

RCA
TRANSMISSION LINE EQUIPMENT

PLANNING DATA • UNIVERSAL LINE

CAP • LOCK LINE • FLANGED & UNFLANGED LINE

COAXIAL SWITCHES



About This Catalog

This catalog is a compilation of specification sheets on current RCA Broadcast Systems RF transmission line and related equipment for the TV broadcast plant.

Catalog specification data is also available on the complete RCA broadcast equipment line:

- Cameras and Studio
- TV Tape
- Audio
- AM-FM Radio Transmitters
- VHF and UHF TV Transmitters
- Antennas and Towers

RCA Regional Offices are staffed by sales representatives with extensive broadcasting experience. Let us assist in supplying needed information or in planning your facilities.

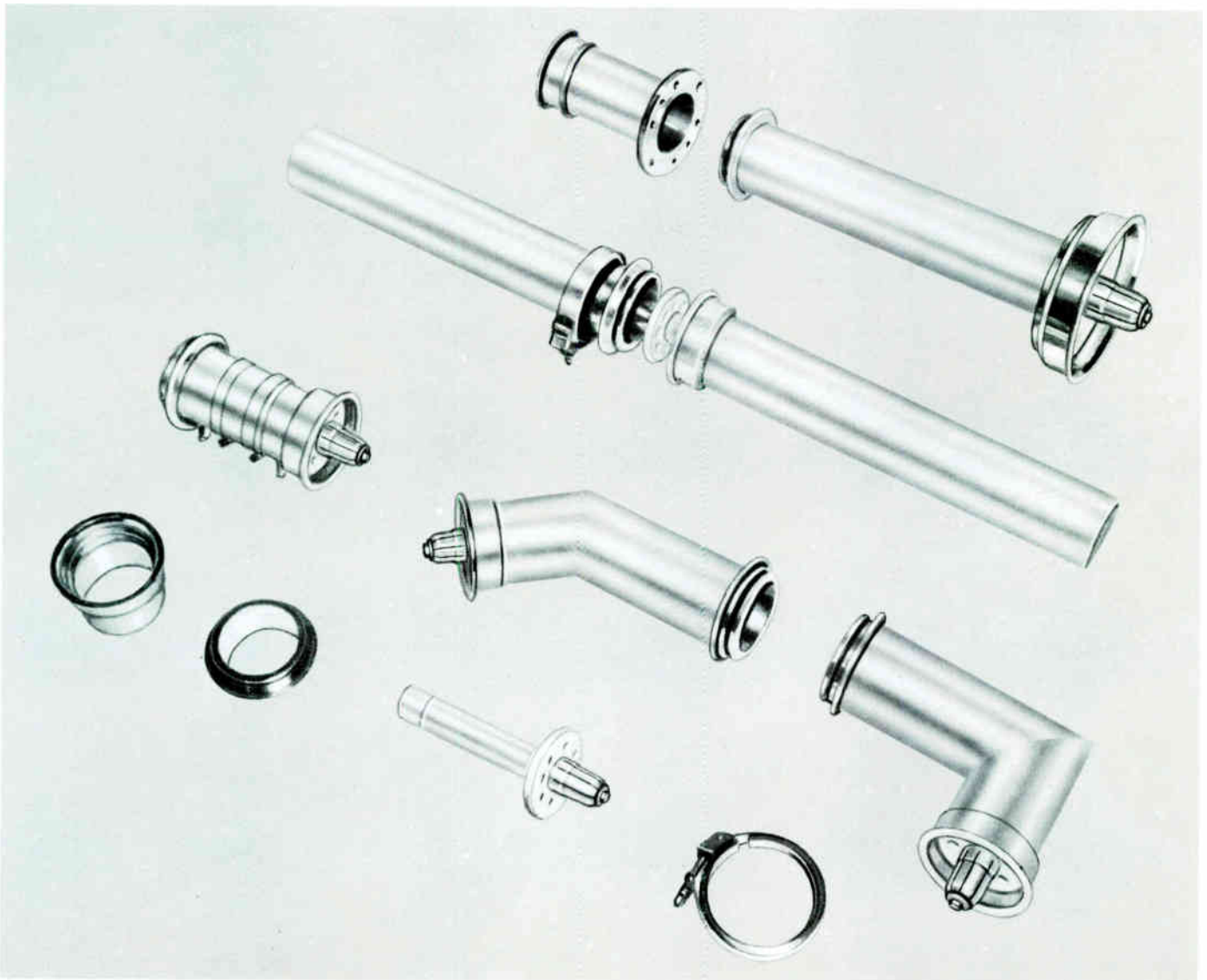
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(Form 771215)

Transmission Line Planning Data

The transmission line system is the sole means for transfer of energy from the transmitter to the antenna. As such it must be efficient and reliable. For most plants, it is not economically feasible to provide redundancy in the transmission line as is sometimes done with the transmitter. Reliability requirements are provided by the excellence of the system. This must be achieved through transmission-line experience, i.e., a knowledge of what to do, not only in the design and fabrication of hardware but in the installation and maintenance as well. RCA pioneered early TV transmission line systems. With those early designs began a continuing program of product improvement related directly to field performance.



There are important quality differences between the brands of transmission line, but all are not readily apparent. Often the superiority of one brand over another is not obvious until after the product has served for a time without failure. To find and correct all the factors that affect the life and performance of transmission line components takes long use, much investigation and many design changes. Ultimately, the improved product is fundamentally different because it incorporates modifications that come from continued attempts to eliminate possible failures.

Here are some examples of RCA attention to product improvement:

- Heliarc welding of outer conductors though more expensive than soldering corrects the weakness found in earlier silver-soldered lines. Flux unavoidably imbedded in the silver solder causes gas leaks; the dispersed and prolonged heat of soldering anneals the copper near the flanges. Heliarc welding requires no flux; it concentrates the heat and prevents material from running under the flange to the inside of the line.

- The copper material used in RCA transmission line is high conductivity, hard-drawn copper tubing. The conductivity of this material is no less than 95% on the IACS (International Annealed Copper Standard) scale to assure proper electrical specifications such as Transfer Efficiency, Power Rating, etc.
- Strong elbows fabricated from thick-wall tubing eliminate the mechanical distortion, gas leaks and seam-splitting that takes place in light-duty elbows when they come under heavy stress and movement. Also, two insulator supports are placed in the long leg with one in the short leg for mechanical and electrical stability and to reduce the risk of a bad connection at installation.
- The need for extra dependability and ease of assembly brought about by tall towers resulted in development of "Universal" line. A clamp replaces all flange bolts, reducing assembly operations to a minimum; all joints are inherently swivel, making it unnecessary to match position. Split-proof inner connectors prevent misalignment during installation, and a "wrist-

band" expansion joint virtually eliminates galling.

- The extra stresses in long runs of 8-inch and 9-inch diameter transmission lines predicated the development of "Cap-Lock" line, an extension of "Universal" line in which captive screws replace the Marmon flange clamp. "Cap-Lock" line includes all of the many advantages of Universal line—the "wristband" expansion joint, split-proof inner-conductor connectors, etc.—and combines them with greater flange-connection strength. Large-diameter Cap-Lock line has replaced Universal line in outside applications.

These are a few of the many RCA developments that make possible the exceptionally efficient and reliable transmission line components presented in this catalog. Consider them when selecting a design. Remember the maxim that a transmission line system cannot be overdesigned. Though it costs a little more initially, the superior product proves to be a most worthwhile investment because the cost of a single failure can completely wipe-out any initial cost savings from inferior transmission line.

Table 1. Summary of RCA Rigid Coaxial Transmission Line

Nominal Diameter	Recommended Service	Coupling Device	Pressure Tight	Power Rating	WT/100' LBS/KG	Stock Identification	Catalog Page No.
50-Ohm Impedance — Teflon Insulated							
1 5/8"	FM, VHF-TV	Unflanged	No		115/52	MI-561565	TR.2501
3 1/8"	AM, FM, VHF-, UHF-TV	Clomped Flanges	Yes		280/127	MI-277791D	TR.2101
3 1/8"	AM, FM, VHF-TV	Unflanged	No		230/104	MI-27791K	TR.2501
3 1/8"	FM, VHF-, UHF-TV	Bolted Flanges	Yes		270/122	MI-19089	TR.2301
4 1/8"	AM, FM, VHF-TV	Clomped Flanges	Yes		345/157	MI-561673E	TR.2101
4 1/8"	AM, FM, VHF-TV	Unflanged	No		310/141	MI-561673K	TR.2101
6 1/8"	FM, VHF-TV	Unflanged	No		625/284	MI-561579	TR.2501
51.5-Ohm Impedance — Teflon Insulated							
3 1/8"	AM, FM, VHF-TV	Bolted Flanges	Yes		255/115	MI-19313C	TR.2401
3 1/8"	AM, FM, VHF-TV	Unflanged	No		240/109	MI-19313C	TR.2401
75-Ohm Impedance — Teflon Insulated							
6 1/8"	FM, VHF-, UHF-TV	Clomped Flanges	Yes		650/295	MI-27792D	TR.2101
6 1/8"	FM, VHF-, UHF-TV	Bolted Flanges	Yes		670/304	MI-19387	TR.2301
8 3/8"	VHF-, UHF-TV	Clomped Flanges	Yes		915/416	MI-561566D	TR.2101
8 3/8"	VHF-, UHF-TV	"Cop-Lock" Flanges	Yes		915/416	MI-561671	TR.2201
9 3/8"	VHF-, UHF-TV	Clomped Flanges	Yes		1190/541	MI-27793D	TR.2101
9 3/8"	VHF-, UHF-TV	"Cop-Lock" Flanges	Yes		1190/541	MI-561672	TR.2201

See Curves Fig. 7

This catalog was prepared to assist VHF and UHF transmitter-plant planners in selecting from a wide variety of designs the most economical and efficient transmission line system for his application.

Complete specifications and ordering information for each of four major families of RCA rigid coaxial transmission line and associated equipment are printed in separate catalog sections:

TR.2101: *Universal* T/L; TR.2201: Cap-Lock T/L; TR.2301: Bolt-Flanged T/L; TR.2401: 51.5-Ohm T/L; TR.2501: Unflanged T/L; TR.3101: T/L Hangers; TR.4101: T/L Pressurizing Accessories; TR.5101: Coaxial T/L Switches.

RCA Transmission Line for AM- and FM-radio applications is described in a catalog available separately from any RCA Broadcast Equipment office.

RCA transmission-line equipment includes several diameters and types plus the necessary hardware and accessories to accommodate a wide range of broadcast requirements. RCA rigid coaxial transmission line is recommended over solid-dielectric line for all television and many FM-radio applications because of its superiority in ratings and characteristics. Recommendations for various classes of service can be found in Table 1. "Summary of RCA Rigid Coaxial Line".

Selecting the Proper Line

Choice of line for an installation depends upon power, frequency, and line length. The line selected should have a power rating which equals or exceeds the power output of the transmitter including possible future power increases. The operating channel should be within the upper frequency limit of the line, and the amount of power attenuated by a given diameter line should be considered for line lengths over a few hundred feet. Mechanical and electrical specifications, including power ratings, efficiencies and recommended frequencies, for the various types and sizes are presented herein.

Rigid transmission line of a given diameter and impedance can be broadly classified as flanged or unflanged. Outdoor portions of a system are pressurized against moisture and require flanged line, which can have either bolt-type, *Marman*-clamp or Cap-Lock clamp flanges. Indoor line for UHF should be unpressurized but flanged. The 3/8-inch and 6/8-inch Series (MI-19089 and MI-19387) lines are recommended. For indoor VHF applications, 15/8-, 3/8- or 6/8-inch, unflanged, 50-ohm line (MI-561565, MI-27791K or MI-561579) is recommended.

Frequency vs Line Length

Line is normally furnished in 20-foot (6.1 m) sections. However, at certain frequencies, reflections from the flanges of 20-foot lengths combine to cause an abnormally high VSWR. For those frequencies, 19 1/2-foot sections are employed. (See Table 2, Recommended Section Length.)

The section length to be avoided at a particular frequency is given by the formula:

$$L = (490.4\pi) / f$$

where: f = freq. in MHz

n = any integer

L = section length in feet to be avoided.

Lengths shorter than the 19 1/2- and 20-foot sections, with or without welded

flanges, are available on special order, or standard sections may be cut to length and soft solder flanges field installed.

Transmission Line Layout

The design of a transmission line run from the transmitter output to the antenna input must satisfy a number of inter-related electrical and mechanical requirements. All of these are extremely important to the correct and reliable functioning of the system.

Before ordering transmission line or fittings, a dimensional layout should be made of the tower and routing of lines between tower and transmitter. This aids in determining the length of line required and the items to be ordered. Routing should keep the number of elbows and

Table 2. Recommended Section Lengths—U.S. TV Channels

Channel No.	20' Only	19 1/2' Only	Either 19 1/2' or 20'	Channel No.	20' Only	19 1/2' Only	Either 19 1/2' or 20'
2			●	37		●	
3			●	38			●
4			●	39			●
5	●			40	●		
6			●	41		●	
7	●			42		●	
8			●	43			●
9			●	44	●		
10		●		45		●	
11	●			46		●	
12			●	47			●
13			●	48	●		
14			●	49		●	
15	●			50		●	
16			●	51			●
17		●		52	●		
18			●	53	●		
19	●			54		●	
20			●	55			●
21		●		56			●
22			●	57	●		
23	●			58		●	
24			●	59			●
25		●		60			●
26			●	61	●		
27	●			62		●	
28			●	63			●
29		●		64			●
30			●	65	●		
31	●			66		●	
32	●			67			●
33		●		68			●
34			●	69	●		
35			●	70		●	
36	●						

FM Frequencies

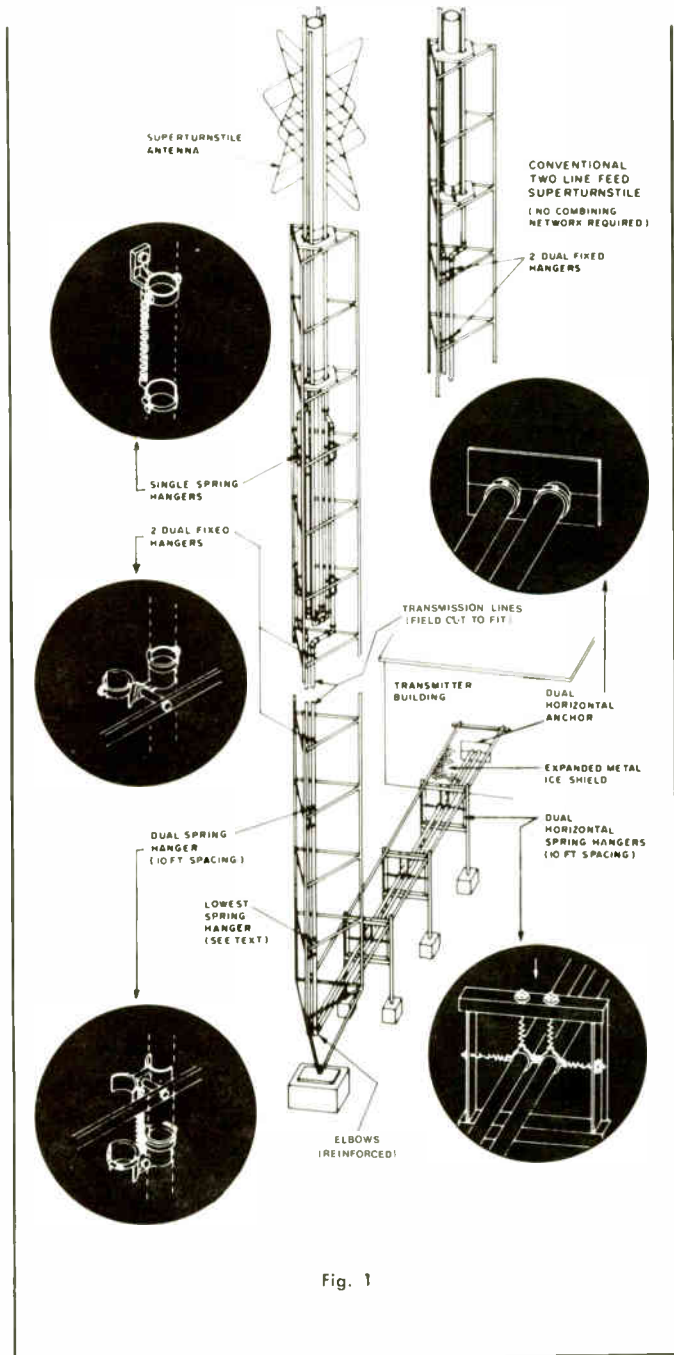
88 to 97 MHz: 19 1/2 or 20' sections

97 to 99 MHz: 19 1/2' sections only

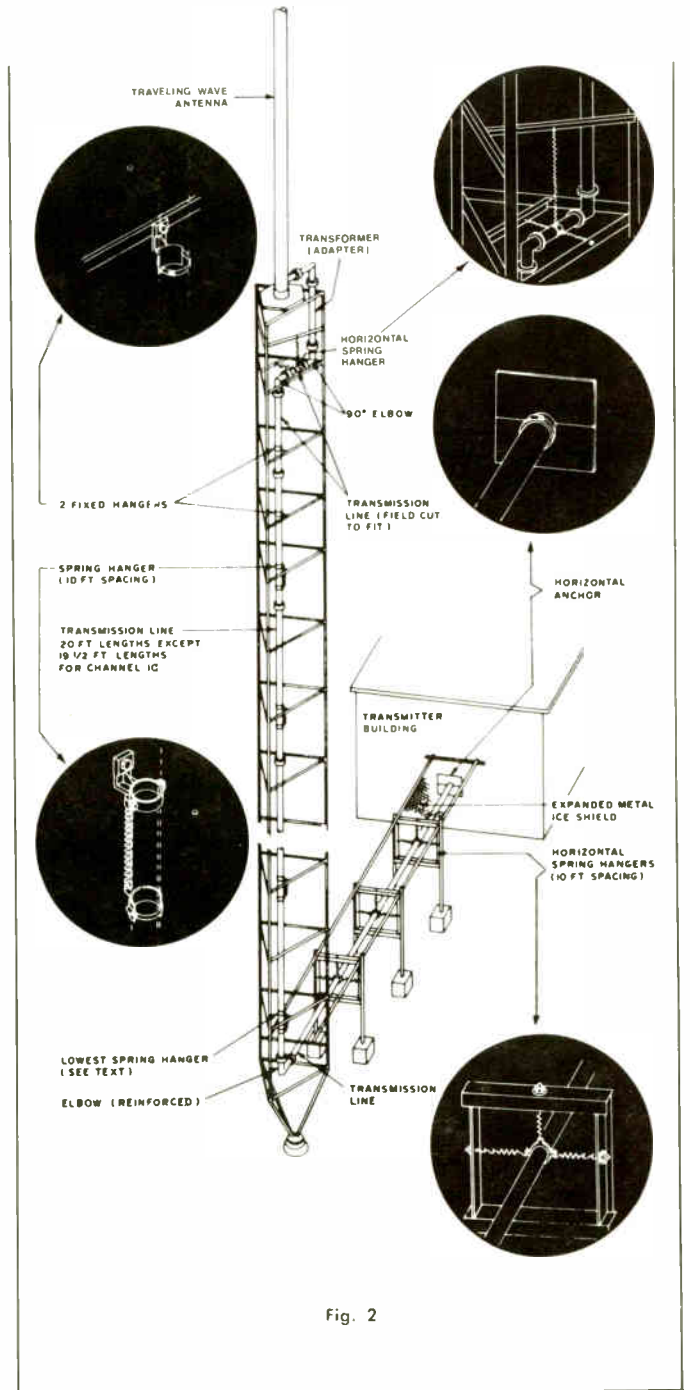
99 to 102 MHz: 20' sections only

102 to 108 MHz: 19 1/2 or 20' sections

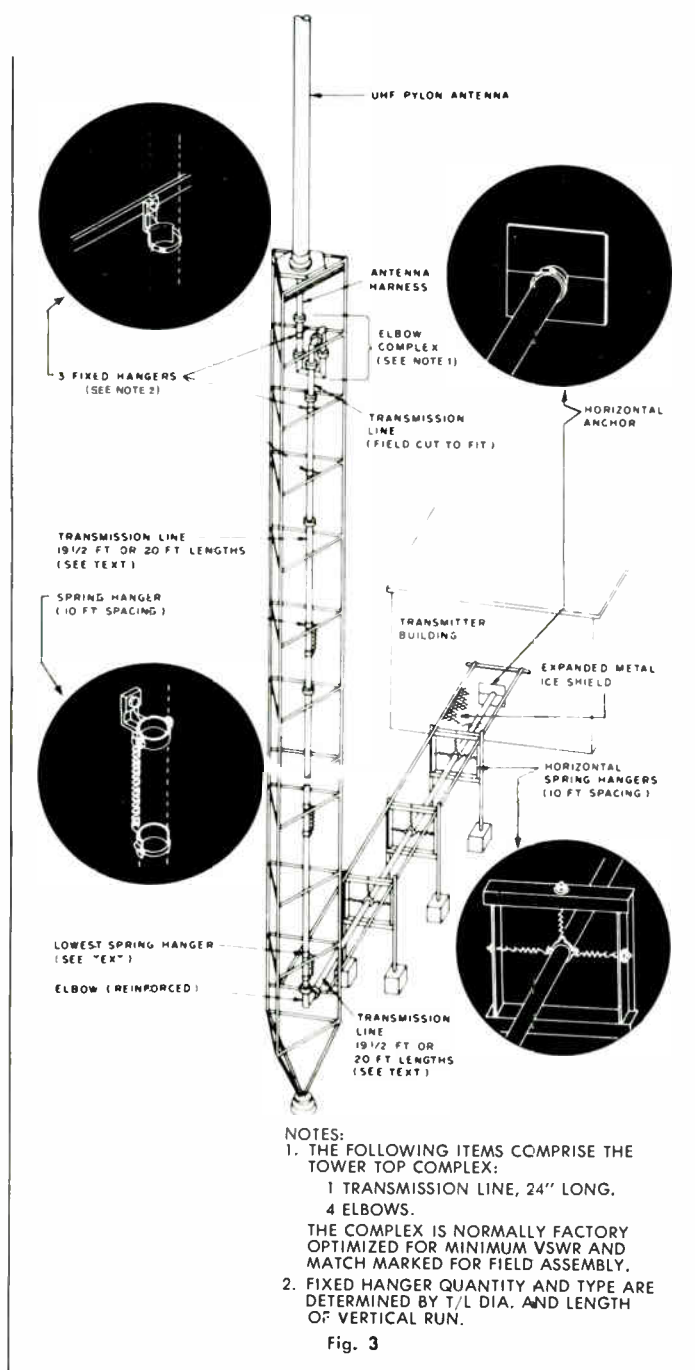
Typical Transmission Line Layout Superturnstile Antenna Utilizing Combining Network in Tower



Typical Transmission Line Layout Traveling Wave Antenna



Typical Transmission Line Layout UHF Pylon Antenna (Guyed Tower)



reducers to a minimum to obtain lowest possible standing-wave ratios (VSWR).

Outdoor layout planning is normally the work of the tower designer after the choice of line and components has been made by the customer with the assistance of his engineering consultant and RCA. Wherever particularly critical specifications are to be met, it is advisable for the tower designer to submit the proposed transmission line layout to RCA.

Installation Precautions

Care is required in handling the various transmission line components to prevent damage and assure proper installation. Procedures are outlined in Table 7, "Transmission Line Do's and Don'ts". These recommendations are important.

Tower steel must be designed to support the vertical run in a straight line and maintain line clearance within spring hanger guide rings under load.

Antenna Input Connections

Special components such as reducers and impedance-transformers that may be necessary to connect the antenna input to the top of the vertical run should be determined from the antenna specifications and installed. Figs. 1, 2 and 3 show typical connections for RCA *Superturbo-stile*, *Traveling Wave* and *Pylon* antennas respectively.

Elbow complexes at the tower top should use special transmission-line lengths specified to the nearest 1/32 inch (0.79 mm). The electrical characteristics of these complexes are vital to satisfactory operation of the system. It may be necessary to have RCA optimize them (make electrically transparent) during fabrication. It is then important that the components be installed in the exact orientation shown on the installation prints supplied and that match markings be followed exactly.

Vertical Run Considerations

Provision must be made to accommodate the difference in expansion coefficients between the copper of the line and the steel of the tower. Copper temperature rise due to RF heating as well as ambient temperature changes must be taken into account. In the vertical run this is accomplished by fixing the line at the tower top and "floating" it down the tower on spring hangers with expansion accumulating at the bottom of the tower. To accommodate this movement, the length of the horizontal run must be as specified in Fig. 4. In addition, the minimum distance from the horizontal run to the first vertical support ring must be maintained as specified in

Fig. 5 to accommodate movement of the horizontal run.

Generally, only standard lengths should be included in the vertical run except at the top where a field cut section is utilized. However, one or two special lengths may be inserted if it permits a better pattern of hangers. Positions of flanges relative to hangers, guide rings and tower members must be carefully planned to avoid interference as the line moves relative to the tower. Where interference between line flanges and spring hangers may occur due to a peculiar spacing of tower horizontal members, a steel plate may be used to mount the hanger a sufficient distance above or below the flange to avoid such interference.

Ideally, spring hangers supporting the

vertical run of transmission line should occur every 10 feet (3.1 m); however minor variations may be used provided an average of one hanger for each 10 feet of line is maintained. The vertical portion of line near the top of the run should be anchored firmly using the appropriate fixed hanger(s). Spring-loading charts are used to set spring tensions of expansion hangers. As finally installed, the line must be *vertical* and *free to move* in the hanger guides, and the tower must be designed to keep the vertical hangers perpendicular to the line and the fixed hanger(s) from moving. When installing transmission line, the preferred method is to start at the bottom and work toward the top. The transmission line Series MI-27791D, MI-27792D, MI-561669D, MI-561673E, MI-561671, MI-561672, MI-19089 and

MI-19387 must be mounted with the anchor insulator of each section at the *top* end. Series MI-19313 line must be mounted with the rolled outer conductor insulator-supporting grooves at the *lower* end. In most cases, the elbow which joins the vertical and horizontal runs should be a *reinforced type*.

Horizontal Run Considerations

In complex horizontal-line layouts involving elevation and direction changes, care must be exercised not to overstress mitre elbows or introduce excessive flexing of the line. Back to back elbows may be used to achieve desired vertical and horizontal angles.

As stated previously, the horizontal run should be at least as long as indicated in Fig. 4 to allow for sufficient movement due

Fig. 4. RECOMMENDED HORIZONTAL RUN

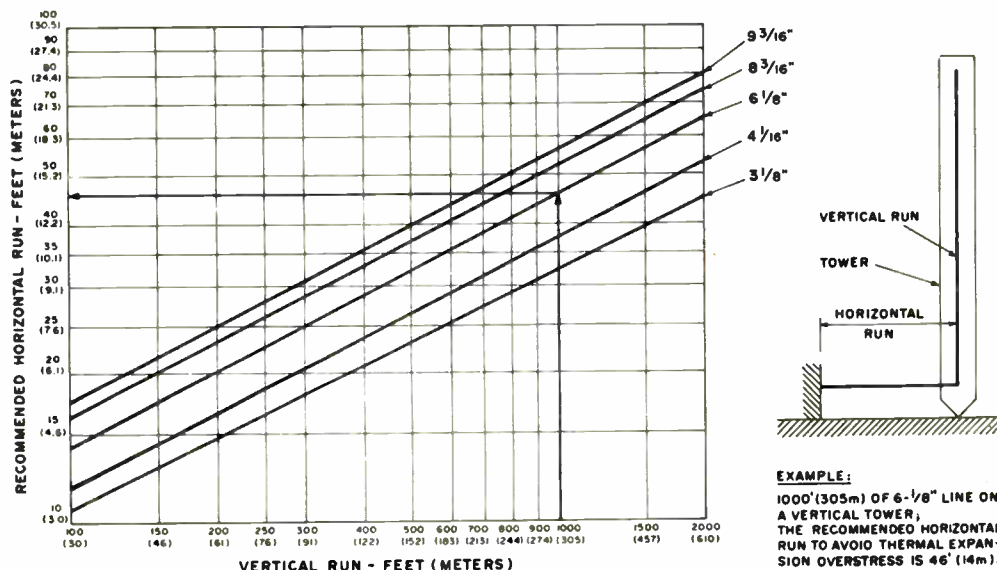
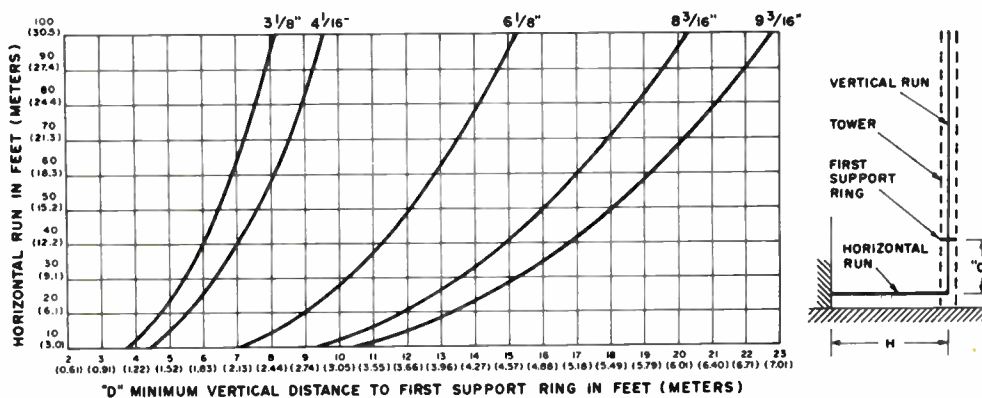


Fig. 5. MINIMUM DISTANCE TO FIRST SUPPORT RING — VS — HORIZONTAL RUN LENGTH



to expansion of the vertical run. Adequate bending of the vertical line to allow for movement of the horizontal run is assured by proper placement of the first vertical support ring as specified in Fig. 5. Three-point-suspension spring hangers should be used in the horizontal run for at least the distance shown in Fig. 4. Beyond the minimum distance specified, horizontal roller assemblies or swivel hangers may be used to support the line. Where several lines are in close proximity, special provision may be required to prevent lateral movement while allowing vertical movement. The line should be secured at the wall of the building using a horizontal anchor plate. Lines should be protected from falling ice.

When installing 51.5-ohm, 3/8-inch line (MI-19313), the sections in the horizontal run must connect the *grooved* end of one section with the *grooved* end of the adjacent section. (The "groove" is a radial groove 5/8 inches from the end.) Similarly, the *ungrooved* end of each section must connect with the *ungrooved* end of the adjacent section. This arrangement anchors the inner conductor in both directions.

Indoor Installation Considerations

The indoor part of the transmission line is normally not pressurized. Therefore, a Gas Stop is installed inside the building wall, and unpressurized line components are used between that point and the output of the transmitter. The arrangement permits disconnecting the ungasged portion of the line anywhere before the Gas Stop without loss of pressure in the outside line.

Indoor runs should be provided with a convenient arrangement of fittings on the output lines of the visual transmitter, aural transmitter and filterplexer to facilitate connection of an RF wattmeter and dummy load.

Purging Moisture from New Line

A transmission line installation must be free of moisture before power is applied since operating a line with moisture inside is likely to cause substantial damage. If moisture is suspected, the uppermost part of the line should be opened by using the petcock supplied or by slightly loosening the most-distant flange. The line should then be bled with dry (oil-pumped) nitrogen. Lines should be continuously pressurized from a nitrogen or a dry-air source. After any complete loss of pressure where moisture may have entered, the line should be purged before it is again placed in use.

Directional Couplers

Directional Couplers provide RF sampling sources for transmitter-monitoring and test equipment. The coupler mounts on the transmission line and protrudes into the line through a hole in the outer conductor. Use of a standard mounting section of transmission line with a factory-drilled and -finished hole is the recommended method of mounting the directional coupler. See Table 11 for data concerning these components.

Line Dehydrating Equipment

Transmission line gassing and dehyra-

tor equipment keeps lines pressurized and free of moisture assuring stable, trouble-free operation. There are dehydrators for transmission line systems of all sizes and lengths. RCA offers dehydrators, pressure regulators and three fitting kits (see Fig. 6).

Waveguide

The efficiency and power handling capability of waveguide for UHF energy-transfer may recommend its use in certain applications. For these applications RCA can supply complete waveguide transmission systems.

Table 3	MARMAN-CLAMP BOLTS		FLANGE BOLTS	
	Line Dia.	in-lb/kg-cm	Bolt Dia.	in-lb/kg-cm
Recommended Bolt	3/8"	180/36	3/8"	210/37
Torque	4 1/16"	180/36	3/8"	210/37
	6 1/8"	210/37		not applicable
	8 3/16"	210/37		not applicable
	9 3/16"	210/37		not applicable

Cap-Lock Line: 100 ft/lbs minimum to 110 ft/lbs maximum

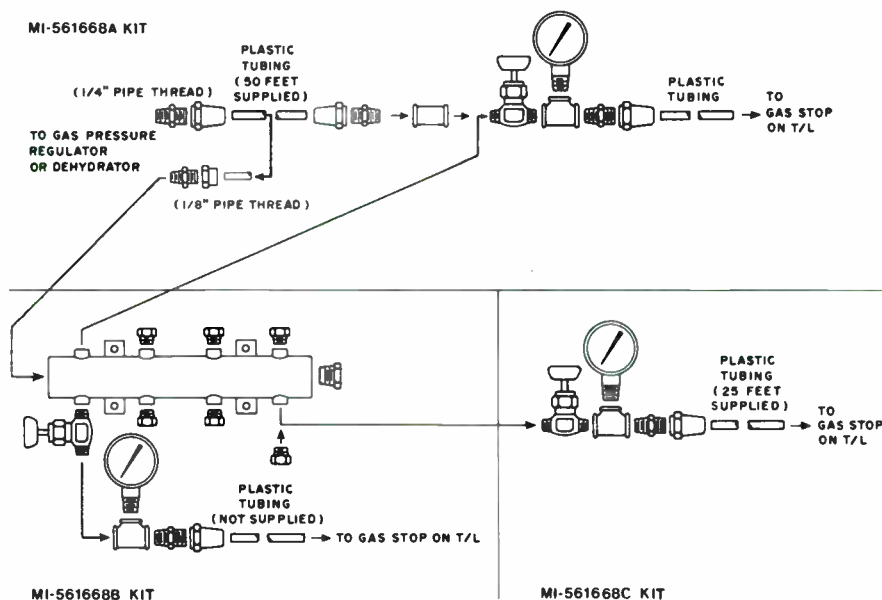


Fig. 6

Schematic relationships of the three gassing kits RCA packages for transmission line pressurization. See "Dehydrator and Accessories" section of catalog.

COAXIAL TRANSMISSION LINE

RIGID COAXIAL LINE SPECIFICATIONS

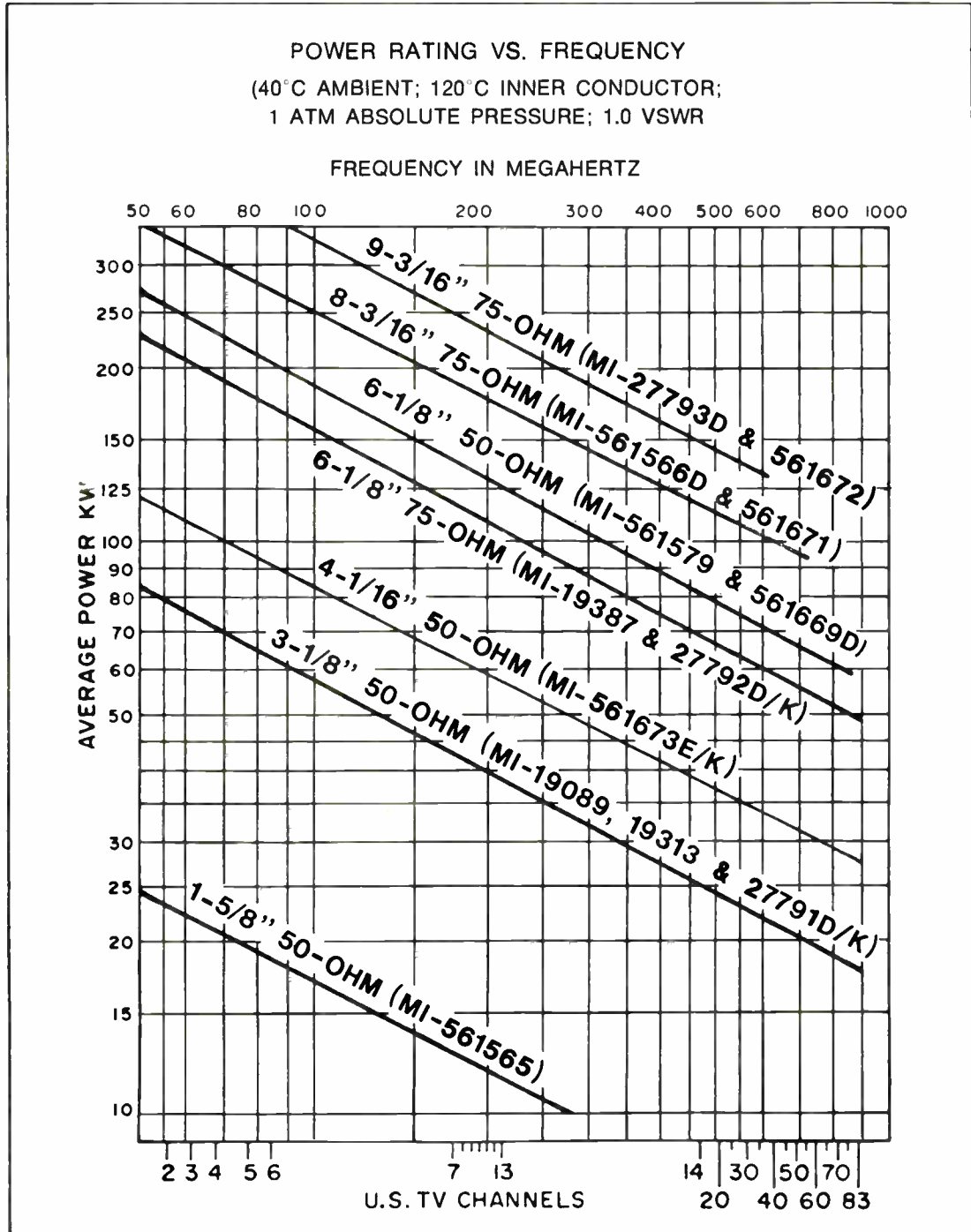


Table 4
Transfer Efficiency (%)
3 1/8" 51.5-ohm Line
(MI-19313)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
2	.0723	96.7	93.6	90.5	87.5	84.7	81.9	79.2	76.6	74.1	72.0
3	.0762	96.6	93.2	90.0	87.0	83.9	81.0	78.2	75.5	72.9	70.3
4	.080	96.4	92.9	89.5	86.3	83.2	80.2	77.3	74.5	71.7	69.2
5	.086	96.1	92.4	88.9	85.4	82.1	78.9	75.9	72.8	69.8	67.4
6	.089	96.0	92.1	88.4	84.9	81.5	78.2	75.1	72.0	69.2	66.4
7	.130	94.2	88.7	83.6	78.7	74.1	69.9	65.8	62.0	58.3	54.9
8	.132	94.1	88.5	83.4	78.4	73.8	69.5	65.3	61.5	57.9	54.4
9	.134	94.0	88.3	83.1	78.1	73.4	69.2	64.9	61.0	57.3	53.8
10	.136	94.0	88.1	82.9	77.8	73.1	68.8	64.5	60.6	56.8	53.4
11	.138	93.8	88.1	82.6	77.6	72.8	68.3	64.1	60.2	56.4	52.9
12	.141	93.7	87.8	82.3	77.1	72.3	67.7	63.5	59.5	55.8	52.2
13	.143	93.6	87.7	82.1	76.8	71.9	67.4	63.1	59.1	55.3	51.6

Table 5
Transmission Line
Do's and Don'ts

DO'S

- DO store packaged transmission line in clean dry place to prevent contamination.
- DO withdraw and inspect inner and outer conductors completely if in previously opened or damaged shipping boxes.
- DO withdraw and inspect all short pieces of line.
- DO check operation of inner expander assembly* and any components suspected of contamination with dirt or moisture.
- DO cap all unpacked components against the entry of moisture.
- DO hoist components with connector end up unless component is marked otherwise.
- DO check the line in the spring hanger guides after each section is installed to insure free movement for expansion. Shimming of guides at tower support may be necessary.
- DO consult spring-loading dimensions chart (in Hangers section) for proper spring tension on expansion hangers and adjust each position on the tower accordingly.
- DO loosen all bolts on Cap-Lock line female flange prior to assembly. Lift and move clamping block assemblies outward as far as they will go. After joining male and female flanges, lift clamping blocks into place on the male flange and slide over until they drop onto the detent pins in the female flanges.
- DO ascertain that inner conductors of adjacent sections match alignment to prevent inadvertent damage to the connector. Hold top connector insulator in place and see that the insulator is well seated before installing the next section.
- DO tap outside of universal line Marman clamps with plastic-faced hammer, all the way around, to seat clamp as it is tightened.
- DO tighten flange bolts alternately, one side, then the other, before final torquing.
- DO use torque wrench for final tightening.
- DO pressurize line immediately following installation and maintain 3 lbs/in² (0.21 kg/cm²) at all times. Leaks must be repaired immediately.
- DO keep ends of transmission line capped during installation. If installation is halted, seal installed line ends and pressurize to at least 0.5 lbs/in² (0.04 kg/cm²) with dry air or nitrogen.
- DO coat O-ring gaskets lightly with Dow-Corning DC-4 silicone compound to ease assembly.
- DO check O-ring and its groove for dirt or other foreign material and ascertain that ring is properly seated before flange assembly.

