, Sunbeam, Mine Lighting . . .	675
Mazda, Sunbeam, Projection . . .	673
Mazda, Sunbeam, Series . . .	674, 675
Mazda, Sunbeam, Sign Lighting . . .	672
Mazda, Sunbeam, Special Lighting . . .	670
Mazda, Sunbeam, Street Railway . . .	673
Mazda, Sunbeam, Train Lighting . . .	674
Mazda, Sunbeam, Tubular . . .	671
Mazda, Sunbeam, White . . .	671
Portable, Adjusto-lite . . .	708
Portable, Buss . . .	706
Portable, Dim-A-Lamp . . .	709
Portable, Emeraldite . . .	709, 710
Portable, Esrobert . . .	711, 712
Portable, Greist . . .	708, 709
Portable, Wallace . . .	708
Receptacle, Flush, Bull's Eye, Bryant . . .	329
Signal, Bank Protection, Faraday . . .	91
Lamps and Receptacles, Pilot,	
Combination, Bryant . . .	329
Lanterns, Battery . . .	94
Condulet, Portable, Type LM . . .	613
Condulet, Portable, Type VSB . . .	613
Glass . . .	700
Lathe Motors, Hamilton Beach . . .	69
Laundry Boxes, Gem . . .	573
Lead Burners, Pyrotip . . .	218
Covered Cable, Habirshaw . . .	511
Thread Thimbles, Peirce . . .	854
Leather Nail Heads . . .	546
Leg Rests, Lamp Trimmers . . .	842
Lenses, Projector, Floodlight,	
Crouse-Hinds . . .	741
Letter Boxes, Inter-phone . . .	18
Leviathan Reflectors, X-Ray . . .	705
Levolier Switches, Fixture . . .	364
Light and Power Outfits . . .	144-146
Lighters, Tobacco, M-B . . .	68
Lighting Cable, Automobile . . .	519, 520
Fixtures, Aglite . . .	698
Fixtures, Bracket . . .	694, 696
Fixtures, Ceiling . . .	694-696
Fixtures, Enclosed . . .	690-693
Fixtures, Kitchen . . .	697

	Page
Lighting Fixtures, Pendent.	694-696
Fixtures, X-Ray	689
Installation Calculations.	716, 717
Outfits, Decorative	677
Outfits, Portable	146
Lightning Arresters, Magnetic	
Blowout.	221
Arresters, Multigap	220
Arresters, Oxide Film	219, 220
Arresters, Street Lighting	219
Arresters, Vacuum Tube	221
Lights, Cargo, Benjamin	779
Exit	694
Flash, Eveready	95
Flood, Show Window, X-Ray	706
Porch	696
Line Connectors	220
Linemen's Blocks	902
Crossarm Shields	876
Grips	902, 903
Hatchets	918
Pole Climbers	905
Protector Gloves	876
Rubber Gloves	876
Safety Chairs	875
Safety Harness	907
Safety Straps	906-908
Shields	876
Shoes	876
Tool Bags	907-909
Tool Belts	906, 903
Tool Cases	905
Tool Kits	907
Torches	924
Linen Tape	928
Linings, Socket, Bryant	271
Link Fuses, Buss	439
Type Insulators, Porcelain	838
Links, Connecting, Hubbard	860
Fuse, Cutout, Transformer	214
Hubbard	860
Insulating, Bryant	277
Insulating, Hubbell	293
Reinforcing, Hubbard	846
Renewal, Fuse, Enclosed, Economy	434, 435
Splicing, Bryant	277
Splicing, Hubbell	293
Linotape	928
Localet Plugs, Benjamin	339
Locatap Plugs, Benjamin	339
Lock Attachments, Switch, II & II	
Washers, Peirce	855
Locking Plates, Square D	406
Sockets, Benjamin	722
Switch Plates, Square D	404
Locknuts, Conduit	544
Locomotive Deck Light Condulets	
Headlight Switches	630-633
Locust Pins	832
Loom Boxes, T & B	550
Loops, Fixture, P & S	315
Loud Speaking Telephones	51
Low Voltage Transformers, Jefferson	
Lamp Guards	681
Loys	896
Lubricant, Commutator	927
Lug Hooks	897
Lugs, Dossert	424, 425
Frankel	426, 427
Soldering, FA	420
Soldering, Sherman	418, 419
Luminous Pendants, Undark,	
Bryant	287
Switch Buttons, Bryant	348
Switch Handles, Bryant	348
Lungen Bells, Edwards	107
Buzzers, Edwards	107

M

M-B Heating Appliances	62-68
Macallen Blank Joints	735
Fixture Hickeys	734

	Page
Macallen Fixture Joints	734
Fixture Studs	735
Insulated Crowfeet	735
Insulating Joints	734, 735
Machine Bolts, Hubbard	843
Lamps, Emeraldite	710
Machines, Boring, Earth	878-881
Boring, Electricians'	912
Field, Conduit, Bermico	541
Ironing	55
Setting, Pole	878-881
Sewing, Console Type	57
Sewing, Portable	56, 57
Washing	55
Machinists' Hammers	918
Magnet Wire, Deltabeston	524
Wire, Enameled	525
Wire, Rectangular	525
Wire, Round	525
Wire, Square	525
Magnetic Switches	167-173
Magneto Generator Boxes, Tele-	
phone	41
Generators, Telephone	41
Mine Telephones	34, 35
Motor Generator Ringing Sets	45
Ringing Generators	45
Stations, Watchmen's	93
Telephones	31, 32
Telephones, Portable	36
Testing Sets	44
Manhole Frames and Covers	873
Guards	873
Ladders, Hubbard	847
Racks and Hooks	873
Skids and Sheaves	873
Strips and Hooks	873
Marble and Slate Drills, Speedway	
Marine Fittings, Benjamin	774-779
Fittings, R & S	779-781
Name Plate Markings	778
Marline	870
Cable Hangers	875
Mast Arms, Benjamin	729
Arms, Peirce	869, 870
Mast-arm Cable, Habirshaw	513
Material, Railway, Street	790-811
Mats, Switch, Wood	376
Matthews Cable Clamps	870
Disconnecting Switches	215
Fuse Switches	215
Lamp Changers	685
Lamp Guard Shades	680
Lamp Guards	680
Lamp Guards, Portable	685
Portables	680
Serulix Guy Anchors	872
Slack Pullers	903
Wire Reels	893
Woodpecker Telefaults	205
Matting, Switchboard, Rubber	929
Mauls, Never-Creep	871
Mazda Lamps, Decorative	677
Lamps, Hylo	672
Lamps, Miniature, Automobile	676
Lamps, Miniature, Battery	676
Lamps, Miniature, Christmas	
Tree	676
Lamps, Miniature, Flashlight	676
Lamps, Sunbeam	669-675
Lamps, Sunbeam, All Frosted	
670, 671	
Lamps, Sunbeam, Colored	672
Lamps, Sunbeam, Country Home	
Lighting	675
Lamps, Sunbeam, Daylight	671
Lamps, Sunbeam, Decorative	671
Lamps, Sunbeam, Floodlighting	673
Lamps, Sunbeam, Inside Frosted	
670	
Lamps, Sunbeam, Mill Type	670, 672
Lamps, Sunbeam, Mine Lighting	675
Lamps, Sunbeam, Projection	673
Lamps, Sunbeam, Series	674, 675
Lamps, Sunbeam, Sign Lighting	672

	Page
Mazda Lamps, Sunbeam, Special	
Lighting	670
Lamps, Sunbeam, Street Lighting	673
Lamps, Sunbeam, Train Lighting	674
Lamps, Sunbeam, Tubular	671
Lamps, Sunbeam, White	671
McKean Signal Brackets	861
Measuring Outfits, Wire	923
Tapes	919, 920
Melting Ladles	926
Pots	926
Mesco Wire Connectors	422
Messenger Hangers, Hubbard	846
Splicers, Blackburn	873
Metal Molding, National	551
Molding Fittings, National	551-557
Molding Fittings, Wiremold	558-562
Sign Pliers, II & H	299
Sign Pliers, Hubbell	297
Metal-working Outfits, Speedway	
Meter Books, Loose Leaf	205
End Walls, Square D	406
Service Switches, Acco	412
Service Switches, Noark	413-416
Service Switches, Seco	412
Service Switches, Square D	402, 403, 405
Shutters, Square D	406
Test Switches, Square D	401
Test and Compensator Switches, Square D	402
Trims, Square D	405
Meters, Battery Testing, Sterling	197
Foot-candle	205
Frequency, Weston	193, 196
Portable, Weston	181-188
Power-factor, Weston	192, 195
Precision, Weston	183
Switchboard, Weston	189-197
Watt-hour	198-205
Wire	923
Metric Tables	955
Mica, Uncut	929
Mica Sockets, P & S	310
Micanite Cloth	931
Paper	931
Plate	930
Micrometer Calipers,	
Brown & Sharpe	923
Midget Reflectors, X-Ray	705
Mill Reflectors, X-Ray	703
Milliammeters, Portable, Weston	
182, 183, 185, 187	188
Precision, Weston	183
Radio Frequency, Weston	197
Switchboard, Weston	190, 194
Milling Cutters, Rail Bonding	789
Millivoltmeter Shunts, Weston	181
Millivoltmeters, Portable, Weston	
181	182
Precision, Weston	183
Switchboard, Weston	189
Milonite Insulated Nails	546
Mine Brackets, Peirce	850
Cable, Habirshaw	516
Roof Drills	808
Insulator Pins	795
Signal Switch Condulets	656
Suspensions	797
Telephones, Magneto	34, 35
Miniature Cleat Receptacles,	
Bryant	277
Mazda Lamps, Automobile	676
Mazda Lamps, Battery	676
Mazda Lamps, Christmas Tree	676
Mazda Lamps, Flashlight	676
Receptacles, Weatherproof, P & S	308
Sign Receptacles, Bryant	277
Sockets, Bryant	277
Sockets, Hubbell	295
Minneapolis Heat Regulators	61
Mixers, Drink, Hamilton Beach	69
Mogul Receptacles, Bryant	287
Receptacles, Hubbell	298

	Page
Mogul Receptacles, P & S	309
Socket Bodies, P & S.....	309
Socket Bodies, Porcelain, Bryant.....	286, 287
Socket Caps, Bryant.....	287
Socket Reducers, Benjamin.....	311
Socket Yokes, Bryant.....	287
Sockets, Benjamin.....	311
Sockets, Bryant.....	287
Sockets, Hubbell.....	298
Sockets, P & S.....	309
Moisture Proof Fixtures, Benjamin	727
Molding, Metal, National	551
Molding Bushings, Wiremold	558
Fittings, Metal, National.....	551-557
Fittings, Metal, Wiremold.....	558-562
Receptacles, Bryant.....	283
Momentary Contact Switches,	
Diamond H.....	377
Contact Switches, H & H.....	388
Monitor Bells, Edwards	107
Lamp Guards, Portable.....	684
Monkey Wrenches	912
Motor Attachment Plug Caps,	
Bryant.....	318
Connectors, Bryant.....	319
Data.....	961
Drum Switches.....	162-166
Generator Ringing Sets, Magneto.....	45
Plugs, Hubbell.....	336, 337
Protective Cutouts.....	158
Reversing Switches.....	173
Speed Regulating Rheostats.....	157
Starters, Automatic.....	168
Starters, Resistor.....	157
Starting Compensators.....	151-154, 174-177
Starting Relays.....	158
Starting Resistors.....	164, 166
Starting Rheostats.....	150, 151, 178
Starting Switch Condulets, Type MK.....	626
Starting Switches.....	156
Starting Switches, Bull Dog.....	409
Starting Switches, Square D.....	401
Starting Thermostats.....	158
Wiring Tables.....	960, 962-964
Motors, Alternating Current	133-138
Back Geared.....	136, 137
Crane.....	138
Direct Current.....	133-138
Hoist.....	138
Lathe, Hamilton Beach.....	69
Sewing Machines.....	
Hamilton Beach.....	69
Mountings, Bracket, Telephone	44, 45
Protector, Telephone.....	43
Mule Supports	896
Multiple Attachment Plugs,	
Hubbell.....	335
Plugs, Benjamin.....	338, 339
Plugs, Hemco.....	339
Push Buttons, Edwards.....	125
Sockets, Bryant.....	270, 274, 275
Sockets, Novalux.....	767