DON'TS

- DON'T withdraw complete line section if shipping box appears to be new and intact. ONLY inspect inner conductor expander.
- DON'T hoist coupled sections of transmission line. The stresses involved damage components.
- DON'T use force when fitting components one to another. If cause cannot be corrected or isn't evident visually, call for RCA assistance.
- DON'T assemble line components that contain water or condensation.
- DON'T assemble line components that contain dust, dirt, packing material or other foreign objects. Consult RCA regarding any loose or suspicious material in the line as it is unpacked.
- DON'T assemble match-marked components unless the marking is clear and understood. DON'T interchange match-marked items. Consult RCA about proper assembly.
- DON'T install any line component with dust, dirt or grease on insulators.
- DON'T install line that exhibits any evidence of damage.
- DON'T attempt to correct defects discovered unless instructed and authorized by RCA.
- DON'T dismiss rigger until transmission line is completely installed and pressurized for at least 12 hours and the appropriate electrical tests performed.
- DON'T power the transmission line until the line is known to be dry and pressurized to at least 3 lbs/in² (0.2 atm.).
- DON'T exceed specified torque for clamp or flange bolts (see Table 3)
- DON'T use a line flange with evidence of over-stressed.
- DON'T use a damaged O-ring gasket. Use a new gasket whenever in doubt. The same goes for Marman Clamps.
- DON'T bend elbow components to fit. If leg angle is incorrect, consult RCA.
- DON'T let rigging equipment damage components. Provide proper protection.
- DON'T cut tubing without a cut-off gauge and remove all burrs and chips from inside and outside of tubing.
- DON'T assemble a horizontal run without proper support.

*Check inner conductor expansion joint for an excursion of 0.2 inch (5 mm) travel and in the extended position check for presence of contacting spring through exposed groove on inner conductor. In some lines the contacting spring is not visible in the extended position. Presence of the spring can be determined by inserting a 6-mil 0.15 mm thick feeler gauge (0.5-inch or 13-mm wide) between the tubing inner surface and the connector body outer surface. If spring is present the feeler gauge can be inserted 0.25 inch (6.4 mm). If gauge goes in 0.5 inch (13 mm), spring is missing and line section must not be used.

Table 6. Transfer Efficiency (%)
3/8" 50-ohm Line (MI-27791D, MI-27791K, MI-19089)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
2	0.072	96.7	93.6	90.5	87.5	84.7	81.9	79.2	76.6	74.1	71.7
3	0.076	96.6	93.2	90.0	87.0	83.9	81.0	78.2	75.5	72.9	70.3
4	0.080	96.4	92.9	89.5	86.3	83.2	80.2	77.3	74.5	71.7	69.2
5	0.086	96.1	92.4	88.9	85.4	82.1	78.9	75.9	72.8	69.8	67.4
6	0.089	96.0	92.1	88.4	84.9	81.5	78.2	75.1	72.0	69.2	66.4
7	0.130	94.2	88.7	83.6	78.7	74.1	69.9	65.8	62.0	58.3	54.9
8	0.132	94.1	88.5	83.4	78.4	73.8	69.5	65.3	61.5	57.9	54.4
9	0.134	94.0	88.3	83.1	78.1	73.4	69.2	64.9	61.0	57.3	53.8
10	0.136	94.0	88.1	82.9	77.8	73.1	68.8	64.5	60.6	56.8	53.4
11	0.138	93.8	88.1	82.6	77.6	72.8	68.3	64.1	60.2	56.4	52.9
12	0.141	93.7	87.8	82.3	77.1	72.3	67.7	63.5	59.5	55.8	52.2
13	0.143	93.6	87.7	82.1	76.8	71.9	67.4	63.1	59.1	55.3	51.6
14	0.223	90.2	81.4	73.5	66.3	59.8	54.0	48.7	44.0	39.6	35.7
15	0.225	90.2	81.3	73.3	66.1	59.6	53.7	48.4	43.7	39.3	35.5
16	0.227	90.1	81.1	73.1	65.8	59.3	53.4	48.1	43.3	39.0	35.1
17	0.229	90.0	81.0	72.9	65.6	59.0	53.1	47.8	43.0	38.6	34.8
18	0.231	89.9	80.8	72.7	65.3	58.8	52.8	47.5	42.7	38.4	34.5
19	0.233	89.8	80.7	72.5	65.1	58.5	52.5	47.2	42.4	38.0	34.2
20	0.234	89.8	80.6	72.4	65.0	58.3	52.4	47.0	42.2	37.9	33.9
21	0.235	89.7	80.5	72.3	64.9	58.2	52.2	46.9	42.1	37.8	33.8
22	0.237	89.7	80.4	72.1	64.6	57.9	52.0	46.6	41.8	37.4	33.5
23	0.239	89.6	80.2	71.9	64.4	57.7	51.7	46.3	41.5	37.0	33.2
24	0.240	89.5	80.2	71.8	64.3	57.5	51.5	46.1	41.3	36.9	33.0
25	0.242	89.5	80.0	71.6	64.0	57.3	51.2	45.8	41.0	36.7	32.8
26	0.243	89.4	80.0	71.5	63.9	57.2	51.1	45.7	40.9	36.4	32.7
27	0.245	89.3	79.8	71.3	63.7	56.9	50.8	45.4	40.6	36.2	32.3
28	0.247	89.3	79.7	71.1	63.5	56.6	50.5	45.1	40.3	36.0	32.0
29	0.249	89.2	79.5	70.9	63.2	56.4	50.3	44.8	40.0	35.7	31.8
30	0.250	89.1	79.4	70.8	63.1	56.2	50.1	44.7	39.8	35.5	31.5
31	0.252	89.0	79.3	70.6	62.9	56.0	49.8	44.4	39.5	35.1	31.3
32	0.254	89.0	79.1	70.4	62.6	55.7	49.6	44.1	39.2	34.9	31.1
33	0.255	88.9	79.1	70.3	62.5	55.6	49.4	43.9	39.1	34.8	30.9
34	0.256	88.9	79.0	70.2	62.4	55.5	49.3	43.8	38.9	34.5	30.8
35	0.257	88.8	78.9	70.1	62.3	55.3	49.2	43.7	38.8	34.4	30.5
36	0.258	88.8	78.9	70.0	62.2	55.2	49.0	43.5	38.7	34.3	30.4

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
37	0.260	88.7	78.7	69.8	61.9	55.0	48.8	43.3	38.4	33.9	30.2
38	0.262	88.6	78.6	69.6	61.8	54.7	48.5	43.0	38.1	33.7	29.9
39	0.264	88.6	78.4	69.4	61.5	54.5	48.2	42.7	37.8	33.5	29.7
40	0.265	88.5	78.3	69.3	61.4	54.3	48.1	42.6	37.7	33.2	29.4
41	0.266	88.5	78.3	69.3	61.3	54.2	48.0	42.4	37.5	33.1	29.3
42	0.267	88.4	78.2	69.2	61.2	54.1	47.8	42.3	37.4	33.0	29.2
43	0.269	88.3	78.0	69.0	60.9	53.8	47.6	42.0	37.1	32.8	28.9
44	0.270	88.3	78.0	68.9	60.8	53.7	47.4	41.9	37.0	32.7	28.8
45	0.272	88.2	77.8	68.7	60.6	53.5	47.2	41.6	36.7	32.3	28.6
46	0.274	88.1	77.7	68.5	60.4	53.2	46.9	41.3	36.4	32.1	28.3
47	0.275	88.0	77.6	68.4	60.3	53.1	46.8	41.2	36.3	32.0	28.2
48	0.276	88.1	77.6	68.3	60.1	53.0	46.6	41.1	36.2	31.8	28.0
49	0.278	88.0	77.4	68.1	59.9	52.7	46.4	40.8	35.9	31.5	27.7
50	0.279	87.9	77.3	68.0	59.8	52.6	46.3	40.7	35.8	31.4	27.6
51	0.281	87.9	77.2	67.8	59.6	52.4	46.0	40.4	35.5	31.2	27.4
52	0.282	87.8	77.1	67.7	59.5	52.2	45.9	40.3	35.4	31.1	27.2
53	0.283	87.8	77.1	67.6	59.4	52.1	45.7	40.2	35.3	30.9	27.1
54	0.284	87.7	77.0	67.5	59.3	52.0	45.6	40.0	35.1	30.8	27.0
55	0.285	87.6	76.9	67.5	59.2	51.9	45.5	39.9	35.0	30.6	26.9
56	0.286	87.7	76.8	67.4	59.1	51.8	45.4	40.0	34.9	30.5	26.8
57	0.287	87.6	76.8	67.3	58.9	51.6	45.2	39.6	34.7	30.4	26.6
58	0.290	87.5	76.6	67.0	58.6	51.3	44.9	39.3	34.4	30.0	26.3
59	0.292	87.4	76.4	66.8	58.4	51.1	44.6	39.0	34.1	29.8	26.1
60	0.294	87.3	76.3	66.6	58.2	50.8	44.4	38.8	33.9	29.6	25.8
61	0.295	87.3	76.2	66.5	58.1	50.7	44.3	38.6	33.7	29.4	25.7
62	0.297	87.2	76.1	66.3	57.9	50.5	44.0	38.4	33.5	29.1	25.5
63	0.298	87.2	76.0	66.3	57.8	50.3	43.9	38.3	33.4	29.0	25.3
64	0.299	87.1	75.9	66.2	57.7	50.2	43.8	38.1	33.2	28.9	25.2
65	0.300	87.1	75.9	66.1	57.5	50.1	43.7	38.0	33.1	28.8	25.1
66	0.301	87.1	75.8	66.0	57.4	50.0	43.5	37.9	33.0	28.7	25.0
67	0.302	87.0	75.7	65.9	57.3	49.9	43.4	37.8	32.9	28.6	24.9
68	0.2025	87.0	75.7	65.8	57.3	49.8	43.4	37.7	32.8	28.5	24.8
69	0.303	87.0	75.6	65.8	57.2	49.8	43.3	37.7	32.7	28.5	24.8
70	0.3035	87.0	75.6	65.8	57.2	49.7	43.2	37.6	32.7	28.4	24.7

Table 7. Transfer Efficiency (%)
4₁¹/₁₆" 50-ohm Line (MI-561673E, MI-561673K)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)										Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)			200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
2	0.050	97.7	95.5	93.4	91.3	89.2	87.2	85.2	83.3	81.4	79.5	36	0.166	92.7	85.8	79.5	73.7	68.3	63.3	58.6	54.3	50.3	46.6
3	0.052	97.6	95.3	93.0	90.8	88.7	86.5	84.5	82.5	80.5	78.6	37	0.167	92.6	85.8	79.4	73.6	68.1	63.1	58.5	54.1	50.1	46.4
4	0.055	97.5	95.1	92.7	90.4	88.2	86.0	83.8	81.7	79.7	77.7	38	0.167	92.6	85.7	79.4	73.5	68.0	63.0	58.3	54.0	50.0	46.3
5	0.059	97.3	94.7	92.2	89.8	87.4	85.0	82.8	80.6	78.4	76.3	39	0.168	92.5	85.6	79.3	73.4	67.9	62.8	58.1	53.8	49.8	46.1
6	0.061	97.2	94.5	91.9	89.4	86.9	84.5	82.2	79.9	77.7	75.5	40	0.169	92.5	85.6	79.2	73.2	67.8	62.7	58.0	53.6	49.6	45.9
FM	0.066	97.0	94.1	91.3	88.6	86.0	83.4	81.0	78.6	76.2	74.0	41	0.170	92.5	85.5	79.1	73.1	67.6	62.5	57.8	53.5	49.5	45.7
7	0.089	96.0	92.2	88.5	84.9	81.6	78.3	75.2	72.2	69.3	66.5	42	0.171	92.4	85.5	79.0	73.0	67.5	62.4	57.7	53.3	49.3	45.6
8	0.090	95.9	92.0	88.3	84.7	81.3	78.0	74.8	71.8	68.8	66.0	43	0.172	92.4	85.4	78.9	72.9	67.4	62.3	57.5	53.2	49.1	45.4
9	0.092	95.9	91.9	88.1	84.5	81.0	77.6	74.4	71.4	68.4	65.6	44	0.172	92.4	85.3	78.8	72.8	67.2	62.1	56.4	53.0	49.0	45.2
10	0.093	95.8	91.8	87.9	84.3	80.7	77.3	74.1	71.0	68.0	65.2	45	0.173	92.3	85.3	78.7	72.7	67.1	62.0	57.2	52.8	48.8	45.1
11	0.094	95.7	91.7	87.8	84.0	80.4	77.0	73.7	70.6	67.6	64.7	46	0.174	92.3	85.2	78.6	72.6	67.0	61.8	57.1	52.7	48.6	44.9
12	0.096	95.7	91.5	87.6	83.8	80.2	76.7	73.4	70.2	67.2	64.3	47	0.175	92.3	85.1	78.6	72.5	66.9	61.7	56.9	52.5	48.5	44.7
13	0.097	95.6	91.4	87.4	83.6	79.9	76.4	73.1	69.9	66.8	63.9	48	0.176	92.2	85.1	78.5	72.4	66.8	61.6	56.8	52.4	48.3	44.6
14	0.146	93.5	87.4	81.7	76.4	71.4	66.8	62.4	58.4	54.6	51.0	49	0.176	92.2	85.0	78.4	72.3	66.6	61.4	56.6	52.2	48.2	44.4
15	0.147	93.4	87.3	81.6	76.3	71.3	66.6	62.2	58.2	54.3	50.8	50	0.177	92.2	84.9	78.3	72.2	66.5	61.3	56.5	52.1	48.0	44.2
16	0.148	93.4	87.3	81.5	76.1	71.1	66.4	62.0	58.0	54.1	50.6	51	0.178	92.1	84.9	78.2	72.1	66.4	61.2	56.4	51.9	47.8	44.1
17	0.149	93.4	87.2	81.4	76.0	71.0	66.3	61.9	57.8	53.9	50.4	52	0.179	92.1	84.8	78.1	72.0	66.3	61.0	56.2	51.8	47.7	43.9
18	0.150	93.3	87.1	81.3	75.9	70.8	66.1	61.7	57.6	53.7	50.1	53	0.179	92.1	84.8	78.0	71.9	66.2	60.9	56.1	51.6	47.5	43.8
19	0.151	93.3	87.0	81.2	75.7	70.7	65.9	61.5	57.4	53.5	49.9	54	0.180	92.0	84.7	78.0	71.8	66.0	60.8	55.9	51.5	47.4	43.6
20	0.152	93.3	87.0	81.1	75.6	70.5	65.7	61.3	57.2	53.3	49.7	55	0.181	92.0	84.6	77.9	71.6	65.9	60.6	55.8	51.3	47.2	43.5
21	0.153	93.2	86.9	81.0	75.5	70.4	65.6	61.1	57.0	53.1	49.5	56	0.182	92.0	84.6	77.8	71.5	65.8	60.5	55.7	51.2	47.1	43.3
22	0.154	93.2	86.8	80.9	75.4	70.2	65.4	61.0	56.8	52.9	49.3	57	0.183	91.9	84.5	77.7	71.4	65.7	60.4	55.5	51.0	46.9	43.1
23	0.154	93.1	86.7	80.8	75.2	70.1	65.3	60.8	56.6	52.7	49.1	58	0.183	91.9	84.5	77.6	71.3	65.6	60.3	55.4	50.9	46.8	43.0
24	0.155	93.1	86.7	80.7	75.1	69.9	65.1	60.6	56.4	52.5	48.9	59	0.184	91.9	84.4	77.5	71.2	65.5	60.1	55.3	50.8	46.6	42.8
25	0.156	93.1	86.6	80.6	75.0	69.8	64.9	60.4	56.2	52.3	48.7	60	0.185	91.8	84.3	77.5	71.1	65.3	60.0	55.1	50.6	46.5	42.7
26	0.157	93.0	86.5	80.5	74.9	69.6	64.8	60.3	56.1	52.1	48.5	61	0.186	91.8	84.3	77.4	71.0	65.2	59.9	55.0	50.5	46.3	42.5
27	0.158	93.0	86.5	80.4	74.7	69.5	64.6	60.1	55.9	51.9	48.3	62	0.186	91.8	84.2	77.3	71.0	65.1	59.8	54.8	50.3	46.2	42.4
28	0.159	92.9	86.4	80.3	74.6	69.4	64.5	59.9	55.7	51.8	48.1	63	0.187	91.7	84.2	77.2	70.9	65.0	59.6	54.7	50.2	46.1	42.3
29	0.160	92.9	86.3	80.2	74.5	69.2	64.3	59.7	55.5	51.6	47.9	64	0.188	91.7	84.1	77.1	70.8	64.9	59.5	54.6	50.1	45.9	42.1
30	0.161	92.9	86.2	80.1	74.4	69.1	64.2	59.6	55.3	51.4	47.7	65	0.189	91.7	84.1	77.1	70.7	64.8	59.4	54.5	49.9	45.8	42.0
31	0.161	92.8	86.2	80.0	74.3	68.9	64.0	59.4	55.2	51.2	47.5	66	0.189	91.7	84.0	77.0	70.6	64.7	59.3	54.3	49.8	45.6	41.8
32	0.162	92.8	86.1	79.9	74.2	68.8	63.9	59.3	55.0	51.0	47.3	67	0.190	91.6	83.9	76.9	70.5	64.6	59.2	54.2	49.7	45.5	41.7
33	0.163	92.8	86.0	79.8	74.0	68.7	63.7	59.1	54.8	50.8	47.2	68	0.191	91.6	83.9	76.8	70.4	64.5	59.0	54.1	49.5	45.4	41.5
34	0.164	92.7	86.0	79.7	73.9	68.5	63.6	58.9	54.6	50.7	47.0	69	0.191	91.6	83.8	76.8	70.3	64.3	58.9	53.9	49.4	45.2	41.4
35	0.165	92.7	85.9	79.6	73.8	68.4	63.4	58.8	54.5	50.5	46.8	70	0.192	91.5	83.8	76.7	70.2	64.2	58.8	53.8	49.3	45.1	41.3

Table 8. Transfer Efficiency (%)
6 1/8" 75-ohm "Universal" Line (MI-27792D)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
2	0.0339	98.5	96.9	95.4	94.1	92.5	91.1	89.6	88.3	86.8	85.5
3	0.0355	98.4	96.8	95.2	93.7	92.1	90.7	89.2	87.7	86.3	84.8
4	0.0372	98.3	96.6	95.0	93.4	91.8	90.2	88.7	87.2	85.7	84.2
5	0.040	98.2	96.4	94.6	92.9	91.2	89.5	87.9	86.3	84.6	83.1
6	0.0417	98.1	96.2	94.4	92.6	90.8	89.1	87.4	85.8	84.0	82.4
7	0.0615	97.1	94.5	91.8	89.4	86.7	84.4	82.0	79.7	77.4	75.1
8	0.0625	97.1	94.4	91.7	89.1	86.6	84.1	81.7	79.4	77.0	74.9
9	0.0635	97.0	94.3	91.6	88.9	86.4	83.9	81.5	79.1	76.8	74.6
10	0.0645	97.1	94.2	91.5	88.8	86.2	83.7	81.2	78.9	76.5	74.3
11	0.0655	97.0	94.1	91.4	88.6	86.0	83.5	81.0	78.6	76.4	73.9
12	0.0665	97.0	94.1	91.2	88.5	85.8	83.2	80.7	78.3	75.8	73.6
13	0.0675	96.9	94.0	91.1	88.3	85.6	83.0	80.4	78.0	75.5	73.2
14	0.105	95.3	90.8	86.5	82.4	78.5	74.8	71.3	67.9	64.6	61.6
15	0.106	95.2	90.7	86.4	82.3	78.4	74.6	71.1	67.7	64.4	61.4
16	0.107	95.2	90.6	86.3	82.1	78.2	74.4	70.8	67.4	64.1	61.1
17	0.1075	95.2	90.6	86.2	82.0	78.1	74.3	70.7	67.3	64.0	60.9
18	0.108	95.2	90.5	86.1	82.0	78.0	74.2	70.6	67.2	64.0	60.8
19	0.109	95.1	90.5	86.0	81.8	77.8	74.0	70.4	66.9	63.6	60.5
20	0.1095	95.1	90.4	86.0	81.7	77.7	73.9	70.3	66.8	63.5	60.3
21	0.110	95.1	90.4	85.9	81.7	77.6	73.8	70.2	66.7	63.3	60.2
22	0.111	95.0	90.3	85.8	81.5	77.5	73.6	70.0	66.4	63.0	60.0
23	0.112	95.0	90.2	85.7	81.4	77.3	73.4	69.7	66.2	62.8	59.7
24	0.113	94.9	90.1	85.5	81.2	77.1	73.2	69.5	65.9	62.5	59.4
25	0.1135	94.9	90.1	85.5	81.1	77.0	73.1	69.4	65.8	62.4	59.3
26	0.1140	94.9	90.0	85.4	81.1	76.9	73.0	69.3	65.7	62.4	59.1
27	0.1145	94.9	90.0	85.4	81.0	76.8	72.9	69.1	65.6	62.2	58.9
28	0.115	94.8	90.0	85.3	80.9	76.7	72.8	69.0	65.5	62.0	58.8
29	0.116	94.8	89.9	85.2	80.8	76.6	72.6	68.8	65.2	61.7	58.6
30	0.117	94.8	90.0	85.1	80.6	76.4	72.4	68.6	65.0	61.6	58.3
31	0.1175	94.7	89.7	85.0	80.5	76.3	72.3	68.5	64.9	61.4	58.2
32	0.118	94.7	89.7	85.0	80.5	76.2	72.2	68.4	64.7	61.2	58.0
33	0.1185	94.7	89.7	84.9	80.4	76.1	72.1	68.3	64.6	61.1	57.9
34	0.119	94.7	89.6	84.8	80.3	76.0	72.0	68.2	64.5	60.9	57.8
35	0.120	94.6	89.5	84.7	80.2	75.9	71.8	67.9	64.3	60.8	57.7
36	0.1205	94.6	89.5	84.7	80.1	75.8	71.7	67.8	64.2	60.7	57.4

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
37	0.121	84.6	89.5	84.6	80.0	75.7	71.6	67.7	64.0	60.5	57.3
38	0.1215	94.6	89.4	84.5	79.9	75.6	71.5	67.6	63.9	60.3	57.1
39	0.122	94.5	89.4	84.5	80.0	75.5	71.4	67.5	63.8	60.3	57.0
40	0.123	94.5	89.3	84.4	79.7	75.3	71.2	67.3	63.6	60.0	56.8
41	0.1235	94.5	89.2	84.3	79.6	75.2	71.0	67.1	63.4	59.9	56.5
42	0.124	94.5	89.2	84.3	79.6	75.2	71.0	67.1	63.3	59.7	56.5
43	0.1245	94.4	89.2	84.2	79.5	75.1	70.9	66.9	63.2	59.7	56.4
44	0.125	94.4	89.1	84.1	79.4	75.0	70.8	66.8	63.1	59.5	56.2
45	0.126	94.4	89.0	84.0	79.3	74.8	70.5	66.6	62.9	59.3	55.9
46	0.1265	94.3	89.0	84.0	79.2	74.7	70.0	66.5	62.7	59.1	55.8
47	0.127	94.3	89.0	83.9	79.1	74.6	70.4	66.4	62.6	59.1	55.6
48	0.128	94.3	88.9	83.8	79.0	74.0	70.2	66.2	62.4	58.8	55.3
49	0.129	94.2	88.8	83.7	78.9	74.3	70.0	66.0	62.2	58.5	55.2
50	0.130	94.2	88.7	83.6	78.7	74.1	69.8	65.8	61.9	58.3	54.9
51	0.1305	94.2	88.7	83.5	78.6	74.0	69.7	65.7	61.8	58.2	54.7
52	0.131	94.1	88.6	83.4	78.6	74.0	69.6	65.6	61.7	58.0	54.7
53	0.132	94.1	88.5	83.3	78.4	73.8	69.4	65.3	61.5	57.9	54.4
54	0.1325	94.1	88.5	83.3	78.3	73.7	69.3	65.2	61.4	57.7	54.3
55	0.133	94.1	88.5	83.2	78.3	73.6	69.3	65.1	61.3	57.6	54.1
56	0.1335	94.0	88.4	83.2	78.1	73.5	69.1	65.0	61.2	57.4	54.0
57	0.134	94.0	88.4	83.1	78.1	73.5	69.1	64.9	61.0	57.4	54.0
58	0.1345	94.0	88.3	83.0	78.0	73.4	69.0	64.8	60.9	57.3	53.8
59	0.135	94.0	88.3	83.0	78.0	73.3	68.9	64.7	60.8	57.1	53.7
60	0.136	93.9	88.2	82.9	77.8	73.1	68.7	64.5	60.6	56.8	53.4
61	0.1365	93.9	88.2	82.8	77.8	73.0	68.6	64.4	60.5	56.8	53.2
62	0.137	93.9	88.1	82.8	77.7	72.9	68.5	64.3	60.4	56.8	53.1
63	0.1375	93.9	88.1	82.7	77.6	72.9	68.4	64.2	60.3	56.5	53.1
64	0.138	93.8	88.1	82.6	77.6	72.8	68.3	64.1	60.2	56.4	52.9
65	0.1385	93.8	88.0	82.6	77.5	72.7	68.2	64.0	60.0	56.2	52.8
66	0.139	93.8	88.0	82.5	77.4	72.6	68.1	63.9	60.0	56.2	52.7
67	0.140	93.8	87.9	82.4	77.3	72.4	67.9	63.7	59.7	55.9	52.4
68	0.141	93.7	87.8	82.3	77.1	72.3	67.7	63.5	59.5	55.8	52.3
69	0.1415	93.7	87.8	82.2	77.1	72.2	67.6	63.4	59.4	55.6	52.1
70	0.142	93.7	87.7	82.2	77.0	72.1	67.5	63.3	59.3	55.5	52.0

Table 9. Transfer Efficiency (%)
6 1/8" 75-ohm Line (MI-19387)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
14	0.102	95.4	91.0	86.9	82.9	79.1	75.4	72.0	68.7	65.6	62.5
15	0.102	95.4	91.0	86.8	82.9	79.1	75.4	72.0	68.7	65.6	62.5
16	0.103	95.4	91.0	86.7	82.7	78.9	75.2	71.8	68.4	65.2	62.2
17	0.104	95.3	90.9	86.6	82.6	78.7	75.0	71.5	68.2	64.9	61.9
18	0.105	95.3	90.8	86.5	82.4	78.5	74.8	71.3	67.9	64.6	61.6
19	0.106	95.2	90.7	86.4	82.3	78.4	74.6	71.1	67.7	64.4	61.4
20	0.107	95.2	90.6	86.3	82.1	78.2	74.4	70.8	67.4	64.1	61.1
21	0.108	95.2	90.5	86.1	82.0	78.0	74.2	70.6	67.2	64.0	60.8
22	0.109	95.1	90.5	86.0	81.8	77.8	74.0	70.4	66.9	63.6	60.5
23	0.110	95.1	90.4	85.9	81.7	77.6	73.8	70.2	66.7	63.3	60.2
24	0.111	95.0	90.3	85.8	81.5	77.5	73.6	70.0	66.4	63.0	60.0
25	0.112	95.0	90.2	85.7	81.4	77.3	73.4	69.7	66.2	62.8	59.7
26	0.113	94.9	90.1	85.5	81.2	77.1	73.2	69.5	66.0	62.5	59.4
27	0.113	94.9	90.1	85.5	81.2	77.1	73.2	69.5	66.0	62.5	59.4
28	0.114	94.9	90.0	85.4	81.1	76.9	73.0	69.3	65.7	62.4	59.1
29	0.116	94.8	89.9	85.2	80.8	76.6	72.6	68.8	65.2	61.7	58.6
30	0.117	94.8	90.0	85.1	80.6	76.4	72.4	68.6	65.0	61.6	58.3
31	0.118	94.7	89.7	85.0	80.5	76.2	72.2	68.4	64.7	61.3	58.0
32	0.119	94.7	89.6	84.8	80.3	76.0	72.0	68.2	64.5	60.9	57.7
33	0.119	94.7	89.6	84.8	80.3	76.0	72.0	68.2	64.5	60.9	57.7
34	0.120	94.6	89.5	84.7	80.2	75.9	71.8	67.9	64.3	60.8	57.6
35	0.121	94.6	89.5	84.6	80.0	75.7	71.6	67.7	64.0	60.5	57.3
36	0.122	94.5	89.4	84.5	80.0	75.5	71.4	67.5	63.8	60.3	57.0
37	0.123	94.5	89.3	84.4	79.7	75.3	71.2	67.3	63.6	60.0	56.7
38	0.124	94.5	89.2	84.3	79.6	75.2	71.0	67.1	63.3	59.7	56.5
39	0.125	94.4	89.1	84.1	79.4	75.0	70.8	66.8	63.1	59.5	56.2
40	0.127	94.3	89.0	83.9	79.1	74.6	70.4	66.4	62.6	59.1	55.6
41	0.128	94.3	88.9	83.8	79.0	74.0	70.2	66.2	62.4	58.8	55.5
42	0.129	94.2	88.8	83.7	78.9	74.3	70.0	66.0	62.2	58.5	55.2

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
43	0.130	94.2	88.7	83.6	78.7	74.1	69.8	65.8	61.9	58.3	54.9
44	0.131	94.1	88.6	83.4	78.6	74.0	69.6	65.6	61.7	58.0	54.7
45	0.132	94.1	88.5	83.3	78.4	73.8	69.4	65.3	61.5	57.9	54.4
46	0.133	94.1	88.5	83.2	78.3	73.6	69.3	65.1	61.3	57.6	54.1
47	0.134	94.0	88.4	83.1	78.1	73.5	69.1	64.9	61.0	57.4	54.0
48	0.135	94.0	88.3	83.0	78.0	73.3	68.9	64.7	60.8	57.1	53.7
49	0.136	93.9	88.2	82.9	77.8	73.1	68.7	64.5	60.6	56.8	53.4
50	0.137	93.9	88.1	82.8	77.7	72.9	68.5	64.3	60.4	56.7	53.1
51	0.138	93.8	88.1	82.6	77.6	72.8	68.3	64.1	60.2	56.4	52.9
52	0.140	93.8	87.9	82.4	77.3	72.4	67.9	63.7	59.7	55.9	52.4
53	0.141	93.7	87.8	82.3	77.1	72.3	67.7	63.5	59.5	55.8	52.2
54	0.143	93.6	87.7	82.1	76.8	71.9	67.4	63.1	59.1	55.3	51.6
55	0.144	93.6	87.6	82.0	76.7	71.8	67.2	62.9	58.8	55.0	51.5
56	0.145	93.5	87.5	81.9	76.6	71.6	67.0	62.7	58.6	54.9	51.2
57	0.147	93.5	87.3	81.6	76.3	71.3	66.6	62.3	58.2	54.4	50.8
58	0.148	93.4	87.3	81.5	76.1	71.1	66.4	62.1	58.0	54.1	50.5
59	0.150	93.3	87.1	81.3	75.9	70.8	66.1	61.7	57.5	53.7	50.1
60	0.151	93.3	87.0	81.7	75.7	70.6	65.9	61.5	57.3	53.4	49.8
61	0.153	93.2	86.9	80.0	75.4	70.3	65.5	61.1	56.9	52.9	49.4
62	0.155	93.1	86.7	80.7	75.2	70.0	65.2	60.7	56.5	52.5	49.0
63	0.157	93.0	86.5	80.5	74.9	69.7	64.8	60.3	56.1	52.1	48.5
64	0.159	92.9	86.4	80.3	74.6	69.3	64.5	59.9	55.7	51.6	48.0
65	0.161	92.9	86.2	80.1	74.3	69.0	64.1	59.5	55.3	51.2	47.6
66	0.162	92.8	86.1	80.0	74.2	68.9	63.9	59.3	55.1	51.1	47.4
67	0.164	92.7	86.0	79.7	73.9	68.6	63.6	58.9	54.7	50.6	47.0
68	0.165	92.7	85.9	79.6	73.8	68.4	63.4	58.8	54.5	50.4	46.7
69	0.167	92.6	85.7	79.4	73.5	68.1	63.0	58.4	54.1	50.1	46.3
70	0.169	92.5	85.6	79.2	73.3	67.8	62.7	58.0	53.7	49.7	45.9

Table 10. Transfer Efficiency (%)
6 1/8" 50-ohm Line (MI-561669, MI-561579)

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)									
		200 (60.96)	400 (121.9)	600 (182.9)	800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)
2	0.039	98.2	96.4	94.7	93.0	91.4	89.7	88.1	86.5	85.0	83.5
3	0.041	98.1	96.3	94.5	92.7	90.9	89.2	87.5	85.9	84.3	82.7
4	0.043	98.0	96.1	94.2	92.4	90.5	88.7	87.0	85.3	83.6	82.0
5	0.046	97.9	95.8	93.8	91.8	89.9	88.0	86.2	84.3	82.6	80.8
6	0.048	97.8	95.7	93.6	91.5	89.5	87.6	85.7	83.8	82.0	80.2
FM	0.051	97.7	95.4	93.1	91.0	88.8	86.7	84.7	82.7	80.8	78.9
7	0.069	96.9	93.8	90.9	88.0	85.3	82.6	80.0	77.5	75.1	72.7
8	0.070	96.8	93.7	90.7	87.8	85.0	82.3	79.7	77.2	74.7	72.3
9	0.071	96.8	93.6	90.6	87.7	84.8	82.1	79.4	76.8	74.4	71.9
10	0.073	96.7	93.5	90.5	87.5	84.6	81.8	79.1	76.5	74.0	71.6
11	0.074	96.7	93.4	90.3	87.3	84.4	81.6	78.8	76.2	73.7	71.2
12	0.075	96.6	93.3	90.2	87.1	84.2	81.4	78.6	75.9	73.3	70.9
13	0.076	96.6	93.2	90.0	87.0	84.0	81.1	78.3	75.6	73.0	70.5
14	0.113	94.9	90.1	85.5	81.2	77.1	73.2	69.4	65.9	62.6	59.4
15	0.114	94.9	90.0	85.5	81.1	76.9	73.0	69.3	65.8	62.4	59.2
16	0.115	94.9	90.0	85.4	81.0	76.8	72.9	69.1	65.6	62.2	59.0
17	0.115	94.8	89.9	85.3	80.9	76.7	72.7	69.0	65.4	62.0	58.8
18	0.116	94.8	89.9	85.2	80.8	76.6	72.6	68.8	65.2	61.8	58.6
19	0.117	94.8	89.8	85.1	80.7	76.4	72.5	68.7	65.1	61.7	58.4
20	0.117	94.7	89.8	85.0	80.6	76.3	72.3	68.5	64.9	61.5	58.3
21	0.118	94.7	89.7	85.0	80.5	76.2	72.2	68.4	64.7	61.3	58.1
22	0.119	94.7	89.6	84.9	80.4	76.1	72.0	68.2	64.6	61.1	57.9
23	0.119	94.7	89.6	84.8	80.3	76.0	71.9	68.1	64.4	61.0	57.7
24	0.120	94.6	89.5	84.7	80.2	75.8	71.8	67.9	64.3	60.8	57.5
25	0.121	94.6	89.5	84.6	80.1	75.7	71.6	67.8	64.1	60.6	57.4
26	0.121	94.6	89.4	84.6	80.0	75.6	71.5	67.6	63.9	60.5	57.2
27	0.122	94.5	89.4	84.5	79.9	75.5	71.4	67.5	63.8	60.3	57.0
28	0.123	94.5	89.3	84.4	79.8	75.4	71.2	67.3	63.6	60.1	56.8
29	0.123	94.5	89.3	84.3	79.7	75.3	71.1	67.2	63.5	60.0	56.7
30	0.124	94.4	89.2	84.3	79.6	75.2	71.0	67.0	63.3	59.8	56.5
31	0.125	94.4	89.2	84.2	79.5	75.0	70.9	66.9	63.2	59.6	56.3
32	0.125	94.4	89.1	84.1	79.4	74.9	70.7	66.8	63.0	59.5	56.1
33	0.126	94.4	89.0	84.0	79.3	74.8	70.6	66.6	62.9	59.3	56.0
34	0.127	94.3	89.0	84.0	79.2	74.7	70.5	66.5	62.7	59.2	55.8
35	0.127	94.3	88.9	83.9	79.1	74.6	70.4	66.3	62.6	59.0	55.7
36	0.128	94.3	88.9	83.8	79.0	74.5	70.2	66.2	62.4	58.9	55.5
37	0.129	94.3	88.8	83.7	78.9	74.4	70.1	66.1	62.3	58.7	55.3
38	0.129	94.2	88.8	83.7	78.8	74.3	70.0	65.9	62.1	58.5	55.2
39	0.130	94.2	88.7	83.6	78.7	74.2	69.9	65.8	62.0	58.4	55.0
40	0.130	94.2	88.7	83.5	78.6	74.1	69.7	65.7	61.8	58.2	54.8
41	0.131	94.1	88.6	83.4	78.6	74.0	69.6	65.5	61.7	58.1	54.7
42	0.132	94.1	88.6	83.4	78.5	73.8	69.5	65.4	61.6	57.9	54.5
43	0.132	94.1	88.5	83.3	78.4	73.7	69.4	65.3	61.4	57.8	54.4
44	0.133	94.1	88.5	83.2	78.3	73.6	69.3	65.2	61.3	57.7	54.2
45	0.133	94.0	88.4	83.2	78.2	73.5	69.2	65.0	61.2	57.5	54.1
46	0.134	94.0	88.4	83.1	78.1	73.4	69.0	64.9	61.0	57.4	53.9
47	0.135	94.0	88.3	83.0	78.0	73.3	68.9	64.8	60.9	57.2	53.8
48	0.135	94.0	88.3	83.0	77.9	73.2	68.8	64.7	60.7	57.1	53.6
49	0.136	93.9	88.2	82.9	77.9	73.1	68.7	64.5	60.6	56.9	53.5
50	0.136	93.9	88.2	82.8	77.8	73.0	68.6	64.4	60.5	56.8	53.3
51	0.137	93.9	88.1	82.7	77.7	72.9	68.5	64.3	60.3	56.7	53.2
52	0.138	93.9	88.1	82.7	77.6	72.8	68.4	64.2	60.2	56.5	53.0
53	0.138	93.8	88.0	82.6	77.5	72.7	68.2	64.0	60.1	56.4	52.9
54	0.139	93.8	88.0	82.5	77.4	72.6	68.1	63.9	60.0	56.2	52.8
55	0.139	93.8	87.9	82.5	77.3	72.5	68.0	63.8	59.8	56.1	52.6
56	0.140	93.8	87.9	82.4	77.3	72.4	67.9	63.7	59.7	56.0	52.5
57	0.141	93.7	87.9	82.3	77.2	72.3	67.8	63.6	59.6	55.8	52.3
58	0.141	93.7	87.8	82.3	77.1	72.2	67.7	63.4	59.4	55.7	52.2
59	0.142	93.7	87.8	82.2	77.0	72.2	67.6	63.3	59.3	55.6	52.1
60	0.142	93.7	87.7	82.2	76.9	72.1	67.5	63.2	59.2	55.4	51.9
61	0.143	93.6	87.7	82.1	76.9	72.0	67.4	63.1	59.1	55.3	51.8
62	0.143	93.6	87.6	82.0	76.8	71.9	67.3	63.0	58.9	55.2	51.7
63	0.144	93.6	87.6	82.0	76.7	71.8	67.2	62.9	58.8	55.1	51.5
64	0.145	93.6	87.5	81.9	76.6	71.7	67.1	62.7	58.7	54.9	51.4
65	0.145	93.5	87.5	81.8	76.5	71.6	67.0	62.6	58.6	54.8	51.3
66	0.146	93.5	87.4	81.8	76.5	71.5	66.9	62.5	58.5	54.7	51.1
67	0.146	93.5	87.4	81.7	76.4	71.4	66.8	62.4	58.3	54.5	51.0
68	0.147	93.5	87.4	81.6	76.3	71.3	66.7	62.3	58.2	54.4	50.9
69	0.147	93.4	87.3	81.6	76.2	71.2	66.6	62.2	58.1	54.3	50.7
70	0.148	93.4	87.3	81.5	76.2	71.1	66.5	62.1	58.0	54.2	50.6

Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)								
		800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)	2200 (670.6)	
14	0.0789	86.5	83.4	80.4	77.5	74.8	72.1	69.5	67.0	
15	0.0794	86.4	83.3	80.3	77.4	74.6	72.0	69.4	66.9	
16	0.0799	86.3	83.2	80.2	77.3	74.5	71.8	69.2	66.7	
17	0.0804	86.2	83.1	80.1	77.2	74.4	71.7	69.0	66.5	
18	0.0809	86.2	83.0	80.0	77.0	74.2	71.5	68.9	66.4	
19	0.0814	86.1	82.9	79.9	76.9	74.1	71.4	68.7	66.2	
20	0.0819	86.0	82.8	79.7	76.8	74.0	71.2	68.6	66.0	
21	0.0824	85.9	82.7	79.6	76.7	73.8	71.1	68.4	65.9	
22	0.0829	85.8	82.6	79.5	76.6	73.7	70.9	68.3	65.7	
23	0.0833	85.8	82.5	79.4	76.4	73.6	70.8	68.1	65.6	
24	0.0838	85.7	82.4	79.3	76.3	73.4	70.7	68.0	65.4	
25	0.0843	85.6	82.4	79.2	76.2	73.3	70.5	67.8	65.2	
26	0.0848	85.5	82.3	79.1	76.1	73.2	70.4	67.7	65.1	
27	0.0852	85.5	82.2	79.0	76.0	73.1	70.2	67.5	64.9	
28	0.0857	85.4	82.1	78.9	75.9	72.9	70.1	67.4	64.8	
29	0.0862	85.3	82.0	78.8	75.8	72.8	70.0	67.3	64.6	
30	0.0866	85.3	81.9	78.7	75.6	72.7	69.8	67.1	64.5	
31	0.0871	85.2	81.8	78.6	75.5	72.6	69.7	67.0	64.3	
32	0.0875	85.1	81.7	78.5	75.4	72.4	69.6	66.8	64.2	
33	0.0880	85.0	81.7	78.4	75.3	72.3	69.4	66.7	64.0	
34	0.0884	85.0	81.6	78.3	75.2	72.2	69.3	66.5	63.9	
35	0.0889	84.9	81.5	78.2	75.1	72.1	69.2	66.4	63.7	
36	0.0893	84.8	81.4	78.1	75.0	72.0	69.1	66.3	63.6	
37	0.0898	84.8	81.3	78.0	74.9	71.8	68.9	66.1	63.5	
38	0.0902	84.7	81.2	77.9	74.8	71.7	68.8	66.0	63.3	
39	0.0906	84.6	81.2	77.8	74.7	71.6	68.7	65.9	63.2	
40	0.0911	84.6	81.1	77.7	74.6	71.5	68.6	65.7	63.0	
41	0.0915	84.5	81.0	77.7	74.5	71.4	68.4	65.6	62.9	
42	0.0920	84.4	80.9	77.6	74.3	71.3	68.3	65.5	62.8	
43	0.0924	84.4	80.8	77.5	74.2	71.2	68.2	65.3	62.6	
44	0.0928	84.3	80.8	77.4	74.1	71.0	68.1	65.2	62.5	
45	0.0932	84.2	80.7	77.3	74.0	70.9	67.9	65.1	62.4	
46	0.0937	84.2	80.6	77.2	73.9	70.8	67.8	65.0	62.2	
47	0.0941	84.1	80.5	77.1	73.8	70.7	67.7	64.8	62.1	
48	0.0945	84.0	80.4	77.0	73.7	70.6	67.6	64.7	62.0	
49	0.0949	84.0	80.4	76.9	73.6	70.5	67.5	64.6	61.8	
50	0.0954	83.9	80.3	76.8	73.5	70.4	67.4	64.5	61.7	
51	0.0958	83.8	80.2	76.8	73.4	70.3	67.2	64.3	61.6	
52	0.0962	83.8	80.1	76.7	73.3	70.2	67.1	64.2	61.4	
53	0.0966	83.7	80.1	76.6	73.2	70.1	67.0	64.1	61.3	
54	0.0970	83.6	80.0	76.5	73.1	70.0	66.9	64.0	61.2	
55	0.0974	83.6	79.9	76.4	73.1	69.8	66.8	63.9	61.1	
56	0.0978	83.5	79.8	76.3	73.0	69.7	66.7	63.7	60.9	

Table 11
Transfer Efficiency (%)
8-3/16" 75-ohm Line
(MI-5611566D, MI-561671)

Fig. 8. dB/EFFICIENCY CONVERSION CHART

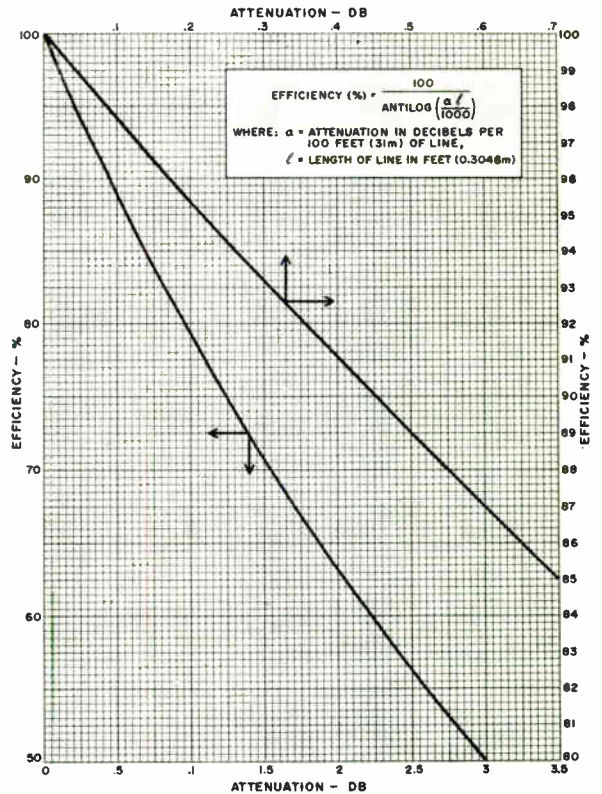


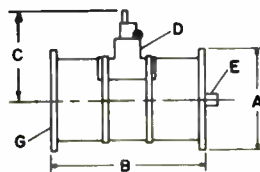
Table 12. Directional Coupler Accessories Data

Line Nom Diameter	RCA MI Number	Reference Drawing	Length (Dim B)	Protrusion (Dim C)	Coupler (D) Id. No.	Connector (E) Id. No.	Coupling (F) Id. No.	Line Sect. Id. No.	Recommended Service	Pressure Tight
50-Ohm, Teflon-Insulated Line										
3/8"	MI-19089	1	12" (305)	6.81 (173)	MI-19396-1B*	MI-19089-10A	—	MI-19396-2	VHF, UHF	No*
3/8"	MI-27791-D	3	12" (305)	6.81 (173)	MI-19396-1B*	MI-27791-D4D	—	MI-27791-D9A	VHF, UHF	No*
3/8"	MI-27791-K	2	12" (305)	6.81 (173)	MI-18396-1B	—	MI-27791-K9A	MI-27791-K9A	VHF	No
51.5-Ohm, Teflon-Insulated Line										
3/8"	MI-19313†	2	12" (305)	6.81 (173)	MI-19396-1B	—	MI-19313-8	MI-19396-3	VHF	No
75-Ohm, Teflon-Insulated Line										
6/8"	MI-19387	1	12" (305)	8.31 (211)	MI-27389	MI-19387-10A	—	MI-19387-20	VHF, UHF	Yes
6/8"	MI-27792D	3	12" (305)	8.31 (211)	MI-27389	MI-27792-D4D	—	MI-27792-D9A	VHF, UHF	Yes
8 3/16"	MI-561566D	3	12" (305)	9.34 (237)	MI-561577	MI-561566D-4D	—	MI-561566D-9A	UHF	Yes
9 3/16"	MI-27793D	3	12" (305)	9.34 (237)	MI-561578	MI-27793D-4D	—	MI-27793D-9A	UHF	Yes

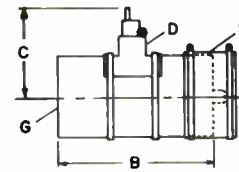
*For pressurized line, specify Coupler MI-27390.
†Teflon insulated.

Table 13
Transfer Efficiency (%) 9-3/16" 75-ohm Line
(MI-27793D, MI-561672)

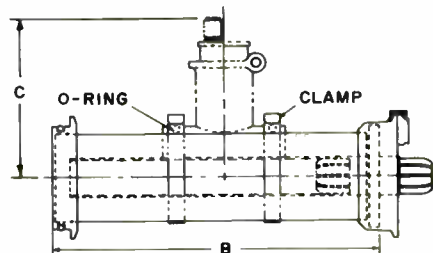
Channel	Loss dB/100' (30.48 m)	Total Length in Feet (Meters)							
		800 (243.8)	1000 (304.8)	1200 (365.8)	1400 (426.7)	1600 (487.7)	1800 (548.7)	2000 (609.6)	2200 (670.6)
14	0.0682	88.2	85.5	82.8	80.3	77.8	75.4	73.1	70.8
15	0.0686	88.1	85.4	82.7	80.2	77.7	75.3	72.9	70.6
16	0.0690	88.1	85.3	82.6	80.0	77.5	75.1	72.8	70.5
17	0.0695	88.0	85.2	82.5	79.9	77.4	75.0	72.6	70.3
18	0.0699	87.9	85.1	82.4	79.8	77.3	74.9	72.5	70.2
19	0.0703	87.9	85.1	82.3	79.7	77.2	74.7	72.3	70.0
20	0.0707	87.8	85.0	82.2	79.6	77.1	74.6	72.2	69.9
21	0.0712	87.7	84.9	82.2	79.5	76.9	74.5	72.1	69.7
22	0.0716	87.6	84.8	82.1	79.4	76.8	74.3	71.9	69.6
23	0.0720	87.6	84.7	82.0	79.3	76.7	74.2	71.8	69.4
24	0.0724	87.5	84.6	81.9	79.2	76.6	74.1	71.6	69.3
25	0.0728	87.4	84.6	81.8	79.1	76.5	74.0	71.5	69.2
26	0.0732	87.4	84.5	81.7	79.0	76.4	73.8	71.4	69.0
27	0.0736	87.3	84.4	81.6	78.9	76.2	73.7	71.2	68.9
28	0.0740	87.3	84.3	81.5	78.8	76.1	73.6	71.1	68.7
29	0.0744	87.2	84.3	81.4	78.7	76.0	73.5	71.0	68.6
30	0.0748	87.1	84.2	81.3	78.6	75.9	73.3	70.9	68.5
31	0.0752	87.1	84.1	81.2	78.5	75.8	73.2	70.7	68.3
32	0.0756	87.0	84.0	81.1	78.4	75.7	73.1	70.6	68.2
33	0.0760	86.9	83.9	81.1	78.3	75.6	73.0	70.5	68.0
34	0.0764	86.9	83.9	81.0	78.2	75.5	72.9	70.3	67.9
35	0.0768	86.8	83.8	80.9	78.1	75.4	72.7	70.2	67.8
36	0.0772	86.8	83.7	80.8	78.0	75.3	72.6	70.1	67.6
37	0.0775	86.7	83.6	80.7	77.9	75.2	72.5	70.0	67.5
38	0.0779	86.6	83.6	80.6	77.8	75.0	72.4	69.8	67.4
39	0.0783	86.6	83.5	80.5	77.7	74.9	72.3	69.7	67.3
40	0.0787	86.5	83.4	80.5	77.6	74.8	72.2	69.6	67.1



DRAWING 1



DRAWING 2

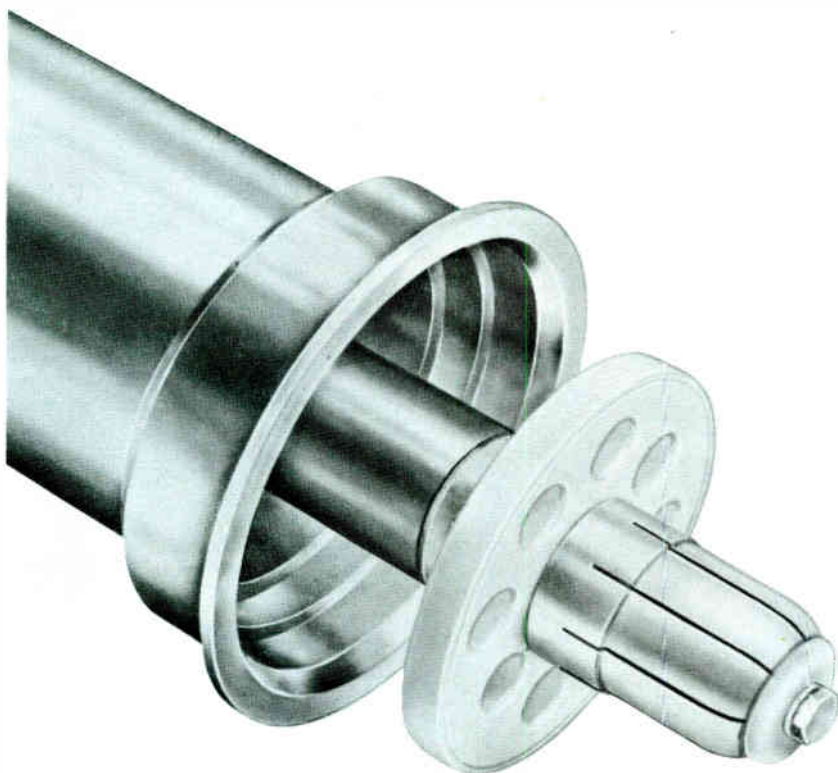


DRAWING 3

Reference drawings for Table 13.

Universal 50- and 75-Ohm Teflon Transmission Line

- Ease of assembly
- Positive conductor alignment
- Heliarc welded flanges
- Fully captive O-ring
- High efficiency Teflon insulation



RCA Universal Transmission Line has proved in use to be a most versatile and successful type. Of the several hundred thousand feet that are now in service, not one failure has occurred as a result of insulator flashover from inner conductor galling. Differential expansion takes place inside the inner conductor and all movement occurs on a silver plated beryllium watchband spring. Universal line has a unique error-proof coupling. There are no flange bolts; instead, a single stainless steel clamp surrounds the beveled edges of the heliarc welded male and female flanges and holds them in complete alignment. The O-ring is held securely by a groove in the male flange with no chance of being squeezed out of place to cause a leaky joint. All flange connections inherently swivel so it is unnecessary to match the position of line sections. A thick Teflon insulator recessed in the female flange supports the inner conductor which is easily removed for inspection.

Power handling capability, efficiency and useful frequency ranges of RCA Universal line are given in "Planning and Data for Transmission Line," TR.1101B.

In This Section:

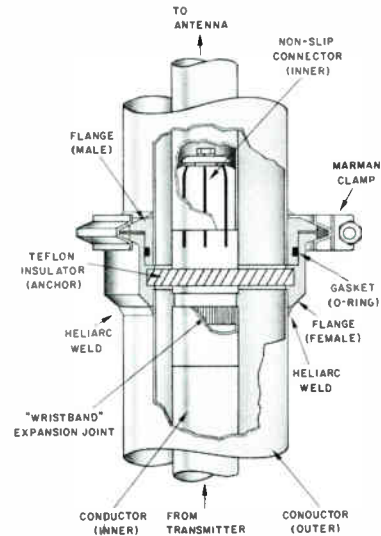
3 $\frac{1}{8}$ -inch, 50-ohm	MI-27791D
4 $\frac{1}{16}$ -inch, 50-ohm	MI-561673E
6 $\frac{3}{16}$ -inch, 75-ohm	MI-27792D
8 $\frac{3}{16}$ -inch, 75-ohm	MI-561566D
9 $\frac{3}{16}$ -inch, 75-ohm	MI-27793D

Universal 50- and 75-Ohm Teflon Transmission Line

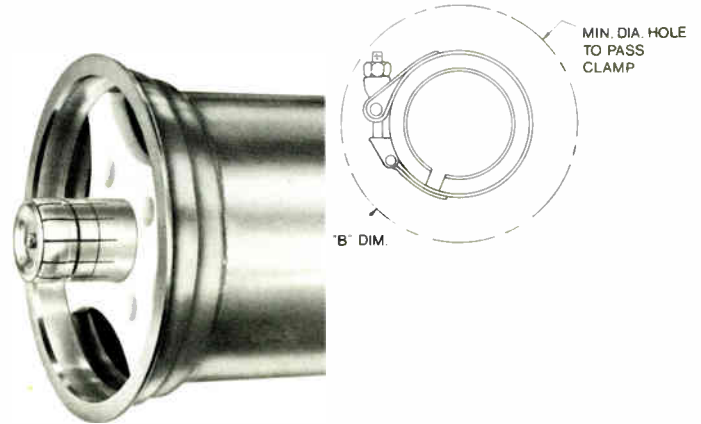
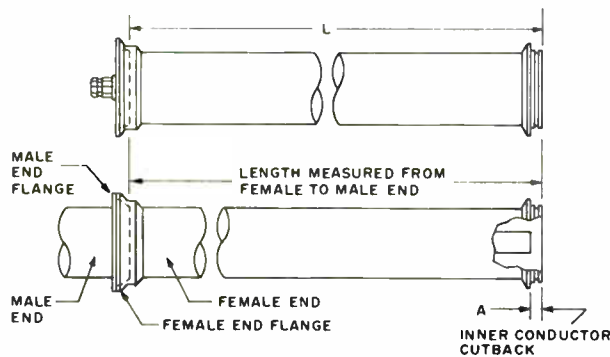
General Specifications

	OUTER		INNER		Frequency*
	OD	ID	OD	ID	
MI-27791D 3 1/8-inch, 50 ohm	3.125"	3.027"	1.315"	1.231"	1,000 MHz
	(79 mm)	(77 mm)	(33 mm)	(31 mm)	
MI-561673E 4 1/16-inch, 50 ohm	4.062"	3.935"	1.711"	1.661"	1,000 MHz
	(103 mm)	(100 mm)	(45 mm)	(42 mm)	
MI-27792D 6 1/8-inch, 75 ohm	6.125"	5.981"	1.711"	1.666"	890 MHz
	(156 mm)	(152 mm)	(44 mm)	(42 mm)	
MI-561566D 8 3/16-inch, 75 ohm	8.150"	8.000"	2.293"	2.229"	728 MHz
	(207 mm)	(203 mm)	(58 mm)	(57 mm)	
MI-27793D 9 3/16-inch, 75 ohm	9.166"	9.000"	2.580"	2.516"	632 MHz
	(233 mm)	(229 mm)	(66 mm)	(64 mm)	

*Recommended upper limit for broadcast application.



STRAIGHT SECTIONS



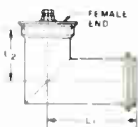
Stock Number	Length (L)	Dim. A	Dim. B	Approx. Weight	Packaged Dimensions	Shipping Weight
MI-27791D-1A	20' (6.1 m)	0.90"-0.97" (23-24 mm)	7" (178 mm)	58 lbs. (26.3 kg)	248"x12 1/2"x8" (6299x318x203 mm)	162 lbs. (74 kg)
MI-27791D-1B	19 1/2' (6 m)	0.90"-0.97" (23-24 mm)	7" (178 mm)	52 lbs. (26.3 kg)	248"x12 1/2"x8" (6299x318x203 mm)	149 lbs. (68 kg)
MI-561673E-1A	20' (6.1 m)	1.21"-1.26" (31-32 mm)	8" (203 mm)	69 lbs. (31.2 kg)	248"x12 1/2"x8" (6299x318x203 mm)	184 lbs. (84 kg)
MI-561673E-1B	19 1/2' (6 m)	1.21"-1.26" (31-32 mm)	8" (203 mm)	62 lbs. (28.1 kg)	248"x12 1/2"x8" (6299x318x203 mm)	180 lbs. (82 kg)
MI-27792D-1A	20' (6.1 m)	1.20"-1.21" (30-31 mm)	10 3/4" (703 mm)	127 lbs. (58 kg)	248"x9 1/2"x10 1/2" (6299x241x267 mm)	172 lbs. (78 kg)
MI-27792D-1B	19 1/2' (6 m)	1.20"-1.21" (30-31 mm)	10 3/4" (703 mm)	124 lbs. (56 kg)	248"x9 1/2"x10 1/2" (6299x241x267 mm)	169 lbs. (77 kg)
MI-561566D-1A	20' (6.1 m)	1.54"-1.57" (39-40 mm)	13 3/4" (350 mm)	192 lbs. (85 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	255 lbs. (116 kg)
MI-561566D-1B	19 1/2' (6 m)	1.54"-1.57" (39-40 mm)	13 3/4" (350 mm)	179 lbs. (81 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	253 lbs. (115 kg)
MI-27793D-1A	20' (6.1 m)	1.54"-1.57" (39-40 mm)	14 3/4" (375 mm)	227 lbs. (103 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	290 lbs. (132 kg)
MI-27793D-1B	19 1/2' (6 m)	1.54"-1.57" (39-40 mm)	14 3/4" (375 mm)	220 lbs. (98 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	283 lbs. (128 kg)

NOTES: MI-27791D-1A and MI-27791D-1B 3 1/8" straight sections are shipped two sections to the package; other sizes, one section per package. Each section includes connector, clamp, expansion joint and O-ring.

The special 19 1/2 ft. lengths are required for certain frequencies. See table for channel length selection in "Planning and Data for Transmission Line," Catalog Sheet TR.1101B. Six-inch line illustrated.

Universal 50- and 75-ohm Teflon Transmission Line

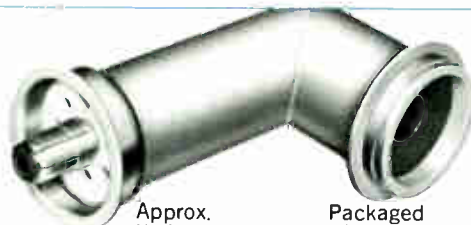
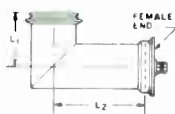
90-DEGREE ELBOWS, SHORT END FEMALE



Stock Number	Line Size	Insert Length		Approx. Weight	Packaged Dimensions	Shipping Weight
		L ₁	L ₂			
MI-27791D-2A	3 $\frac{1}{8}$ "	8 $\frac{1}{16}$ " (205 mm)	4 $\frac{9}{16}$ " (116 mm)	10 $\frac{3}{4}$ lbs. (5 kg)	25 $\frac{1}{2}$ "x13"x14 $\frac{1}{2}$ " (648x330x368 mm)	15 lbs. (7 kg)
MI-561673E-2A	4 $\frac{1}{16}$ "	12" (305 mm)	6" (152 mm)	12 lbs. (5.4 kg)	6"x12"x12" (152x305x305 mm)	16 lbs. (7.3 kg)
MI-27792D-2A	6 $\frac{1}{8}$ "	12" (305 mm)	7" (178 mm)	25 $\frac{1}{4}$ lbs. (11 kg)	22"x20"x14" (559x508x356 mm)	50 lbs. (23 kg)
MI-561566D-2A	8 $\frac{3}{16}$ "	24" (610 mm)	12" (305 mm)	47 $\frac{1}{2}$ lbs. (22 kg)	36"x25"x14" (914x635x356 mm)	100 lbs. (46 kg)
MI-27793D-2A	9 $\frac{3}{16}$ "	22 $\frac{3}{4}$ " (172 mm)	9 $\frac{1}{2}$ " (241 mm)	57 lbs. (26 kg)	35"x22"x15" (879x559x381 mm)	110 lbs. (51 kg)

Includes connector, clamp and O-ring. Specially reinforced elbow is available for each line size. To order reinforced unit, add suffix "R" to Stock Number shown. Three-inch diameter elbow illustrated.

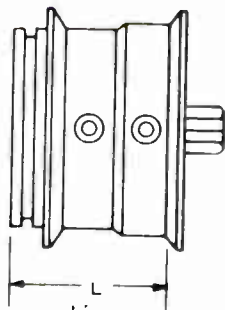
90-DEGREE ELBOWS, LONG END FEMALE



Stock Number	Line Size	Insert Length		Approx. Weight	Packaged Dimensions	Shipping Weight
		L ₁	L ₂			
MI-27791D-2B	3 $\frac{1}{8}$ "	4-3/16" (115 mm)	8-7/16" (214 mm)	10 $\frac{3}{4}$ lbs. (5 kg)	25 $\frac{1}{2}$ "x13"x14 $\frac{1}{2}$ " (648x330x368 mm)	15 lbs. (7 kg)
MI-561673E-2B	4 $\frac{1}{16}$ "	6" (152 mm)	12" (305 mm)	12 lbs. (5.4 kg)	6"x12"x12" (152x305x305 mm)	16 lbs. (7.3 kg)
MI-27792D-2B	6 $\frac{1}{8}$ "	6-9/16" (167 mm)	12-7/16" (316 mm)	25 $\frac{1}{4}$ lbs. (11 kg)	25 $\frac{1}{2}$ "x13"x14 $\frac{1}{2}$ " (648x330x368 mm)	50 lbs. (23 kg)
MI-561566D-2B	8 $\frac{3}{16}$ "	12" (305 mm)	24" (610 mm)	47 $\frac{1}{2}$ lbs. (21 kg)	39"x21"x14" (991x533x356 mm)	100 lbs. (46 kg)
MI-27793D-2B	9 $\frac{3}{16}$ "	8 $\frac{7}{8}$ " (225 mm)	23 $\frac{3}{8}$ " (594 mm)	57 lbs. (26 kg)	38"x18"x15" (965x457x381 mm)	110 lbs. (51 kg)

Includes connector, clamp and O-ring. Specially reinforced elbow is available for each line size. To order reinforced unit, add suffix "R" to Stock Number shown. Three-inch diameter elbow illustrated.

GAS STOPS

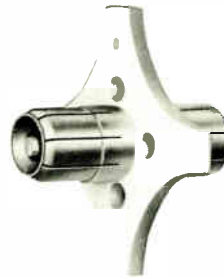
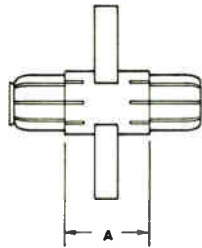


Stock Number	Line Size	Insert Length (L)	Approx. Weight	Shipping Weight
MI-27791D-3A	3 $\frac{1}{8}$ "	4-27/32" (123 mm)	7 lbs. (3 kg)	10 lbs. (4.5 kg)
MI-561673E-3A	4 $\frac{1}{16}$ "	9" (229 mm)	8 lbs. (3.6 kg)	10 lbs. (4.5 kg)
MI-27792D-3A	6 $\frac{1}{8}$ "	5-5/8" (143 mm)	18 lbs. (8 kg)	22 lbs. (10 kg)
MI-561566D-3A	8 $\frac{3}{16}$ "	6-15/16" (176 mm)	43 lbs. (20 kg)	50 lbs. (23 kg)
MI-27793D-3A	9 $\frac{3}{16}$ "	6-15/16" (176 mm)	60 lbs. (27 kg)	65 lbs. (29 kg)

Seals gassed from ungassed section. Each stock number includes clamp and O-ring. Six-inch diameter stop illustrated.

Universal 50- and 75-Ohm Teflon Transmission Line

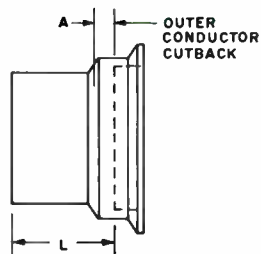
CONNECTORS, INNER CONDUCTOR, ANCHOR



Stock Number	Line Size	Insert Length (A)	Approx. Weight
MI-27791D-4D	3 $\frac{1}{8}$ "	1 $\frac{3}{4}$ " (44 mm)	1 lb. (454 g)
MI-561673E-4D	4 $\frac{1}{16}$ "	2 $\frac{3}{8}$ " (61 mm)	1 $\frac{1}{4}$ lbs. (0.6 kg)
MI-27792D-4D	6 $\frac{1}{8}$ "	2 $\frac{3}{8}$ " (61 mm)	2 lbs. (908 g)
MI-561566D-4D	8 $\frac{3}{16}$ "	3 $\frac{1}{8}$ " (79 mm)	4 lbs. (2 kg)
MI-27793D-4D	9 $\frac{1}{16}$ "	3 $\frac{1}{8}$ " (79 mm)	5 lbs. (2.3 kg)

Connector for use with Universal elbows, gas stops and certain adapters. Six-inch line connector illustrated.

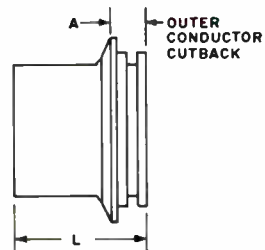
SOFT SOLDER FLANGES, FEMALE



Stock Number	Line Size	Length (L)	Insert Length (A)	Approx. Weight
MI-27791D-4A	3 $\frac{1}{8}$ "	2 $\frac{5}{16}$ " (59 mm)	$\frac{5}{8}$ " (16 mm)	2 $\frac{1}{2}$ lbs. (1.2 kg)
MI-561673E-4A	4 $\frac{1}{16}$ "	2 $\frac{1}{4}$ " (57 mm)	$\frac{1}{2}$ " (13 mm)	3 lbs. (1.4 kg)
MI-27792D-4A	6 $\frac{1}{8}$ "	3" (76 mm)	11/16" (17 mm)	6 lbs. (3 kg)
MI-561566D-4A	8 $\frac{3}{16}$ "	6 $\frac{1}{2}$ " (165 mm)	1" (25 mm)	17 $\frac{1}{2}$ lbs. (8 kg)
MI-27793D-4A	9 $\frac{1}{16}$ "	6 $\frac{1}{2}$ " (165 mm)	1" (25 mm)	17 $\frac{3}{4}$ lbs. (8.1 kg)

To flange field cut cut line. Includes soft solder kit, but does not include clamp. 8 $\frac{3}{16}$ -inch flange illustrated.

SOFT SOLDER FLANGES, MALE



Stock Number	Line Size	Length (L)	Insert Length (A)	Approx. Weight
MI-27791D-4B	3 $\frac{1}{8}$ "	1 $\frac{7}{8}$ " (48 mm)	17/32" (14 mm)	2 lbs. (0.9 kg)
MI-561673E-4B	4 $\frac{1}{16}$ "	2 $\frac{3}{4}$ " (70 mm)	$\frac{3}{4}$ " (19 mm)	2 $\frac{1}{2}$ lbs. (1.2 kg)
MI-27792D-4B	6 $\frac{1}{8}$ "	3 $\frac{5}{8}$ " (74 mm)	27/32" (18 mm)	5 $\frac{3}{4}$ lbs. (2.6 kg)
MI-561566D-4B	8 $\frac{3}{16}$ "	6 $\frac{1}{2}$ " (165 mm)	1" (25 mm)	13 $\frac{1}{2}$ lbs. (6 kg)
MI-27793D-4B	9 $\frac{1}{16}$ "	6 $\frac{1}{4}$ " (164 mm)	11/16" (17 mm)	15 $\frac{3}{4}$ lbs. (7.1 kg)

To flange field cut line. Includes O-ring gasket and soft solder kit. 8 $\frac{3}{16}$ -inch flange illustrated.

Universal 50- and 75-Ohm Teflon Transmission Line

SILVER SOLDER FLANGES, FEMALE



Stock Number	Line Size	Length	Insert Length (A)	Approx. Weight
MI-27791-14	3 1/8"	1 1/2" (38 mm)	1/2" (13 mm)	1 1/4 lbs. (567 g)
MI-561673E-4G	4 1/16"	1 1/2" (38 mm)	5/8" (16 mm)	1 1/2 lbs. (0.7 kg)
MI-27792-14	6 1/8"	1 7/8" (48 mm)	1/2" (13 mm)	2 3/4 lbs. (1.2 kg)

To flange 3 1/8", 4 1/16" and 6 1/8" Universal line. Not for field installation.

SILVER SOLDER FLANGES, MALE



Stock Number	Line Size	Length	Insert Length (A)	Approx. Weight
MI-27791-16	3 1/8"	1" (25 mm)	1/2" (13 mm)	1 lb. (454 g)
MI-561673E-4F	4 1/16"	1" (25 mm)	7/8" (22 mm)	1 1/4 lbs. (0.6 kg)
MI-27792-16	6 1/8"	1 1/4" (36 mm)	7/8" (20 mm)	2 3/4 lbs. (1.2 kg)

To flange 3 1/8", 4 1/16" and 6 1/8" Universal line. Not for field installation.

END CAPS, FEMALE



Stock Number	Line Size	Length (L)	Approx. Weight
MI-27791D-8A	3 1/8"	2 1/6" (62 mm)	2 1/2 lbs. (1.1 kg)
MI-561673E-8A	4 1/16"	5/8" (16 mm)	2 1/2 lbs. (1.2 kg)
MI-27792D-8A	6 1/8"	2 3/4" (70 mm)	6 lbs. (2.7 kg)
MI-561566D-8A	8 3/16"	3 1/8" (79 mm)	16 3/4 lbs. (7.7 kg)
MI-27793D-8A	9 3/16"	2 7/8" (73 mm)	19 3/4 lbs. (9 kg)

For temporarily capping male end of line to prevent entrance of moisture. Fitted for bleeding and gassing line.

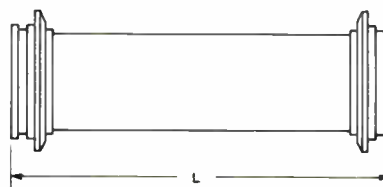
END CAPS, MALE



Stock Number	Line Size	Length (L)	Approx. Weight
MI-27791D-8B	3 1/8"	4" (102 mm)	1 3/4 lbs. (793 g)
MI-561673E-8B	4 1/16"	3 1/8" (80 mm)	2 lbs. (0.9 kg)
MI-27792D-8B	6 1/8"	4" (102 mm)	6 3/4 lbs. (3 kg)
MI-561566D-8B	8 3/16"	5" (127 mm)	13 1/2 lbs. (6 kg)
MI-27793D-8B	9 3/16"	5" (127 mm)	16 1/2 lbs. (7 kg)

For temporarily capping female end of line to prevent entrance of moisture. Fitted for bleeding and gassing of line.

ADAPTERS, MALE BOTH ENDS

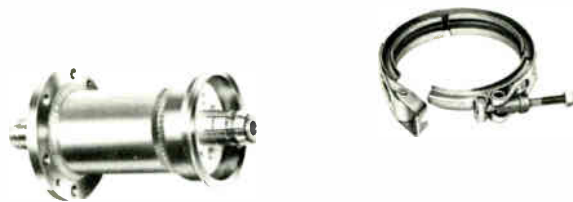
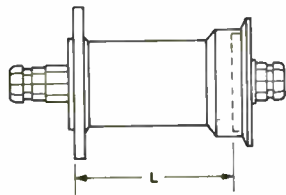


Stock Number	Line Size	Length (L)	Approx. Weight
MI-27791D-7C	3 1/8"	12" (304 mm)	5 lbs. (2.2 kg)
MI-27792D-7C	6 1/8"	12" (304 mm)	11 1/4 lbs. (5 kg)
MI-561566D-7C	8 3/16"	12" (304 mm)	19 lbs. (8.6 kg)
MI-27793D-7C	9 3/16"	12" (304 mm)	25 3/4 lbs. (12 kg)

Couples female ends of Universal line by providing two male ends. Furnished with two O-rings.

Universal 50- and 75-Ohm Teflon Transmission Line

ADAPTERS (Provide Universal Female and EIA Flanged Ends)

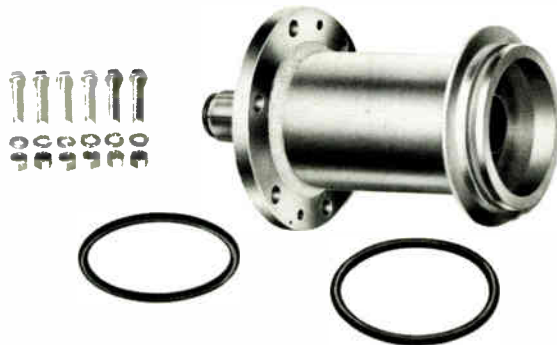
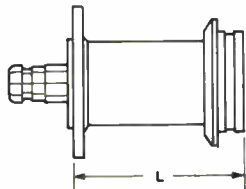


Stock Number	Length (L)	Approx. Weight
MI-27791D-7A	6" (152 mm)	7 lbs. (3 kg)
MI-27792D-7A	6" (152 mm)	16 lbs. (7 kg)

MI-27791D-7A couples 3/8" Universal male end to 3/8" MI-19089 or EIA by providing Universal female and EIA flanged ends. Includes two connectors, clamp, O-ring, 6 bolts, nuts and lockwashers.

MI-27792D-7A couples 6 1/8" Universal male end to 6 1/8" MI-19387 or EIA by providing Universal female and EIA flanged ends. Includes two connectors, clamp, O-ring, 12 bolts, nuts and lockwashers.