N

Nail Hammers	918
Heads, Leather.....	546
Nail-it Insulators, Split	536
Nails, Dating, Pole, Hubbard	843
Insulated, Milonite.....	546
Name Plate Markings, Marine	778
National Code Rules	933-953
Fixture Studs.....	546
Metal Molding.....	551
Metal Molding Fittings.....	551-557
Portable Lamp Guards.....	684
Never-Creep Guy Anchors	871
Installing Bars.....	871
Mauls.....	871
New Wrinkle Plug Receptacle Bodies, Bryant	267

	Page
New Wrinkle Receptacle Bases,	
Bryant.....	269, 270
Rosette Bodies, Bryant.....	267
Socket Bodies, Bryant.....	267
Socket Caps, Bryant.....	268
Sockets, Bryant.....	249-260, 270
Switch Bodies, Bryant.....	267, 268
Nipples, Conduit, Chase	544
Noark Switch End Walls	414
Switch Wiring Diagrams.....	415
Switches, Meter Service.....	413-416
Nokorode Radiokits	927
Soldering Paste.....	926
Non-metallic Flexible Conduit	546
Non-watertight Circuit-breaking Plugs, Arktite	615
Novalux Industrial Lighting Fixtures	768
Sockets, Multiple.....	767
Sockets, Series.....	767
Street Lighting Fixtures.....	754-767
Nozzles, Outlet Box, Fullman	576
Nut Fasteners, Speedway	130
Nuts, Eye	841

O

Oak Pins	832
Office Wire, Damp-proof	526
Ohmmeters, Portable, Weston	182
Oil Circuit Breakers	154-156, 234-241
Fuse Cutouts, D & W.....	214
Oiled Canvas.....	931
Cloth Tape.....	928
Duck.....	931
Paper.....	931
Silk.....	931
Openers, Door, Edwards	126, 127
Outdoor Fixtures, Benjamin	727-729
Outfits, Etching, Lamp	677
Inter-phone.....	24, 26
Light and Power.....	144-146
Lighting, Decorative.....	677
Lighting, Portable.....	146
Outlet Box Adapters, P & S	305
Box Bodies, Bryant.....	319, 320
Box Covers, Bryant.....	315
Box Covers, P & S.....	316
Box Covers, Wiremold.....	560
Box Hangers.....	570, 571
Box Lamp Guards, Benjamin.....	683
Box Receptacles, Bryant.....	270
Box Receptacles, Hubbell.....	334, 337
Box Receptacles, Porcelain, Bryant.....	283-285
Box Receptacles, Porcelain, H & H.....	299
Box Receptacles, Porcelain, Hubbell.....	297
Box Receptacles, Porcelain, P & S.....	304-306
Box Receptacles, Weatherproof, P & S.....	305
Box Straps, P & S.....	305
Boxes.....	562-569
Boxes, Concrete.....	568
Boxes, Floor, Patterson.....	577
Boxes, Fullman.....	576
Boxes, Ovalduct.....	545
Boxes, R & S.....	577, 578
Boxes, Wiremold.....	560
Hoods, D & W.....	438
Receptacles, P & S.....	304
Receptacles, Porcelain, Hubbell.....	296
Outlets, Bracket, Wiremold	562
Ceiling, Wiremold.....	562
Convenience, Diamond H.....	329
Convenience, Hubbell.....	330, 331, 337
Floor, R & S.....	579
Hanger, Fan, FA.....	73
Window, Wiremold.....	562
Ovalduct Conduit	545
Conduit Fittings.....	545
Ovalflex Armored Cable	548
Fittings.....	548

P

	Page
P & S Conduit Box Straps	305
Fixture Loops.....	315
Outlet Box Adapters.....	305
Outlet Box Covers.....	316
Porcelain Candelabra Adapters.....	303
Receptacles, Ceiling, Porcelain.....	306
Receptacles, Cleat, Porcelain.....	306, 307
Receptacles, Concealed, Porcelain.....	306
Receptacles, Miniature, Weatherproof.....	308
Receptacles, Mogul.....	309
Receptacles, Outlet Box, Porcelain.....	304-306
Receptacles, Outlet Box, Weatherproof.....	305
Receptacles, Porcelain.....	302, 303
Receptacles, Sign, Porcelain.....	307, 308
Receptacles, Two-piece, Porcelain.....	306
Rosettes.....	315, 316
Socket Bodies, Mogul.....	309
Socket Suspension Cleats.....	310
Socket Wrenches.....	308
Sockets, Aluminum.....	310
Sockets, Bracket.....	309
Sockets, Candle.....	303
Sockets, Mica.....	310
Sockets, Mogul.....	309
Sockets, Porcelain.....	300, 301, 303
Sockets, Reflector.....	308
Sockets, Shurlok.....	300
Sockets, Weatherproof.....	309, 310
Switches, Canopy.....	364
Packing House Cord, Flexible	522
Pads, Climber	905
Climber Strap.....	905
Heating, M-B.....	67
Heating, Meteor.....	67
Paint, Insulating, Ajax	932
Insulating, M.I.C.....	931
Panel Board Switches, Perkins	346
Boards, Benjamin-Starrett.....	492-505
Boards, Crouse-Hinds.....	446-457
Boards, FA.....	458-491
Boxes, Columbia.....	440-445
Saws.....	917
Switches, Bryant.....	428
Switches, Perkins.....	368, 369
Panels, Control, Bank Protection,	
Faraday.....	91, 92
Control, Fire Alarm, Edwards.....	84
Control, Fire Alarm, Faraday.....	85-90
Regulator, Street Lighting.....	770, 771
Paper, Insulating	929
Micanite.....	931
Oiled.....	931
Paper Dials, Clock, Watchmen's	93
Pulleys, Rockwood.....	147
Sleeves.....	932
Parabolite Reflectors, Benjamin	719
Paragon Grounds	870
Switches, Perkins.....	345
Park Cable, Habirshaw	512
Parts, Chafing Dish, M-B	68
Cord and Plug, M-B.....	68
Percolator, Coffee, M-B.....	68
Receptacle, Hubbell.....	289
Socket, Bryant, Brass Shell.....	271
Socket, Hubbell.....	289
Table Stove, M-B.....	68
Toaster, M-B.....	68
Paste, Soldering	926
Patterson Battery Sets	98, 99
Floor Boxes, Outlet.....	577
Tank Indicators.....	94
Paul Pumps, Suction, Type K	147
Water Systems.....	147-149
Pay Stations, Telephone	36
Pay-out Reels	895
Peavies	897
Pedestals, Condulet	628
Peirce Arc Lamp Suspension Insulators	870