ADAPTERS (Provide Universal Male and EIA Flanged Ends)



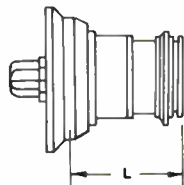
Stock Number	Length (L)	Approx. Weight
MI-27791D-7B	6" (152 mm)	5 lbs. (2.2 kg)
MI-27792D-7B	6" (152 mm)	12 1/2 lbs. (6 kg)

MI-27791D-7B couples 3/8" Universal female end to 3/8" MI-19089 or EIA by providing Universal male and EIA flanged ends. Includes connector, two O-rings, 6 bolts, nuts and lockwashers.

MI-27792D-7B couples 6 1/8" Universal female end to 6 1/8" MI-19387 or EIA by providing Universal male and EIA flanged ends. Includes connector, two O-rings, 12 bolts, nuts and lockwashers.

REDUCER-ADAPTER

(Provides 4 1/8" Universal Female and 3 1/8" Universal Male Ends)

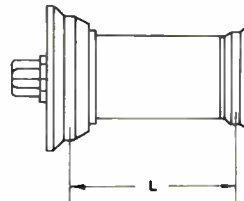


Stock Number	Length (L)	Approx. Weight
MI-561673E-5A	4" (102 mm)	8 1/2 lbs. (3.9 kg)

Couples 4 1/8" Universal male end to 3 1/8" Universal female end by providing Universal female and male ends. Includes captive connector, clamp and O-ring.

REDUCER-ADAPTER

(Provides 4 1/8" Universal Female and 3 1/8" Universal Female Ends)



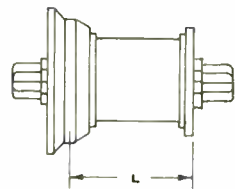
Stock Number	Length (L)	Approx. Weight
MI-561673E-5B	4 3/8" (111 mm)	8 1/2 lbs. (3.9 kg)

Couples 4 1/8" Universal male end to 3 1/8" Universal male end by providing Universal female ends. Includes captive connector at 4 1/8" end and removable connector at 3 1/8" end, and clamps for both ends.

Universal 50- and 75-Ohm Teflon Transmission Line

REDUCER-ADAPTER

(Provides 4 1/8" Universal Female and 3 1/8" EIA Flange Ends)

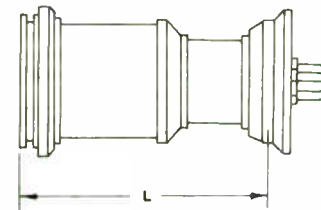


Stock Number	Length (L)	Approx. Weight
MI-561673E-5C	4 1/8" (106 mm)	8 1/2 lbs. (3.9 kg)

Couples 4 1/8" Universal male end to 3 1/8" EIA flange end by providing Universal female and bolted flange ends. Includes captive connector and clamp at 4 1/8" end, and removable connector and O-ring at 3 1/8" end.

REDUCER-ADAPTERS

(Provides Universal Male and Female Ends)

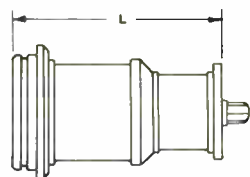


Stock Number	Length (L)	Approx. Weight
MI-561673E-5D	6" (152 mm)	6 lbs. (2.7 kg)
MI-561673E-5F	8" (203 mm)	48 lbs. (21.8 kg)

MI-561673-5D couples 4 1/8" Universal female end to 3 1/8" Universal male end by providing Universal male and female ends. MI-561673-5F couples 4 1/8" Universal male to 6 1/8" Universal female by providing Universal female and male ends. Both include removable connector, clamp and O-ring.

REDUCER-ADAPTER

(Provides 4 1/8" Universal Male and 3 1/8" EIA Flange Ends)

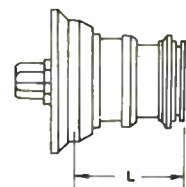


Stock Number	Length (L)	Approx. Weight
MI-561673-5E	6" (152 mm)	6 lbs. (2.7 kg)

Couples 4 1/8" Universal female and 3 1/8" EIA flange ends by providing Universal male and bolted flange ends. Includes removable connector at 3 1/8" end and O-ring at both ends.

REDUCER-ADAPTER

(Provides 6 1/8" Universal Female and 4 1/8" Universal Male Ends)



Stock Number	Length (L)	Approx. Weight
MI-561673E-5G	6" (152 mm)	48 lbs. (21.8 kg)

Couples 6 1/8" Universal male end to 4 1/8" Universal female end by providing Universal female and male ends. Includes captive connector and clamp at 6 1/8" end, and O-ring at 4 1/8" end.

REDUCER-TRANSFORMERS (Provide 6 1/8" Universal Female and 3 1/8" Universal Male Ends)



Stock Number	Length (L)	Approx. Weight	U. S. Channels
MI-27792D-6A	60" (1.5 m)	40 lbs. (18 kg)	2 or 3
MI-27792D-6B	48" (1.2 m)	30 lbs. (14 kg)	4, 5 or 6
MI-27792D-6C	24" (610 mm)	20 lbs. (9 kg)	7 thru 13
MI-27792D-6D	18" (457 mm)	17 1/4 lbs. (8 kg)	14-83

Reduces and transforms 6 1/8" 75-ohm Universal male end to 3 1/8" 50 ohm Universal female end by providing Universal 6 1/8" female and 3 1/8" male flanges. Includes captive connector, clamp and O-ring.

Universal 50- and 75-Ohm Teflon Transmission Line

REDUCER-TRANSFORMER (Provides 6 1/8" Universal Female and 3 1/8" 50-Ohm Flanged Ends)



Stock Number	Length (L)	Approx. Weight	U. S. Channels
MI-27792D-6K	18" (457 mm)	17 1/4 lbs. (8 kg)	14-83

Reduces and transforms 6 1/8" 75 ohm Universal male end to 3 1/8" 50 ohm flanged MI-19089 or EIA by providing Universal 6 1/8" female and 3 1/8" EIA flanges. Includes captive connector, clamp, O-ring, 6 bolts, nuts and lockwashers.

REDUCER-TRANSFORMER (Provides 6 1/8" Universal Male and 3 1/8" EIA Flanged Ends)



Stock Number	Length (L)	Approx. Weight	U. S. Channels
MI-19089-31ch	18" (457 mm)	17 lbs. (8 kg)	14-83

Reduces and transforms 6 1/8" 75 ohm Universal female end to 3 1/8", 50 ohm flanged MI-19089 or EIA by providing 6 1/8" Universal male and 3 1/8" EIA flanges. Includes O-ring, 6 bolts, nuts and lockwashers. Specify channel number.

REDUCER-TRANSFORMERS (Provide 6 1/8" Universal Female and 3 1/8" 51.5-Ohm Flanged Ends)



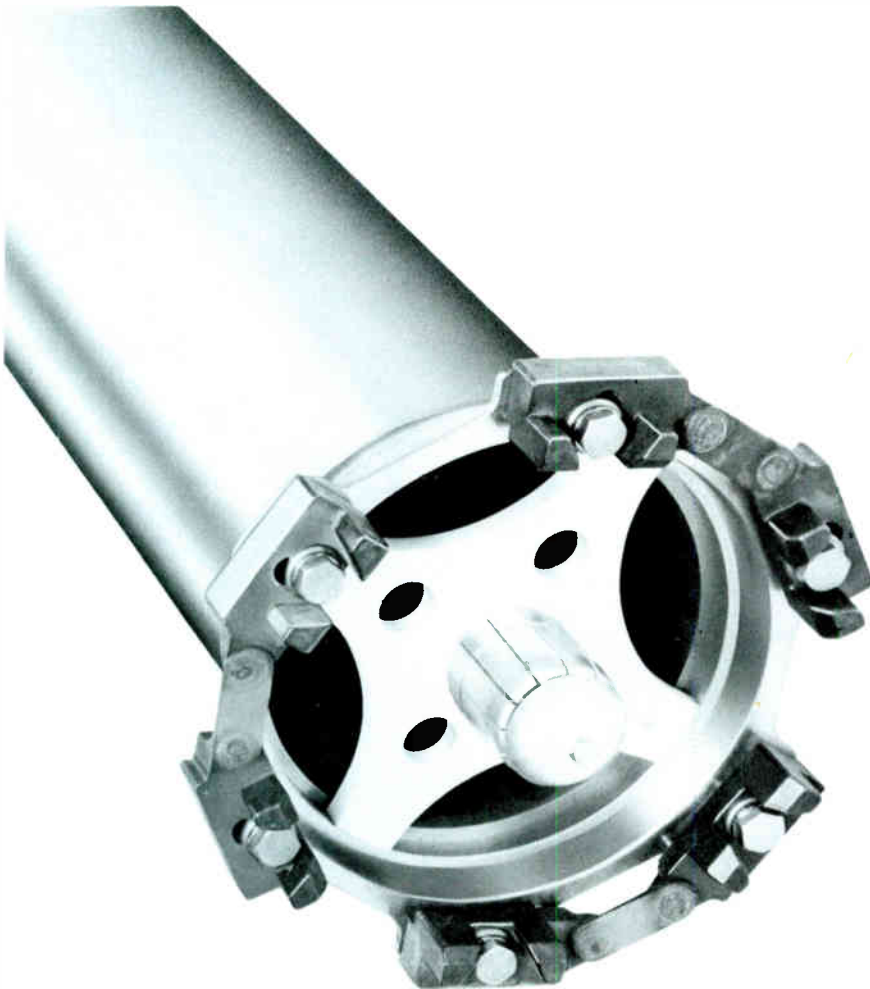
Stock Number	Length (L)	Approx. Weight	U. S. Channels
MI-27792D-6L	60" (1.5 m)	40 lbs. (18 kg)	2 or 3
MI-27792D-6M	48" (1.2 m)	30 lbs. (14 kg)	4, 5 or 6
MI-27792D-6N	24" (610 mm)	20 lbs (9 kg)	7 thru 13

Reduces and transforms 6 1/8" 75 ohm Universal male end to 3 1/8" 51.5 ohm flanged MI-19113C or 19313 by providing Universal 6 1/8" female and 3 1/8" EIA flanges. Includes captive connector, clamp, O-ring, 6 bolts, nuts and lockwashers.



Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

- Ease of assembly
- High efficiency Teflon insulation
- Heliarc welded flanges
- Inherently swivel connections
- Fully captive bolts and O-ring



RCA Cap-Lock 75-ohm transmission line retains all the key performance features of the proven RCA Universal transmission line and many more. The Cap-Lock flange combines strength of the bolt flange with the swivel action inherent in the Marman flange making it unnecessary to match the position of line sections. As in the case of the bolt flange, the Cap-Lock flange is actually stronger than the line itself since mechanical stress is carried by the bolts themselves. To the erector, the Cap-Lock flange provides an advantage over the ordinary bolt flange in that all parts needed to interconnect sections of line are captive in the flanges and thus instantly available. The O-ring is held securely by a groove in the male flange where the chances of being pinched or squeezed out of place are minimized. A thick Teflon insulator recessed in the female flange supports the inner conductor by a silver-plated beryllium contact. This is a watchband type spring contact which eliminates galling. It requires no lubrication.

Power handling capability, efficiency and useful frequency ranges of RCA Cap-Lock line are given in "Planning and Data for Transmission Line", TR.1101B.

In This Section:

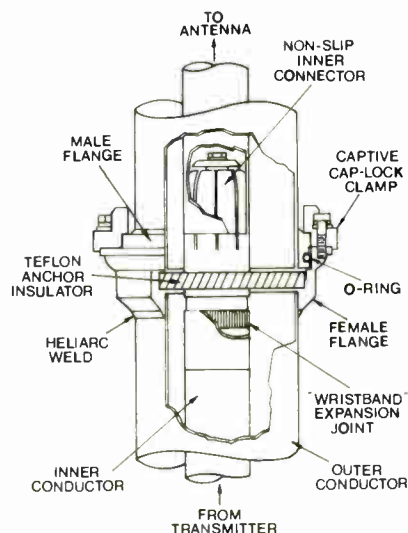
8 3/16-inch, 75 ohm	MI-561671
9 3/16-inch, 75 ohm	MI-561672

Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

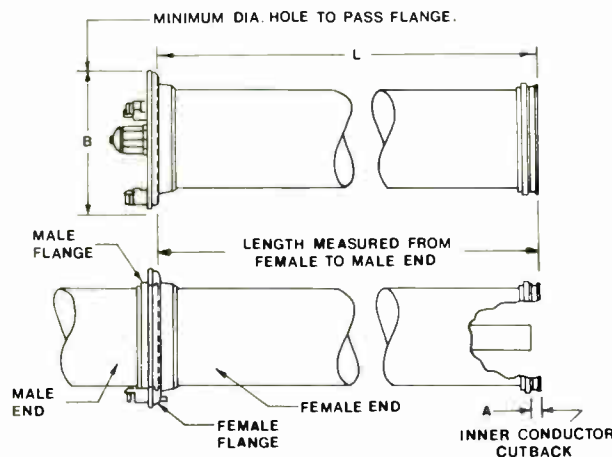
General Specifications

	OUTER		INNER		FREQUENCY*
	OD	ID	OD	ID	
MI-561671 8 3/16 inch 75 ohms	8.150"	8.000"	2.293"	2.229"	728 MHz
MI-561672 9 3/16 inch 75 ohms	9.166"	9.000"	2.580"	2.516"	632 MHz

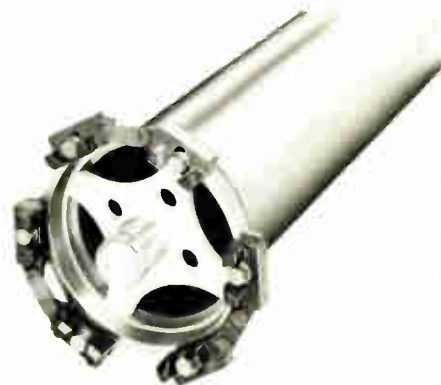
*Recommended upper limit for broadcast applications.



STRAIGHT SECTIONS



Cap-Lock flange, cutaway view: Clamping of line sections is positive through six stainless steel bolts. All hardware is captive. Clamps are ganged in pairs to provide only three discrete assemblies, minimizing chance of error. Clamp index pins give "feel" for full engagement. Guard bosses at bolts protect O-ring in coupling engagement and prevent use of spanner wrenches which may slip and dent outer conductor.



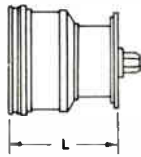
Stock No.	Length (L)	(Cutback) Dim. A	Dim. B*	Approx. Weight	Packaged Dimensions	Shipping Weight
MI-561671-1A	20' (6.1 m)	1.55"-1.58" (39-40 mm)	12" (305 mm)	200 lbs. (91 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	263 lbs. (119 kg)
MI-561671-1B	19 1/2' (6 m)	1.55"-1.58" (39-40 mm)	12" (305 mm)	187 lbs. (85 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	261 lbs. (118 kg)
MI-561672-1A	20' (6.1 m)	1.55"-1.58" (39-40 mm)	13" (330 mm)	235 lbs. (107 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	298 lbs. (135 kg)
MI-561672-1B	19 1/2' (6 m)	1.55"-1.58" (39-40 mm)	13" (330 mm)	228 lbs. (104 kg)	248"x14 1/2"x14 1/2" (6299x368x368 mm)	291 lbs. (132 kg)

*Minimum diameter hole to pass flange.

Straight sections are shipped one section per package. Each section includes expansion joint and O-ring. The special 19 1/2' lengths are required for certain frequencies. See table for channel length selection in "Planning and Data for Transmission Line", Catalog Sheet TR.1101B.

Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

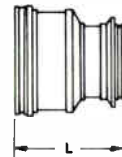
REDUCER-ADAPTERS (Provide Cap-Lock Male and 6 1/8" Bolted Flange Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-5E	8 3/16"	9" (229 mm)	13 lbs. (6 kg)
MI-561672-5E	9 3/16"	10" (254 mm)	15 lbs. (7 kg)

MI-561671-5E couples 8 3/16" Cap-Lock female end to 6 1/8" bolted flange end by providing Cap-Lock male and 6 1/8" bolted flange ends. MI-561672-5E couples 9 3/16" Cap-Lock female end to 6 1/8" bolted flange end by providing Cap-Lock 9 3/16" male and 6 1/8" bolted flange ends. MI-561671-5E includes 8 3/16" O-ring, 6 1/8" removable connector and O-ring. MI-561672-5E includes 9 3/16" O-ring, 6 1/8" removable connector and O-ring.

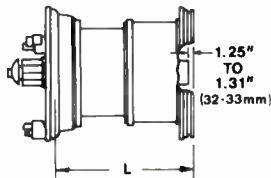
REDUCER-ADAPTERS (Provide Cap-Lock Male and 6 1/8" Universal Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-5F	8 3/16"	9" (229 mm)	13 lbs. (6 kg)
MI-561672-5F	9 3/16"	10" (254 mm)	15 lbs. (7 kg)

MI-561671-5F couples 8 3/16" Cap-Lock female end to 6 1/8" Universal female end by providing 8 3/16" Cap-Lock male end and 6 1/8" Universal male end. MI-561672-5F couples 9 3/16" Cap-Lock female end to 6 1/8" Universal female end by providing 9 3/16" Cap-Lock male and 6 1/8" Universal male ends. MI-561671-5F includes 8 3/16" O-ring and 6 1/8" O-ring. MI-561672-5F includes 9 3/16" O-ring and 6 1/8" O-ring.

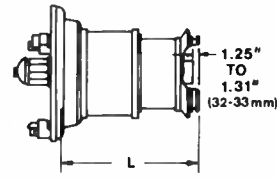
REDUCER-ADAPTER (Provides Cap-Lock 9 3/16" Male and 8 3/16" Female Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561672-5G	9 3/16"	12" (305 mm)	18 lbs. (8 kg)

MI-561672-5G couples 9 3/16" Cap-Lock female end to 8 3/16" Cap-Lock male end by providing Cap-Lock 9 3/16" male and 8 3/16" female ends.

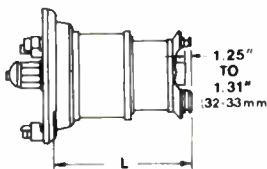
REDUCER-ADAPTER (Provides Cap-Lock 9 3/16" Female and Universal 8 3/16" Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561672-5H	9 3/16"	12" (305 mm)	18 lbs. (8 kg)

MI-561672-5H couples 9 3/16" Cap-Lock female end to 8 3/16" Universal male end by providing Cap-Lock 9 3/16" female and Universal 8 3/16" male ends.

REDUCER-ADAPTER (Provides Cap-Lock 9 3/16" Female and 8 3/16" Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561672-5J	9 3/16"	12" (305 mm)	18 lbs. (8 kg)

MI-561672-5J couples 9 3/16" Cap-Lock female end to 8 3/16" Cap-Lock male end by providing Cap-Lock 9 3/16" female and 8 3/16" Cap-Lock male ends.

CUTOFF GUIDES

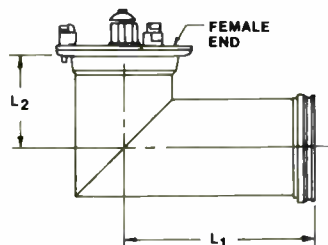
Stock No.	Approx. Weight	Guide for Cutting
MI-561566D-15A	10 lbs. (5 kg)	8 3/16" outer
MI-561566D-15B	1.5 lbs. (0.7 kg)	8 3/16" inner
MI-27793D-15A	11 lbs. (4.5 kg)	9 3/16" outer
MI-27793D-15B	1.5 lbs. (0.7 kg)	9 3/16" inner

MISCELLANEOUS

O-ring Gasket for MI-561671	MI-561671-4E
O-ring Gasket for MI-561672	MI-561672-4E
Hardware Kit (Spare) for MI-561671	MI-561671-4C
Hardware Kit (Spare) for MI-561672	MI-561672-4C
Silicone Grease, 2 oz. tube	MI-19089-18.

Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

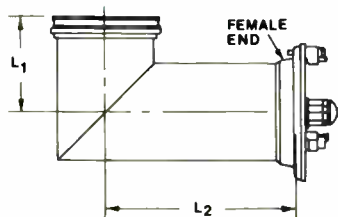
90-DEGREE ELBOWS, SHORT END FEMALE



Stock No.	Line Size	Insert Length		Approx. Weight	Packaged Dimensions	Shipping Weight
		L ₁	L ₂			
MI-561671-2A	8 3/16"	24" (610 mm)	12" (305 mm)	55 1/2 lbs. (25 kg)	36"x25"x14" (914x635x356 mm)	108 lbs. (49 kg)
MI-561672-2A	9 3/16"	22 3/4" (578 mm)	9 1/2" (241 mm)	65 lbs. (30 kg)	35"x22"x15" (879x559x381 mm)	118 lbs. (54 kg)

Includes removable connector and O-ring. Specially reinforced elbow available for each line size. To order reinforced unit, add suffix "R" to Stock Number shown.

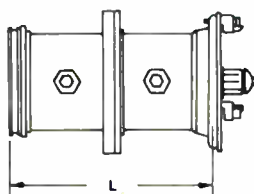
90-DEGREE ELBOWS, LONG END FEMALE



Stock No.	Line Size	Insert Length		Approx. Weight	Packaged Dimensions	Shipping Weight
		L ₁	L ₂			
MI-561671-2B	8 3/16"	12" (305 mm)	24" (610 mm)	55 1/2 lbs. (25 kg)	39"x21"x14" (991x533x356 mm)	108 lbs. (49 kg)
MI-561672-2B	9 3/16"	8 7/8" (226 mm)	23 3/8" (594 mm)	65 lbs. (30 kg)	38"x18"x15" (965x457x381 mm)	118 lbs. (54 kg)

Includes removable connector and O-ring. Specially reinforced elbow available for each line size. To order reinforced unit, add suffix "R" to Stock Number shown.

GAS STOPS

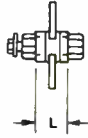


Stock No.	Line Size	Insert Length (L)	Approx. Weight	Shipping Weight
MI-561671-3A	8 3/16"	12" (305 mm)	51 lbs. (23 kg)	58 lbs. (26 kg)
MI-561672-3A	9 3/16"	12" (305 mm)	68 lbs. (31 kg)	73 lbs. (33 kg)

Seals gassed from ungassed section. Each stock number includes captive connector and O-ring.

Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

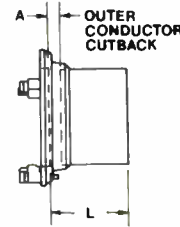
CONNECTOR, INNER CONDUCTOR, ANCHOR



Stock No.	Line Size	Insert Length (A)	Approx. Weight
MI-561671-4D	8 3/16"	3 1/8" (79 mm)	4 lbs. (2 kg)
MI-561672-4D	9 3/16"	3 1/8" (79 mm)	5 lbs. (2.3 kg)

Connector for use with Cap-Lock elbows, gas stops and certain adapters.

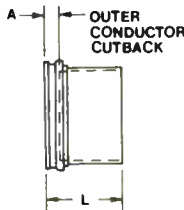
SOFT SOLDER FLANGES, FEMALE



Stock No.	Line Size	Length (L)	Insert Length (A)	Approx. Weight
MI-561671-4A	8 3/16"	6 5/8" (168 mm)	7/8" (22 mm)	25 1/2 lbs. (12 kg)
MI-561672-4A	9 3/16"	6 5/8" (168 mm)	7/8" (22 mm)	25 3/4 lbs. (12 kg)

To flange field cut line. Includes soft solder kit.

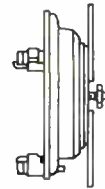
SOFT SOLDER FLANGES, MALE



Stock No.	Line Size	Length (L)	Insert Length (A)	Approx. Weight
MI-561671-4B	8 3/16"	6 1/4" (173 mm)	1 1/16" (27 mm)	13 1/2 lbs. (6 kg)
MI-561672-4B	9 3/16"	6 1/4" (173 mm)	1 1/16" (27 mm)	15 3/4 lbs. (7.1 kg)

To flange field cut line. Includes O-ring and soft solder kit.

END CAPS, FEMALE



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-8A	8 3/16"	3" (76 mm)	24 3/4 lbs. (11 kg)
MI-561672-8A	9 3/16"	3" (76 mm)	27 3/4 lbs. (13 kg)

For temporarily capping male end of line to prevent entrance of moisture. Fitted for bleeding and gassing line. Includes O-ring.

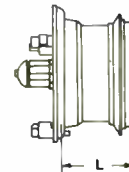
END CAPS, MALE



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-8B	8 3/16"	5" (127 mm)	13 1/2 lbs. (6 kg)
MI-561672-8B	9 3/16"	5" (127 mm)	16 1/2 lbs. (7 kg)

For temporarily capping female end of line to prevent entrance of moisture. Fitted for bleeding and gassing line. Includes O-ring.

ADAPTERS (Provide Cap-Lock Female and Universal Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-7A	8 3/16"	6" (152 mm)	18 lbs. (8 kg)
MI-561672-7A	9 3/16"	10" (254 mm)	20 lbs. (9 kg)

MI-561671-7A couples 8 3/16" Cap-Lock male end to 8 3/16" Universal female end by providing Cap-Lock female and 8 3/16" Universal male ends. MI-561672-7A couples 9 3/16" Cap-Lock male end to 9 3/16" Universal female end by providing Cap-Lock female and 9 3/16" Universal male ends. Includes O-ring at male end.

Cap-Lock 75-Ohm 8 3/16" and 9 3/16" Teflon Transmission Line

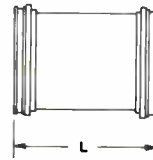
ADAPTERS (Provide Cap-Lock Male and Universal Female Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-7B	8 3/16"	6" (152 mm)	15 lbs. (7 kg)
MI-561672-7B	9 3/16"	10" (254 mm)	18 lbs. (8 kg)

MI-561671-7B couples 8 3/16" Cap-Lock female end to 8 3/16" Universal male end by providing Cap-Lock male and 8 3/16" Universal female ends. MI-561672-7B couples 9 3/16" Cap-Lock female end to 9 3/16" Universal male end by providing Cap-Lock male and 9 3/16" Universal female ends. Includes O-ring at male end.

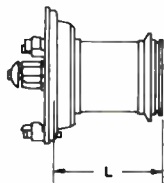
ADAPTERS (Provide Two Cap-Lock Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-7C	8 3/16"	12" (305 mm)	19 lbs. (8.6 kg)
MI-561672-7C	9 3/16"	12" (305 mm)	25 3/4 lbs. (12 kg)

MI-561671-7C couples two 8 3/16" Cap-Lock female ends by providing two Cap-Lock male ends. MI-561672-7C couples two 9 3/16" Cap-Lock female ends by providing two Cap-Lock male ends. Includes two O-ring gaskets.

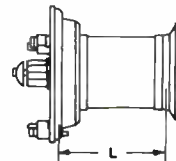
REDUCER-ADAPTERS (Provide Cap-Lock Female and 6 1/8" Universal Male Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-5A	8 3/16"	9" (229 mm)	15 lbs. (7 kg)
MI-561672-5A	9 3/16"	10" (254 mm)	17 lbs. (7.7 kg)

MI-561671-5A couples 8 3/16" Cap-Lock male end to 6 1/8" Universal female end by providing Cap-Lock female and 6 1/8" Universal male ends. MI-561672-5A couples 9 3/16" Cap-Lock male end to 6 1/8" Universal female end by providing Cap-Lock female and 6 1/8" Universal male ends. Includes captive connector and O-ring.

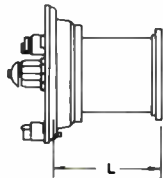
REDUCER-ADAPTERS (Provide Cap-Lock Female and 6 1/8" Universal Female Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-5B	8 3/16"	9"-9.06" (229-230 mm)	15 lbs. (7 kg)
MI-561672-5B	9 3/16"	10"-10.06" (254-256 mm)	17 lbs. (7.7 kg)

MI-561671-5B couples 8 3/16" Cap-Lock male end to 6 1/8" Universal female end by providing Cap-Lock female and Universal 6 1/8" female ends. MI-561672-5B couples 9 3/16" Cap-Lock male end to Universal 6 1/8" male end by providing Cap-Lock 9 3/16" female and 6 1/8" Universal female ends. MI-561671-5B includes 8 3/16" captive connector, 6 1/8" removable connector and Marman clamp. MI-561672-5B includes 9 3/16" captive connector, 6 1/8" removable connector and Marman clamp.

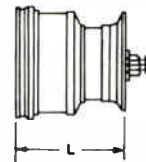
REDUCER-ADAPTERS (Provide Cap-Lock Female and 6 1/8" Bolted Flange Ends)



Stock No.	Line Size	Length (L)	Approx. Weight
MI 561671-5C	8 3/16"	9" (229 mm)	14 lbs. (6 kg)
MI-561672-5C	9 3/16"	10" (254 mm)	16 lbs. (7.3 kg)

MI-561671-5C couples 8 3/16" Cap-Lock male end to 6 1/8" bolted flange end by providing Cap-Lock female and 6 1/8" bolted flange ends. MI-561672-5C couples 9 3/16" Cap-Lock male end to 6 1/8" bolted flange end by providing 9 3/16" Cap-Lock female end and 6 1/8" bolted flange end. MI-561671-5C includes 8 3/16" captive connector, 6 1/8" removable connector and O-ring. MI-561672-5C includes 9 3/16" captive connector, 6 1/8" removable connector and O-ring.

REDUCER-ADAPTERS (Provide Cap-Lock Male and 6 1/8" Universal Female Ends)

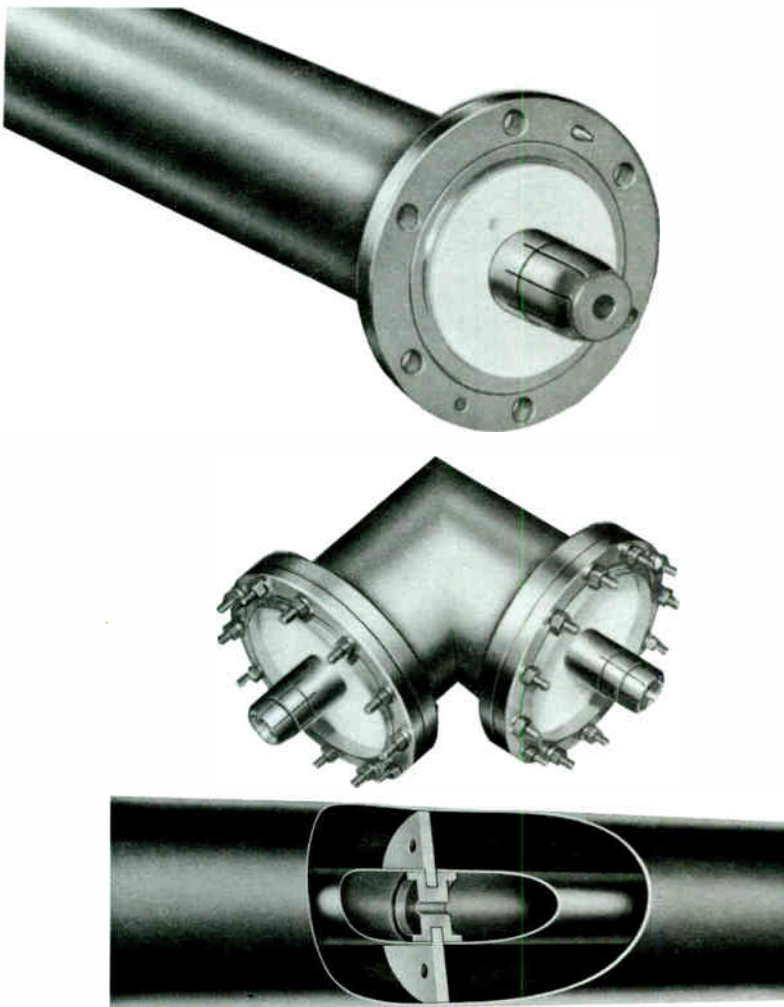


Stock No.	Line Size	Length (L)	Approx. Weight
MI-561671-5D	8 3/16"	9" (229 mm)	13 lbs. (6 kg)
MI-561672-5D	9 3/16"	10" (254 mm)	15 lbs. (7 kg)

MI-561671-5D couples 8 3/16" Cap-Lock female end to 6 1/8" Universal male end by providing Cap-Lock male and 6 1/8" Universal female ends. MI-561672-5D couples 9 3/16" Cap-Lock female end to 6 1/8" Universal male end by providing Cap-Lock male and 6 1/8" Universal female ends. MI-561671-5D includes 8 3/16" O-ring, 6 1/8" removable connector and Marman clamp. MI-561672-5D includes 9 3/16" O-ring, 6 1/8" removable connector and Marman clamp.

Bolt Flanged 50 and 75 Ohm Teflon Insulated Transmission Line

- Low loss Teflon dielectric
- High power capability
- Excellent VSWR



RCA Bolt Flanged 50- and 75-ohm Transmission Lines are efficient, precision types designed for medium to high power installations at frequencies up to 1,000 MHz and higher. These lines feature excellent VSWR and a flat characteristic impedance over a wide range of frequencies.

This is the result of a specially developed Teflon insulator which is electrically "transparent" and introduces minimum discontinuity. RF attenuation is low and efficiency is high. Characteristics of the insulator and precise centering of the inner conductor permit the line to be cut at any point along its length without changing operating impedance.

Power ratings and efficiency are given in "Planning and Data for Transmission Line," Catalog Sheet TR.1101A.

In This Section:

3 $\frac{1}{8}$ -inch Teflon	
50-Ohm	MI-19089
6 $\frac{1}{8}$ -inch Teflon	
75-Ohm	MI-19387

3/8-inch Teflon-Insulated, 50-Ohm Transmission Line, MI-19089

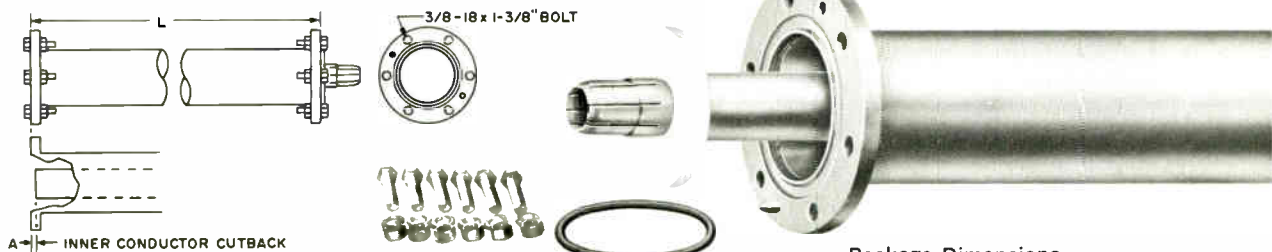
General Specifications

Frequency (Recommended upper limit for broadcast applications)	1400 MHz
Characteristic Impedance	50 ohms
OD, Outer Conductor	3.125" (79 mm)
ID, Outer Conductor	3.027" (77 mm)
OD, Inner Conductor	1.315" (33 mm)
ID, Inner Conductor	1.231" (31 mm)
Flange Diameter	5 5/8" (132 mm)

Dimensionally, this line is equivalent to EIA 50 ohm 3/8" line. However, the connectors associated with straight sections are captive.

NOTES: MI-19387-1E and -1F include one captive insulator and expansion joint. MI-19387-1C and -1D have neither anchor insulator nor expansion joint, and are offered for short inside runs only. When ordering for replacement, specify that line include one swivel flange. The special 19 1/2' lengths are required for certain frequencies. See table for channel length selection in "Planning and Data for Transmission Line," B.6900.

STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Dim. A	Approx. Weight	Package Dimensions (two lengths per package)	Shipping Weight
MI-19089-1E	20' (6.1 m)	2 fixed	1 1/8" (29 mm)	60 lbs. (27 kg)	248" x 13" x 8" (6300 x 330 x 203 mm)	162 lbs. (73 kg)
MI-19089-1F	19 1/2' (6 m)	2 fixed	1 1/8" (29 mm)	57 lbs. (26 kg)	240" x 13" x 8" (6096 x 330 x 203 mm)	158 lbs. (72 kg)
MI-19089-1C	20' (6.1 m)	2 fixed	1" (25 mm)	60 lbs. (27 kg)	248" x 13" x 8" (6300 x 330 x 203 mm)	162 lbs. (73 kg)
MI-19089-1D	19 1/2' (6 m)	2 fixed	1" (25 mm)	57 lbs. (25 kg)	240" x 13" x 8" (6096 x 330 x 203 mm)	158 lbs. (72 kg)

90-DEGREE ELBOW, MALE

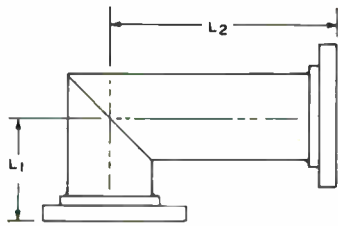


Stock Number	L1	L2	Flanges	Approx. Weight
MI-19089-2A	4 1/8" (105 mm)	4 1/8" (105 mm)	2 Swivel	13 lbs. (6 kg)

Includes locked-in connector at each end.

3/8-inch Teflon-Insulated, 50-Ohm Transmission Line, MI-19089

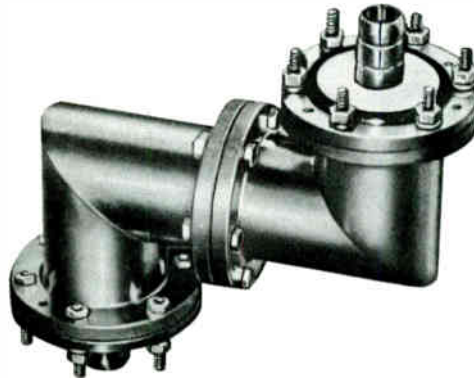
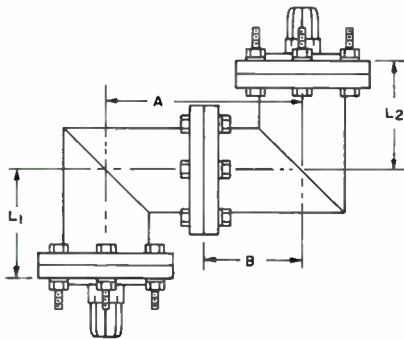
90-DEGREE ELBOW, FEMALE



Stock Number	L ₁	L ₂	Flanges	Approx. Weight
MI-19089-2C	4 3/4" (121 mm)	8" (203 mm)	2 Swivel	11 lbs. (5 kg)

MI-19089-2CR same as above but with reinforced, welded gussets. If anchor insulator connectors are required, use connector MI-19089-10A with this elbow (see next page).

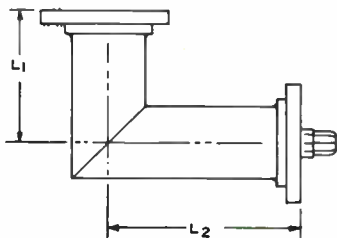
TWO 90-DEGREE ELBOWS IN SERIES



Stock Number	L ₁	Dimensions L ₂	A	B	Flanges	Approx. Weight
MI-19089-6	4 1/8" (105 mm)	4 1/8" (105 mm)	7 1/2" (190 mm)	3 3/4" (95 mm)	2 Swivel	23 lbs. (10 kg)

Swivel tandem elbows supplied with one O-ring, and at each end, 6 1 3/8" bolts, nuts, lockwashers and one locked-in connector.

90-DEGREE ELBOW (For Replacement Use)



Stock Number	Insert Length L ₁	L ₂	Flanges	Approx. Weight
MI-19089-2B	3 7/8" (97 mm)	4 1/8" (105 mm)	2 Swivel	11 lbs. (5 kg)

Furnished with one locked-in inner connector, O-ring, 6 bolts, nuts and lockwashers.