	Page		Page		Page
Peirce Bracket Feet	867	Perkins Switches, Expulsion...	360, 361	Plates, Locking, Square D	406
Brackets, Arc-light Drop.....	861	Switches, Feed-through.....	366, 367	Metal Molding, National.....	552, 553
Brackets, Brick Drive.....	863	Switches, Heater.....	362	Push Button, Edwards.....	124
Brackets, Crossarm.....	864, 865	Switches, Panel.....	368, 369	Receptacle, Bryant.....	322, 323
Brackets, Distributing.....	864	Switches, Panelboard.....	346	Receptacle, Bull's Eye, Bryant...	326
Brackets, Hook.....	868	Switches, Paragon.....	345	Receptacle, Chapman, Bryant...	323
Brackets, House.....	867, 868	Switches, Pendent.....	366, 367	Receptacle, D.D., Bryant.....	324
Brackets, Lamp Lead.....	868	Switches, Push, Flush.....	345-347	Receptacle, Door, Hubbell.....	331
Brackets, Pole.....	863, 864, 867	Switches, Rotary, Flush.....	350	Receptacle, H & H.....	391
Brackets, Pole Top.....	855	Switches, Surface.....	356-362	Receptacle, Hubbell.....	330, 331
Brackets, Ridge Iron.....	856	Switches, Wall.....	367	Receptacle, Porcelain, Spartan...	321
Brackets, Screw.....	868	Permacolor Lamp Coloring.....	678	Special, Bryant.....	353
Brackets, Secondary Rack.....	862	Phlexarms, Esrobert.....	712	Special, Hubbell.....	374
Brackets, Spreader.....	865	Picture Machine Cable,		Strain, Hubbard.....	841
Brackets, Steel.....	850	Deltabeston.....	523	Strain, Trolley.....	800
Brackets, Telephone.....	864	Pike Poles.....	896	Switch, Locking, Square D.....	404
Brackets, Transposition.....	848	Pilot Caps, Bryant.....	318	Switch, Push, Bryant.....	346, 348, 349
Brackets, Wall.....	867, 868	Lamp Combinations, Bryant...	328	Switch, Push, Diamond H.....	377
Break Arms.....	865	Lamps and Receptacles, Combi-		Switch, Push, H & H.....	390
Cable Racks.....	847	nation, Bryant.....	329	Switch, Rotary, Bryant.....	350
Centering Washers.....	854	Pine Crossarms.....	829-831	Switch, Rotary, H & H.....	389
Clamp Pin Clamps.....	852	Poles, Yellow, Creosoted.....	818-826	Switch, Special, H & H.....	390
Clamp Pins.....	869	Pins, Channel, Rail Bond.....	787	Switch, Toggle, Hubbell.....	372
Corner Irons.....	867	Clamp, Peirce.....	851, 852, 869	Switch, Tringle, Bryant.....	348
Corner Pins.....	869	Corner, Peirce.....	869	Switch, Tumbler, Bryant.....	348, 349
Corner Plates.....	869	Dowel, Conduit.....	539	Switch, Tumbler, H & H.....	387
Crossarm Clevises.....	851	Dowel, Hubbard.....	847	Telephone, H & H.....	390
Crossarm Saddles.....	855	Drift, Rail Bond.....	787	Plier Pockets.....	907
Crossarm Straps.....	852, 869	Forged Steel, Peirce.....	850-854	Pliers, Klein's.....	903-905
Dead Ending Straps.....	863	Insulator, Mine.....	795	Sign, Metal, H & H.....	299
Drill Point Chucks.....	914	Pole Top, Peirce.....	855	Sign, Metal, Hubbell.....	297
Drill Points.....	914	Presteel, Peirce.....	851	Plug Caps, Attachment, Hubbell	
Expansion Bolts.....	913	Railway Feeder, Peirce.....	850	Covers, Elexit.....	332, 333, 336
Fire Alarm Fixtures.....	856	Screw, Peirce.....	852	Cutouts, Series.....	767
Fuse Block Clamps.....	851	Short Shank, Hubbard.....	850	Fuse Casings, D & W.....	430
Ground Wire Terminals.....	840	Standard, Hubbard.....	850	Fuse Cutout Bases, Bryant...	429
Guy Wire Protectors.....	841	Wood.....	832	Fuses.....	430
Hammer Drills.....	914	Wood Top, Hubbard.....	850	Receptacle Bases, New Wrinkle	
Insulated Clevises.....	861	Pipe Benches, Portable, Henderson		.....	258-260
Knob Fixtures.....	848	.....	922, 923	Receptacle Bodies, Bryant.....	314
Knob Fixtures, Swinging.....	866, 867	Benders, Wiremold.....	561	Receptacle Bodies, New Wrinkle	
Knob Racks.....	849	Benders and Vise Stands, Port-		.....	255-260, 267
Knobs, Rack, Telephone.....	848	able.....	922	Receptacle Bodies, Porcelain,	
Lamp Hangers, Insulated.....	870	Clamps, New York.....	544	Bryant.....	278, 280
Lock Washers.....	855	Clamps, Sherman.....	544	Receptacle Caps, New Wrinkle	
Mast Arms.....	869, 870	Couplings, Wiremold.....	561	.....	255-260
Pins, Clamp.....	851	Cutters.....	920	Receptacle Caps, Porcelain,	
Pins, Forged Steel.....	850-854	Pushers, Giant.....	921	Bryant.....	278
Pins, Pole Top.....	855	Stocks and Dies, Beaver.....	920	Receptacle Condulets	
Pins, Presteel.....	851	Stocks and Dies, Beaverette.....	920	.....	618-621, 626, 647-649
Pins, Railway Feeder.....	850	Stocks and Dies, Trio.....	920	Receptacles, Hubbell.....	334, 335
Pole Bands.....	863	Taps and Reamers.....	921	Receptacles, New Wrinkle.....	255-260
Pole Extensions.....	856, 857	Threading Tools.....	920	Receptacles, Porcelain, Bryant	
Pole Seats.....	845	Vises, G T D.....	921	.....	278, 279
Pole Steps.....	842	Pipe and Conduit Benches, Turn-		Receptacles, Watertight,	
Pole Struts.....	840	buckle.....	923	Benjamin.....	775, 776
Racks, House.....	866	Pipes, Ground, Hubbard.....	839	Sockets, Adjustable, Benjamin...	339
Racks, Spreader.....	865, 866	Pivots, Watthour Meter.....	205	Sockets, Bryant.....	274, 275
Secondary Rack Insulators.....	862	Plaster Drills, Adjustable.....	910	Switches, Potential.....	245
Secondary Racks.....	861-863	Plate, Micanite.....	930	Switches, Synchronizing.....	245
Swaging Tools.....	914	Plate Markings, Name, Marine... 778		Plug and Cord Parts, M-B.....	68
Tamping Tools.....	914	Plates, Bakelite, Bryant.....	350	Plugs, Attachment, Benjamin.....	338
Thimble Adapters.....	854	Bell Push, H & H.....	390	Attachment, Bryant.....	319
Thimble Clevises.....	861	Blank, Bryant.....	350	Attachment, Hubbell.....	332, 336, 337
Thimbles, Drawn Zinc.....	854	Blank, H & H.....	390	Attachment, Multiple, Hubbell...	335
Thimbles, Lead Thread.....	854	Closing, Trough, Square D.....	403	Attachment, Square D.....	404
Tree Insulators.....	867	Combination, Bryant		Attachment, Wiremold.....	559
Wire Holders.....	866, 867	.....	326-328, 354, 355	Circuit-breaking, Non-watertight,	
Pendants, Luminous, Undark,		Combination, Diamond H.....	378	Arktite.....	615
Bryant.....	287	Combination, H & H.....	391, 392	Circuit-breaking, Watertight,	
Pendent Lighting Fixtures.....	694-696	Conduit Body.....	667	Arktite.....	615
Push Buttons, Edwards.....	125	Corner, Peirce.....	869	Condulet, Type BP 620, 621, 649, 659	
Switches, H & H.....	366	Cover, Outlet Box, Fullman.....	576	Condulet, Type BPA.....	659
Switches, Perkins.....	366, 367	Double Arming, Hubbard.....	857	Condulet, Type BPF.....	658
Units, Street Lighting, Novalux		Elexit.....	340, 341	Condulet, Type BPPA.....	658
.....	759-761, 763	End, Switch, Entrance, Square D		Condulet, Type DP.....	626
Percolator Parts, Coffee, M-B.....	68	End, Switch, Square D.....	404	Condulet, Type RQ.....	619
Sets, Coffee, M-B.....	62-64	Ground, Hubbard.....	839	D. D., Bryant.....	324
Percolators, Coffee, M-B.....	65, 66	Hot, Crawford.....	59	Elexit.....	340, 341
Perkins Rotary Switch Handles...	361	Hub, Conduit, MF Series.....	625	Flashing.....	678
Switch Keys.....	361, 362	Hub, Conduit, Type MK.....	626	Fusless, Bryant.....	439
Switches, Ceiling.....	367	Hub, Conduit, Type RSMP.....	662	Motor, Hubbell.....	336, 337
Switches, Door.....	347	Hub, Conduit, Type RSP.....	662	Multiple, Benjamin.....	338, 339
Switches, Electrolier 345, 346, 357-359		Hub, Conduit, YYP Series... 617, 623			

	Page		Page		Page
Plugs, Multiple, Hemco	339	Porcelain Knobs, Telephone	535	Precision Instruments, Weston	183, 184
Outlet Box, Fullman	576	Lined Sockets, Bryant	274	Preservative Treatments for Wood	
Pull, Benjamin	338	Outlet Box Receptacles, Hubbell	297	Poles	812-815
Receptacle, Chapman, Bryant	323	Outlet Box Receptacles, P & S		Pressure Governors	159
Service Box, Dossert	425		304-306	Switches	159
Service Box, Frankel	427	Outlet Receptacles, Hubbell	296	Primary Cells, Edison	98-101
Socket, Bryant	274, 275	Rack Insulators	535	Cutouts	213
Spark	105, 106	Receptacle Bases, Bryant	281	Priming Saws	918
Switch, Appliance, Bryant	68	Receptacle Bodies, Bryant	320	Private Lighting Outfits	144-146
Switch, Hubbell	335	Receptacle Bodies and Bases, Bryant	320	Projector Bases, Floodlight, Crouse-Hinds	741
Switch, Synchronizing	245	Receptacle Plates, Spartan	321	Brackets, Floodlight, Crouse- Hinds	741
Test, Square D	404	Receptacles, Bryant	321	Lenses, Floodlight, Crouse-Hinds	741
20-ampere Bryant	325	Receptacles, Ceiling, Bryant	285	Projectors, Floodlight, Crouse- Hinds	738-740
Plugs and Receptacles, Bryant	325	Receptacles, Cleat, Bryant	282	Floodlight, Davis	735-737
Circuit-breaking, Arkite	614, 615	Receptacles, Concealed, Bryant	282	Protection Strips, Pole, Hubbard	839
D.D., Bryant	324	Receptacles, Fused, Bryant	283	Protective Cutouts, Motor	158
Marine, R & S	780, 781	Receptacles, Outlet Box, Bryant		Grids, Edwards	110
Outlet Box, Fullman	576		283-285	Hoods, Bell, Edwards	111
R & S	342, 343	Receptacles, P & S	302, 303	Protector A Lamp Guards	681
Plug-stud Connectors, Frankel	426	Receptacles, Removable Ring, Bryant	282	Blocks, Telephone	42, 43
Pneumatic Water Systems, Paul	147-149	Receptacles, Sign, Bryant	283, 285	Gloves, Linemen's	876
Pocket Meters, Sterling	197	Receptacles, Weatherproof, Bryant	285, 286	Mountings, Telephone	43
Pockets, Plier	907	Rings, Hubbell	297	O Lamp Guards	681
Pointed Bars	839	Rosettes, Bryant	314	Protectors, Cable Grip	901
Points, Drill, Diamond	913, 914	Sign Receptacles, Hubbell	297	Telephone	42
Drill, Peirce	914	Sign Receptacles, P & S	307, 308	Wire, Guy, Peirce	841
Drive, Hubbard	839	Socket Bases, Bryant	279	Pull Attachments, Hubbell	292, 293
Poke Bonnet Reflectors, X-Ray	705	Socket Bases, Hubbell	296	Boxes, T & B	573, 574
Pole Balconies, Hubbard	846	Socket Bodies, Bryant	278, 280	Button Control Switches	245
Bands, Hubbard	849	Socket Bodies, Mogul Bryant		Plugs, Benjamin	338
Bands, Peirce	863		286, 287	Pullers, Slack, Matthews	903
Brackets, Peirce	863, 864, 867	Socket Caps, Bryant	278-281	Pulleys, Manila Rope	898-900
Changers	45	Socket Caps, Hubbell	295	Paper, Rockwood	147
Changing Switches, Edwards	111	Sockets, Benjamin	311	Wire Rope	897, 899, 900
Climbers, Linemen's	905	Sockets, Bragdon, Bryant	285	Pulling-in Irons, Hubbard	847
Dating Nails, Hubbard	843	Sockets, Bryant	278, 279	Pumps, Suction, Type K, Paul	147
Derricks, Automobile	882, 883	Sockets, P & S	300, 301, 303	Washer	55
Dinkeys	886	Sockets, Weatherproof, Bryant	285, 286	Punches, Metal Molding, National	557
Extensions, Peirce	856, 857	Switch Sub-bases, Bryant	366	Rail Bonding	789
Fittings, Benjamin	727	Switches, Square D	403	Taper, Rail Bond	787
Jacks, Simplex	890	Tubes	538	Push Button Blocks, Inter-phone	27
Line Construction Rules	828	Two-piece Receptacles, P & S	306	Button Contactors, Bank Pro- tection, Faraday	91
Protection Strips, Hubbard	839	Porcelains, Spark Plug	105, 106	Button Control Stations	161, 162
Seats, Peirce	845	Porch Lights	696	Button Plates, Edwards	124
Setting Machines	878-881	Portable Blowers, Sturtevant	74	Buttons, Compound, Edwards	125
Steps, Hubbard	842	Cord, Duracord	518	Buttons, Directory, Edwards	125
Steps, Peirce	842	Cord, Tirex	518	Buttons, Edwards	123-126
Steps, Wood	832	Heaters, Western Electric	59	Buttons, Elevator, Edwards	126
Struts, Peirce	840	Instruments, Weston	181-188	Buttons, Floor, Edwards	124
Supports	896	Lamp Bases, Esrobert	712	Buttons, Multiple, Edwards	125
Tapes	919	Lamp Cord	520-522	Buttons, Pendant, Edwards	125
Top Brackets, Peirce	855	Lamp Guards	680, 684, 685	Buttons, Watertight, Benjamin	778
Top Fixtures, Hubbard	857	Lamp Stems, Esrobert	712	Buttons, Watertight, Edwards	112, 124
Top Pins, Peirce	855	Lamps, Adjusto-lite	708	Buttons and Bells, Combination, Edwards	107
Trailers	884-886	Lamps, Buss	706	Buttons and Buzzers, Combina- tion, Edwards	107
Poles, Cedar, Red	816, 817	Lamps, Dim-A-Lamp	709	Escutcheons, Flush, Edwards	123, 124
Cedar, White	817, 818	Lamps, Emeralite	709, 710	Switch Plates, Bryant	346, 348, 349
Chestnut	826, 827	Lamps, Esrobert	711, 712	Switch Plates, Diamond H.	377
Cypress	827	Lamps, Greist	708, 709	Switch Plates, H & H	390
Juniper	827	Lamps, Wallace	708	Switches, Diamond H.	377
Pike	896	Lighting Outfits	146	Switches, Flush, Bryant	345
Pine, Yellow, Creosoted	818-826	Magnet Telephone	36	Switches, Flush, Perkins	345-347
Steel, Bates	829	Portables, Matthews	680	Switches, H & H	387, 388
Trolley, Street	809	Watertight, Benjamin	777	Pushers, Pipe, Giant	921
Wood	812-827	Post Hole Shovels	895	Pushes, Foot	125
Porcelain Box Bases, Bryant	314	Hole Spoons	895	Pyrotip Lead Burners	218
Candelabra Adapters, P & S	303	Posts, Binding, Eby	423		
Ceiling Receptacles, Hubbell	296	Binding, Fahnestock	423		
Ceiling Receptacles, P & S	306	Street Lighting, Chicago	751-753		
Clamp Bushings	536	Street Lighting, King	743-749		
Cleat Receptacles, Bryant	282	Potential Plug Switches	245		
Cleat Receptacles, Hubbell	296, 297	Transformers, Weston	188		
Cleat Receptacles, P & S	306, 307	Pothead Compound, Ajax	932		
Cleats	537	Supports, Hubbard	847		
Cleats, Telephone	535	Wire	522		
Concealed, Receptacles, P & S	306	Pots, Fire, C & L	925		
Insulators	532-536	Glue, American Beauty	60		
Insulators, Hewlett	838	Melting	926		
Insulators, High Voltage	835, 836	Power and Light Outfits	144-146		
Insulators, Link Type	838	Power-factor Meters, Weston	192, 195		
Insulators, Strain	834, 837				
Insulators, Suspension	837				
Insulators, Telephone	835				

Q

Queen Reflectors, X-Ray	704
Quick Break Switch Attachments, FA	397
Catch Socket Bases, Hubbell	290
Catch Socket Bodies, Hubbell	289
Catch Socket Caps, Hubbell	290
Catch Sockets, Hubbell	291
Catch Switch Bodies, Hubbell	289, 290

R	Page	Receptacles, Ceiling, Porcelain, P & S.	Page	Reciprocating Switches, H & H.	Page
R & S Bunghole Lamps	684	Ceiling, Pull, Hubbell	306	Recti Bells, Edwards	109, 110
Conduit Elbows	579	Cleat, Candelabra, Bryant	277	Buzzers, Edwards	110
Conduit Tees	577, 579	Cleat, Miniature, Bryant	277	Rectifiers, Battery Charging	102-104
Floor Boxes	577, 578	Cleat, Porcelain, Bryant	232	Red Cedar Poles	816, 817
Floor Outlets	579	Cleat, Porcelain, Hubbell	296, 297	Reducers, Condulet	628
Marine Fittings	779-781	Cleat, Porcelain, P & S	306, 307	Dossert	424
Portable Lamp Guards	684	Cleat, Temporary, Bryant	284	Frankel	426
Receptacles and Plugs	342, 343	Concealed, Porcelain, Bryant	232	Socket	287
Rack Brackets, Secondary, Peirce	862	Concealed, Porcelain, P & S	306	Socket, Mogul, Benjamin	311
Insulators, Porcelain	535	Conduit Box, Bryant	270	Reducing Bushings	544
Knobs, Telephone, Peirce	848	Conduit Box, Hubbell	334, 337	Reel Capacities, Cable	514
Racks, Cable, Peirce	847	Condulet, Type SRH	656	Jacks, Cable	891, 893
House, Peirce	866	Door, Flush, Hubbell	331	Trailers, Cable	884
Knob, Peirce	849	Elexit	340, 341	Reels, Extension, Automatic	685
Secondary, Peirce	861-863	Fixture, Condulet, Type G-II	595	Wire	516, 893, 895, 923
Spreader, Peirce	865, 866	Flush, Chapman, Bryant	323	Wire, Magnet	525
Racks and Hooks, Manhole	873	Flush, D.D., Bryant	324	Reflection Data, Industrial	687-689
Radiators, Portable, Western Electric	59	Flush, Diamond II	329	Reflector Covers, Glass, Benjamin	725
Radio Antenna Insulators	834	Flush, Hubbell	330, 331, 337	Fittings, Benjamin	722
Batteries, Eveready	96	Fused, Porcelain, Bryant	233	Fixtures, Watertight, Benjamin	777
Batteries, Storage	97	Gas-filled Lamp, Bryant	247	Guards, Benjamin	683
Battery Chargers, Fansteel	104	Keyless, Wiremold	559	Guards, Hubbell	682
Clips, Universal	421	Lamp, Attachment Plug, Hubbell	333	Holders, Condulet	655
Dry Batteries, Eveready	97	Lamp, Condulet	598, 653	Sockets, Benjamin	718-722
Frequency Instruments, Weston	197	Lamp, Conduletto	605	Sockets, Bryant	282
Head Sets	50	Lamp, Conduletto, Type G-II	594, 595	Sockets, P & S	308
Storage Batteries, Titan	104	Metal Molding, National	556	Reflectors, Bull's Eye, Benjamin	724
Terminals, Sherman	421	Miniature, Weatherproof, P & S	308	Flat Cone, Benjamin	725
Tube Rejuvenators, Jefferson	122	Mogul, Bryant	287	Floodlight, Crouse-Hinds	740
Radiokits, Nokorode	927	Mogul, Hubbell	298	Hubbell	730
Rail Bond Terminals	788	Mogul, P & S	309	Industrial, Benjamin 718-720, 723, 724	724
Bonding Tools	788-790	Molding, Bryant	283	Industrial, Ben-ox	715
Bonds	782-787	Outlet, P & S	304	Industrial, X-Ray	703
Railway Condulets	658	Outlet, Porcelain, Hubbell	296	Mill, X-Ray	703
Material, Street	790-811	Outlet Box, Porcelain, H & H	299	Outdoor, Benjamin	727-729
Range Switch Sub-bases, Bryant		Outlet Box, Porcelain, Hubbell	297	Parabolite, Benjamin	719
Switch Units, Bryant	363, 364	Outlet Box, Porcelain, P & S	304-306	Sewing Machine, Benjamin	725
Switches, Bryant	362, 363	Outlet Box, Weatherproof, P & S	305	Shade Holder, Benjamin	723, 724
Temperature Controls	59	Plug, Hubbell	334, 335	Shallow Bowl, Benjamin	725
Time Controls	59	Plug, New Wrinkle	255-260	Show Case, Benjamin	707
Ranges, Kitchen, Crawford	57-59	Plug, Porcelain, Bryant	278, 279	Show Window, Benjamin	707, 725
Rapid Fire Drills	914	Plug, Watertight, Benjamin	775, 776	Show Window, X-Ray	703-705
Rawplug Drills	916	Porcelain, Bryant	321	Street Fixture, Novalux	766
Screw Anchors	916	Porcelain, Ceiling, Bryant	285	Threaded, Benjamin	721
Tool Holders	916	Porcelain, Outlet Box, Bryant	283-285	Tubular, Benjamin	707
Rawplugs, Lag Screw	916	Porcelain, P & S	302, 303	Vapor Proof, Benjamin	726
Reamers, Burring, GTD	921	Porcelain, Sign, Bryant	283, 285	X-Ray	703-705
Reamers and Taps, Pipe	921	Porcelain, Weatherproof, Bryant	285, 286	Refractors, Holophane	767
Receivers, Telephone	43	Removable Ring, Porcelain, Bryant	282	Holophane, Highway Lighting	759
Receptacle Adapters, Hubbell	337	Screw Plug, Flush, Bryant	322	Unit	759
Bases, Metal Molding, National	553	Series, Novalux	767	Register Tape Winders	83
Bases, New Wrinkle, Bryant	269, 270	Sign, Candelabra, Bryant	277	Registers, Tally, Hand	923
Bases, Porcelain, Bryant	281, 314	Sign, H & H	299	Tape, Edwards	82, 83
Bases, Wiremold	559	Sign, Miniature, Bryant	277	Regulator Panels, Street Lighting	770, 771
Bodies, Lamp, Bryant	314	Sign, Porcelain, Hubbell	297	Regulators, Heat, Minneapolis	61
Bodies, Plug, Bryant	314	Sign, Porcelain, P & S	307, 308	Reinforcing Links, Hubbard	846
Bodies, Porcelain, Bryant	320	Switch, Synchronizing	245	Straps, Hubbard	846
Bodies, Spartan, Bryant	321	Table, Hubbell	334	Rejuvenators, Tube, Radio, Jefferson	122
Bodies and Bases, Porcelain, Bryant	320	20-ampere, Bryant	325	Relays, Bell, Signal	119
Boxes, Metal Molding, National	553, 554	Two-piece, Porcelain, P & S	306	Dixie	110
Housing Condulets, Type BRY	624	Wall, Hubbell	336, 337	Edwards	108
Housings, Condulet, Type BRG	599	Receptacles and Condulets, Circuit-breaking, Arkite	617	Extension, Telephone	120
Lamps, Flush, Bull's Eye, Bryant	329	Receptacles and Pilot Lamps, Combination, Bryant	329	Fire, Alarm, Edwards	84
Parts, Hubbell	289	Receptacles and Plugs, Bryant	325	Motor Starting	158
Plates, Bryant	322, 323	Receptacles and Plugs, Circuit-breaking, Arkite	614, 615	Transformer	243, 244
Plates, Bull's Eye, Bryant	326	Receptacles and Plugs, D.D., Bryant	324	Remote Control Apparatus, Street Lighting	773
Plates, Chapman, Bryant	323	Receptacles and Plugs, Marine, R & S	780, 781	Control Switches, Diamond H	378, 379
Plates, D.D., Bryant	324	Receptacles and Plugs, Outlet Box, Fullman	576	Removable Ring Sockets, Bryant	271
Plates, H & H	391	Receptacles and Plugs, R & S	342, 343	Renewable Fuses, Enclosed, Economy	434, 435
Plates, Hubbell	330, 331	Receptacles and Switches, Bryant	329	Resin Core Solder	926
Plates, Porcelain, Spartan	321	Receptacles and Switches, Combination, Bryant	320	Resistance Wire	526
Plugs, Chapman, Bryant	323	Receptacles and Switches, Marine, R & S	779, 781	Resistances, Bell, Edwards	112
Straps, Outlet Box, Fullman	576			Bell, Faraday	117
Receptacles, Attachment Plug, Square D	404			Condulet, Type LIIRM	664
Bull's Eye, Flush, Bryant	329			Resistor Motor Starters	157
Candelabra, Hubbell	295			Units	179, 180
Ceiling, Porcelain, Hubbell	296			Resistors, Cage Type	176
				Starting Motor	164, 166
				Rests, Log, Lamp Trimmers	842