GAS STOP

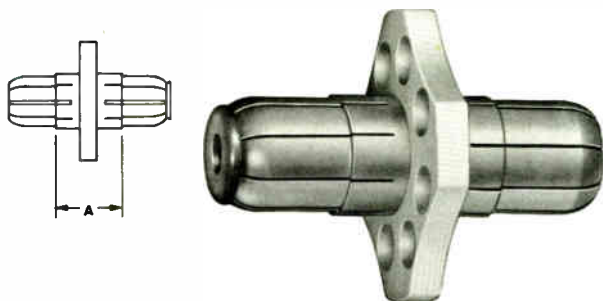


Stock Number	Insert Length (L)	Approx. Weight
MI-19089-4	1 1/2" (48 mm)	7 lbs. (3.2 kg)

Seals gassed from ungassed sections.

3/8-inch Teflon-Insulated, 50-Ohm Transmission Line, MI-19089

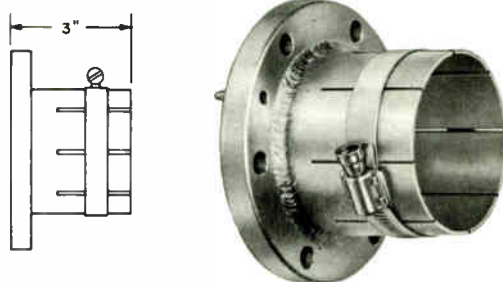
CONNECTOR, ANCHOR INSULATOR



Stock Number	Insert Length (A)	Approx. Weight
MI-19089-10A	1 3/4" (44 mm)	1 lb. (454 g)

Used to join inner conductors of MI-19089 line.

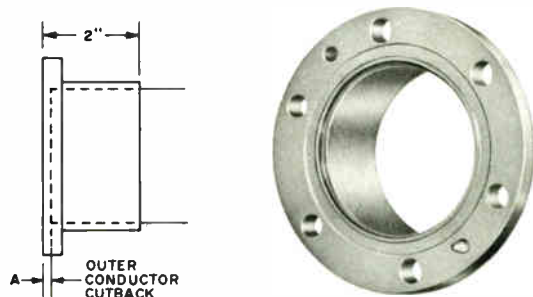
MECHANICAL FLANGE



Stock Number	Approx. Weight
MI-27988-4C	3 lbs. (1.4 kg)

To flange field cut line. Cannot be pressurized.

SOFT SOLDER FLANGE



Stock Number	Insert Length (A)	Approx. Weight
MI-19089-14	1/4" (6.3 mm)	3 lbs. (1.4 kg)

To flange field cut line. Flange is non-swivel.

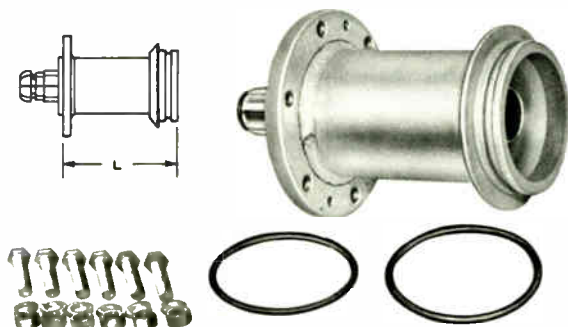
SILVER SOLDER FLANGES



Stock Number	Insert Length (A)	Approx. Weight
MI-19089-11	1/4" (6.3 mm)	1 3/4 lbs. (.8 kg)
MI-19089-12	1/4" (6.3 mm)	1 3/4 lbs. (.8 kg)

MI-19089-11 is fixed and MI-19089-12 is a swivel flange. Not recommended for field installation.

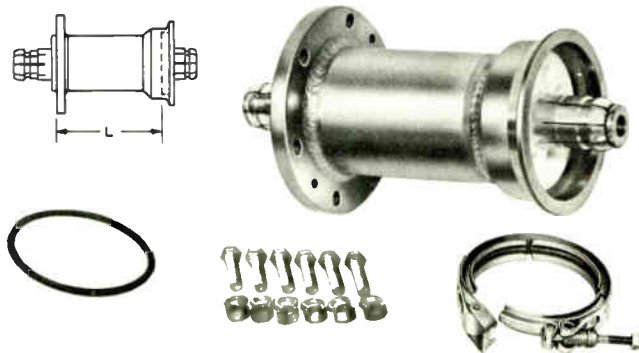
ADAPTER, TO 3/8" UNIVERSAL MALE



Stock Number	Insert Length (L)	Approx. Weight
MI-27791D-7B	6" (152 mm)	5 lbs. (2.2 kg)

Converts MI-19089 and EIA flanged components to 3/8" Universal male end.

ADAPTER, TO 3/8" UNIVERSAL FEMALE

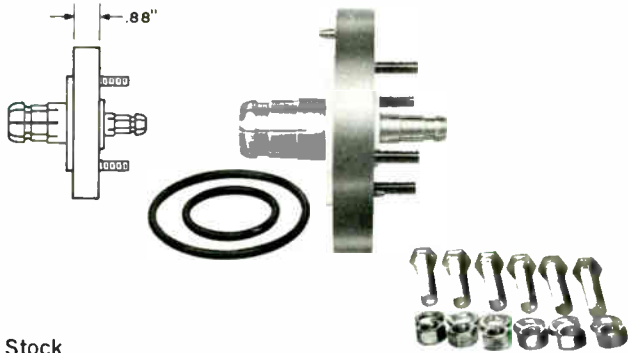


Stock Number	Insert Length (L)	Approx. Weight
MI-27791D-7A	6" (152 mm)	7 lbs. (3 kg)

Converts MI-19089 and EIA flanged components to 3/8" Universal female.

3/8-inch Teflon-Insulated, 50-Ohm Transmission Line, MI-19089

REDUCER, TO 1 5/8" EIA



Stock Number	Approx. Weight
MI-27988-5C	3 lbs. (1.4 kg)

Reduces flanged MI-19089 to 1 5/8" 50 ohm EIA components.

REDUCER, TO 7/8" EIA



Number Stock	Approx. Weight
MI-27988-5D	3 lbs. (1.3 kg)

Reduces flanged MI-19089 to 7/8" 50 ohm EIA components.

REDUCER, TO N FITTING



Stock Number	Length	Approx. Weight
MI-19089-17	8" (203 mm)	5 3/4 lbs. (2.6 kg)

Converts MI-19089 to Type N female.

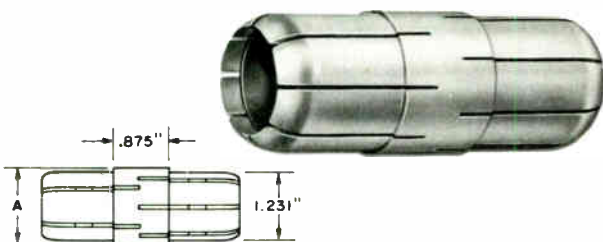
REDUCER, TO TYPE HN FITTING



Stock Number	Length	Approx. Weight
MI-19089-21	7 3/8" (187 mm)	4 lbs. (1.8 kg)

Converts MI-19089 to Type HN female.

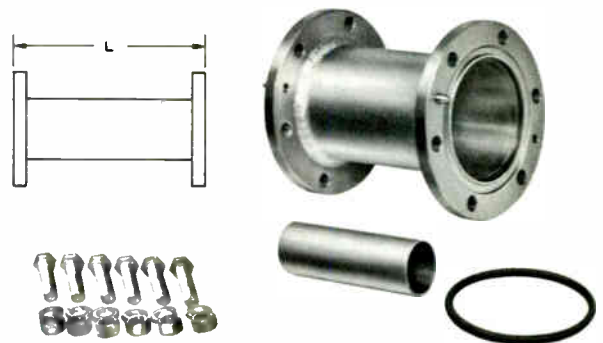
INNER CONDUCTOR ADAPTERS



Stock Number	Dim. A	Approx. Weight
MI-27988-4A	1.136" (28 mm)	6 ozs. (171 g)
MI-27988-4B	1.232" (31 mm)	6 ozs. (171 g)

MI-27988-4A adapts MI-19089 and MI-27791D inner conductors to MI-19113C inner conductors. MI-27988-4B adapts MI-19089 and MI-27791D inner conductors to MI-19313 inner conductors.

ADAPTER, MALE TO MALE

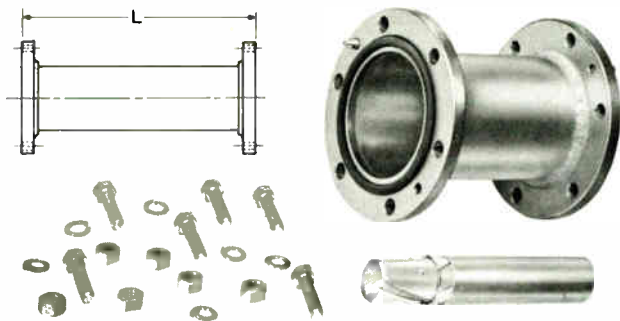


Stock Number	Insert Length (L)	Approx. Weight
MI-27988-7E	6" (152 mm)	5 1/2 lbs. (2.5 kg)

Connects male ends of MI-19089 and EIA components.

3 1/8-inch Teflon-Insulated, 50-Ohm Transmission Line, MI-19089

ADAPTER, FLANGED TO EIA FLANGED



Stock Number	Length (L)	Approx. Weight
MI-27988-7A	6" (152 mm)	5 1/2 lbs. (2.5 kg)

Adapts MI-19089 and EIA components to MI-19113C or MI-19313 components. For FM applications.

END CAP



Stock Number	Approx. Weight
MI-19089-26	3 lbs. (1.4 kg)

For temporary closure of line to prevent entrance of moisture. Includes pipe plug for bleeding and gassing line.

CUTOFF GUIDES



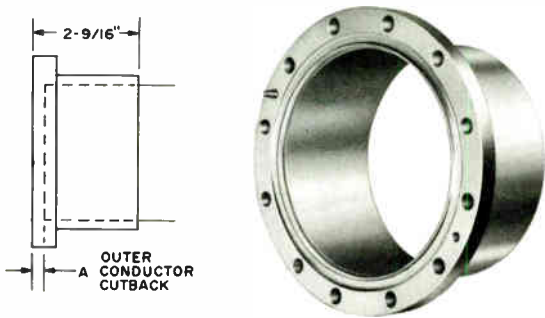
Stock Number	Approx. Weight	Guide for Cutting
MI-19089-15	2.3 lbs. (1.1 kg)	3 1/8 inch outer
MI-19089-16	6 ozs. (171 g)	3 1/8 inch inner

MISCELLANEOUS ITEMS

Item	Stock Number
O-Ring Gasket	MI-19113C-10
Hardware Kit consisting of 6 bolts, nuts and lockwashers	MI-19113C-19
Tool for lancing 3 1/8" line	MI-19089-29
Extractor for removing anchor insulator from inner conductor	MI-19089-20
Expansion Joint Anchor Insulator—Field Replacement Kit	MI-19089-23
20' Length of Inner Conductor for use with MI-19089-23	MI-19089-99-1
Silicone Grease, 8 oz. tube	MI-19089-18A

6 1/8-inch Teflon-Insulated, 75-Ohm Transmission Line, MI-19387

SOFT SOLDER FLANGE



Stock Number	Insert Length (A)	Approx. Weight
MI-19387-14	3/8" (9.5 mm)	7 lbs. (3.2 kg)

To flange field cut line. Flange is non-swivel.

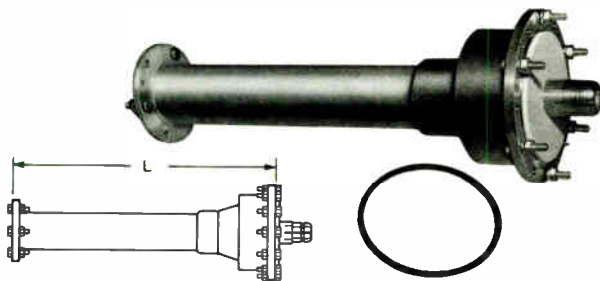
SILVER SOLDER FLANGES



Stock Number	Insert Length (A)	Approx. Weight
MI-19387-11	9/32" (7 mm)	3 1/2 lbs. (1.6 kg)
MI-19387-12	3/8" (9.5 mm)	3 1/2 lbs. (1.6 kg)

MI-19387-11 is fixed and MI-19387-12 is a swivel flange. Not recommended for field installation.

UHF REDUCER-TRANSFORMER, TO 3 1/8" 50-OHM



Stock Number	Insert Length (L)	Approx. Weight
MI-19387-4-ch	21 5/8" (544 mm)	19 lbs. (8.7 kg)

Reduces and transforms 6 1/8" 75 ohm MI-19387 to 3 1/8" 50 ohm MI-19089 and EIA components. Specify UHF channel or frequency with order. Furnished with one captive inner connector, O-ring MI-19314C-9, three 1 3/8" bolts, six 1 3/4" bolts, 9 nuts and lockwashers.

CUTOFF GUIDES



Stock Number	Approx. Weight	Guide for Cutting
MI-19387-15	6 lbs. (2.7 kg)	6 1/8 inch outer
MI-19387-16	6 ozs. (171 g)	6 1/8 inch inner

END CAP



Stock Number	Approx. Weight
MI-19387-26	10 lbs. (4.5 kg)

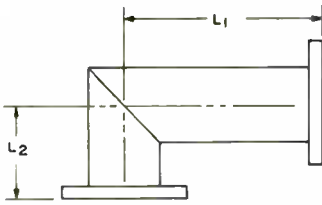
For temporary closure of transmission line to prevent entrance of moisture. Includes pipe plug for bleeding and gassing line.

MISCELLANEOUS ITEMS

Item	Stock Number
O-Ring Gasket	MI-19314C-9
Hardware Kit consisting of 12 bolts, nuts and lockwashers	MI-19314C-10
Tool for lancing MI-19387 line	MI-19387-29
Expansion Joint Anchor Insulator— Field Replacement Kit	MI-19387-23
20' Length of Inner Conductor for use with MI-19387-23	MI-19387-99-1
Silicone Grease, 8 oz. tube	MI-19089-18A

6 1/8-inch Teflon-Insulated, 75-Ohm Transmission Line, MI-19387

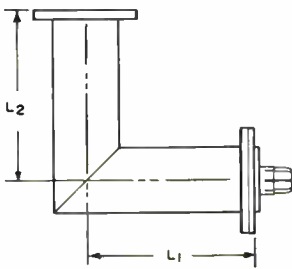
90-DEGREE ELBOW, FEMALE



Stock Number	L ₁	Insert Length L ₂	Flanges	Approx. Weight
MI-19387-2C	12" (305 mm)	7" (178 mm)	2 Swivel	26 lbs. (12 kg)

MI-19387-2CR same as above but with reinforced, welded gussets. If anchor insulator connectors are required, use connector MI-19387-10A with this elbow (see lower right panel, this page).

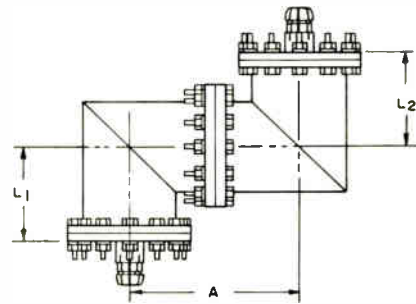
90-DEGREE ELBOW (For Replacement Use)



Stock Number	Insert Length		Flanges	Approx. Weight
	L ₁	L ₂		
MI-19387-2B	6 3/8" (157 mm)	5 1/8" (144 mm)	2 Swivel	24 lbs. (11 kg)

Includes one locked-in inner connector, O-ring, 24 bolts, nuts and lockwashers.

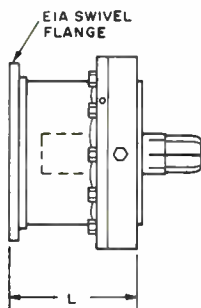
TWO 90-DEGREE ELBOWS IN SERIES



Stock Number	Dimensions			Flanges	Approx. Weight
	L ₁	L ₂	A		
MI-19387-6	6 3/8" (157 mm)	6 3/8" (157 mm)	11 3/8" (289 mm)	2 Swivel	55 lbs. (25 kg)

Swivel tandem elbows supplied with 12 bolts, nuts, and lockwashers at each end, 2 locked-in connectors and one O-ring.

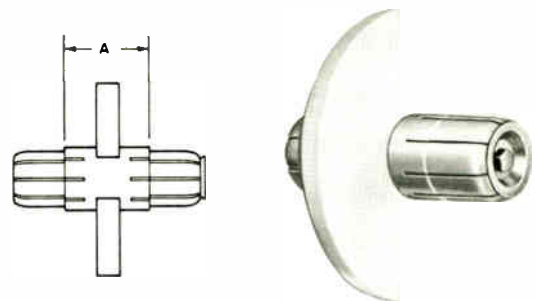
GAS STOP



Stock Number	Insert Length (L)	Approx. Weight
MI-19387-5A	5 3/8" (137 mm)	17.5 lbs. (8 kg)

Seals gassed from ungassed sections. Supplied with one O-ring, 12 bolts, nuts and lockwashers.

CONNECTOR, ANCHOR INSULATOR



Stock Number	Insert Length (A)	Approx. Weight
MI-19387-10A	2 3/8" (61 mm)	2 3/4 lbs. (1 kg)

Used to join inner conductors of MI-19387 line.

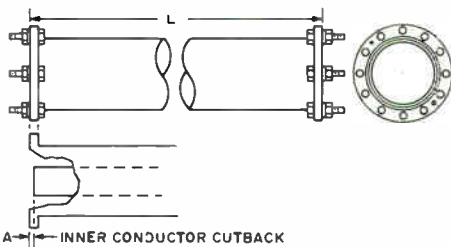
6 1/8-inch Teflon-Insulated, 75-Ohm Transmission Line, MI-19387

General Specifications

Frequency (Recommended upper limit for broadcast applications)	900 MHz
Characteristic Impedance	75 ohms
OD, Outer Conductor	6.125" (156 mm)
ID, Outer Conductor	5.981" (152 mm)
OD, Inner Conductor	1.711" (43 mm)
ID, Inner Conductor	1.661" (42 mm)
Flange Diameter	8 1/8" (206 mm)

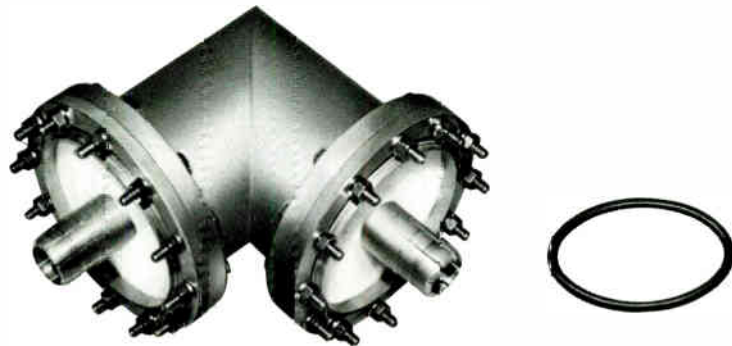
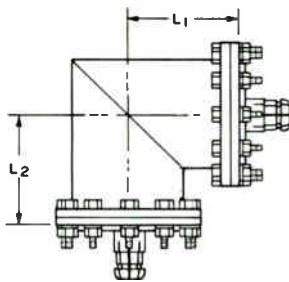
NOTES: MI-19387-1E and -1F include one captive insulator and expansion joint. MI-19089-1C and -1D have neither anchor insulator nor expansion joint, and are offered for short inside runs only. When ordering for replacement, specify that line include one swivel flange. The special 19 1/2' lengths are required for certain frequencies. See table for channel length selection in "Planning and Data for Transmission Line," B.6900.

STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Dim. A	Approx. Weight	Package Dimensions (one length per package)	Shipping Weight
MI-19387-1E	20' (6.1 m)	2 fixed	1 1/8" (29 mm)	131 lbs. (60 kg)	248" x 10 1/2" x 10" (6300 x 267 x 254 mm)	175 lbs. (80 kg)
MI-19387-1F	19 1/2' (6 m)	2 fixed	1 1/8" (29 mm)	124 lbs. (56 kg)	240" x 10 1/2" x 10" (6096 x 267 x 254 mm)	168 lbs. (76 kg)
MI-19387-1C	20' (6.1 m)	2 fixed	1" (25 mm)	131 lbs. (60 kg)	248" x 10 1/2" x 10" (6300 x 267 x 254 mm)	175 lbs. (80 kg)
MI-19387-1D	19 1/2' (6 m)	2 fixed	1" (25 mm)	124 lbs. (56 kg)	240" x 10 1/2" x 10" (6096 x 267 x 254 mm)	168 lbs. (76 kg)

90-DEGREE ELBOW, MALE

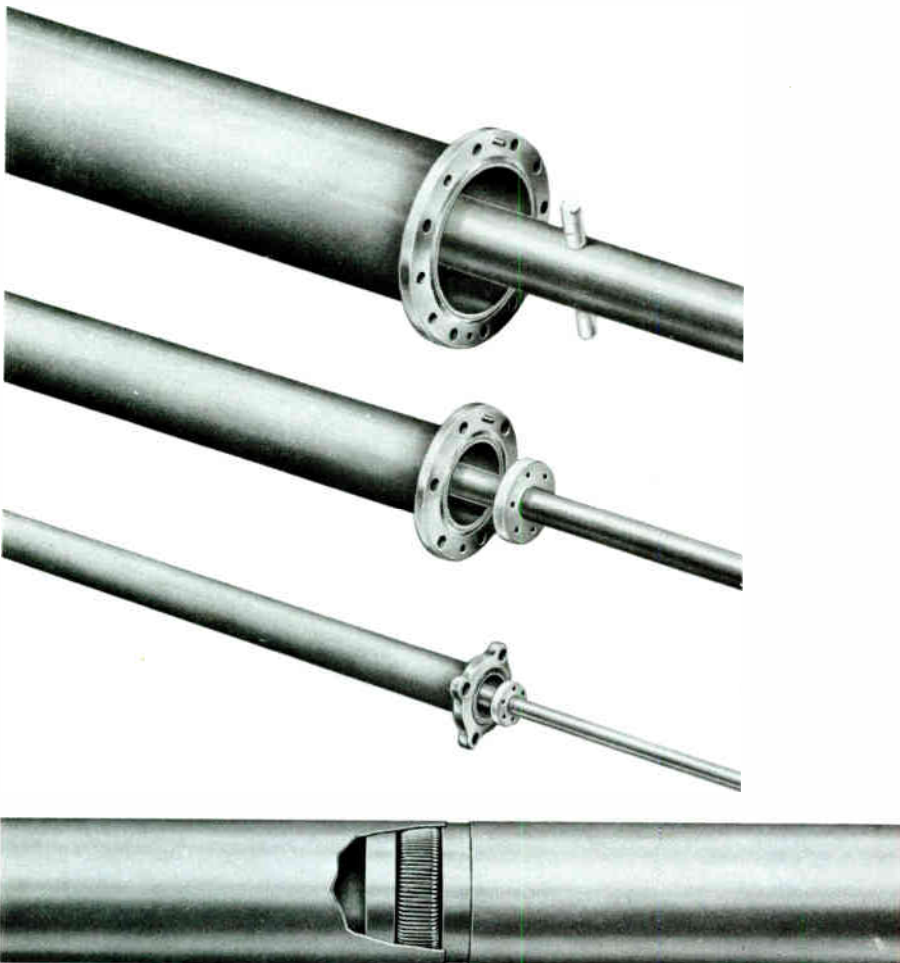


Stock Number	Insert Length L1	Insert Length L2	Flanges	Approx. Weight
MI-19387-2A	6 1/8" (157 mm)	6 1/8" (157 mm)	2 Swivel	31 lbs. (14 kg)

Includes two locked-in connectors, O-ring, 24 bolts, nuts and lockwashers.

51.5 Ohm Rigid Coaxial Transmission Cable

- High transfer efficiency
- Precision flanges
- Extra-strength elbow units
- Installation ease and economy



Cutaway of inner conductor expansion joint used in Teflon-insulated transmission line.

RCA 51.5 ohm rigid coaxial transmission line serves all AM, FM and TV broadcast applications at frequencies through 254 MHz.

The 1½ inch (41 mm) line is steatite insulated and intended for low power TV and FM broadcast (108 MHz and lower). Steatite insulated 3½ inch (79 mm) line serves moderate power level FM and lowband VHF TV stations. Teflon-insulated 3½ inch line covers the entire VHF TV and FM broadcast spectrum with moderate power handling capability. Teflon insulated line features a "wristband spring" inner conductor expansion joint that prevents galling and contamination of the Teflon insulation.

Steatite insulated 6½ inch (156 mm) line offers extra transmission efficiency and higher power capability for all VHF TV and FM broadcast frequencies.

Power ratings and efficiency are given in "Planning and Data for Transmission Line," TR.1101A.

In This Section:

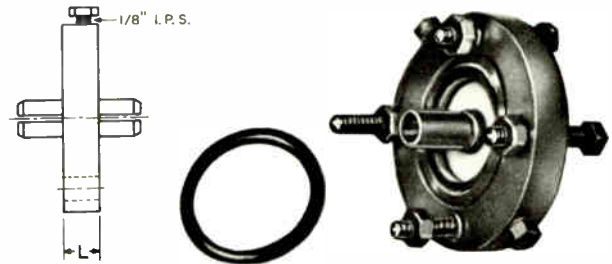
1½-inch Steatite	MI-19112
3½-inch Steatite	MI-19113C
3½-inch Teflon	MI-19313
6½-inch Steatite	MI-19314C

1⁵/₈-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19112

General Specifications

Frequency (Recommended upper limit for broadcast applications)108 MHz
 Characteristic Impedance51.5 ohms
 OD, Outer Conductor1.625" (41 mm)
 ID, Outer Conductor1.527" (39 mm)
 OD, Inner Conductor0.625" (16 mm)
 ID, Inner Conductor0.569" (14 mm)
 Flange Clearance Diameter4" (100 mm)
 For all AM and FM channels, TV channels 2 through 6 (54-88 MHz)

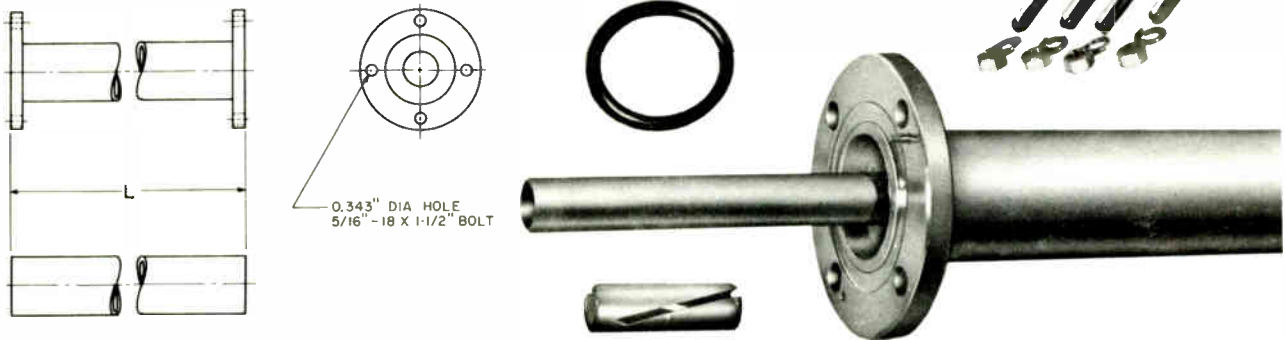
GAS STOP



Stock Number	Insert Length (L)	Approx. Weight
MI-19112-5	5/8" (16 mm)	3 lbs. (1.4 kg)

Seals gassed sections from ungassed sections.

STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19112-1	20' (6.1 m)	2	25 lbs. (11.3 kg)	248" x 13" x 8 1/2" (6300 x 330 x 216 mm)	203 lbs. (92 kg)
MI-19112-1NF	20' (6.1 m)	None	24 lbs. (10.9 kg)		

MI-19112-1NF includes inner connector. Six sections per package.

90-DEGREE ELBOW

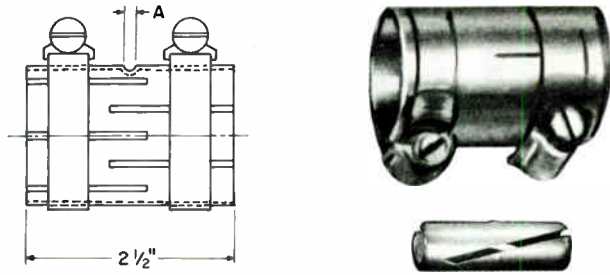


Stock Number	Insert Length		Flanges	Approx. Weight
	L ₁	L ₂		
MI-19112-18	6 1/8"	2 3/8"	2 Swivel	4 1/4 lbs. (2.2 kg)
MI-19112-18NF	(153 mm)	(65 mm)	None	2 lbs. (1 kg)

MI-19112-18NF includes inner connector.

1 5/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19112

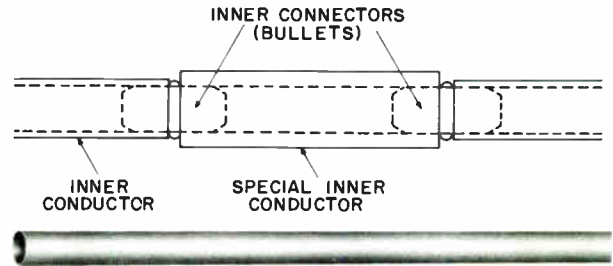
UNFLANGED COUPLING



Stock Number	Insert Length (A)	Approx. Weight
MI-19112-8	1/8" (3.2 mm)	8 oz. (228 g.)

Connects unflanged line sections. (MI-19112-1NF).

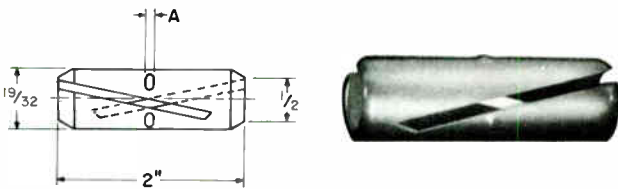
SPLICING INNER CONDUCTOR



Stock Number	Dimensions			Approx. Weight
	OD	ID	Length	
MI-19112-9	0.645" (16.4 mm)	0.569" (14.5 mm)	12' (3.7 m)	3 1/2 lbs. (1.6 kg)

Thick-wall tubing for splicing inner conductor at points other than midpoint between insulators. Requires two inner connectors for each splice (not supplied, see MI-19112-11 at below and to left).

INNER CONNECTOR



Stock Number	Insert Length (A)	Approx. Weight
MI-19112-11	1/16" (1.6 mm)	1 oz. (28 g)

Connector for joining inner conductors of all MI-19112 components.

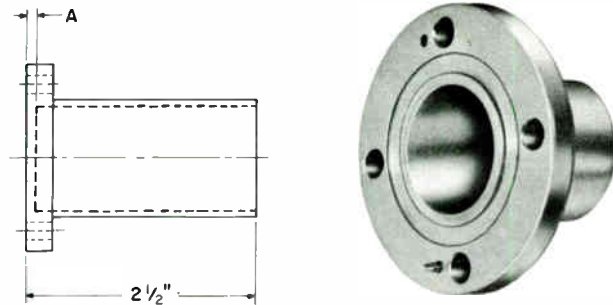
MECHANICAL FLANGE



Stock Number	Length (L)	Approx. Weight
MI-19112-16	2 1/16" (53 mm)	1 lb. (454 g)

To flange MI-19112-1NF line. Cannot be pressurized.

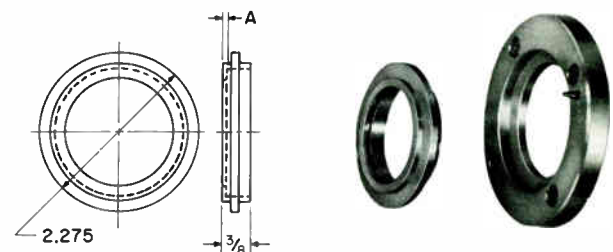
SOFT-SOLDER FLANGE



Stock Number	Insert Length (A)	Approx. Weight
MI-19112-60	9/64" (3.5 mm)	1 3/4 lbs. (790 g)

To flange field-cut line. Flange is non-swivel.

SILVER-SOLDER FLANGES

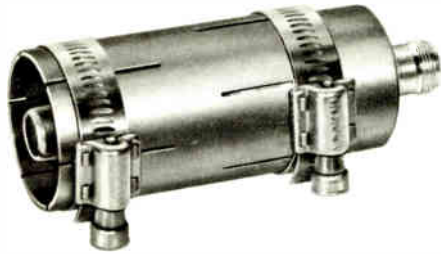


Stock Number	Insert Length (A)	Approx. Weight
MI-19112-20	5/64" (2 mm)	15 oz. (427 g)
MI-19112-21	5/64" (2 mm)	16 oz. (454 g)

To flange MI-19112 line. MI-19112-20 is a fixed flange, and MI-19112-21 is a swivel flange. Not for field installation.

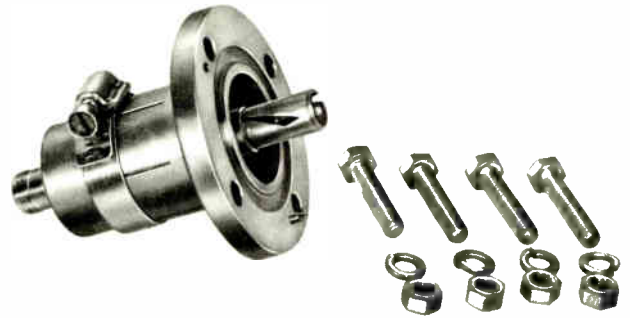
1⁵/₈-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19112

REDUCER, UNFLANGED TO TYPE "N"



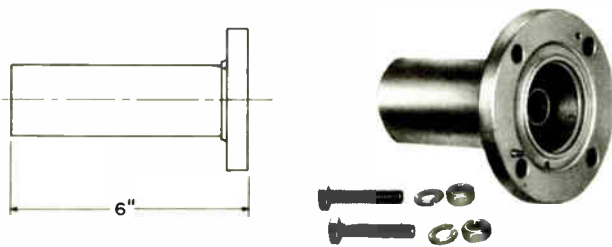
Stock Number	Length	Approx. Weight
MI-19112-58	5" (127 mm)	25 oz. (712 g)
Converts unflanged MI-19112 to Type "N" female.		

REDUCER, FLANGED TO TYPE "N"



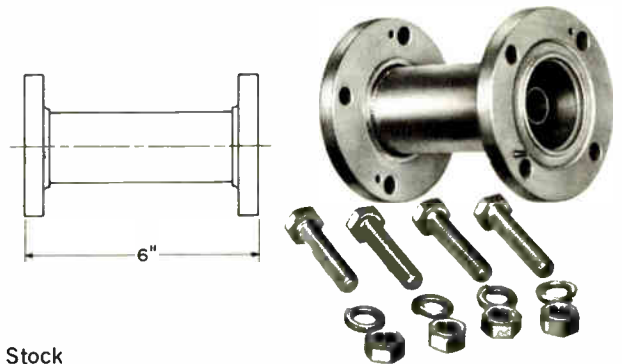
Stock Number	Length	Approx. Weight
MI-19112-59	5" (127 mm)	2¼ lbs. (1020 g)
Converts flanged MI-19112 to Type "N" female.		

ADAPTER, UNFLANGED TO EIA FLANGED



Stock Number	Length	Approx. Weight
MI-27988-7F	6" (152 mm)	2 lbs. (907 g)
Converts unflanged MI-19112 to EIA flanged, 50-ohm components.		

ADAPTER, FLANGED TO EIA FLANGED



Stock Number	Length	Approx. Weight
MI-27988-7G	6" (152 mm)	2.5 lbs. (1100 g)
Converts flanged MI-19112 to EIA flanged, 50-ohm components.		

END CAP



Stock Number	Approx. Weight
MI-19112-13	5 oz. (143 g)
For temporary closure of line to prevent entrance of moisture.	

MISCELLANEOUS



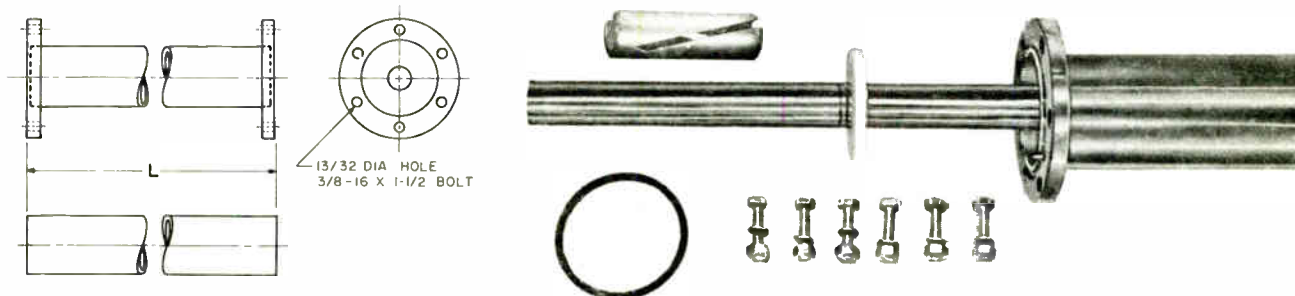
MI-19112-10	O-Ring Gasket
MI-19112-19	Hardware Kit consisting of four bolts, nuts, lockwashers
MI-19112-39	Hose Clamp for 1 ⁵ / ₈ -inch unflanged components
MI-19089-18	Silicone Grease, 2 oz. tube

3/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19113C

General Specifications

Frequency (Recommended upper limit for broadcast applications)108 MHz
 Characteristic Impedance51.5 ohms
 OD, Outer Conductor3.125" (79.4 mm)
 ID, Outer Conductor3.027" (76.9 mm)
 OD, Inner Conductor1.200" (30.5 mm)
 ID, Inner Conductor1.136" (28.9 mm)
 Flange Clearance Diameter6" (152 mm)
 For AM, FM & VHF-TV Channels 2-6 (54-88 MHz)

STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19113C-1	20' (6.1 m)	2 Fixed	53 lbs. (24 kg)	248" x 13" x 8 1/2" (6300 x 330 x 216 mm)	150 lbs. (68 kg) 148 lbs. (67 kg) 150 lbs. (68 kg)
MI-19113C-1NF	20' (6.1 m)	None	52 lbs. (23.6 kg)		
MI-19113C-1SF	20' (6.1 m)	2 (one swivel)	53 lbs. (24 kg)		

For field replacement, use MI-19113C-1SF. MI-19113C-1NF includes inner connector. U.S. TV Channel 10 and FM Channels between 97.1 and 98.9 MHz require 19 1/2-foot (5.94 m) sections. Two sections per package.

90-DEGREE ELBOWS

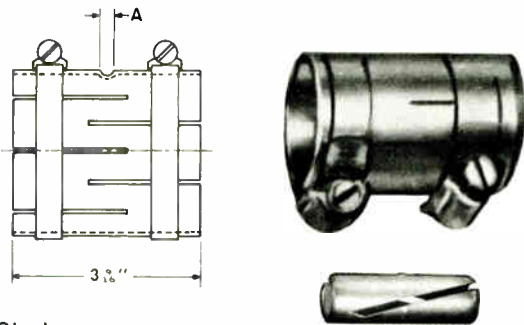


Stock Number	Insert Length L ₁	Insert Length L ₂	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19113C-18	3 7/8" (98 mm)	8 1/8" (206 mm)	2 Swivel	11 1/4 lbs. (5.1 kg)	12 1/2" x 12 1/2" x 7" (317 x 317 x 178 mm)	14 lbs. (6 kg)
MI-19113C-18NF	3 7/8" (98 mm)	8 1/8" (206 mm)	None	6 1/4 lbs. (2.8 kg)	10" x 6" x 4" (254 x 152 x 102 mm)	7 lbs. (3 kg)

MI-19113C-18NF includes inner conductor.

3/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19113C

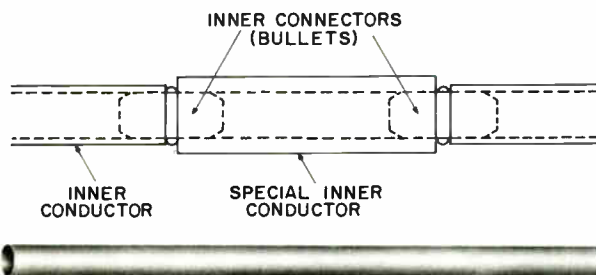
UNFLANGED COUPLING



Stock Number	Insert Length (A)	Approx. Weight
MI-19113C-8	1/8" (3.2 mm)	1 1/8 lbs. (510 g)
MI-19113C-8NB	1/8" (3.2 mm)	1 1/4 lbs. (567 g)

Couples unflanged line sections and components. MI-19113C-8NB coupling omits inner connector.

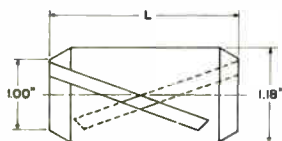
SPLICING INNER CONDUCTOR



Stock Number	Dimensions			Approx. Weight
	OD	ID	Length	
MI-19113C-9	1.282" (33 mm)	1.136" (28 mm)	12' (3.7 m)	12 1/2 lbs. (5.7 kg)

Oversize inner conductor for splicing MI-19113C line when it has been cut at other than the midpoint between insulators. Each splice requires two standard inner connectors (Connector not supplied. See MI-19113C-11 below).

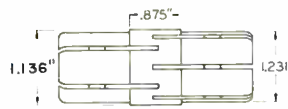
INNER CONNECTOR



Stock Number	Length (L)	Approx. Weight
MI-19113C-11	2 1/2" (64 mm)	2 oz. (57 g)

Inner connector for joining inner conductor of MI-19113C components.

INNER CONDUCTOR ADAPTER



Stock Number	Insert Length (L)	Approx. Weight
MI-27988-4A	7/8" (22 mm)	6 oz. (171 g)

Connects inner conductors of MI-19113C and MI-19089 or MI-27791D components.

3/8-inch Teflon-Insulated, 51.5-Ohm Transmission Line, MI-19313

General Specifications

Frequency (Recommended upper limit
for broadcast applications)400 MHz
 Characteristic Impedance51.5 ohms
 OD, Outer Conductor3.125" (79.4 mm)
 ID, Outer Conductor3.027" (76.9 mm)
 OD, Inner Conductor1.282" (32.5 mm)
 ID, Inner Conductor1.231" (31.4 mm)
 Flange Clearance Diameter6" (152 mm)
 For all AM, FM & VHF-TV Channels (54-400 MHz).

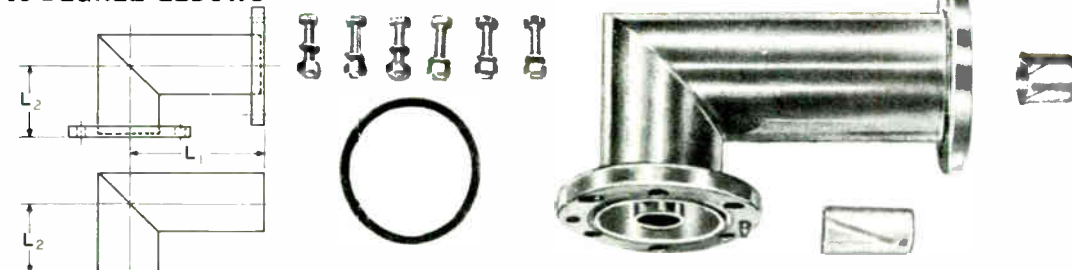
STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19313-1H	20' (6.1 m)	2 Fixed	51 lbs. (23 kg)	248" x 13" x 8 1/2" (6300 x 330 x 216 mm)	149 lbs. (58 kg)
MI-19313-INF	20' (6.1 m)	None	48 lbs. (22 kg)		143 lbs. (55 kg)
MI-19313-1SFH	20' (6.1 m)	2 (one swivel)	52 lbs. (24 kg)		150 lbs. (58 kg)
MI-19313-1BH	19 1/2' (5.9 m)	2 Fixed	47 1/2 lbs. (22 kg)		147 lbs. (67 kg)
MI-19313-1BSFH	19 1/2' (5.9 m)	2 (one swivel)	48 lbs. (22 kg)		148 lbs. (67 kg)

For field replacement, use MI-19313-1SFH or MI-19313-1BSFH. MI-19313-INF includes inner connector. U.S. TV Channel 10 and FM Channels between 97.1 and 98.9 MHz require 19 1/2-foot MI-19313-1BH or -1BSFH sections. Shipped two per pkg.

90-DEGREE ELBOWS

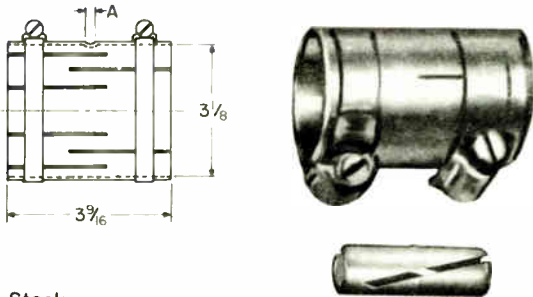


Stock Number	Insert Length L ₁	Insert Length L ₂	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19313-2			2 Swivel	11 1/2 lbs. (5.2 kg)	12 1/2" x 12 1/2" x 7" (317 x 317 x 178 mm)	14 lbs. (6 kg)
MI-19313-2NF	8 1/8" (206 mm)	3 7/8" (98 mm)	None	6 1/2 lbs. (2.9 kg)		9 lbs. (4 kg)
MI-19313-2R	8" (205 mm)	3 3/4" (95 mm)	2 Swivel	12 lbs. (5.5 kg)		14 1/2 lbs. (7 kg)

MI-19313-2NF includes two connectors and two adapters. MI-19313-2R is MI-19313-2 with reinforced welded gussets.

3/8-inch Teflon-Insulated, 51.5-Ohm Transmission Line, MI-19313

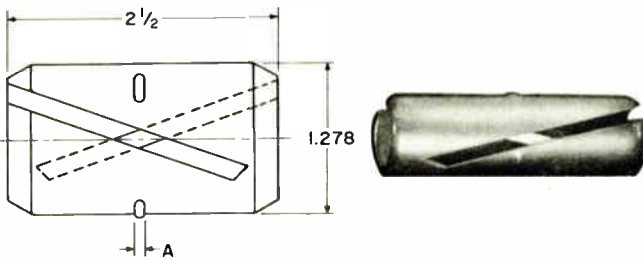
UNFLANGED COUPLING



Stock Number	Insert Length (A)	Approx. Weight
MI-19313-8	1/8" (3.2 mm)	1 1/4 lbs. (567 g)
MI-19313-8NB	1/8" (3.2 mm)	1 1/8 lbs. (510 g)

Connects unflanged line sections. MI-19313-8NB coupling omits inner connector.

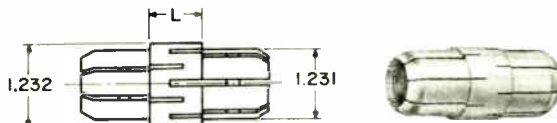
INNER CONNECTOR



Stock Number	Insert Length (A)	Approx. Weight
MI-19313-9	1/16" (1 mm)	2 oz. (57 g)

For joining inner conductors of MI-19313 transmission line sections.

INNER CONDUCTOR ADAPTER

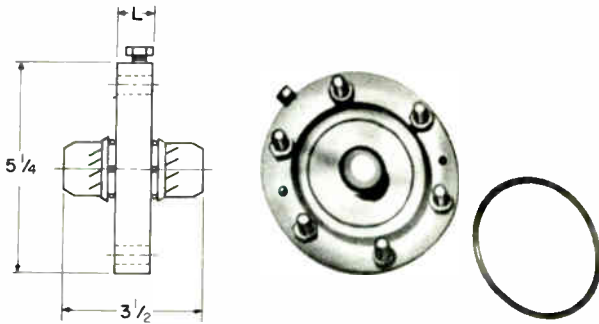


Stock Number	Insert Length (L)	Approx. Weight
MI-27988-4B	7/8" (22 mm)	6 oz. (171 g)

Connects inner conductor of MI-19313 and MI-19089 or MI-27791D components.

Accessories for 3 1/8-inch, 51.5-Ohm Transmission Line

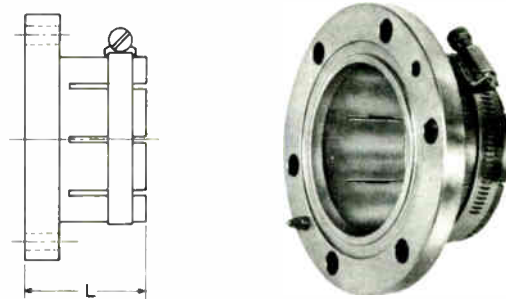
GAS STOP



Stock Number	Insert Length (L)	Approx. Weight
MI-19113C-5	7/8" (22 mm)	4 3/4 lbs. (3 kg)

Used between flanged MI-19113C or MI-19313 components. Seals pressurized from unpressurized sections.

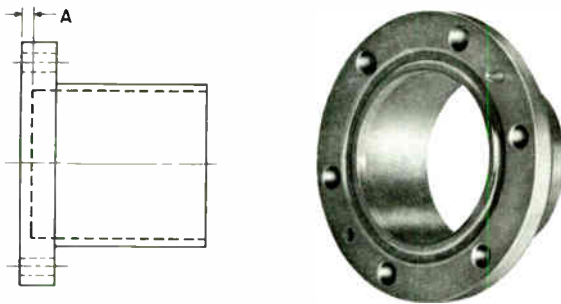
MECHANICAL FLANGE



Stock Number	Length (L)	Approx. Weight
MI-19113C-60	2" (51 mm)	3 1/4 lbs. (1.5 kg)

To flange MI-19113C or MI-19313 line. Cannot be pressurized.

SOFT-SOLDER FLANGE



Stock Number	Insert Length (A)	Approx. Weight
MI-19113C-55	1/4" (6.4 mm)	3 lbs. (1.4 kg)

To flange field-cut MI-19113C or MI-19313 line.

SILVER-SOLDER FLANGES



Stock Number	Insert Length (A)	Approx. Weight
MI-19113C-20	1/8" (2.8 mm)	1 3/4 lb. (790 g)
MI-19113C-21	1/8" (2.8 mm)	1 3/4 lb. (790 g)

To flange MI-19113C or MI-19313 line. MI-19113C-20 is a fixed flange. MI-19113C-21 allows 360° swivel. Not recommended for field installation.

CUTOFF GUIDES

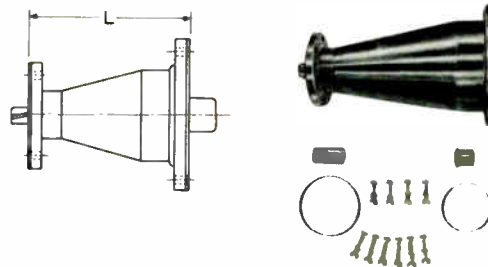


Stock Number	Approx. Weight
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MI-19113C-51	6 oz. (171 g)
MI-19113C-54	5 oz. (143 g)
MI-19089-15	10 oz. (286 g)

MI-19113C-51 guide for cutting inner conductor of MI-19313. MI-19113C-54 guide for MI-19113C inner conductor or 19113C-9 splicing inner conductor. MI-19089-15 guide for cutting MI-19113C or MI-19313 outer conductors.

REDUCER, FLANGED TO 1 5/8" FLANGED

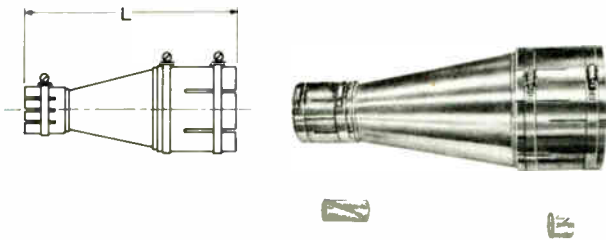


Stock Number	Insert Length (L)	Approx. Weight
MI-19113C-5	5-5/32" (131 mm)	5 5/8 lbs. (2.6 kg)

Reduces 3 1/8-inch, flanged MI-19113C or MI-19313 to 1 5/8-inch, flanged MI-19112.

Accessories for 3/8-inch, 51.5-Ohm Transmission Line

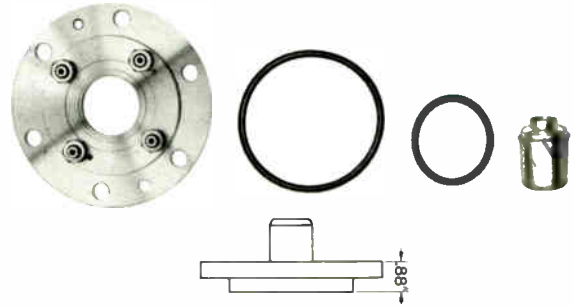
REDUCER, UNFLANGED TO 1 5/8" UNFLANGED



Stock Number	Length (L)	Approx. Weight
MI-19113C-7	7" (178 mm)	3 lbs. (1.4 kg)

Reduces 3/8-inch unflanged MI-19113C or 19313 to MI-19112 1 5/8-inch unflanged.

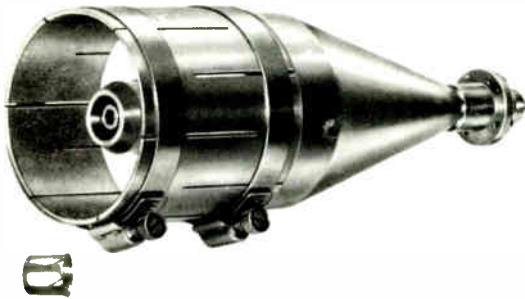
REDUCER, TO 7/8" EIA



Stock Number	Insert Length	Approx. Weight
MI-27988-5A	0.88" (2 mm)	8 oz. (228 g)

Reduces flanged MI-19113C or 19313 to 7/8-inch EIA flanged components. For FM application.

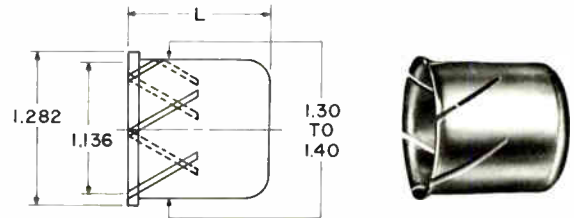
REDUCER, UNFLANGED TO TYPE "N"



Stock Number	Approx. Weight
MI-19113C-58	4 lbs. (1.8 kg)

Converts unflanged MI-19113C or 19313 line to a Type "N" female.

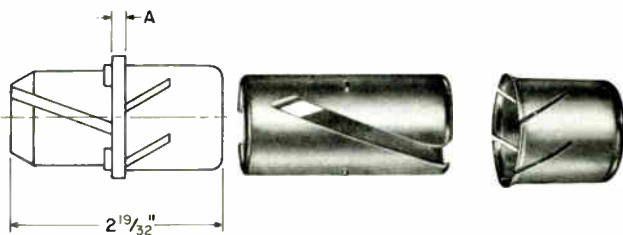
ADAPTER BUSHING



Stock Number	Length (L)	Approx. Weight
MI-19313-11	1 5/16" (33 mm)	2 oz. (57 g)

Used to reduce inner diameter of MI-19313 inner conductor to permit it to mate with inner conductor of MI-19113 components.

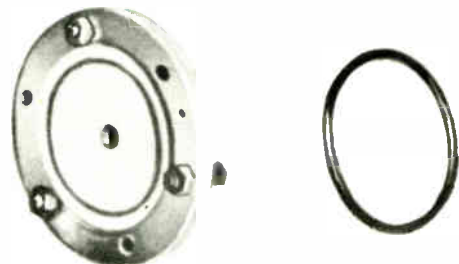
INNER CONDUCTOR ADAPTER



Stock Number	Insert Length (A)	Approx. Weight
MI-19313-10	1/8" (3 mm)	4 oz. (114 g)

Consists of MI-19113C-11 plus MI-19313-11 insert bushing. Used to connect inner conductors of MI-19113C and MI-19313 or MI-27791K.

END CAP



Stock Number	Approx. Weight	Package Dimensions
MI-19113C-13	14 1/4 lbs. (6.5 kg)	6" x 6" x 4 1/2" (152 x 152 x 114 mm)

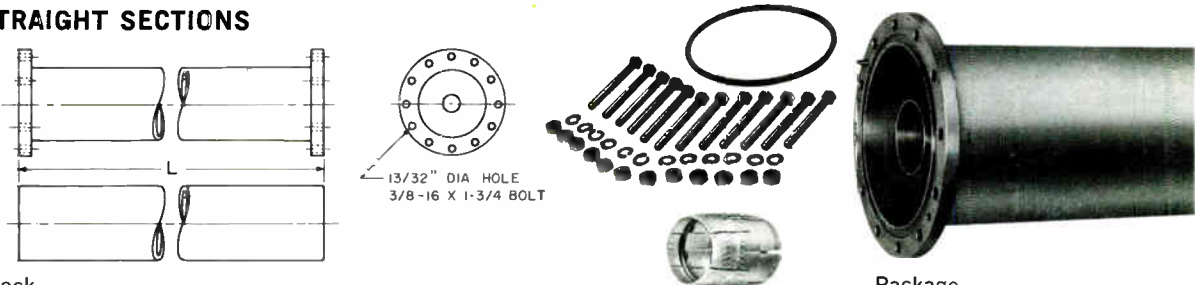
For temporary capping of ends of MI-19113C or 19313 line to prevent entrance of moisture during installation.

6 1/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19314C

General Specifications

Frequency (Recommended upper limit for broadcast applications)250 MHz
 Characteristic Impedance51.5 ohms
 OD, Outer Conductor6.125" (156 mm)
 ID, Outer Conductor5.981" (152 mm)
 OD, Inner Conductor2.500" (64 mm)
 ID, Inner Conductor2.435" (62 mm)
 Flange Clearance Diameter9" (229 mm)
 For all AM, FM and VHF-TV Channels to 250 MHz.

STRAIGHT SECTIONS



Stock Number	Length (L)	Flanges	Approx. Weight	Package Dimensions	Shipping Weight
MI-19314C-1	20' (6.1 m)	2 Swivel	139 lbs. (63 kg)	248" x 10 1/2" x 10" (6300 x 266 x 254 mm)	185 lbs. (84 kg)
MI-19314C-1A	10' (3.0 m)	None	131 lbs. (60 kg)		180 lbs. (82 kg)
MI-19314C-1SF	20' (6.1 m)	2 (one Swivel)	140 lbs. (64 kg)	236" x 10 1/2" x 10" (6000 x 266 x 254 mm)	186 lbs. (84 kg)
MI-19314C-1B	19' (5.8 m)	2 Swivel	132 lbs. (60 kg)		177 lbs. (80 kg)
MI-19314C-1BSF	19' (5.8 m)	2 (one Swivel)	139 lbs. (63 kg)		177 lbs. (80 kg)

For field replacement, use MI-19314C-1SF or MI-19314C-1BSF. MI-19314C-1A includes no hardware. U.S. TV Channel 10 and FM Channels between 97.1 and 98.9 MHz require 19-foot (5.79 m) sections MI-19314C-1B or -1BSF.

90-DEGREE ELBOWS

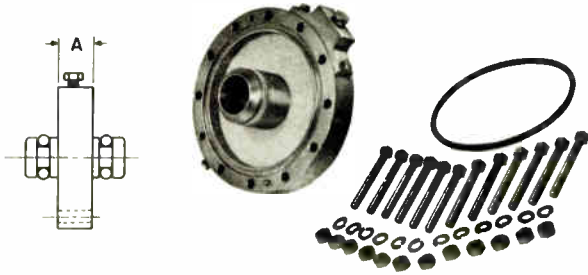


Stock Number	Insert Length L ₁	Length L ₂	Flanges	Approx. Weight	Packaged Dimensions	Shipping Weight
MI-19314C-18	12 3/16" (310 mm)	6 3/16" (157 mm)	2 Swivel	30 1/2 lbs. (14 kg)	21" x 13" x 10" (533 x 330 x 254 mm)	40 lbs. (18 kg)
MI-19314C-18NF	—	—	None	21 1/2 lbs. (10 kg)	—	31 lbs. (14 kg)
MI-19314C-18R	—	—	2 Swivel	33 1/2 lbs. (18.3 kg)	—	43 lbs. (23.5 kg)

MI-19314C-18NF includes inner connector. MI-19314C-18R is the same as MI-19314C-18 except that it has reinforced welded gussets.

6 1/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19314C

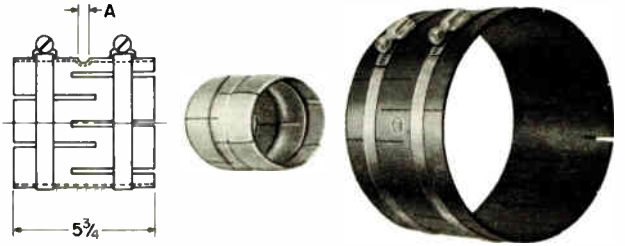
GAS STOP



Stock Number	Insert Length (A)	Approx. Weight
MI-19314C-52	1 3/8" (35 mm)	15 1/2 lbs. (7 kg)

Seals gassed from ungassed sections. Packaged dimensions are: 12" (304 mm) x 12" (304 mm) x 14" (356 mm) and shipping weight is 22 lbs. (10 kg).

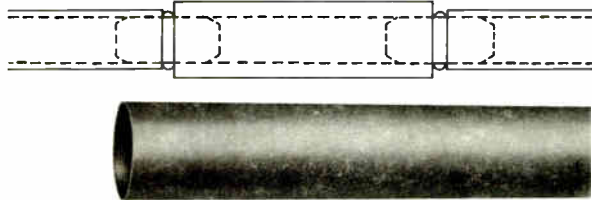
UNFLANGED COUPLING



Stock Number	Insert Length (A)	Approx. Weight
MI-19314C-7	1/4" (6.4 mm)	5 lbs. (23 kg)

Connects unflanged line sections.

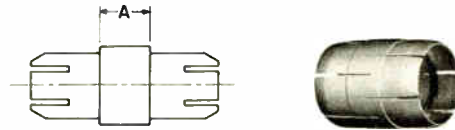
SPLICING INNER CONDUCTOR



Stock Number	OD	Dimensions ID	Length (L)	Approx. Weight
MI-19314C-23	2.532" (64 mm)	2.435" (63 mm)	12' (3.7 m)	18 lbs (8 kg)

Oversize inner conductor for splicing MI-19314C line at points other than midpoint between insulators. Two inner connectors are required for each splice (not supplied, see MI-19314C-5). Packaged dimensions are: 148" (3759 mm) x 13" (330 mm) x 8" (203 mm) and shipping weight is 38 lbs. (17 kg).

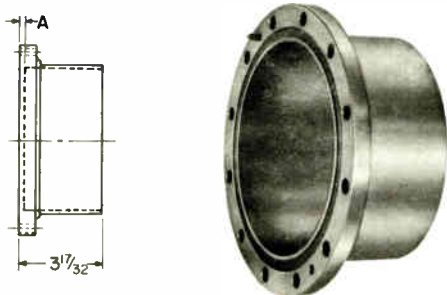
INNER CONNECTOR



Stock Number	Insert Length (A)	Approx. Weight
MI-19314C-5	1 1/8" (27 mm)	10 oz. (285 g)

Joins inner conductors of MI-19314C components.

SOFT-SOLDER FLANGE



Stock Number	Insert Length (A)	Approx. Weight
MI-19314C-14	1/4" (6.4 mm)	7 lbs. (3.2 kg)

To flange field cut line.

SILVER-SOLDER FLANGES

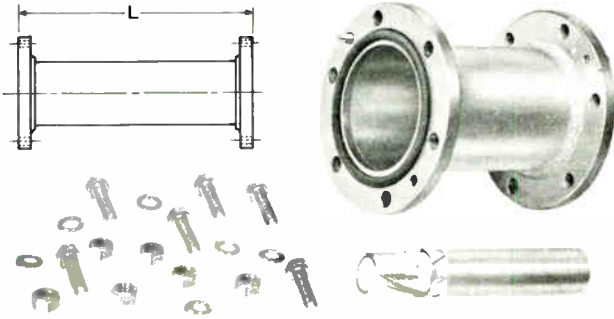


Stock Number	Insert Length (A)	Approx. Weight
MI-19314C-11	3/16" (5 mm)	3 1/4 lbs. (1.5 kg)
MI-19314C-12	1/8" (3 mm)	3 1/2 lbs. (1.6 kg)

To flange MI-19314C line. Not for field installation. MI-19314C-11 fixed flange and MI-19314C-12 swivel flange.

Accessories for 3/8-inch, 51.5-Ohm Transmission Line

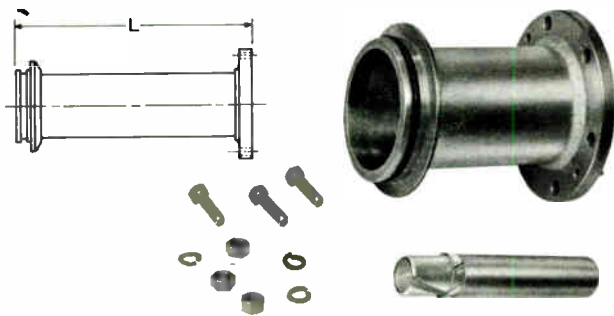
ADAPTER, FLANGED TO EIA FLANGED



Stock Number	Length (L)	Net Weight
MI-27988-7A	6" (152 mm)	5.5 lbs. (2.5 kg)

Adapts flanged MI-19113C or 19313 to 3/8" 50 ohm EIA, including MI-19089. For FM applications.

ADAPTER, TO UNIVERSAL



Stock Number	Length (L)	Net Weight
MI-27988-7B	6" (152 mm)	4.4 lbs. (1.9 kg)

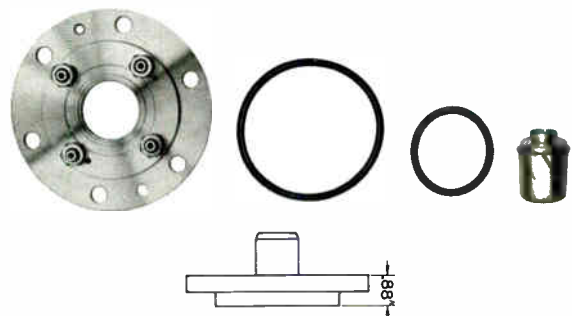
Converts flanged MI-19113C or 19313 to 3/8" Universal male.

MISCELLANEOUS



MI-19113C-10	O-Ring Gasket
MI-19113C-19	Hardware Kit consisting of 6 bolts, 6 nuts, 6 lockwashers
MI-19313-39	Hose Clamp for 3/8-inch unflanged components
MI-19089-18	Silicone Grease, 2 oz. tube

REDUCER, TO 1 5/8" EIA

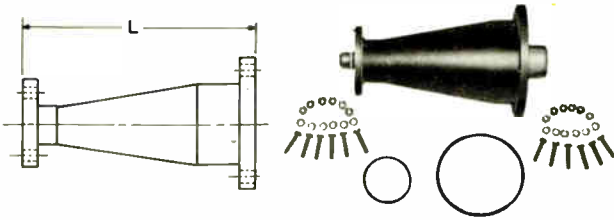


Stock Number	Insert Length	Approx. Weight
MI-27988-5B	0.88" (2 mm)	8 oz. (228 g)

Reduces flanged MI-19113C or MI-19313 to 1 5/8-inch, 50-ohm EIA flanged components. For FM radio applications.

6 1/8-inch Steatite-Insulated, 51.5-Ohm Transmission Line, MI-19314C

REDUCER, FLANGED TO 3 1/8" 51.5 OHM FLANGED

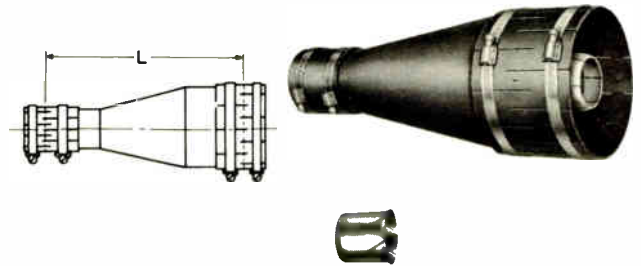


Stock Number	Insert Length (L)	Approx. Weight
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MI-19314C-4	12 1/2" (318 mm)	15 1/4 lbs. (7 kg)
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Reduces flanged 6 1/8" components to flanged 3 1/8" MI-19113C and 19313 components.

REDUCER, UNFLANGED TO 3 1/8" 51.5 OHM UNFLANGED



Stock Number	Insert Length (L)	Approx. Weight
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MI-19314C-13	12 1/2" (318 mm)	14 1/4 lbs. (6.5 kg)
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Reduces unflanged MI-19314C to 3 1/8-inch unflanged MI-19313 or MI-19113C components. Packaged dimensions are: 21" (533 mm) x 13" (330 mm) x 10" (254 mm). Shipping weight is 21 lbs. (10 kg).

END CAP



Stock Number	Approx. Weight
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MI-19314C-8	8 3/4 lbs. (4 kg)
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For temporary closure of transmission line to prevent entrance of moisture. Includes pipe plug.

CUTOFF GUIDES



Stock Number	Approx. Weight
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MI-19314C-16	14 oz. (40 g)
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MI-19387-15	2 lbs. (907 g)
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MI-19314C guide for cutting inner conductors in the field.
MI-19387-15 guide for cutting outer conductors in the field.

TOOL KIT

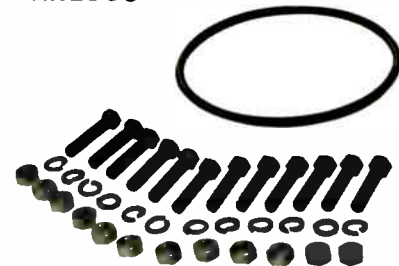


Stock Number	Approx. Weight
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MI-19314C-53	20 oz. (621 g)
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Forked spreader and 6 1/8" wrench to adjust anchor pin assembly.

MISCELLANEOUS



MI-19314C-9 O-Ring Gasket

MI-19314C-39 Hose Clamp for 6 1/8" unflanged components

MI-19314C-10 Hardware Kit consisting of 12 bolts, 12 nuts and 12 lockwashers

MI-19089-18 Silicone Grease, 2 oz. tube

50-Ohm Unflanged, Rigid Coaxial Transmission Line

- Excellent VSWR characteristics
- Low loss Teflon dielectric
- Heliarc welded miter elbows
- Heavy wall tubing



RCA 50-ohm unflanged is a hard tempered copper transmission line designed for unpressurized indoor applications in AM, FM and VHF television installations. It has excellent VSWR characteristics, and since it employs low loss Teflon dielectric, operates with high efficiency.

Components are ruggedly and precisely constructed. Miter elbows are made of heavy wall tubing and are heliarc welded for utmost strength and reliability. The inner conductor of the elbow is supported at three points. A complete line of components in 1 $\frac{5}{8}$ -, 3 $\frac{1}{8}$ -, 4 $\frac{1}{4}$ - and 6 $\frac{1}{8}$ -inch line sizes provides installation versatility for a wide power range.

Consult Catalog Sheet TR.1101B for ratings.

In This Section:

1 $\frac{5}{8}$ -inch	MI-561565
3 $\frac{1}{8}$ -inch	MI-27791K
4 $\frac{1}{4}$ -inch	MI-561673K
6 $\frac{1}{8}$ -inch	MI-561579

1⁵/₈" , 3¹/₈" , 4¹/₁₆" , 6¹/₈" 50-ohm Teflon Transmission Line

General Specifications

Characteristic Impedance50 ohms

Line Size 1⁵/₈" (Stock Number MI-561565):

Outer Conductor, OD1.625" (41 mm)

Outer Conductor, ID1.527" (38 mm)

Inner Conductor, OD0.664" (17 mm)

Inner Conductor, ID0.588" (15 mm)

Line Size 3¹/₈" (Stock Number MI-27791K):

Outer Conductor, OD3.125" (79 mm)

Outer Conductor, ID3.027" (77 mm)

Inner Conductor, OD1.315" (33 mm)

Inner Conductor, ID1.231" (31 mm)

Line Size 4¹/₁₆" (Stock Number MI-561673K):

Outer Conductor, OD4.062" (103 mm)

Outer Conductor, ID3.935" (110 mm)

Inner Conductor, OD1.711" (43 mm)

Inner Conductor, ID1.661" (42 mm)

Line Size 6¹/₈" (Stock Number MI-561579):

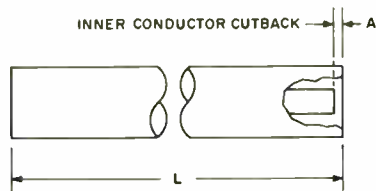
Outer Conductor, OD6.125" (153 mm)

Outer Conductor, ID5.981" (152 mm)

Inner Conductor, OD2.600" (66 mm)

Inner Conductor, ID2.520" (64 mm)

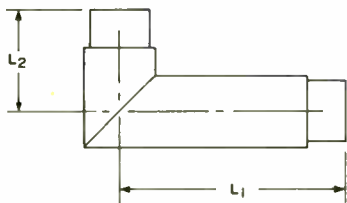
STRAIGHT SECTIONS



Stock Number	Line Size	Dim. A	Approx. Weight	Package Dimensions	No. Lengths	Shipping Weight
MI-561565-1A	1 ⁵ / ₈ "	.23" (5.8 mm)	25 lbs. (11 kg)	8 ¹ / ₂ " x 13" x 248" (216 x 330 x 6299 mm)	6	203 lbs. (93 kg)
MI-27791K-1A	3 ¹ / ₈ "	.23" (5.8 mm)	52 lbs. (24 kg)	8 ¹ / ₂ " x 13" x 248" (216 x 330 x 6299 mm)	2	148 lbs. (67 kg)
MI-561673K-1A	4 ¹ / ₁₆ "	1.11" (28 mm)	62 lbs. (28 kg)	8" x 12 ¹ / ₂ " x 248" (205 x 317 x 6299 mm)	2	170 lbs. (77 kg)
MI-561579-1A	6 ¹ / ₈ "	1.17" (30 mm)	67 lbs (30 kg)	10" x 10" x 248" (254 x 254 x 6299 mm)	1	112 lbs. (51 kg)

Each section 20' (6.1 m) in length (Dimension L).

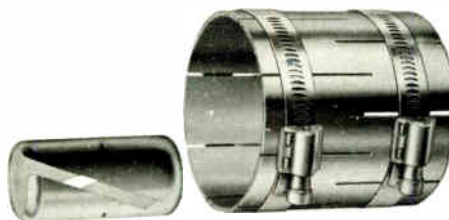
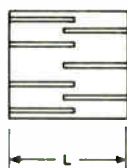
90 DEGREE ELBOWS



Stock Number	Line Size	Dimensions		Approx. Weight
		L ₁	L ₂	
MI-561565-2A	1 ⁵ / ₈ "	5 ¹ / ₁₆ " (151 mm)	2 ¹ / ₁₆ " (62 mm)	2 ³ / ₄ lbs. (1.3 kg)
MI-27791K-2A	3 ¹ / ₈ "	8" (205 mm)	3 ³ / ₄ " (95 mm)	6 lbs. (2.7 kg)
MI-561673K-2A	4 ¹ / ₁₆ "	12" (305 mm)	6" (152 mm)	7 lbs. (3 kg)
MI-561579-2A	6 ¹ / ₈ "	12" (305 mm)	6" (152 mm)	21 ¹ / ₂ lbs (10 kg)

MI-561565, MI-27791K, MI-561673K, MI-561579

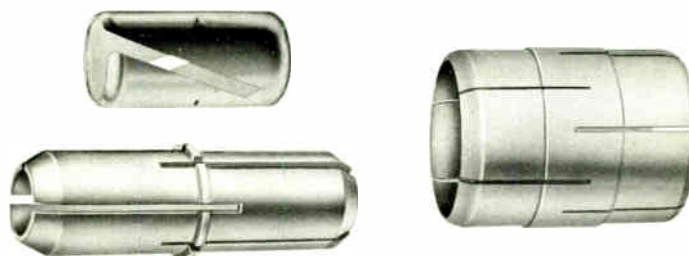
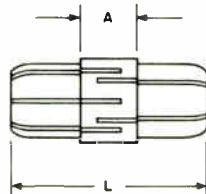
COUPLINGS



Stock Number	Line Size	Length (L)	Approx. Weight
MI-561565-4A	1 $\frac{5}{8}$ "	2 $\frac{3}{8}$ " (59 mm)	8 ozs. (228 g)
MI-27791K-4A	3 $\frac{1}{8}$ "	4" (102 mm)	20 ozs. (570 g)
MI-561673K-4A	4 $\frac{1}{16}$ "	4" (102 mm)	32 ozs. (912 g)
MI-561579-4A	6 $\frac{1}{8}$ "	4 $\frac{1}{2}$ " (114 mm)	65 ozs. (1800 g)

For joining line sections and components. Consists of outer sleeve, inner conductor and two clamps.

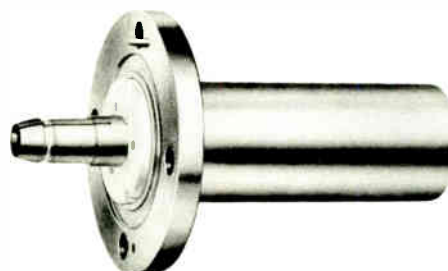
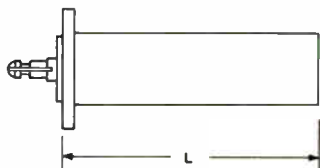
CONNECTORS, INNER CONDUCTOR



Stock Number	Line Size	Length (L)	Dimension A	Approx. Weight
MI-561565-4B	1 $\frac{5}{8}$ "	2" (51 mm)	$\frac{1}{8}$ " (3.2 mm)	2 ozs. (57 g)
MI-27791K-4B	3 $\frac{1}{8}$ "	2 $\frac{1}{2}$ " (64 mm)	$\frac{1}{8}$ " (3.2 mm)	3 ozs. (85 g)
MI-561673K-4B	4 $\frac{1}{16}$ "	4 $\frac{1}{4}$ " (108 mm)	1" (25 mm)	4 ozs. (100 g)
MI-561579-4B	6 $\frac{1}{8}$ "	3-13/32" (86-mm)	1 $\frac{1}{16}$ " (27 mm)	8 ozs. (227 g)

Connectors for joining inner conductors for 1 $\frac{5}{8}$ ", 3 $\frac{1}{8}$ ", 4 $\frac{1}{16}$ " or 6 $\frac{1}{8}$ " line.

ADAPTER 1 $\frac{5}{8}$ " UNFLANGED TO 1 $\frac{5}{8}$ " EIA

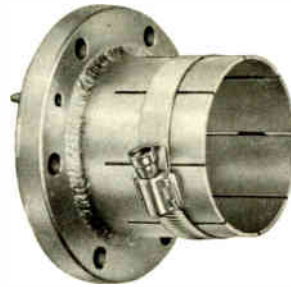


Stock Number	Length (L)	Approx. Weight
MI-561565-7A	4 $\frac{7}{16}$ " (113 mm)	1 $\frac{1}{2}$ lbs. (681 g)

Converts unflanged MI-561565 to 1 $\frac{5}{8}$ " EIA flanged components using coupling (MI-561565-4A) not supplied.