	Page		Page		Page
Reversible Trailers, Highway	888, 889	Saws, Hand	917	Shields, Bolt Expansion	915
Reversing Switches, Motor	173	Keyhole	918	Candle, Glass	700
Revolution Counters, Veeder	923, 924	Panel	917	Crossarm, Linemen's	876
Rheostats, Motor Starting	150, 151	Priming	918	Duct, Cable, Hubbard	847
Speed Regulating, Motor	157	Rip	917	Expansion	915
Starting, Motor	178	Scoop Reflectors, X-ray	703	Expansion, Metal Molding, National	554
Ridge Iron Brackets, Peirce	856	Scoopette Reflectors, X-ray	705	Linemen's	876
Irons, Hubbard	852	Screw Anchors, Rawlplug	916	Shims, Guy, Hubbard	841
Rigid Steel Conduit	542	Brackets, Peirce	868	Shock Absorber Aligners Benjamin	722
Ringers, Telephone	43	Cover Condulets, Connection		Absorber Crossarms, Benjamin	722
Ringed Generators, Magneto	45	Block	641, 642	Absorber Suspension Fittings, Benjamin	722
Sets, Motor Generator, Magneto	45	Extensions, Switch, H & H	386	Shoes, Linemen's	876
Rings, Bridle	875	Pins, Peirce	852	Shops, Speedway	131
Cable	875	Screwdriver Bits	910	Shovels	895
Chain Supporting, Ben-ox	715	Chucks, Ratchet	910	Show Window Flood Lights, X-Ray	706
Grounding, Condulet	617	Drills, Ratchet	910	Window Reflectors, Benjamin	707, 725
Outlet Box, Fullman	576	Screwdrivers, Ratchet	911, 912	Window Reflectors, X-Ray	703-705
Porcelain, Hubbell	297	Speedway	130	Window Spotlights, X-Ray	706
Seating, Elexit	341	Screw-it Insulators, Split	536	Showcase Fixtures, Benjamin	707, 708
Riot Bells, Edwards	110	Screws, Hanger, Hubbard	843	Reflectors, X-Ray	705
Rip Saws	917	Lag, Hubbard	843	Shunts, Millivoltmeter, Weston	181
Rock Guy Anchors, Hubbard	840	Wood	917	Shurlok Sockets, P & S	300
Rockwood Paper Pulleys	147	Searchlight Projectors, Davis	736	Shutters, Meter, Square D	406
Rods, Anchor, Hubbard	840	Searchlights, Eveready	95	Sign Flashers	678, 679
Fibre	928	Seating Rings, Elexit	341	Lighting Transformers	216
Ground, Hubbard	840	Seats, Pole, Peirce	845	Pliers, Metal, H & H	299
Rollers, Cable	875	Seco Switches Meter Service	412	Pliers, Metal, Hubbell	297
Rolls, Tool	909	Secondary Rack Brackets, Peirce	862	Receptacles, Candelabra, Bryant	277
Roof Drills, Mine	808	Rack Insulators, Peirce	862	Receptacles, H & H	299
Fastenings, Trolley	794, 795	Racks, Peirce	861-863	Receptacles, Miniature, Bryant	277
Rosette Bases, Condulet, Type GS	639	Section Insulators, Trolley	806, 807	Receptacles, Porcelain, Bryant	283, 285
Bodies, Bryant	314	Switches, Trolley	807	Receptacles, Porcelain, Hubbell	297
Bodies, New Wrinkle, Bryant	267	Series Lamps, Carbon	675	Receptacles, Porcelain, P & S	307, 308
Caps, K-W, Bryant	281	Plug Cutouts	767	Signal Bell Relays	119
Condulets, Type G	639	Regulator Panels, Street Lighting		Bells	118
Condulets, Type H	639	Sockets, Novalux	770, 771	Brackets, McKean	861
Rosettes, Ceiling, Cab	633-639	Transformers, Street Lighting	767	Call Systems	119
Cord, Conduletto, Type G-H	595	Service Entrance Condulets, Type	769-773	Gongs, Faraday	113, 114, 116
Fixture, Conduletto, Type G-H	594	FF	621	Lamps, Bank Protection, Faraday	91
Metal Molding, National	554, 557	Switch Hoods, D & W	438	Systems, Silent Call, Bryant	79
P & S	315, 316	Switches, D & W	438	Systems, Silent Call, Deveau	79
Porcelain, Bryant	314	Switches, FA	399	Wire, Habirshaw	514
Wiremold	559	Set Screw Connectors, Sherman	420	Signalite Current Taps, Hubbell	334
Rotary Switch Handles, Perkins	361	Sets, Battery, Patterson	98, 99	Signals, Warning	120
Switch Plates, Bryant	350	Double Arming, Hubbard	858	Silent Call Signal Systems	79
Switch Plates, H & H	389	Hand, Telephone	41, 42	Silk, Oiled	931
Switches, Diamond H	378	Head, Telephone	50	Silk Tape	928
Switches, Flush, H & H	389	Percolator, Coffee, M-B	62-64	Simplex Jacks, Bridge	892
Switches, Flush, Perkins	350	Ringling, Motor Generator, Magneto	45	Jacks, Cable Reel	891
Rubber Casing, Attachment Plug	332	Testing, Telephone	44	Jacks, Car	892
Covered Cable, Habirshaw	509, 510	Setting Machines, Pole	878-881	Jacks, Derrick	891
Covered Wire, Habirshaw	509, 510	Set-up Boxes, Union	569	Jacks, Emergency	891
Gloves, Linemen's	876	Sewing Machine Motors, Hamilton		Jacks, Pole	890
Switchboard Matting	929	Beach	69	Jacks, Track	892
Tape	927	Machine Reflectors, Benjamin	725	Jacks, Truck	891
Rules, Code, National	933-953	Machines, Console Type	57	Jacks, Utility	892
Construction, Pole Line	828	Machines, Portable	56, 57	Single-stroke Bells, Signal	118
		Shade Fixtures, Condulet, Type		Gongs, Faraday	114
		GS	598	Siren Control Switches	120, 121
Saddles, Crossarm, Peirce	855	Holder Reflectors, Benjamin	723, 724	Sirens, Federal	120
Safety Catches, Switch	223	Holders, Benjamin	310	Sizes of Conduit	542, 543
Chairs, Linemen's	875	Holders, Ben-ox	716	Skeleton Bells, Edwards	108
Harness, Linemen's	907	Holders, Bryant	312, 313	Bells, Ekla	115
Portable Lamp Guards	684	Holders, Hubbard	313	Bells, Faraday	115
Straps, Linemen's	906-908	Shades, Brass, Esrobert	712	Skids and Sheaves, Manhole	873
Switches, Acco	412	Glass	699-702	Slack Pullers, Matthews	903
Switches, Bull Dog	407-411	Greenalite, Esrobert	712	Slate and Marble Drills, Speedway	130
Switches, Seco	412	Hubbell	730	Sleeve Bushings, Condulet, Type	
Switches, Square D	400-407	Lamp Guard, Matthews	680	GTXB	645
Switches, Condulet, Type MK	626	Shaving Tools	839	Connectors	874
Switches, Condulet, Type MKS	626	Shears, Electricians	913	Twisters, Klein's	902
Switches, Noark	413-416	Metal Molding, National	557	Sleeves, Condulet, Type GTXS	645
Sal Ammoniac, Soldering	926	Sheath Splitting Knives, Cable	897	Dossert	425
Salts, Soldering	926	Sheaves and Skids, Manhole	873	Paper	932
Sampson Access Fixtures	732-734	Sheets, Fibre	929	Splicing, Cable	874
Samson Carbon Batteries	105	Shells, Socket, Bryant	271	Splicing, Trolley	802
San-Fer-Ann Annunciators	75	Sheraduct Conduit	542	Sleeving, Cotton	928
Saw Blades, Hack	913	Sherman Connectors, Fixture	419	Slicks	896
Frames, Hack	913	Connectors, Set Screw	420	Snap Switches, Diamond H	375, 376
Saws, Cable	918	Connectors, Wire	419	Switches, H & H	379-384
Compass	917	Radio Terminals	421	Switches, Perkins	356-362
Coping	918	Soldering Lugs	418, 419		
Crosscut	918				