1⁵/₈" , 3¹/₈" , 4¹/₁₆" , 6¹/₈" 50-Ohm Teflon Transmission Line

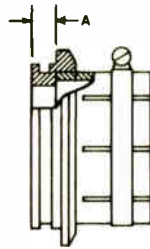
ADAPTER, 3¹/₈" UNFLANGED TO 3¹/₈" EIA FLANGED



Stock Number	Insert Length (A)	Length (L ₂)	Approx. Weight
MI-27988-4C	7/8" (22 mm)	3" (76 mm)	2½ lbs. (1100 g)

Converts 3¹/₈" 50-ohm unflanged MI-27791K to 3¹/₈" 50-ohm flanged MI-19089 EIA line. Not pressure tight.

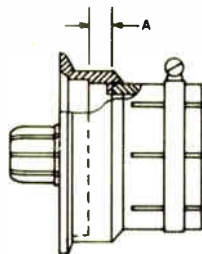
ADAPTERS, 3¹/₈" and 4¹/₁₆" UNFLANGED TO 3¹/₈" and 4¹/₁₆" UNIVERSAL MALE



Stock Number	Line Size	Insert Length (A)	Approx. Weight
MI-27791K-7B	3 ¹ / ₈ "	.53" (13 mm)	2¼ lbs. (1000 g)
MI-561673K-7B	4 ¹ / ₁₆ "	.73" (19 mm)	3.5 lbs. (1.6 kg)

MI-27791K-7B provides Universal MI-27791D male flange on MI-27791K line. MI-561673K-7B provides Universal MI-561673E male flange on MI-561673K line. Not pressure tight.

ADAPTERS, 3¹/₈" and 4¹/₁₆" UNFLANGED TO 3¹/₈" and 4¹/₁₆" UNIVERSAL FEMALE

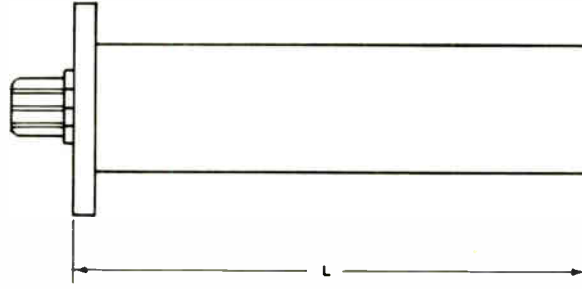


Stock Number	Line Size	Insert Length (A)	Approx. Weight
MI-27791K-7A	3 ¹ / ₈ "	.625" (16 mm)	3½ lbs. (1400 g)
MI-561673K-7A	4 ¹ / ₁₆ "	.50" (13 mm)	3¾ lbs. (1.7 kg)

MI-27791K-7A provides Universal MI-27791D female flange on MI-27791K line. MI-561673K-7A provides Universal MI-561673E female flange on MI-561673K line. Not pressure tight.

MI-561565, MI-27791K, MI-561673K, MI-561579

ADAPTER, 6 1/8" UNFLANGED TO 6 1/8" FLANGED



Stock Number	Length (L)	Approx. Weight
MI-561579-7A	3 5/8" (93 mm)	8 lbs. (3.6 kg)

Converts 6 1/8" 50-ohm flanged MI-561579 to 6 1/8" 51.5-ohm flanged MI-19314-C line. Not pressure tight. 6940-3).

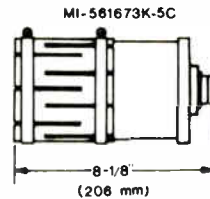
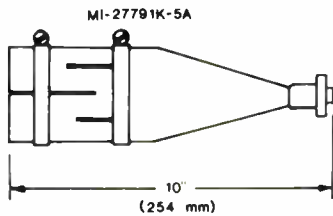
REDUCER, 1 5/8" UNFLANGED TO TYPE "N"



Stock Number	Approx. Weight
MI-561565-5B	8 ozs. (227 g)

Converts 1 5/8" 50-ohm unflanged MI-561565 to Type "N" female.

REDUCERS, 3 1/8" and 4 1/16" UNFLANGED TO TYPE "N"

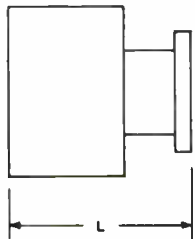


Stock Number	Approx. Weight
MI-27791K-5A	4 1/4 lbs. (2 kg)
MI-561673K-5C	5 1/4 lbs. (2.4 kg)

MI-27791K-5A converts 3 1/8" 50-ohm unflanged MI-27791K to Type "N" female. MI-561673K-5c converts 4 1/16" 50-ohm unflanged MI-561673K to Type "N" female.

1⁵/₈" , 3¹/₈" , 4¹/₁₆" , 6¹/₈" 50-ohm Teflon Transmission Line

REDUCER, 6¹/₈" UNFLANGED TO 3¹/₈" EIA FLANGED

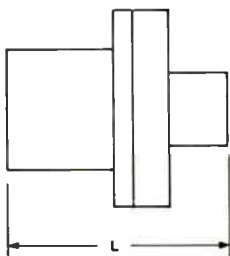


Stock Number	Length (L)	Approx. Weight
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MI-561579-5B	6 ³ / ₄ " (171 mm)	9 lbs. (4 kg)
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Reduces 6¹/₈" 50-ohm unflanged MI-561579 to 3¹/₈" 50-ohm flanged EIA MI-19089 using MI-561579-4A coupling not supplied.

REDUCER, 50-OHM UNFLANGED, 3¹/₈" TO 1⁵/₈" , 4¹/₁₆" TO 3¹/₈" , 6¹/₈" TO 4¹/₁₆" , AND 6¹/₈" TO 3¹/₈"



Stock Number	Length (L)	Approx. Weight
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MI-561565-5A	5" (127 mm)	3 ¹ / ₄ lbs. (1.5 kg)	3 ¹ / ₈ " to 1 ⁵ / ₈ "
MI-561673K-5A	7" (178 mm)	6 lbs. (2.7 kg)	4 ¹ / ₁₆ " to 3 ¹ / ₈ "
MI-561673K-5B	9" (229 mm)	10 lbs. (4.5 kg)	6 ¹ / ₈ " to 4 ¹ / ₁₆ "
MI-561579-5A	6 ³ / ₄ " (171 mm)	8.5 lbs. (3.8 kg)	6 ¹ / ₈ " to 3 ¹ / ₈ "

Requires couplings not supplied as follows: MI-561565-4A for 1⁵/₈" , MI-27791K-4A for 3¹/₈" , MI-561673K-4A for 6¹/₈" , and MI-561579-4A for 6¹/₈" .

MI-561565, MI-27791K, MI-561673K, MI-561579

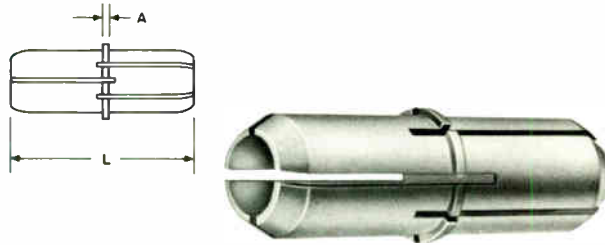
TRANSFORMER-ADAPTER, 6 1/8" 50-OHM UNFLANGED TO 6 1/8" 75-OHM UNIVERSAL FEMALE



Stock Number	TV Channel	Insert Length	Approx. Weight
MI-561579-6R	2, 3	62" (1574 mm)	47 lbs. (21 kg)
MI-561579-6T	4, 5, 6	52" (1221 mm)	32 lbs. (17 kg)
MI-561579-6U	7 thru 13	26" (660 mm)	24 lbs. (11 kg)

Transforms 6 1/8" 50-ohm MI-561579 to 6 1/8" 75-ohm MI-27792D and provides universal female flange. Universal connector and clamp supplied. Unflanged end requires coupling not supplied. Specify TV channel or frequency when ordering.

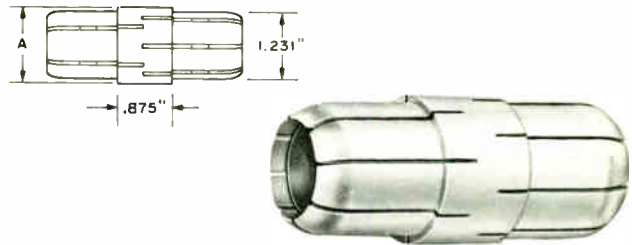
INNER CONNECTOR ADAPTER, 1 5/8" 50-OHM TO 1 5/8" 51.5-OHM



Stock Number	Length (L)	Dimension A	Approx. Weight
MI-561565-8A	2" (51 mm)	1/16" (1.6 mm)	2 ozs. (57 g)

Couples inner conductor of 50-ohm 1 5/8" MI-56156 to inner conductor of 51.5-ohm 1 5/8" MI-19112.

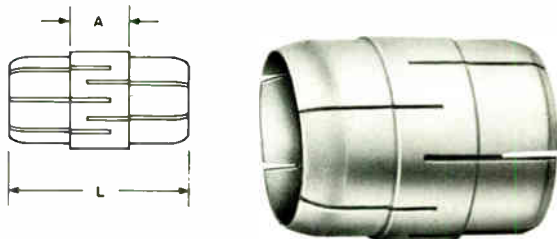
ADAPTER, INNER CONDUCTOR 3 1/8" 50-OHM TO 51.5-OHM



Type	Dim. A	To Adapt
27988-4A	1.136 (29 mm)	MI-19113C to MI-19089/MI-27791D
27988-4B	1.232 (31 mm)	MI-19313 to MI-19089/MI-27791D

Couples inner conductor of 50-ohm 3 1/8" MI-19089 or MI-27791D to inner conductor of 51.5-ohm 3 1/8" MI-19113 or MI-19313. Weight is 6 ozs. (171 g).

ADAPTER, INNER CONDUCTOR 6 1/8" 50-OHM TO 6 1/8" 51.5-OHM



Stock Number	Length	Dimension A	Approx. Weight
MI-561579-8A	3 7/8" (81 mm)	1 1/16" (27 mm)	12 ozs. (342 g)

Couples inner conductor of 50-ohm 6 1/8" MI-561579 to inner conductor of 51.5-ohm 6 1/8" MI-19314C.

CLAMPS, COUPLING



Clamp, Coupling for 1 5/8" line	MI-561565-4C
Clamp, Coupling for 3 1/8" line	MI-27791K-4C
Clamp, Coupling for 4 1/16" line	MI-561673K-4C
Clamp, Coupling for 6 1/8" line	MI-561579-4C

Hangers for Rigid Transmission Line

- Fixed and expansion, dual and single
- For vertical support
- For horizontal support
- Spring loading dimensions included



RCA offers a wide variety of hangers and accessories for the support of rigid coaxial transmission line. Hangers can be supplied for vertical and horizontal runs and for indoor and outdoor use. Special hangers for supporting dual lines and insulated types that permit use of FM and TV antennas on insulated AM towers are also available. Hanger arm extension length must be chosen to align the guides one above the other so that the line may move up and down freely. All tower mounting hangers are bolt-through-hole types.

Hangers and accessories are generally shipped in kegs. Total shipping weight, therefore, equals the weight of the hangers plus about ten pounds (4.6 kg) for the keg.

In This Section:

1 $\frac{5}{8}$ -Inch Hangers for:

MI-19112 Series, MI-561565 Series

3 $\frac{1}{8}$ -Inch Hangers for:

MI-19089 Series, MI-19313 Series,
MI-27791 Series

4 $\frac{1}{8}$ -Inch Hangers for:

MI-561673 Series

6 $\frac{1}{8}$ -Inch Hangers for:

MI-19387 Series, MI-27792 Series,
MI-561579 Series

8 $\frac{1}{8}$ -Inch Hangers for:

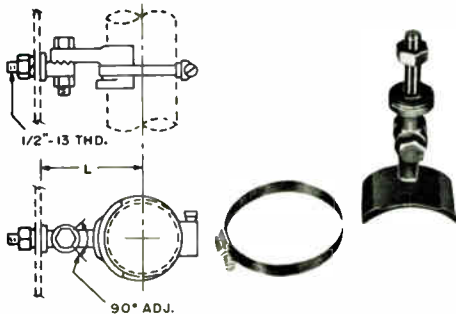
MI-561566 Series, MI-561671 Series

9 $\frac{1}{8}$ -Inch Hangers for:

MI-27793 Series, MI-561672 Series

1⁵/₈-Inch Rigid Transmission Line Hangers

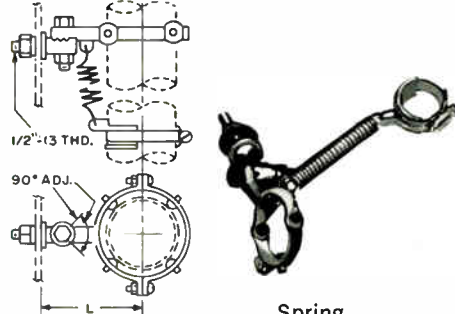
SINGLE, FIXED



Stock Number	Dimension L	Approx. Weight
MI-19312-44	4 ¹ / ₄ " (107 mm)	1 ¹ / ₄ lbs. (567 g)
MI-19312-47	7 ³ / ₄ " (197 mm)	1 ¹ / ₂ lbs. (618 g)

Long arm unit (-47) matches standoff of insulated hanger

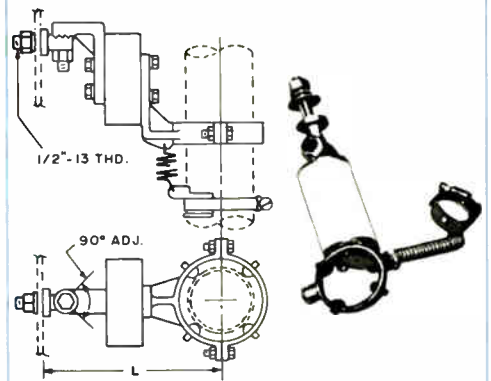
SINGLE, EXPANSION



Stock Number	Dimension L	Spring Chart Fig.	Approx. Weight
MI-19312-32	4 ¹ / ₄ " (107 mm)	A	6 lbs. (2.7 kg)
MI-19312-33	7 ³ / ₄ " (197 mm)	A	2 ³ / ₄ lbs. (1.3 kg)

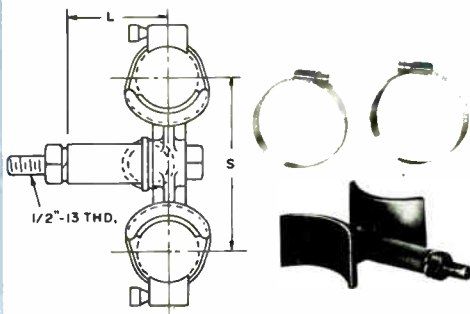
Long arm unit (-33) matches standoff of insulated hanger.

SINGLE, INSULATED, EXPANSION



Stock Number	Dimension L	Spring Chart Fig.	Approx. Weight
MI-19312-34	7 ³ / ₄ " (197 mm)	A	6 lbs. (2.7 kg)

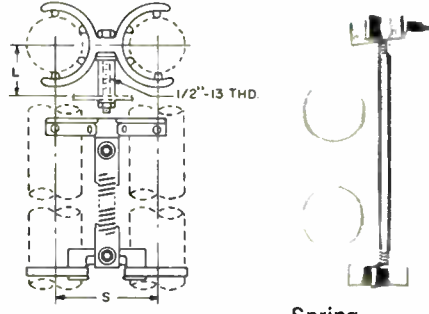
DUAL, FIXED



Stock Number	Dimensions L S	Approx. Weight
MI-19112-15	2-9/32" 3 ³ / ₄ " (58 mm) (95 mm)	1 ¹ / ₄ lbs. (567 g)

Requires one MI-19113-16 Extension Kit when used with MI-19112-48 insulated hanger.

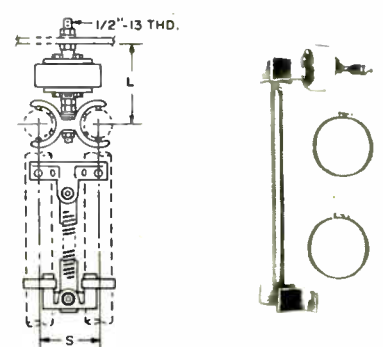
DUAL, EXPANSION



Stock Number	Dimensions L S	Spring Chart Fig.	Approx. Weight
MI-19112-14	2 ¹ / ₄ " 3 ³ / ₄ " (57 mm) (95 mm)	B	3 ¹ / ₂ lbs. (1.6 kg)

Requires one MI-19113-16 Extension Kit when used with MI-19112-48 insulated hanger. (See Hanger Accessories.)

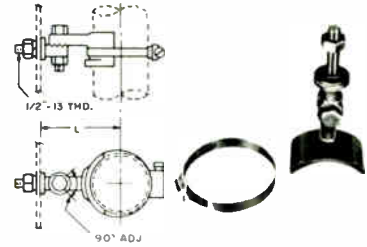
DUAL, INSULATED, EXPANSION



Stock Number	Dimensions L S	Spring Chart Fig.	Approx. Weight
MI-19112-48	5" 5" (127 mm) (127 mm)	B	7 ¹ / ₂ lbs. (3.4 kg)

3/8-Inch Rigid Transmission Line Hangers

SINGLE, FIXED

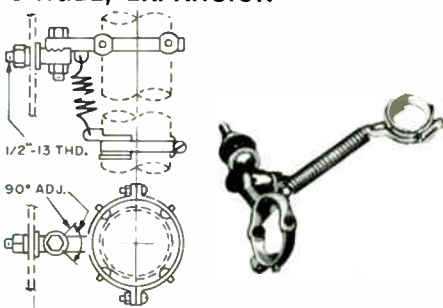


Stock Number	Dimension L	Approx. Weight
MI-19313-44	5" (127 mm)	1½ lbs. (681 g)
MI-19313-47	8 ⁵ / ₁₆ " (217 mm)	1¾ lbs. (793 g)

Long arm unit (-47) matches standoff of insulated hanger.

Use heavy-duty hanger (MI-19313-41, see below) for runs 750' and longer.

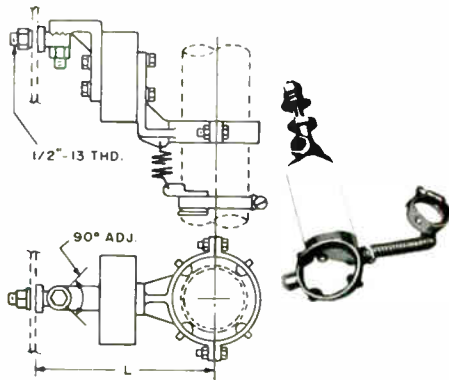
SINGLE, EXPANSION



Stock Number	Dimension L	Spring Chart Fig.	Approx. Weight
MI-19313-32	5" (127 mm)	C	3 lbs. (1.4 kg)
MI-19313-33	8 ⁵ / ₁₆ " (217 mm)	C	3¼ lbs. (1.5 kg)

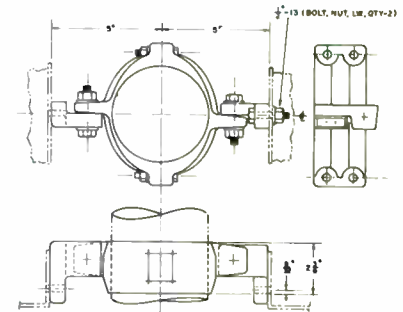
Long arm unit (-33) matches standoff of insulated hanger.

SINGLE, INSULATED, EXPANSION



Stock Number	Dimension L	Spring Chart Fig.	Approx. Weight
MI-19313-34	8 ⁵ / ₁₆ " (217 mm)	C	7 lbs. (3 kg)

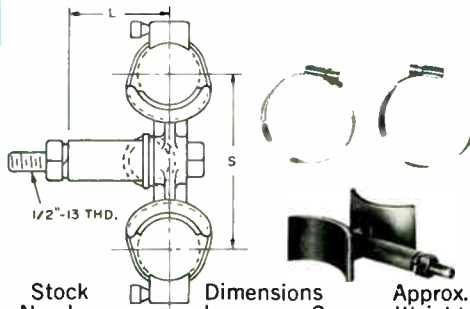
HEAVY DUTY, FIXED



Stock Number	Approx. Weight
MI-19313-41	13½ lbs. (6 kg)

Use hanger for runs of 750' and longer. Dotted lines in drawing are tower members. Mounting details packed with product.

DUAL, FIXED

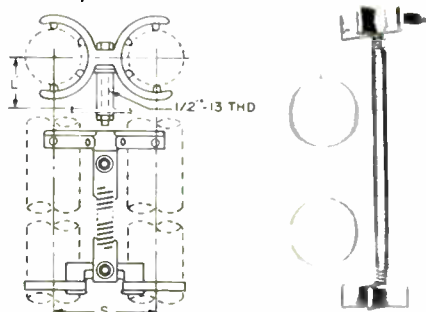


Stock Number	Dimensions L	Dimensions S	Approx. Weight
MI-19113-15	3-1/32" (77 mm)	5½" (140 mm)	2 lbs. (908 g)

Requires one MI-19113-16 Extension Kit when used with MI-19113-48 insulated hanger.

Use at least two on runs of 750' and shorter. Use heavy-duty hanger (MI-19313-41) for each line in runs 750' and longer.

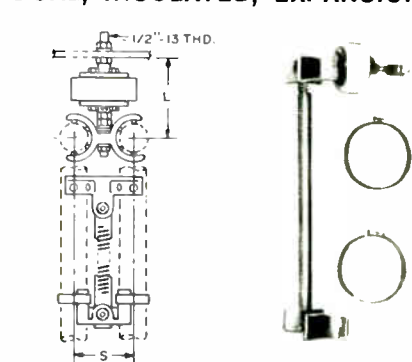
DUAL, EXPANSION



Stock Number	Dimensions L	Dimensions S	Spring Chart Fig.	Approx. Weight
MI-19113-14	3" (76 mm)	5½" (140 mm)	D	5¾ lbs. (2.6kg)

Requires one MI-19113-16 Extension Kit when used with MI-19113-48 insulated hanger. (See Hanger Accessories).

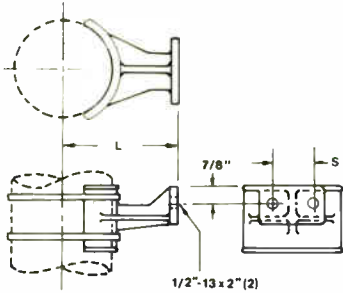
DUAL, INSULATED, EXPANSION



Stock Number	Dimensions L	Dimensions S	Spring Chart Fig.	Approx. Weight
MI-19113-48	5" (127 mm)	5½" (140 mm)	D	9½ lbs. (4 kg)

4 1/16-Inch Rigid Transmission Line Hangers

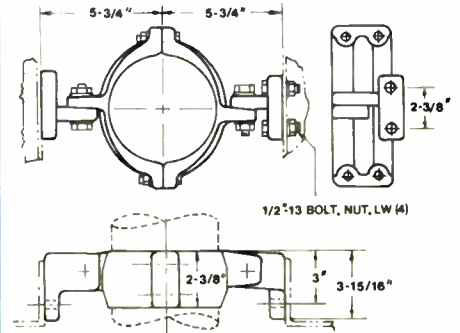
SINGLE, FIXED



Stock Number	Dimensions		Approx. Weight
	L	S	
MI-561674-33	5 3/4" (146 mm)	2 3/8" (60 mm)	15 lbs. (6.8 kg)

For vertical runs of 1000' or less.

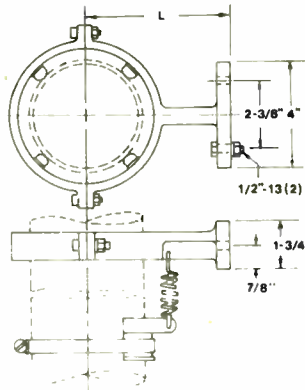
HEAVY DUTY, FIXED



Stock Number	Approx. Weight
MI-561674-41	8 1/2 lbs. (3.8 kg)

For vertical runs of greater than 1000'.

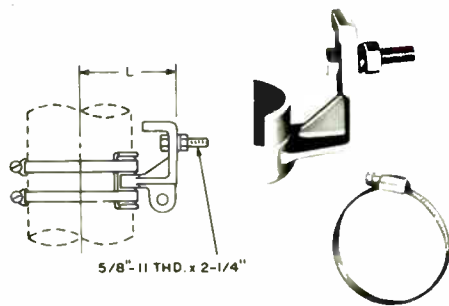
SINGLE EXPANSION



Stock Number	Dim. L	Spring Chart Fig.	Approx. Weight
MI-561674-38	5 3/4"	E	6 1/2 lbs. (2.9 kg)

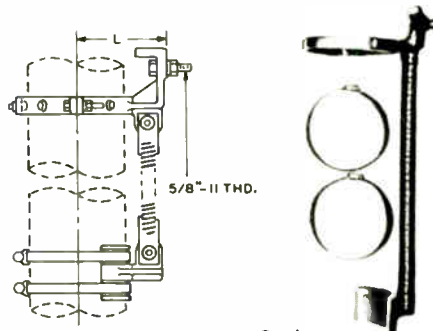
6 1/8-Inch Rigid Transmission Line Hangers

SINGLE, FIXED (600' and shorter)



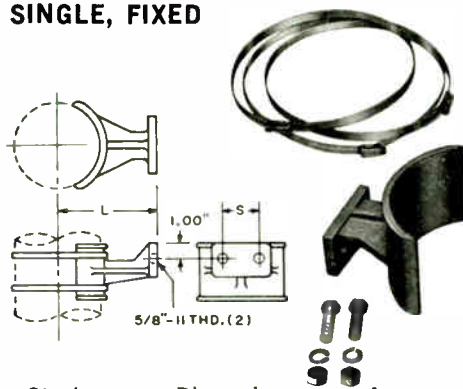
Stock Number	Length	Approx. Weight
MI-19314-44	5 5/8" (143 mm)	3 1/4 lbs. (1.5 kg)

SINGLE, EXPANSION (600' and shorter)



Stock Number	Length	Spring Chart Fig.	Approx. Weight
MI-19314-32	5 5/8" (143 mm)	G	8 1/4 lbs. (4 kg)

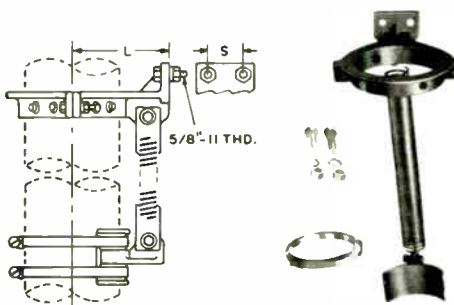
SINGLE, FIXED



Stock Number	Dimensions		Approx. Weight
	L	S	
MI-27970-33	6 7/8" (174 mm)	2 3/8" (60 mm)	6 1/4 lbs. (3 kg)

Use with MI-27970 Series hangers only. Use at least two hangers for runs of 1000' and shorter. For longer runs, use Heavy Duty MI-27970-41.

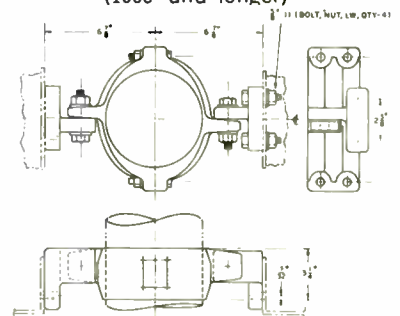
SINGLE, EXPANSION



Stock Number	Dimensions		Spring Chart Fig.	Approx. Weight
	L	S		
MI-27970-37	6 7/8" (174 mm)	2 3/8" (60 mm)	F	18 1/2 lbs. (8 kg)

For use with MI-27792D and MI-19387 Line.

HEAVY DUTY, SINGLE, FIXED (1000' and longer)

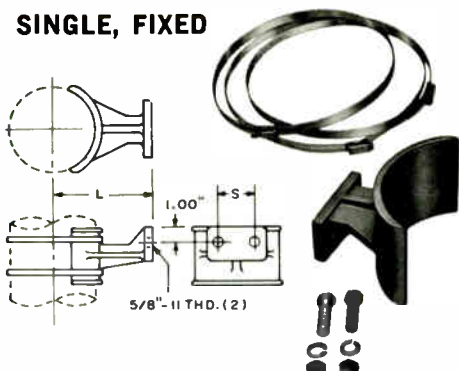


Stock Number	Approx. Weight
MI-27970-41	24 lbs. (11 kg)

Use hanger for runs of 1000' and longer. Dotted lines in drawing are tower members. Mounting details packed with product.

8³/₁₆-Inch Rigid Transmission Line Hangers

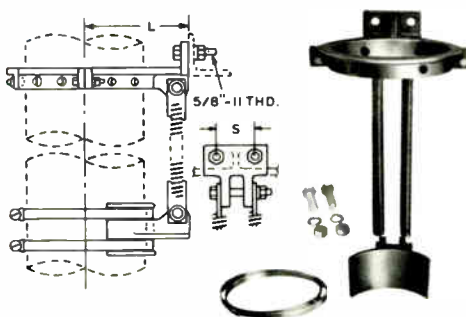
SINGLE, FIXED



Stock Number	Dimensions		Approx. Weight
	L	S	
MI-561569-40	8"	3"	10 ³ / ₄ lbs. (5 kg)

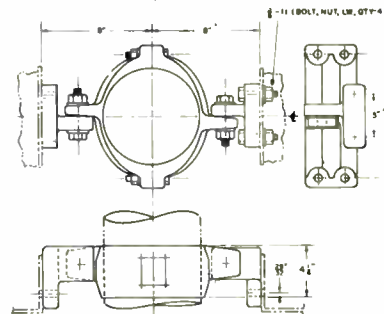
Use at least two hangers for runs of 750' and shorter. For longer runs, use MI-561569-41 described at far right.

SINGLE, EXPANSION



Stock Number	Dimensions		Spring Chart Fig.	Approx. Weight
	L	S		
MI-561569-38	8"	3"	H	25 ¹ / ₄ lbs. (12 kg)

HEAVY DUTY, FIXED

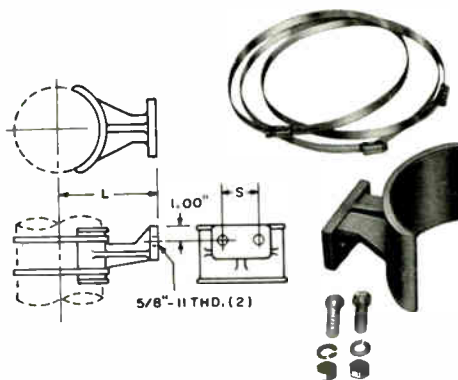


Stock Number	Approx. Weight
MI-561569-41	41 lbs. (18.5 kg)

Use hanger for runs of 750' and longer. Dotted lines in drawing are tower members. Mounting details packed with product.

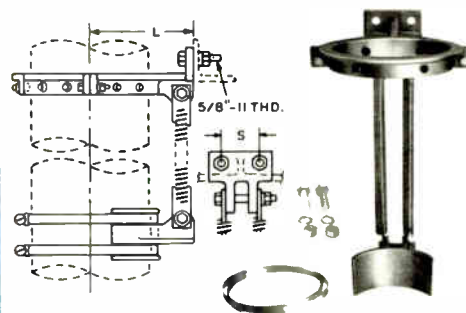
9³/₁₆-Inch Rigid Transmission Line Hangers

SINGLE, FIXED



Stock Number	Dimensions		Approx. Weight
	L	S	
MI-27900-40	8"	3"	10 ³ / ₄ lbs. (5 kg)

SINGLE, EXPANSION

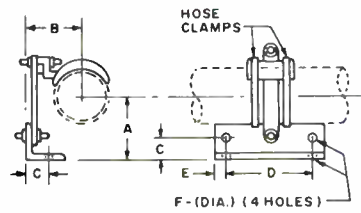


Stock Number	Dimensions		Spring Chart Fig.	Approx. Weight
	L	S		
MI-27900-38	8"	3"	I	26 ³ / ₈ lbs. (12 kg)

Hanger Accessories

SINGLE SWIVEL HANGERS

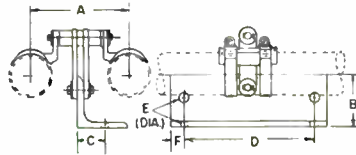
For single horizontal line runs. Takes care of some horizontal line expansion but permits no vertical movement. Use 3-point suspension hangers for horizontal runs when length of vertical run or stiffness of line will require vertical as well as horizontal movement of the horizontal run.



Stock Number	Line Size	Dimensions						Approx. Weight
		A	B	C	D	E	F	
MI-19312-37	1 5/8"	2 1/8" (53 mm)	1 1/2" (38 mm)	1 1/8" (28 mm)	5" (127 mm)	1/2" (13 mm)	9/32" (7 mm)	2 1/4 lbs. (1.1 kg)
MI-19313-37	3 1/8"	2-17/32" (64 mm)	2 7/8" (73 mm)	1 1/8" (28 mm)	5" (127 mm)	1/2" (13 mm)	7/16" (11 mm)	3 lbs. (1.4 kg)

DUAL SWIVEL HANGERS

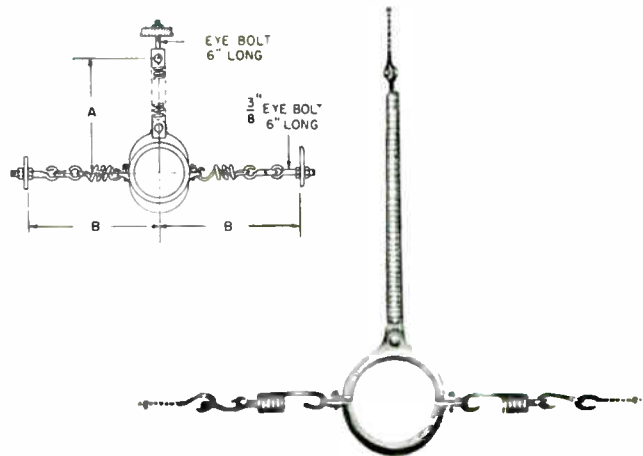
For dual horizontal line runs. Takes care of some horizontal line expansion but permits no vertical movement. Use 3-point suspension hangers for horizontal runs when length of vertical run or stiffness of line will require vertical as well as horizontal movement of the horizontal run.



Stock Number	Line Size	Dimensions						Approx. Weight
		A	B	C	D	E	F	
MI-19312-38	1 5/8"	3 3/4" (95 mm)	2 1/8" (53 mm)	1 1/8" (28 mm)	5" (127 mm)	7/16" (11 mm)	1/2" (13 mm)	3 lbs. (1.4 kg)
MI-19313-38	3 1/8"	5 1/2" (140 mm)	2-17/32" (64 mm)	1 1/8" (28 mm)	5" (127 mm)	7/16" (11 mm)	1/2" (13 mm)	4 lbs. (1.8 kg)

SINGLE THREE-POINT SUSPENSION HANGERS

For horizontal suspension of single line.

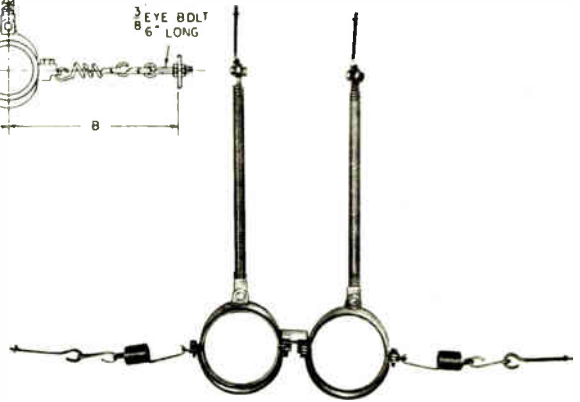
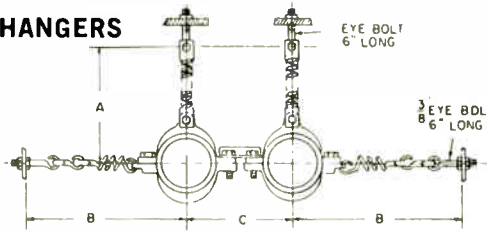


Stock Number	Line Size	Dimensions		Approx. Weight
		A	B	
MI-19313-50	3 1/8"	20 3/4" (527 mm)	15" (381 mm)	5 1/4 lbs. (2.3 kg)
MI-561674-50	4 1/8"	20 3/4" (527 mm)	17 1/4" (438 mm)	6 1/2 lbs. (3 kg)
MI-19314-50	6 1/8"	28" (716 mm)	16 3/4" (425 mm)	11 1/2 lbs. (5.2 kg)
MI-561569-50	8 3/8"	28 1/2" (728 mm)	17 7/8" (454 mm)	30 lbs. (13.6 kg)
MI-27900-50	9 3/8"	29 1/2" (754 mm)	18 3/8" (467 mm)	18 lbs. (8.2 kg)

Hanger Accessories

DUAL THREE-POINT SUSPENSION HANGERS

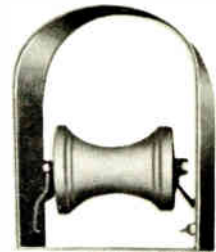
For horizontal suspension of dual lines.



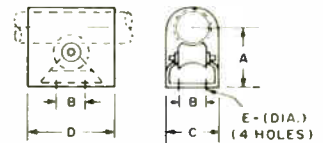
Stock Number	Line Size	Dimensions			Approx. Weight
		A	B	C	
MI-19313-51	3 $\frac{1}{8}$ "	20 $\frac{3}{4}$ " (527 mm)	15" (381 mm)	15 $\frac{1}{2}$ " (394 mm)	9 $\frac{1}{4}$ lbs. (4.2 kg)
MI-561674-51	4 $\frac{1}{16}$ "	20 $\frac{3}{4}$ " (527 mm)	17 $\frac{1}{4}$ " (438 mm)	6 $\frac{1}{2}$ " (165 mm)	11 lbs. (5 kg)
MI-27970-34	6 $\frac{1}{8}$ "	28" (716 mm)	16 $\frac{3}{4}$ " (425 mm)	10 $\frac{1}{2}$ " (267 mm)	18 $\frac{3}{4}$ lbs. (8.5 kg)
MI-561569-51	8 $\frac{3}{16}$ "	28 $\frac{1}{2}$ " (728 mm)	17 $\frac{7}{8}$ " (454 mm)	13" (330 mm)	51 lbs. (23 kg)
MI-27900-51	9 $\frac{3}{16}$ "	29 $\frac{1}{2}$ " (754 mm)	18 $\frac{3}{8}$ " (467 mm)	14" (355 mm)	55 lbs. (25 kg)

HORIZONTAL ROLLER ASSEMBLY

Supports single horizontal line. Two required for dual lines. Mounting bolts not supplied. Rollers accommodate no vertical movement; use 3-point suspension hangers for horizontal runs when length of vertical run or stiffness of line will require vertical as well as horizontal movement of the horizontal run.