S

	Page		Page		Page
Snatch Blocks, Manila Rope	899, 900	Sockets, High-heat, Bryant	275	Special Transformers	216
Blocks, Wire Rope	897, 899	Insulated Chain, Hubbell	288	Speco Soldering Paste	926
Socket Attachments, Hubbell	292, 293	Lamp Base Attachment, Hubbell	292	Soldering Salts	926
Balls, Bryant	277	Left-hand Screw Shell, Bryant	248	Soldering Sticks	926
Bases, Bracket, Bryant	315	Locking, Benjamin	722	Speed Indicators, Starrett	924
Bases, K-W, Bryant	281	Metal Key, Bryant	247	Regulating Rheostats, Motor	157
Bases, New Wrinkle	252-254, 258-260, 269, 270	Metal Molding, National	554, 556, 557	Spherical Insulators, Strain	802
Bases, Porcelain, Bryant	279	Mica, P & S	310	Splicers, Wire, Blackburn	873
Bases, Porcelain, Hubbell	296	Miniature, Bryant	277	Splicing Clamps, Klein's	901, 902
Bases, Quick Catch, Hubbell	290	Miniature, Hubbell	295	Ears, Trolley	801
Bodies, Candle, Bryant	276	Mogul, Benjamin	311	Links, Bryant	277
Bodies, Ediswan, Bayonet, Bryant	275	Mogul, Bryant	287	Links, Hubbell	293
Bodies, Electrolier, Hubbell	291, 292	Mogul, Hubbell	298	Sleeves, Cable	874
Bodies, Hubbell, Porcelain	295	Mogul, P & S	309	Sleeves, Trolley	802
Bodies, K-W, Bryant	281	Multiple, Bryant	270, 274, 275	Tape	927
Bodies, Mogul, P & S	309	Multiple, Novalux	767	Split Insulators, Porcelain	536
Bodies, Mogul, Porcelain, Bryant	286, 287	New Wrinkle, Bryant	249-250, 270	Splitting Knives, Sheath, Cable	897
Bodies, New Wrinkle	249-260, 267	Plug, Adjustable, Benjamin	339	Spool Cord Adjusters	685
Bodies, Porcelain, Bryant	278, 280	Plug, Bryant	274, 275	Spools, Wire, Magnet	525
Bodies, Quick Catch, Hubbell	289	Porcelain, Benjamin	311	Spoons, Post Hole	895
Bodies, Wrinklet	272, 273	Porcelain, Bragdon, Bryant	235	Spotlights, Show Window, X-Ray	706
Cap Wrenches, Bryant	277	Porcelain, Bryant	278, 279	Spreader Brackets, Peirce	865, 866
Caps, Electrolier, Hubbell	292	Porcelain, P & S	300, 301, 303	Racks, Peirce	865, 866
Caps, Mogul, Bryant	287	Porcelain, Weatherproof, Bryant	285, 286	Springs, Burglar Alarm, Edwards	127
Caps, New Wrinkle	249-260, 268	Porcelain Lined, Bryant	274	Spuds, Digging	896
Caps, Porcelain, Bryant	278-281	Pull Chain, Benjamin	310	Spurs, Linemen's	905
Caps, Porcelain, Hubbell	295	Quick Catch, Hubbell	291	Square D Attachment Plug Receptacles	404
Caps, Quick Catch, Hubbell	290	Reflector, Benjamin	718-722	Attachment Plugs	404
Caps, Side Outlet, Bryant	248	Reflector, Bryant	282	Cabinet Connectors	402
Caps, Wrinklet	272, 273	Reflector, P & S	308	Enclosed Cutouts	404
Chain, Hubbell	293	Removable Push Button, Bryant	247	Fuse Blocks	404
Cord, Bryant	247	Removable Ring, Bryant	271	Locking Plates	406
Cord, Hubbell	293	Series, Novalux	767	Meter End Walls	406
Extension Eyelets, Hubbell	288	Shurlok, P & S	300	Meter Shutters	406
Extensions, Benjamin	311	Streethood, Bryant	286	Meter Trims	405
Finishes, Special, Hubbell	288	Switchboard, Bryant	271	Switch End Plates	404
Handles, Bryant	685	Temporary, Bryant	284	Switch End Plates, Entrance	402
Hickeys, Bryant	276	Test, Square D	404	Switch End Walls	405
Lamp Grips, Bryant	248	Titan, Bryant	274	Switch Plates, Locking	404
Locking Keys, Bryant	248	Unassembled, Bryant	248	Switch Troughs	404
Parts, Bryant, Brass Shell	271	Wall, Bryant	271	Switch Wiring Diagrams	407
Parts, Hubbell	289	Wall, Hubbell	292	Switches, Compensator and Meter Test	402
Plugs, Bryant	274, 275	Weatherproof, Benjamin	310	Switches, Entrance	404
Reducers	237	Weatherproof, P & S	309, 310	Switches, Meter Service	402, 403, 405
Reducers, Mogul, Benjamin	311	Wrinklet, Bryant	270, 272	Switches, Meter Test	401
Suspension Cleats, P & S	310	Solder	926	Switches, Motor Starting	401
Tops, Benjamin	311	Soldering Coppers	926	Switches, Porcelain	403
Wrenches, P & S	308	Coppers, Trolley	808	Switches, Safety	400-407
Wrenches, Radio	917	Irons, American Beauty	60	Switches and Distribution Boxes	403
Yokes, Mogul, Bryant	287	Lugs, FA	420	Test Plugs	404
Sockets, Aluminum, Bryant	274	Lugs, Sherman	418, 419	Test Sockets	404
Aluminum, P & S	310	Paste	926	Trough Closing Plates	403
Angle, Bryant	274	Salts	926	Stack Lamp Condulets	653
Art Key, Bryant	247	Sticks	926	Stage Cable, Flexible	522
Bayonet Shell, Bryant	271	Solenoid Bells, Edwards	111	Connectors, Mesco	422
Ben-ox	715	Spark Plug Cable, Automobile	519	Standard Wiring Symbols	954
Bracket, Bryant	274, 315	Plug Cores	105, 106	Standards, Concrete, Street Lighting, Chicago	751-753
Bracket, P & S	309	Plugs	105, 106	Street Lighting, King	743-749
Brylock, Bryant	248	Spartan Attachment Plug Caps	317, 318	Stands, Desk, Telephone	40
Candelabra, Bryant	277	Attachment Plugs	319	Drill, Speedway	129, 130
Candelabra, Hubbell	295	Cord Connector Bodies	318, 319	Stands and Pipe Benders, Vise, Portable	922
Candle, Bryant	275, 276	Cord Connectors	319	Staples, Insulated, Blake	546
Candle, H & H	299	Current Tap Bodies	319	Starters, Motor, Automatic	168
Candle, Hubbell	294	Current Taps	281	Motor, Resistor	157
Candle, P & S	303	Duplex Adapters	319	Starting Cable, Automobile	519
Composition, Weatherproof, Bryant	285, 286	Edison Adapter Bodies	318	Cable, Automobile, Habirshaw	515
Composition, Weatherproof, Hubbell	296	Pilot Caps	318	Compensators, Motor	151-154, 174-177
Covered Base, Bryant	270	Plug Receptacle Bodies	255-260	Resistors, Motor	164, 166
Current Tap, Hubbell	292	Receptacle Bodies	314, 320, 321	Rheostats, Motor	150, 151, 178
Decorative, Bryant	277, 284	Porcelain	320	Switches, Motor	156
Dim-A-Lite	312	Receptacle Plates	321, 322	Stations, Battery, Watchmen's	93
Electrolier, Bryant	274	Receptacles, Porcelain	321	Control, Push Button	161, 162
Electrolier, Hubbell	291	Receptacles and Switches	329	Magneto, Watchmen's	93
Extension Guide, Bryant	247	Socket Bodies, Bryant	280	Pay, Telephone	36
Extra Long Chain, Bryant	247	Spartan to Edison Adapters	318	Steam Tight Fixtures, R & S	779, 780
Extra Long Key, Bryant	247	Speakers, Loud	51	Steel Cabinets, Columbia	440-445
Extra Long Key, Hubbell	288	Special Finishes, Bryant	351	Conduit, Rigid	542
Flat Pan, Bryant	277	Finishes, Hubbell	374	Crossarms, Hubbard	846, 856
Gas-filled Lamp, Bryant	247	Plates, Bryant	353	Poles, Bates	829
		Plates, Hubbell	374		

	Page
Steel Strand, Guy Wire.....	531
Stems, Fixture, Benjamin.....	729
Lamp, Portable, Estrobert.....	712
Stops, Pole, Hubbard.....	842
Pole, Peirce.....	842
Pole, Wood.....	832
Sterling Pocket Meters.....	197
Sticka Friction Tape.....	927
Sticks, Soldering.....	926
Stillson Pattern Wrenches.....	912
Stirrups, Elexit.....	340, 341
Stocks, Bit.....	909
Stocks and Dies, Pipe, Beaver.....	920
Pipe, Beaverette.....	920
Pipe, Trio.....	920
Stops, Switch.....	223
Storage Batteries.....	144
Batteries, Titan.....	104
Radio Batteries.....	97
Stove Parts, Table, M-B.....	68
Wire, Deltabeston.....	523
Stoves, Disc, M-B.....	67
Glow, M-B.....	67
Kitchen, Crawford.....	57-59
Table, M-B.....	67
Strain Clamps, Trolley.....	808
Ears, Trolley.....	800
Insulator Clevises, Hubbard.....	860, 861
Insulators, Blackburn.....	873
Insulators, Globe.....	802
Insulators, Porcelain.....	834, 837
Insulators, Spherical.....	802
Insulators, Wood.....	802
Plates, Hubbard.....	841
Plates, Trolley.....	800
Relief Bushings, Cord, Benjamin.....	311
Yokes, Hubbard.....	859
Strand, Steel, Guy Wire.....	531
Straps, Climber.....	905
Conduit, Hubbard.....	847
Conduit Box, P & S.....	305
Crossarm, Peirce.....	852, 869
Dead Ending, Peirce.....	863
Jack.....	908
Metal Molding, National.....	554, 555
Receptacle, Outlet Box, Fullman.....	576
Reinforcing, Hubbard.....	846
Safety, Linemen's.....	906-908
Supporting, Wiremold.....	558
Street Car Bells, Edwards.....	108
Car Buzzers, Edwards.....	108
Fixture Sockets, Novalux.....	767
Lighting Ball Globes.....	753
Lighting Cable, Habirshaw.....	512
Lighting Fixtures, Chicago.....	751-753
Lighting Fixtures, King.....	743-750
Lighting Fixtures, Novalux.....	754-767
Lighting Lightening Arresters.....	219
Lighting Regulator Panels.....	770, 771
Lighting Remote Control Apparatus.....	773
Lighting Transformers.....	769-773
Railway Material.....	790-811
Railway Telephones.....	39
Trolley Poles.....	809
Streethood Sockets, Bryant.....	286
Stringing Blocks, Cable.....	900
Strip, Fuse, Buss.....	439
Strips, Metal Molding, National.....	554
Protection, Pole, Hubbard.....	839
Strips and Hooks, Manhole.....	873
Struts, Pole, Peirce.....	840
Stubbing Washers, Hubbard.....	843
Stud Connectors, Dossert.....	424
Connectors, Frankel.....	426
Students' Galvanometers, Weston.....	193
Studs, Fixture, Macallen.....	735
Fixture, National.....	546
Sturtevant Portable Blowers.....	74
Sub-bases, Switch, Porcelain, Bryant.....	366
Switch, Range, Bryant.....	363, 364
Submarine Cable, Habirshaw.....	514

	Page
Subway Transformers.....	212
Suction Pumps, Type K Paul.....	147
Sweepers, Western Electric.....	54
Sunbeam Lamps, Mazda.....	669-675
Lamps, Mazda, All Frosted.....	670, 671
Lamps, Mazda, Colored.....	672
Lamps, Mazda, Country Home Lighting.....	675
Lamps, Mazda, Daylight.....	671
Lamps, Mazda, Decorative.....	671
Lamps, Mazda, Flood-lighting.....	673
Lamps, Mazda, Inside Frosted.....	670
Lamps, Mazda, Mill Type.....	670, 672
Lamps, Mazda, Mine Lighting.....	675
Lamps, Mazda, Projection.....	673
Lamps, Mazda, Series.....	674, 675
Lamps, Mazda, Sign Lighting.....	672
Lamps, Mazda, Special Lighting.....	670
Lamps, Mazda, Street Railway.....	673
Lamps, Mazda, Train Lighting.....	674
Lamps, Mazda, Tubular.....	671
Lamps, Mazda, White.....	671
Sunlight Projectors, Davis.....	735
Supporting Clips, Wiremold.....	553
Straps, Wiremold.....	558
Supports, Insulating.....	225, 226
Insulator, Clamp.....	226
Insulator, Universal.....	531
Pole.....	896
Pothead, Hubbard.....	847
Surface Switches, Diamond H.....	375, 376
Switches, H & H.....	379-384
Switches, Perkins.....	356-362
Switches, Toggle, Hubbell.....	373
Surveyors' Chain Tapes.....	919, 920
Suspension Arms, Trolley.....	793
Bodies, Trolley.....	792
Cleats, Socket, P & S.....	310
Fittings, Benjamin.....	727
Fittings, Shock Absorber Benjamin.....	722
Insulator Brackets, Hubbard.....	860
Insulators, Arc Lamp, Peirce.....	870
Insulators, Porcelain.....	837
Suspensions, Mine.....	797
Trolley.....	791-798
Swaging Tools, Peirce.....	914
Sweepers, Suction, Western Electric.....	54
Switch Attachments, Quick Break, FA.....	397
Bases, New Wrinkle.....	258-260, 264-266
Blades, Matthews.....	215
Bodies, New Wrinkle.....	255-268
Bodies, Quick Catch, Hubbell.....	289, 290
Bodies, Wrinklet.....	272, 273
Box Dimensions.....	445
Boxes, Columbia.....	440-445
Boxes, Conduit.....	567
Boxes, Conduit, Gem.....	571, 572
Boxes, Conduit, National.....	571
Boxes, Conduit, Union.....	572, 573
Boxes, Metal Molding, National.....	553, 554
Boxes, Wiremold.....	560
Buttons, Luminous, Bryant.....	348
Caps, New Wrinkle.....	255-266
Caps, Wrinklet.....	272
Condulets, Mine Signal.....	656
Condulets, Motor Starting, Type MK.....	626
Condulets, Toggle.....	657
Covers, Condulet, Type FS.....	600, 601, 603
Covers, Surface, Bryant.....	359
End Plates, Entrance, Square D.....	402
End Plates, Square D.....	404
End Walls, Noark.....	414
End Walls, Square D.....	405
Handles, FA.....	397
Handles, H & H.....	386
Handles, Luminous, Bryant.....	348
Handles, Rotary, Perkins.....	361

	Page
Switch Hooks.....	223
Housings, Condulet, Type BRD.....	601
Keys, Bryant.....	361, 362
Keys, H & H.....	386
Lock Attachments, H & H.....	386
Mats, Wood.....	376
Plates, Locking, Square D.....	404
Plates, Push, Bryant.....	346, 348, 349
Plates, Push, Diamond H.....	377
Plates, Push, H & H.....	390
Plates, Rotary, Bryant.....	350
Plates, Rotary, H & H.....	389
Plates, Special, H & H.....	390
Plates, Toggle, Hubbell.....	372
Plates, Tringle, Bryant.....	348
Plates, Tumbler, Bryant.....	348, 349
Plates, Tumbler, H & H.....	387
Plugs, Appliance, Bryant.....	68
Plugs, Hubbell.....	335
Safety Catches.....	223
Screw Extensions, H & H.....	386
Stops.....	223
Sub-bases, Porcelain, Bryant.....	366
Sub-bases, Range, Bryant.....	363, 364
Troughs, Square D.....	404
Units, Range, Bryant.....	363, 364
Wiring Diagrams, Bryant.....	370-372
Wiring Diagrams, Noark.....	415
Wiring Diagrams, Square.....	407
Switchboard Instruments, Weston.....	189-197
Matting, Rubber.....	929
Sockets, Bryant.....	271
Switchboards, Light and Power.....	143
Telephone.....	27-30
Switches, Appliance, Toggle, Hubbell.....	373
Barrier, H & H.....	384, 385
Battery, Edwards.....	125
Battery, Toggle, Hubbell.....	373
Battery, Trumbull.....	392
Booth, Telephone.....	37
Burglar Alarm, Edwards.....	127
Canopy, Bryant.....	364, 365
Canopy, P & S.....	364
Ceiling, Hubbell.....	291
Ceiling, Perkins.....	367
Compensator, Bull Dog.....	410
Condulet, Safety, Type MKS.....	626
Control, Pull Button.....	245
Disconnecting.....	222-225
Disconnecting, Matthews.....	215
Door, Diamond H.....	378
Door, Edwards.....	364
Door, H & H.....	388
Door, Perkins.....	347
Drum, Motor.....	162-166
Electric Railway, H & H.....	385
Electrolier, Diamond H.....	375
Electrolier, H & H.....	350-382, 388
Electrolier, Perkins.....	345, 346, 357-359
Enclosed, Acco.....	412
Enclosed, Bull Dog.....	407-411
Enclosed, Safety, Noark.....	413-416
Enclosed, Seco.....	412
Enclosed, Square D.....	400-407
Entrance, Fuse Plug, Bryant.....	428
Entrance, Square D.....	404
Expulsion, Perkins.....	360, 361
Externally Operated, Acco.....	412
Externally Operated, Bull Dog.....	407-411
Externally Operated, Noark.....	413-416
Externally Operated, Seco.....	412
Externally Operated, Square D.....	400-407
Fan Motor, Perkins.....	357
Feed-through, Perkins.....	366, 367
Fixture, Levolver.....	364
Float.....	160
Flush, Toggle, Hubbell.....	372
Foot, Bank Hold-up Alarm, Edwards.....	84
Fuse, Matthews.....	215

	Page
Switches, Gas Engine, Trumbull.....	392
Headlight, Locomotive.....	630-633
Heater, Diamond H.....	376
Heater, H & H.....	382, 383
Heater, Perkins.....	362
Knife, Condulet, Type YKK.....	627
Knife, FA.....	393-399
Magnetic.....	167-173
Marine, R & S.....	780
Metal Molding, National.....	556, 557
Meter Service, Acco.....	412
Meter Service, Noark.....	413-416
Meter Service, Seco.....	412
Meter Service, Square D #02, 403, 405	405
Momentary Contact, Diamond H.....	377
Momentary Contact, H & H.....	388
Motor Starting.....	156
Motor Starting, Bull Dog.....	409
Motor Starting, Square D.....	401
Panel, Bryant.....	428
Panel, Perkins.....	368, 369
Panelboard, Perkins.....	346
Paragon, Perkins.....	345
Pendent, H & H.....	366
Pendent, Perkins.....	366, 367
Plug, Potential.....	245
Plug, Synchronizing.....	245
Pole Changing, Edwards.....	111
Porcelain, Square D.....	403
Pressure.....	159
Pull, New Wrinkle.....	255-266
Push, Diamond H.....	377
Push, Flush, Bryant.....	345
Push, Flush, Perkins.....	345-347
Push, H & H.....	387, 388
Range, Bryant.....	362, 363
Reciprocating, H & H.....	383
Remote Control, Diamond H.....	378, 379
Reversing, Motor.....	173
Rotary, Diamond H.....	378
Rotary, Flush, H & H.....	389
Rotary, Flush, Perkins.....	350
Safety, Acco.....	412
Safety, Bull Dog.....	407-411
Safety, Condulet, Type MK.....	626
Safety, Noark.....	413-416
Safety, Seco.....	412
Safety, Square D.....	400-407
Service, D & W.....	438
Service, FA.....	399
Siren Control.....	120, 121
Surface, Diamond H.....	375, 376
Surface, H & H.....	379-384
Surface, Perkins.....	356-362
Surface, Toggle, Hubbell.....	373
Telephone, Trumbull.....	392
Test, Meter, Square D.....	401
Time, Anderson.....	416
Time, Tork.....	417
Toggle, Diamond H.....	377
Tumbler, Flush, Bryant.....	347
Tumbler, H & H.....	386, 387
Tumbler, Surface, Bryant.....	356
Tumbler, Tringle, Bryant.....	348
Vacuum.....	159
Wall, Perkins.....	367
Watertight, Benjamin.....	776, 779
Wrinklet, Bryant.....	272
Switches and Distribution Boxes, Square D.....	403
Switches and Receptacles Bryant.....	329
Switches and Receptacles, Combin- ation, Bryant.....	320
Switches and Receptacles Marine, R & S.....	779, 781
Symbols, Wiring, Standard.....	954
Synchronizing Plug Switches.....	245
Synchrosopes, Weston.....	193
Systems, Alarm, Fire, Edwards.....	80-84
Alarm, Hold-up, Bank, Edwards.....	84
Bank Protection, Faraday.....	91, 92
Call, Signal.....	119
Fire Alarm, Faraday.....	85-90

	Page
Systems, Inter-phone.....	2-27
Signal, Silent Call.....	79
Water, Paul.....	147-149

T

T & B Cable Boxes.....	55C
Conduit Connectors.....	550
Conduit Couplings.....	550
Conduit Elbows.....	579
Conduit Floor Couplings.....	579
Conduit Hangers.....	545
Conduit Tees.....	579
Floor Boxes, Watertight.....	574
Junction Boxes.....	573, 574
Loom Boxes.....	550
Weatherproof Boxes.....	573, 574
Table Clamps, Edwards.....	125
Stoves, M-B.....	67, 68
Taps, Triple, Hubbell.....	334
Tables, Metric.....	955
Wiring.....	962-964
Wiring, Motor.....	960
Tach-Lite Plugs, Hemco.....	339
Tackle Blocks, Manila Rope.....	898, 899
Blocks, Wire Rope.....	900
Take-up Reels.....	893
Tally Registers, Hand.....	923
Tamping Bars.....	896
Tools, Peirce.....	914
Tank Indicators, Patterson.....	94
Tap Caps, Current, Hubbell.....	333
Tape, Cotton.....	928
Fish.....	544
Friction.....	927
Hydroproof.....	927
Linen.....	928
Oiled Cloth.....	928
Rubber.....	927
Silk.....	928
Splicing.....	927
Tape Registers, Edwards.....	82, 83
Winders, Register.....	83
Taper Punches, Rail Bond.....	787
Tapes, Chain, Surveyors'.....	919, 920
Measuring.....	919, 920
Pole.....	919
Taps, Cable, Dossert.....	424
Cable, Frankel.....	426
Current, Hubbell.....	334, 335
Current, Spartan.....	281
Grounding, Frankel.....	427
Table, Triple, Hubbell.....	334
Taps and Reamers, Pipe.....	921
Te-caps, Hubbell.....	333
Tee-lite Plugs, Hemco.....	339
Tees, Conduit, R & S.....	577, 579
Conduit, T & B.....	579
Floor Box.....	575
Metal Molding, National.....	551, 555
Wiremold.....	559
Telefaults, Woodpecker, Matthews.....	205
Telegraph Augers.....	871
Wire.....	522
Wire, Galvanized.....	531
Telephone Booth Switches.....	37
Booths.....	37, 38
Boxes.....	40
Bracket Bolts, Hubbard.....	848
Bracket Clamps.....	44, 45
Bracket Knobs, Hubbard.....	848
Bracket Mountings.....	44, 45
Brackets.....	44, 45
Brackets, Peirce.....	864
Cable, Lead Covered.....	46-50
Cable Terminals.....	39
Condensers.....	39
Cords.....	40
Corner Brackets, Hubbard.....	848
Counters, Veeder.....	923
Desk Stands.....	40
Distributing Brackets, Hubbard.....	848
Extension Bells.....	40
Extension Relays.....	120

	Page
Telephone Generator Boxes, Mag- neto.....	41
Generators, Magneto.....	41
Hand Sets.....	41, 42
Head Sets.....	50
Jack Condulets.....	655
Jacks.....	42
Outfits, Inter-phone.....	24, 26
Pay Stations.....	36
Plates, H & H.....	390
Protector Blocks.....	42, 43
Protector Mountings.....	43
Protectors.....	42
Receivers.....	43
Ringers.....	43
Switchboards.....	27-30
Switches, Trumbull.....	392
Testing Sets.....	44
Transmitters.....	44
Tubular Fuses.....	40
Wire.....	522
Wire, Galvanized.....	531
Telephones, Apartment, Inter- phone.....	18-26
Central Battery.....	32, 33
Inter-phone.....	2-27
Loud Speaking.....	51
Magneto.....	31, 32
Magneto, Portable.....	36
Mine, Magneto.....	34, 35
Street Railway.....	39
Telescoping Auger Handles, Blackburn.....	872
Tellers' Foot-rail Contactors, Bank Protection, Faraday.....	91
Temperature Controls, Range.....	59
Temporary Cleat Receptacles, Bryant.....	284
Sockets, Bryant.....	284
Tender, Lamp Condulets.....	651, 652
Terminals, Bond, Rail.....	788
Cable, FA.....	420
Cable, Inter-phone.....	46
Cable, Sherman.....	418, 419
Cable, Telephone.....	39
Dossert.....	425
Fuse, FA.....	440
Radio, Sherman.....	421
Wire, Ground, Peirce.....	840
Test Clips, Frankel.....	422
Clips, Universal.....	421
Connectors, Fahnestock.....	423
Plugs, Square D.....	404
Sockets, Square D.....	404
Switches, Meter, Square D.....	401
Testers, Rail Bond.....	789
Battery, Weston.....	182, 196
Voltage, Wigginton.....	404
Testing Instruments, Garage, Weston.....	182
Sets, Telephone.....	44
Thermo-ammeters, Radio Fre- quency, Weston.....	197
Thermocouples, Vacuum.....	52
Thermometer Scales.....	957
Thermostats, Motor Starting.....	158
Thimble Adapters, Peirce.....	854
Clevises, Peirce.....	861
Thimbles, Drawn Zinc, Peirce.....	854
Guy, Hubbard.....	841
Lead Thread, Peirce.....	854
Threaded Fixtures, Benjamin.....	721
Threading Tools, Pipe.....	920
Thumb Switch Portable Lamp Guards.....	684
Time Controls, Range.....	59
Detectors, Watchmen's, Edwards.....	93
Switches, Anderson.....	416
Switches, Tork.....	417
Tirex Cable.....	517
Cord, Portable.....	518
Titan Sockets, Bryant.....	274
Storage Batteries.....	104
Toaster Parts, M-B.....	68

	Page		Page
Toasters, M-B.	66	Trolley Crossings.	805, 806
Meteor.	67	Ears.	798-801
Tobacco Lighters, M-B.	68	Frogs.	803, 804
Toggle Appliance Switches,		Hanger Tongs.	803
Hubbell.	373	Hanger Wrenches.	808, 809
Battery Switches, Hubbell.	373	Harps.	809
Bolts, Metal Molding, National.	555	Insulators.	806-808
Switch Condulets.	657	Poles, Street.	809
Switch Contactors, Bank Protec-		Roof Fastenings.	794, 795
tion, Faraday.	92	Soldering Coppers.	808
Switch Plates, Hubbell.	372	Strain Plates.	800
Switches, Diamond H.	377	Suspensions.	791-798
Switches, Hubbell.	372, 373	Switches, Section.	807
Switches, Watertight, Benjamin.	779	Wheels.	810, 811
Toll Stations, Telephone.	36	Wire, Copper.	530
Tongs, Hanger, Trolley.	808	Wire Hauling Clamps.	808
Tool Bags.	967-909	Trouble Bells, Bank Protection,	
Belts, Linemen's.	906, 908	Faraday.	91
Cases, Linemen's.	905	Bells, Fire Alarm, Faraday.	85-90
Holders, Rawlplug.	916	Troublemens' Blocks.	902
Kits, Linemen's.	907	Trough Closing Plates, Square D.	403
Post Grinders, Speedway.	130	Troughs, Switch, Square D.	404
Rolls.	909	Truck Jacks, Simplex.	891
Sets, Millers Falls.	912	Trumbull Switches, Battery.	392
Tools, Shaving.	839	Switches, Gas Engine.	392
Swaging, Peirce.	914	Switches, Telephone.	392
Tamping, Peirce.	914	Tube Connectors.	874
Tops, Pole, Peirce.	856, 857	Rejuvenators, Radio, Jefferson.	122
Socket, Benjamin.	311	Tubes, Fibre, Vulcanized.	929
Torches, Blow, C & L.	924, 925	Porcelain.	538
Linemen's.	924	Vacuum.	52
Tork Clocks.	417	Tubular Fuses, Telephone.	40
Toy Transformers, Jefferson.	122	Lamp Guards, R & S.	684
Track Drills.	733, 789	Reflectors, Benjamin.	707
Jacks, Simplex.	892	Tumbler Switch Plates, Bryant	
Traffic Lighting Units, Novalux,		Switch Plates, H & H.	348, 349
.	757, 759	Switches, Flush, Bryant.	387
Trailers, Polc.	884-886	Switches, H & H.	386, 387
Reel, Cable.	884	Switches, Surface, Bryant.	356
Reversible, Highway.	888, 889	Switches, Trigle, Bryant.	348
Transformer Bells, Edwards.	109	Tungar Battery Chargers.	102, 103
Bells, Faraday.	113	Turnbuckle Pipe and Conduit	
Buzzers, Edwards.	109	Benches.	923
Connections.	966	Turnbuckles, Hubbard.	849
Cutout Fuse Links.	214	Insulated.	803
Cutouts, Matthews.	215	Twin Plugs, Benjamin.	339
Cutouts, Oil Fuse, D & W.	214	Sockets, Bryant.	274, 275
Relays.	243, 244	Twin-Lite Plugs, Iemco.	339
Switches, Matthews.	215	Twisters, Sleeve, Klein's.	902
Transformers, All-Nite-Lite.	218	Two-piece Receptacles, Porcelain,	
Auto.	216, 217	P & S.	306
Bell Ringing, Edwards.	122	Two-way Plugs, Benjamin.	338, 339
Bell Ringing, Jefferson.	121, 122		
Conduit, Wiring.	216		
Constant Current.	709-773		
Current, Tripping.	242		
Current, Weston.	184, 186		
Distribution.	206-213, 217, 218		
Insulating.	216		
Low Voltage, Jefferson.	122		
Potential, Weston.	188		
Sign Lighting.	216		
Special.	216		
Street Lighting.	769-773		
Subway.	212		
Toy, Jefferson.	122		
Transmitters, Telephone.	44		
Transposition Brackets, Hubbard.	847		
Brackets, Peirce.	848		
Pins.	832		
Treads, Floor, Dixie.	125		
Treatments for Wood Poles, Pre-			
servative.	812-815		
Tree Insulators, Peirce.	867		
Trimmers.	897		
Trigle Switch Plates, Bryant.	348		
Tumbler Switches, Bryant.	348		
Trimmers, Tree.	897		
Trims, Meter, Square D.	405		
Tripping Table Taps, Hubbell.	334		
Tripping Current Transformers.	242		
Trips, Door, Burglar Alarm,			
Edwards.	127		
Trolley Clamps, Strain.	808		
		Universal Insulator Supports.	531
		Test Clips.	421
		Useful Information.	955-966
		Utility Boxes, Metal Molding,	
		National.	552
		Jacks, Simplex.	892
		V	
		Vacuum Cleaners, Western Electric	54
		Cleaners and Blowers, Premier	
		Handy.	50
		Switches.	159
		Thermocouples.	52
		Tubes.	52
		Vaporproof Fixtures, Benjamin	724, 726
		Fixtures, Condulet, Type GS.	598
		Fixtures, R & S.	779
		Varnish, Air-drying.	932
		Baking, Ajax.	931, 932
		Insulating, M. I. C.	931
		Ventilating Fans, Western Electric	
		.	73, 74
		Vertical Braces, Hubbard.	844, 845
		Vestibule Condulets, Car.	656
		Viaduct Fixtures, Benjamin.	724
		Vibrators, Massage, Hamilton	
		Beach.	69
		Victor Tape.	927
		Vise Stands and Pipe Benders,	
		Portable.	922
		Vises, Hand.	912
		Pipe, G T D.	921
		Vitrified Clay Conduit.	539
		Vitriol, Blue.	105
		Voltage Testers, Wigginton.	404
		Voltammeters, Battery Testing,	
		Sterling.	197
		Portable, Weston.	182
		Precision, Weston.	184
		Voltmeters, Battery Testing,	
		Sterling.	197
		Battery Testing, Weston.	182, 196
		Portable, Weston.	181, 183, 184, 187
		Precision, Weston.	183
		Switchboard, Weston.	189-191, 193-196
		Vulcanized Fibre Tubes.	929
		W	
		Waffle Irons, M-B.	66, 67
		Wall Brackets, Adjustable.	731
		Brackets, Peirce.	867, 868
		Fittings, Benjamin.	777
		Fixtures, Watertight, Benjamin.	727
		Lamp Guards, Crescent.	681
		Receptacles, Hubbell.	336, 337
		Sockets, Bryant.	271
		Sockets, Hubbell.	292
		Switches, Perkins.	367
		Wallace Portable Lamps.	708
		Walls, End, Meter, Square D.	406
		End, Switch, Noark.	414
		End, Switch, Square D.	405
		Warning Signals.	120
		Washerpumps.	55
		Washers, Centering, Peirce.	854
		Clothes.	55
		Lock, Peirce.	855
		Round.	844
		Square.	844
		Stubbing, Hubbard.	843
		Washing Machines.	55
		Watchcase Buzzers, Edwards.	107
		Watchmen's Battery Stations.	93
		Clock Paper Dials.	93
		Magneto Stations.	93
		Time Detectors, Edwards.	93
		Water Heaters, Hotvent.	61
		Kettles, M-B.	66
		Systems, Paul.	147-149
		Watertight Bells, Edwards.	112
		Buzzers, Edwards.	112

	Page		Page		Page
Watertight Circuit-breaking Plugs,		Wire, Magnet, Square	525	Wood Crossarms	829-831
Arktite	615	Office, Damp-proof	526	Pins	832
Floor Boxes, T & B	574	Pothead	522	Pole Steps	832
Push Buttons, Edwards	112, 124	Resistance	526	Pole Supports	896
Watt-hour Meters	198-205	Rubber Covered, Habirshaw	509, 510	Poles	812-827
Wattmeter Y-Boxes, Weston	184	Signal, Habirshaw	514	Screws	917
Wattmeters, Portable, Weston		Slow Burning	527, 529	Strain Insulators	802
.....	185, 186, 188	Stove, Deltabeston	523	Switch Mats	376
Switchboard, Weston	191, 192, 194, 195	Telegraph	522	Top Pins, Hubbard	850
Wavers, Hair	61	Telephone	522	Woodpecker Telefaults, Matthews	205
Weatherproof Boxes, T & B	573, 574	Telephone, Galvanized	531	Woodworking Outfits, Speedway ..	131
Miniature Receptacles, P & S	308	Trolley, Copper	530	Wrenches, Anchor	872
Outlet Box Receptacles, P & S	305	Weatherproof	527-530	Cap, Socket, Bryant	277
Sockets, Benjamin	310	Wire Connectors	874	Hanger, Trolley	808, 809
Sockets, P & S	309, 310	Connectors, Dossert	424, 425	Lag Screw	912
Tape	927	Connectors, Frankel	426, 427	Monkey	912
Wire	527-530	Connectors, Mescro	422	Sign Receptacle, Hubbell	297
Webbing, Hope	928	Connectors, Sherman	419	Socket, P & S	308
Wedgnut Cover Condulets	643, 644	Cutters	897	Socket, Radio	917
Weights of Conduit	543	Gauges, Brown & Sharpe	923	Stillson Pattern	912
Welders, Arc, Rail Bonding	790	Hauling Clamps, Trolley	808	Wrinklet Socket Bodies, Bryant ..	273
Western Electric Fans	70-74	Holders, Peirce	866, 867	Socket Caps, Bryant	273
Weston Portable Instruments	181-188	Information	506-509, 959	Sockets, Bryant	270, 272
Precision Instruments	183, 184	Information, Copper	958, 959	Switch Bodies, Bryant	273
Switchboard Instruments	189-197	Measuring Outfits	923	Switches, Bryant	272
Testing Instruments, Garage	182	Meters	923		
Wheels, Trolley	810, 811	Protectors, Guy, Peirce	841	X	
White Cedar Poles	817, 818	Reels	516, 893, 895, 923	X-Ray Color Frames	704
Winches, Automotive	887	Reels, Magnet	525	Curtis Lamp Adapters	706
Winders, Tape, Register	83	Rope Clips, Hubbard	841	Lighting Fixtures	689
Window Outlets, Wiremold	562	Solder	926	Reflectors	703-705
Reflectors, Benjamin	707	Splicers, Blackburn	873	Show Window Flood Lights	706
Reflectors, X-ray	703-705	Terminals, Ground, Peirce	840	Show Window Spotlights	706
Wire, Annunciator	526	Wireless Clusters, Benjamin	729, 730		
Bare, Copper	530	Wiremen's Bit Carriers	909	Y	
Boiler Room, Deltabeston	523	Wiremold Conduit	558	Y-Boxes, Wattmeter, Weston	184
Drop	522	Conduit Fittings	558-562	Y Connectors, Frankel	426
Fixture, Deltabeston	523	Wiring Chart, Conduit	542	Yellow Pine Crossarms	829-831
Fuse, Buss	439	Diagrams, Switch, Bryant	370-372	Pine Poles, Creosoted	818-826
Guy, Galvanized	531	Diagrams, Switch, Noark	415	Yokes, Metal Molding, National ..	553
Headlight, Habirshaw	515	Diagrams, Switch, Square D	407	Socket, Mogul, Bryant	287
High Voltage, Habirshaw	513	Symbols, Standard	954	Strain, Hubbard	859
House, Rubber Covered,		Tables	962-964		
Habirshaw	510	Tables, Motor	960	Z	
Magnet, Deltabeston	524	Wood Brackets	832	Zincs, Battery	105
Magnet, Enameled	525	Cleats, Blake	546		
Magnet, Rectangular	525	Cobs	832		
Magnet, Round	525	Conduit, Creosoted	541		