Stock Number	Line Size	Dimensions					Approx. Weight
		A	B	C	D	E	
MI-19312-35	1 $\frac{5}{8}$ "	2-7/16" (62 mm)	1 $\frac{3}{4}$ " (108 mm)	2 $\frac{3}{8}$ " (61 mm)	6" (152 mm)	7/32" (6 mm)	1 lb. (454 g)
MI-19313-35	3 $\frac{1}{8}$ "	4 $\frac{1}{4}$ " (108 mm)	3" (76 mm)	4 $\frac{3}{4}$ " (121 mm)	8" (203 mm)	7/32" (6 mm)	2 $\frac{1}{4}$ lbs. (1.1 kg)
MI-561674-35	4 $\frac{1}{16}$ "	5 $\frac{1}{8}$ " (130 mm)	4" (102 mm)	5 $\frac{1}{4}$ " (133 mm)	8" (203 mm)	9/32" (7 mm)	2 $\frac{3}{4}$ lbs. (1.3 kg)
MI-19314-35	6 $\frac{1}{8}$ "	8" (203 mm)	5 $\frac{1}{2}$ " (140 mm)	7-15/16" (202 mm)	12" (305 mm)	9/32" (7 mm)	8 $\frac{1}{4}$ lbs. (3.7 kg)
MI-561569-35	8 $\frac{3}{16}$ "	9 $\frac{7}{8}$ " (251 mm)	7 $\frac{1}{4}$ " (184 mm)	11-5/16" (287 mm)	20" (508 mm)	9/32" (7 mm)	15 lbs. (6.8 kg)
MI-27900-35	9 $\frac{3}{16}$ "	10 $\frac{3}{8}$ " (264 mm)	7 $\frac{1}{4}$ " (184 mm)	11-5/16" (287 mm)	20" (508 mm)	9/32" (7 mm)	15 lbs. (6.8 kg)

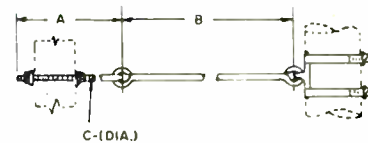


LATERAL BRACES

Mounts through single hole. Complete with two hose clamps. Used to restrict lateral motion of line while permitting vertical and horizontal movement.



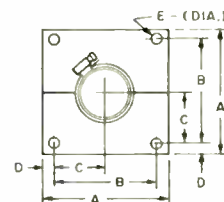
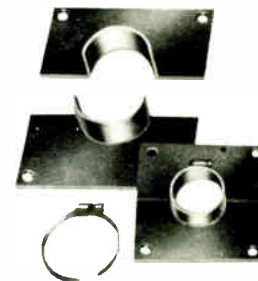
Stock Number	Line Size	Dimensions			Approx. Weight
		A	B	C	
MI-19312-35	1 $\frac{5}{8}$ "	8" (203 mm)	38 $\frac{1}{2}$ " (978 mm)	1/2" (13 mm)	2 lbs. (1 kg)
MI-19313-36	3 $\frac{1}{8}$ "	8" (203 mm)	38 $\frac{1}{2}$ " (978 mm)	1/2" (13 mm)	2 $\frac{1}{4}$ lbs. (1.1 kg)
MI-561674-36	4 $\frac{1}{16}$ "	7 $\frac{3}{4}$ " (197 mm)	38 $\frac{3}{4}$ " (985 mm)	3/8" (10 mm)	2 $\frac{3}{4}$ lbs. (1.3 kg)
MI-19314-36	6 $\frac{1}{8}$ "	7 $\frac{3}{4}$ " (197 mm)	38 $\frac{3}{4}$ " (985 mm)	3/8" (10 mm)	2 $\frac{1}{4}$ lbs. (1.1 kg)
MI-561559-36	8 $\frac{3}{16}$ "	7 $\frac{3}{4}$ " (197 mm)	38 $\frac{3}{4}$ " (985 mm)	3/8" (10 mm)	3 $\frac{1}{2}$ lbs. (1.5 kg)
MI-27900-36	9 $\frac{3}{16}$ "	7 $\frac{3}{4}$ " (197 mm)	38 $\frac{3}{4}$ " (985 mm)	3/8" (10 mm)	3 $\frac{1}{2}$ lbs. (1.5 kg)



Hanger Accessories

SINGLE HORIZONTAL ANCHOR

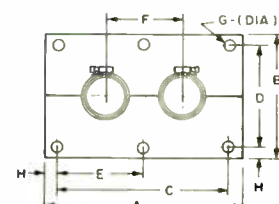
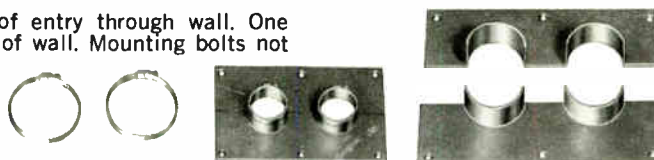
Supports single line at point of entry through wall. One anchor required on each side of wall. Mounting bolts not supplied.



Stock Number	Line Size	Dimensions					Approx. Weight
		A	B	C	D	E	
MI-19312-17	1 5/8"	6" (152 mm)	4 7/8" (124 mm)	2-7/16" (62 mm)	5/16" (14 mm)	5/16" (14 mm)	2 1/4 lbs. (1.1 kg)
MI-19313-17	3 1/8"	8" (203 mm)	6 7/8" (174 mm)	3-7/16" (87 mm)	5/16" (14 mm)	5/16" (14 mm)	3 1/2 lbs. (1.5 kg)
MI-561674-48	4 1/16"	9" (229 mm)	7 3/4" (197 mm)	3 7/8" (98 mm)	5/8" (16 mm)	5/16" (14 mm)	4 1/2 lbs. (2 kg)
MI-19314-48	6 1/8"	11 3/4" (299 mm)	10 1/4" (260 mm)	5 1/8" (130 mm)	3/4" (19 mm)	3/4" (19 mm)	15 lbs. (6.8 kg)
MI-561569-48	8 3/16"	16" (406 mm)	13 1/2" (343 mm)	5 1/2" (140 mm)	1 1/4" (32 mm)	3/4" (19 mm)	32 lbs. (14 kg)
MI-27900-48	9 3/16"	16" (406 mm)	13 1/2" (343 mm)	5 1/2" (140 mm)	1 1/4" (32 mm)	3/4" (19 mm)	29 lbs. (13 kg)

DUAL HORIZONTAL ANCHOR

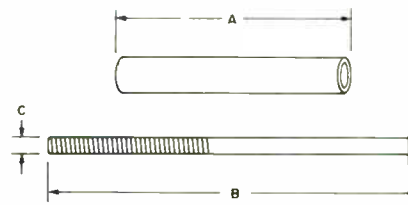
Supports two lines at point of entry through wall. One anchor required on each side of wall. Mounting bolts not supplied.



Stock Number	Line Size	Dimensions								Approx. Weight
		A	B	C	D	E	F	G	H	
MI-19312-18	1 5/8"	9 3/4" (248 mm)	6" (152 mm)	8 5/8" (219 mm)	4 7/8" (124 mm)	4 3/16" (110 mm)	3 3/4" (95 mm)	5/16" (14 mm)	5/16" (14 mm)	3 1/2 lbs. (1.5 kg)
MI-19313-18	3 1/8"	13 1/2" (343 mm)	8" (203 mm)	12 3/8" (314 mm)	6 7/8" (174 mm)	6 3/16" (157 mm)	5 1/2" (140 mm)	5/16" (14 mm)	5/16" (14 mm)	6 1/2 lbs. (3 kg)
MI-561674-49	4 1/16"	14 1/2" (368 mm)	9" (229 mm)	13 1/4" (337 mm)	7 1/2" (191 mm)	6 5/8" (168 mm)	6 1/2" (165 mm)	9 1/16" (230 mm)	5/8" (16 mm)	8 lbs. (3.6 kg)
MI-27970-35	6 1/8"	22" (559 mm)	11 3/4" (298 mm)	20 1/2" (523 mm)	10 1/4" (260 mm)	10 1/4" (260 mm)	10 1/4" (260 mm)	5/16" (14 mm)	3/4" (19 mm)	30 lbs. (13.6 kg)
MI-561569-49	8 3/16"	26" (660 mm)	15" (381 mm)	23 1/2" (597 mm)	12 1/2" (242 mm)	11 3/4" (298 mm)	11 1/2" (292 mm)	3/4" (19 mm)	1 1/4" (32 mm)	57 lbs. (25.8 kg)
MI-27900-49	9 3/16"	28" (716 mm)	16" (406 mm)	25 1/2" (648 mm)	13 1/2" (343 mm)	12 3/4" (324 mm)	3/4" (242 mm)	12 1/2" (19 mm)	1 1/4" (32 mm)	57 lbs. (25.8 kg)

EXTENSION KIT

Aligns grounded dual hangers with insulated dual hangers. For use with 3 1/8-inch line hangers.



Stock Number	A	Dimensions		Approx. Weight
		B	C	
MI-19113-16	4 1/2" (115 mm)	7 1/2" (191 mm)	1/2" (13 mm)	3/4 lbs. (339 g)

Spring Loading Dimensions for Expansion Hangers

SINGLE 1 5/8-INCH LINE

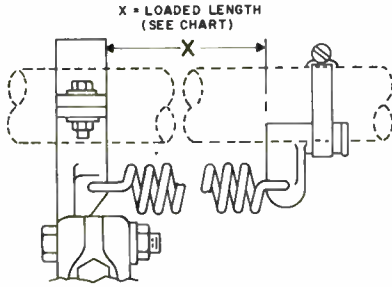


Fig. A
(MI-19312-32, -33, -34)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	14 1/4	362	14 1/4	362	14 5/8	365	14 1/2	368	14 1/2	368
200- 400	61-122	14	356	14 1/8	359	14 3/8	365	14 5/8	371	14 3/4	375
400- 600	122-183	13 3/4	349	14 1/8	359	14 3/8	365	14 5/8	371	14 7/8	378
600- 800	183-244	13 5/8	346	14	356	14 3/8	365	14 3/4	375	15 1/8	384
800-1000	244-305	13 3/8	340	13 7/8	352	14 3/8	365	14 7/8	378	15 1/4	387
1000-1200	305-366	13 1/4	337	13 3/4	349	14 3/8	365	14 7/8	378	15 1/2	394

DUAL 1 5/8-INCH LINE

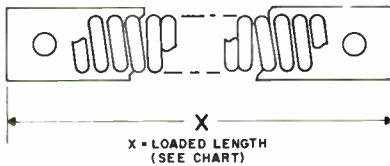


Fig. B
(MI-19112-14, -48)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	19 1/8	486	19 1/4	489	19 1/4	489	19 3/8	492	19 3/8	492
200- 400	61-122	18 7/8	479	19 1/8	486	19 1/4	489	19 1/2	495	19 5/8	498
400- 600	122-183	18 3/4	476	19	483	19 1/4	489	19 1/2	495	19 7/8	505
600- 800	183-244	18 1/2	470	18 7/8	479	19 1/4	489	19 5/8	498	20	508
800-1000	244-305	18 5/8	467	18 3/4	476	19 1/4	489	19 3/4	502	20 1/4	514
1000-1200	305-366	18 1/4	464	18 3/4	476	19 1/4	489	19 3/4	502	20 3/8	518

SINGLE 3 1/8-INCH LINE

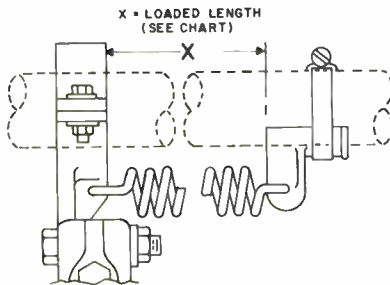


Fig. C.
(MI-19313-32, -33, -34)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	15	381	15 1/8	384	15 1/4	387	15 1/4	387	15 3/8	391
200- 400	61-122	14 3/4	375	15	381	15 1/4	387	15 3/8	391	15 5/8	397
400- 600	122-183	14 1/2	368	14 7/8	378	15 1/4	387	15 1/2	394	15 7/8	403
600- 800	183-244	14 1/4	362	14 3/4	375	15 1/4	387	15 5/8	397	16 1/8	410
800-1000	244-305	14	356	14 5/8	371	15 1/4	387	15 3/4	400	16 3/8	416
1000-1200	305-366	13 7/8	352	14 1/2	368	15 1/4	387	15 7/8	403	16 1/2	413
1200-1400	366-427	13 3/4	349	14 1/2	368	15 1/4	387	15 7/8	403	16 5/8	422
1400-1600	427-488	13 5/8	346	14 1/2	368	15 1/4	387	16	406	16 3/4	425
1600-1800	488-549	13 1/2	343	14 3/8	365	15 1/4	387	16	406	16 7/8	429
1800-2000	549-610	13 1/2	343	14 3/8	365	15 1/4	387	16	406	16 7/8	429

Spring Loading Dimensions for Expansion Hangers

DUAL 3 1/8-INCH UNIVERSAL LINE

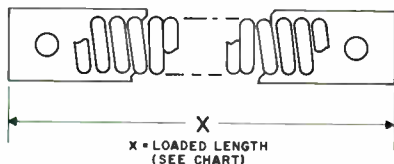


Fig. D
(MI-19113-14, -48)

DO NOT USE OVER 600 FT.

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	24 1/2	622	24 5/8	625	24 3/4	629	24 3/4	629	24 7/8	632
200- 400	61-122	24 1/4	616	24 1/2	622	24 3/4	629	24 7/8	632	25 1/8	638
400- 600	122-183	24	610	24 3/8	619	24 3/4	629	25	635	25 3/8	645
600- 800	183-244	23 3/4	603	24 1/4	616	24 3/4	629	25 1/8	638	25 5/8	651
800-1000	244-305	23 5/8	600	24 1/8	613	24 3/4	629	25 1/4	641	25 7/8	657
1000-1200	305-366	23 3/8	594	24	610	24 3/4	629	25 3/8	645	26	660
1200-1400	366-427	23 1/4	591	24	610	24 3/4	629	25 3/8	645	26 1/8	664
1400-1600	427-488	23 1/4	591	24	610	24 3/4	629	25 1/2	648	26 1/4	667
1600-1800	488-549	23 1/8	587	23 7/8	606	24 3/4	629	25 1/2	648	26 3/8	670
1800-2000	549-610	23	584	23 7/8	606	24 3/4	629	25 1/2	648	26 3/8	670

SINGLE 4 1/16" LINE

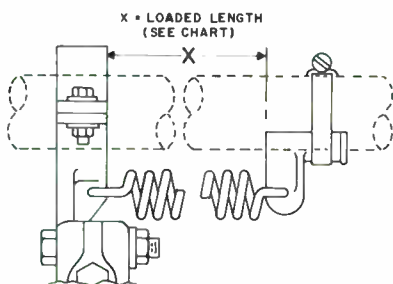


Fig. E (MI-561674-38)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	18	457	18	457	18 1/8	460	18 1/8	460	18 1/4	464
200- 400	61-122	17 5/8	448	17 7/8	454	18 1/8	460	18 1/4	464	18 1/2	470
400- 600	122-183	17 3/8	441	17 3/4	451	18 1/8	460	18 3/8	467	18 3/4	476
600- 800	183-244	17 1/4	438	17 5/8	448	18 1/8	460	18 1/2	470	19	483
800-1000	244-305	17	432	17 1/2	446	18 1/8	460	18 5/8	473	19 1/8	486
1000-1200	305-366	16 3/4	425	17 1/2	446	18 1/8	460	18 3/4	476	19 3/8	492
1200-1400	366-427	16 5/8	422	17 3/8	441	18 1/8	460	18 3/4	476	19 1/2	495
1400-1600	427-488	16 1/2	419	17 1/4	438	18 1/8	460	18 7/8	479	19 5/8	498
1600-1800	488-549	16 3/8	416	17 1/4	438	18 1/8	460	18 7/8	479	19 3/4	502
1800-2000	549-610	16 1/4	413	17 1/8	435	18 1/8	460	19	483	19 7/8	505

SINGLE 6 1/8-INCH UNIVERSAL LINE

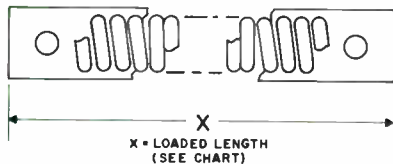


Fig. F
(MI-27970-37)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	32	813	32	813	32 1/8	816	32 1/8	816	32 1/4	819
200- 400	61-122	31 3/4	806	31 7/8	810	32 1/8	816	32 3/8	822	32 1/2	816
400- 600	122-183	31 3/8	797	31 3/4	806	32 1/8	816	32 1/2	826	32 7/8	835
600- 800	183-244	31 1/8	791	31 5/8	803	32 1/8	816	32 5/8	829	33 1/8	841
800-1000	244-305	30 7/8	784	31 1/2	800	32 1/8	816	32 3/4	832	33 3/8	848
1000-1200	305-366	30 5/8	778	31 3/8	797	32 1/8	816	32 7/8	835	33 3/8	854
1200-1400	366-427	30 1/2	775	31 1/4	794	32 1/8	816	33	838	33 3/4	857
1400-1600	427-488	30 1/4	768	31 1/8	791	32 1/8	816	33	838	34	864
1600-1800	488-549	30	762	31 1/8	791	32 1/8	816	33 1/8	841	34 1/8	867
1800-2000	549-610	29 7/8	759	31	787	32 1/8	816	33 3/4	857	34 1/4	870

Spring Loading Dimensions for Expansion Hangers

SINGLE 6 1/8-INCH LINE

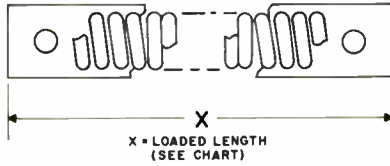


Fig. G
(MI-19314-32)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7--4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0-200	0- 61	26 1/4	667	26 3/8	670	26 1/2	673	26 1/2	673	26 5/8	676
200-400	61-122	26	660	26 1/4	667	26 1/2	673	26 5/8	676	26 7/8	683
400-600	122-183	25 3/4	654	26 1/8	664	26 1/2	673	26 3/4	679	27 1/8	689

DO NOT USE OVER 600 FT.

SINGLE 8-3/16-INCH LINE

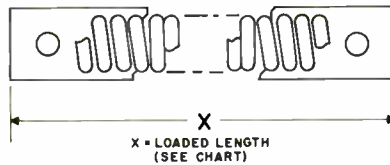


Fig. H
(MI-561569-38)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7-4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	27 7/8	606	24	610	24	610	24	610	24 1/8	613
200- 400	61-122	23 5/8	600	23 3/4	603	24	610	24 1/4	616	24 3/8	619
400- 600	122-183	23 1/4	591	23 5/8	600	24	610	24 3/8	619	24 3/4	625
600- 800	183-244	23 1/8	587	23 1/2	597	24	610	24 1/2	622	24 7/8	632
800-1000	244-305	22 7/8	581	23 3/8	594	24	610	24 5/8	625	25 1/8	638
1000-1200	305-366	22 3/4	578	23 3/8	594	24	610	24 5/8	625	25 1/4	641
1200-1400	366-427	22 5/8	575	23 1/4	591	24	610	24 3/4	629	25 3/8	645

SINGLE 9-3/16-INCH LINE

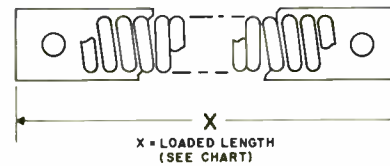


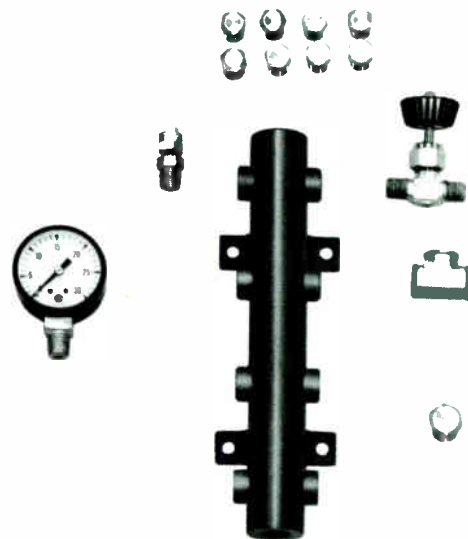
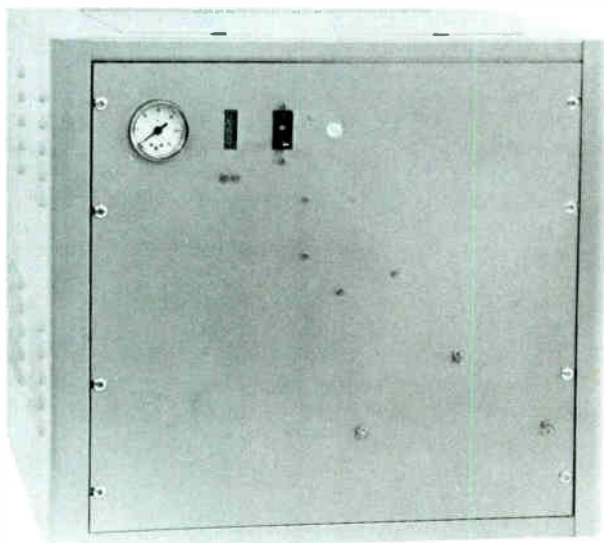
Fig. I
(MI-27900-38)

Distance Below Lowest Fixed Hanger		Loaded Length at Ambient in °F (°C) (Dimension X)									
		0-20° (-18--7°)		20-40° (-7-4°)		40-60° (4-16°)		60-80° (16-27°)		80-100° (27-38°)	
Feet	Meters	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
0- 200	0- 61	25 5/8	651	25 5/8	651	25 3/4	654	25 7/8	657	25 7/8	657
200- 400	61-122	25 3/8	645	25 1/2	648	25 3/4	654	26	660	26 1/8	664
400- 600	122-183	25 1/8	638	25 3/8	645	25 3/4	654	26 1/8	664	26 1/2	673
600- 800	183-244	24 7/8	631	25 1/4	641	25 3/4	654	26 1/4	667	26 3/4	679
800-1000	244-305	24 5/8	625	25 1/8	638	25 3/4	654	26 3/8	670	27 7/8	683

Pressurizing Equipment: Dehydrators and Gassing System Kit

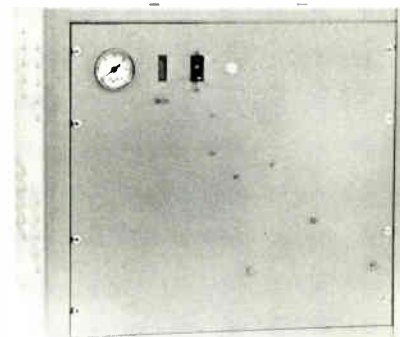
- Choice of two dehydrators
- Nitrogen-bottle regulators
- Expandable system kits
- Flexible plastic tubing
- Brass and bronze fittings

Described here is equipment and material for the pressurization of flanged transmission line. There are two dehydrator/compressors and three "gassing kits". The dehydrator/compressors differ in size and capacity, to accommodate various transmission-line system requirements. The three gassing kits combine the fittings and components into complete packages that simplify installation.



Heatless Compressor/Dehydrator

- Discharge air dewpoint -40°
- Available in two capacities
- Two-cylinder, oil-less compressors
- Adjustable outlet pressure



Engineered and manufactured specifically for pressurizing RF transmission lines, these two compressor/dehydrator units differ only in output capacity and physical dimensions. The units deliver dry, compressed air at the rate of one or two cubic feet per minute (0.028 or 0.056 m³).

Oil-Less Compressor

Both units use an oil-less, two-cylinder air compressor with a direct-drive 1/2- or 3/4-horsepower electric motor. All operate from 115V, 60-Hz power (220V, 50-Hz units are available on special order, see *Ordering Information*).

“Dry-Pak” Dehydrator

The “Dry-Pak” dehydrator provides a continuous supply of dry air. The dew point of this air is below -40 degrees C. The Dry-Pak dehydrator uses a system of air expansion and silica-gel dessicants to achieve this dryness.

A program timer, within the Dry-Pak, recycles the dessicant as required and entirely automatically. The device includes an adjustable pressure switch which maintains discharge pressure at any level between 1 and 15 lbs./in² (0.07-1.05 kg/cm²). The switch is factory set for 4 to 7 lbs/in² (0.28 to 0.49 kg/cm²).

Maintenance-Free System

Dry-Pak Compressor Dehydrators require no routine maintenance. After many hours of use, the *Teflon* piston rings of the compressor might need replacement to restore the unit’s pressure capability. These are available as spare parts.

Specifications

Output Air:
 Dewpoint -40° C
 Pressure 1-15 lbs/in² (0.07-1.05 kg/cm²)

Volume:
 Half-Horsepower Unit 1 ft³/min. (0.0283 m³/min.)
 Three-Quarter Horsepower Unit 2 ft³/min. (0.0566 m³/min.)
 Input Air:
 Temperature 125° F (52° C) max.
 Relative Humidity 0-100%
 Power Requirements 115V, 60 Hz or 220V, 50 Hz

Pressurizing Capacity:	Half-Horsepower Unit (1 SCFM)*	Three-Quarter Horsepower Unit (2 SCFM)*
1 7/8" Line	10,000' (3048 m)	40,000' (12,200 m)
3 1/8" Line	2500' (762 m)	10,000' (3050 m)
4 1/8" Line	1500' (457 m)	6000' (1829 m)
6 1/8" Line	700' (213 m)	3000' (914 m)
8 1/8" Line	300' (92 m)	1200' (366 m)
9 1/8" Line	250' (76 m)	1000' (305 m)
Half-Horsepower Unit	20" H; 22" W; 15" D (508, 558, 381 mm)	
Three-Quarter Horsepower Unit	20" H; 22" W; 15" D (503, 558, 381 mm)	

Weight
 Half-Horsepower Unit 95 lbs. (43 kg)
 Three-Quarter Horsepower Unit 117 lbs. (53 kg)

Ordering Information

Heatless Compressor/Dehydrator (115V 60 Hz):
 Half-Horsepower Unit (1 SCFM) MI-563170-1
 Three-Quarter Horsepower Unit (2 SCFM) MI-563170-2
 Heatless Compressor/Dehydrator (220V 50 Hz):
 Half-Horsepower Unit (1 SCFM) MI-563170-1A
 Three-Quarter Horsepower Unit (2 SCFM) MI-563170-2A

*SCFM = Standard cubic feet per minute.

Gassing System Kit

- For one- to eight-line systems
- For dry air or dry nitrogen
- Precision needle valves
- Highly flexible PVC tubing
- Gauges included

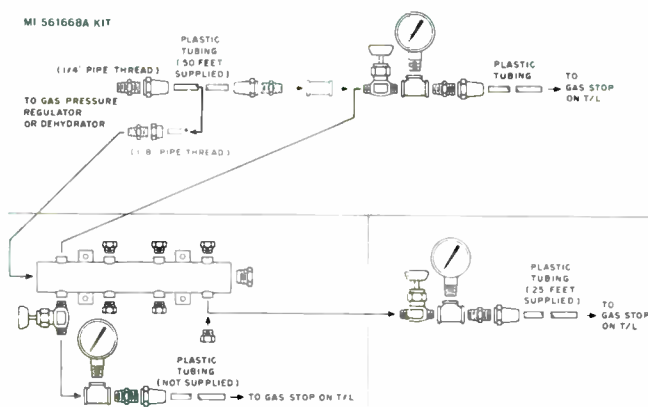
Gassing Kit "A"

Kit "A" provides the fittings, 50 ft. of tubing, valve and gauge required to pressurize a single transmission line from a compressor/dehydrator or a regulated source of compressed dry nitrogen.



Gassing Kit "B"

Kit "B" expands the load capabilities of Kit "A" to handle a dual T/L system. It includes an eight-port manifold and the valve, gauge and fittings required for the additional transmission line. The kit includes no plastic tubing on the basis that surplus is available from Kit A. Should additional tubing be required, it is available separately, see *Accessories*.



MI 561668A KIT
MI 561668B KIT
MI 561668C KIT
There are three gassing system kits: an "A" kit which is basic to Kit "B" which, in turn, is basic to Kit "C".

Accessories

Single-Stage Pressure Regulator (See photo below)

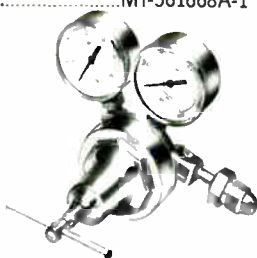
For use where bottled dry nitrogen is the pressurizing source instead of dehydrated compressed air. Connects between nitrogen flask valve and gassing system input fittingMI-19315-22

Plastic Tubing

For situations where the tubing included in Gassing Kits "A" and "C" is insufficient for requirements. In 50-foot (15.2 m) coilsMI-561668A-1

Ordering Information

- Gassing Kit AMI-561668A
- Gassing Kit BMI-561668B
- Gassing Kit CMI-561668C



Gassing Kit "C"

Kit "C" expands the capabilities of Kit "B" by one. It includes a valve, a gauge, 25 feet (7.6 m) of plastic tubing and the fittings necessary to connect a Kit A and a Kit B to an additional transmission line. Thus, if the system uses four pressurized transmission lines, it should be equipped with one Kit A, one Kit B and two Kits C. It is important to note that, to use a Kit C, Kits A and B must be available.



Coaxial Transmission Line Switches

- Low VSWR
- High isolation
- High reliability
- Wide frequency range
- Manual and motor-driven types
- Optional weather proofing



Coaxial transmission line switches provide convenient, rapid and reliable switching of r-f power circuits. Standby transmitter changeover, emergency antenna selection, dummy load connections, temporary by-passing of components, and many other functions are readily accomplished.

Switches for either manual or powered switching accommodate different sizes and types of rigid lines, and single- or multiple-line power transfer. They maintain high reliability, high isolation and low VSWR in all VHF and UHF circuits in which they are used.

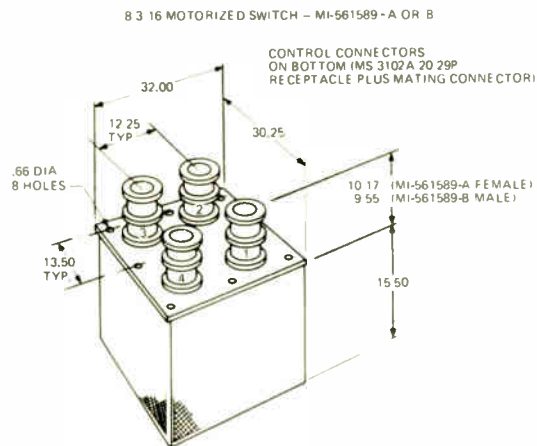
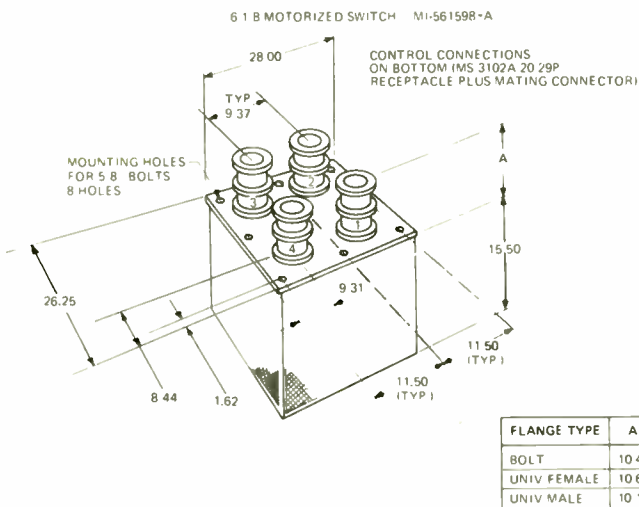
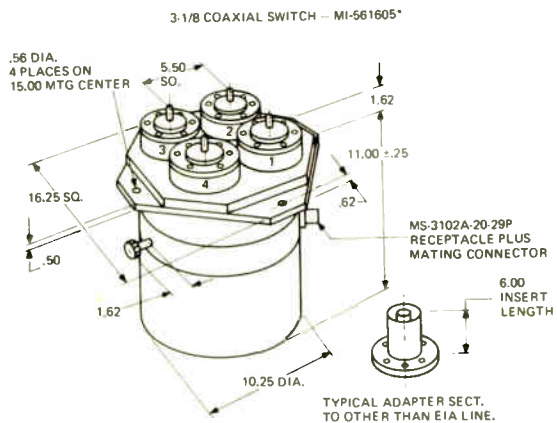
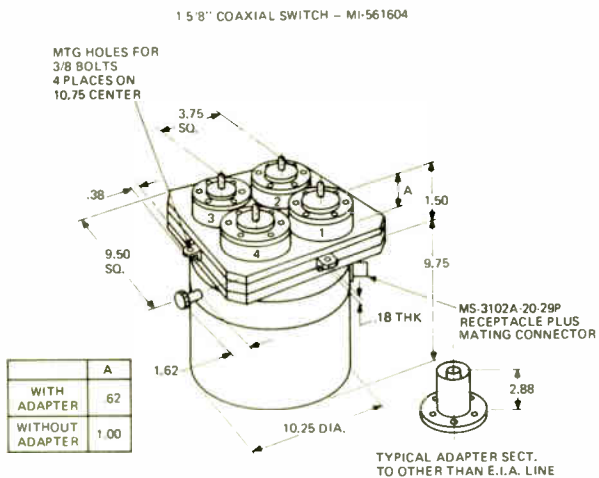
Coaxial Transmission Line Switches

RCA motor driven switches are simple but extremely versatile components that provide reliable and fast switching of r-f energy between coaxial lines. An optional control and status panel provides switch control from a remote point.

Completely compatible with standard coaxial line components, the switch may be used as a four-port transfer switch or a three-port single-pole, double-throw switch. This versatility lets the switch serve a variety of switching situations.

Reliability is an outstanding feature of this switch. The mechanical drive is simple and the number of moving r-f conductors is at a minimum.

As an option, the 1 5/8" coaxial switch, MI-561604, and the 3 1/8" coaxial switch, MI-561605, can be modified for pressurizing and/or de-icing heater for outdoor use.



Specifications

Electrical	MI-561604	MI-561605	MI-561598	MI-561589
Frequency	*DC-900 MHz	*DC-900 MHz	*DC-900 MHz	*DC-700 MHz
Impedance	*50 OHMS	*50/51.5 OHMS	75 OHMS	75 OHMS
Power Rating	Same As Transmission Line Used	Same As Transmission Line Used	Same As 6 1/8 Inch 75 Ohm Transmission Line	Same As For MI-561566-D Transmission Line
VSWR	1.05 to 1 Maximum	1.03 to 1 Maximum	1.03 to 1 Maximum	1.03 to 1 Maximum
Insertion Loss	0.1 dB Maximum	0.05 dB Maximum	0.05 dB Maximum	0.05 dB Maximum
Isolation	50-880 MHz 60 dB Minimum	50-880 MHz 60 dB Minimum	Infinite	Infinite
Switching Time	2 Seconds Nominal	2 Seconds Nominal	5 Seconds Nominal	24 Seconds Nominal
Driving Motor	115 Volts, 50/60 Cycle Single Phase 0.48 Amps Run 2.0 Amps Start	115 Volts, 50/60 Cycle Single Phase 0.48 Amps Run 2.0 Amps Start	115 Volts, 50/60 Cycle Single Phase 4.4 Amps Run 9.8 Amps Start	115 Volts, 50/60 Cycle Single Phase 4.4 Amps Run 9.8 Amps Start
Auxiliary Contacts	15 Amp, 250 Volts AC	15 Amp, 250 Volts AC	15 Amp, 250 Volts AC	15 Amp, 250 Volts AC

*RF OPERATING FREQUENCY AND MATING COAXIAL TRANSMISSION LINE CONNECTION TO BE SPECIFIED WITH ORDER. SEE MI SHEET.

Mechanical

Dimensions	See Drawing	See Drawing	See Drawing	See Drawing
Weight	40 Pounds (Approx.)	65 Pounds (Approx.)	350 Pounds (Approx.)	490 Pounds (Approx.)

Ordering Information

1 3/8" Motor Driven Coaxial SwitchMI-561604-*

*Designate suffix letter from listing below:

MI Designation	Transmission Line Type
MI-561604-A	EIA, 50 Ohms, Flanged
MI-561604-B	MI-561565, 50 Ohms, Unflanged
MI-561604-C	MI-19112, 51.5 Ohms, Flanged
MI-561604-D	MI-19112, 51.5 Ohms, Unflanged

3 1/8" Motor Driven Coaxial SwitchMI-561605-*

*Designate suffix letter from listing below:

MI Designation	Transmission Line Type
MI-561605-A	MI-19089, 50 Ohms, Flanged
MI-561605-B	MI-27791-K, 50 Ohms, Unflanged
MI-561605-C	MI-19313-NF, 51.5 Ohms, Unflanged
MI-561605-D	MI-19313, 51.5 Ohms, Flanged
MI-561605-E	MI-27791-D, 50 Ohms, Male Flange
MI-561605-F	MI-27791-D, 50 Ohms, Female Flange

6 1/8" Motor Driven Coaxial SwitchMI-561598-*

*Designate suffix letter from listing below:

MI Designation	Transmission Line Type
MI-561598-A	MI-19387, 75 Ohms, EIA Flanged
MI-561598-B	MI-27792D, 75 Ohms, Universal Male Flange
MI-561598-C	MI-27792D, 75 Ohms, Universal Female Flange

8 3/8" Motor Driven Coaxial Switch:

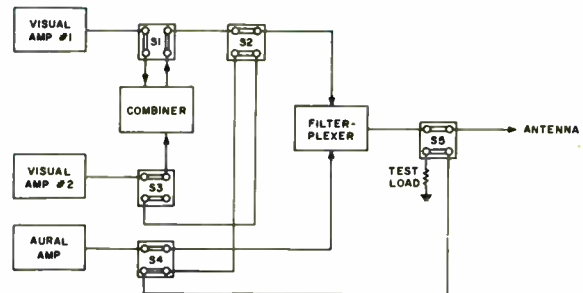
MI-561589-A	MI-561566, 75 Ohms, Universal Female Flange
MI-561589-B	MI-561566, 75 Ohms, Universal Male Flange

Accessories

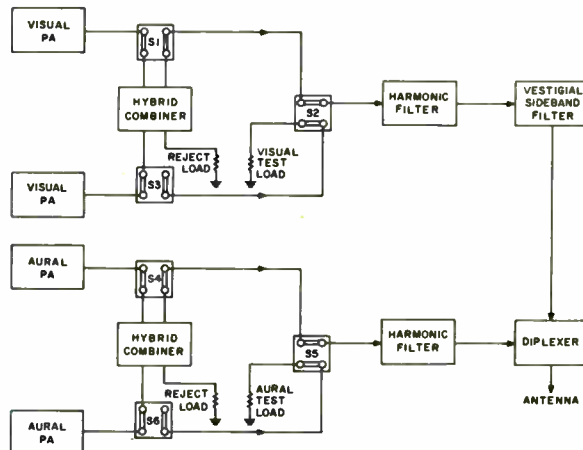
An optional control panel for use with these RCA Motor Driven Switches is available. It mounts in a standard 19-inch relay rack and includes an On-Off switch, operating switch and position-indicator lights. Interlocking circuitry to the transmitter depends upon the individual station's equipment and should be planned accordingly. Order panel as MI-561596-RC.

Optional capability for gassing and/or de-icing of the MI-561604 and the MI-561605 Coaxial Switches is available on request.

Typical UHF Transmitter switching arrangement.



Typical UHF transmitter switching arrangement.



Typical VHF Transmitter switching arrangement.

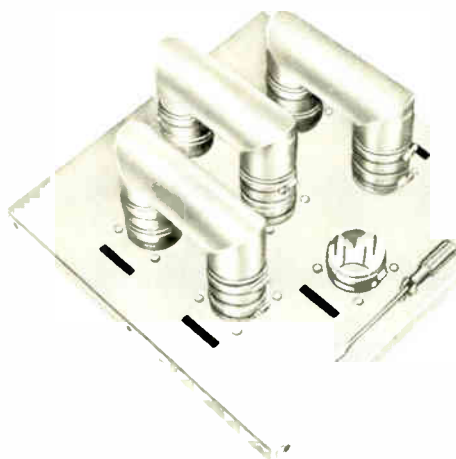
VHF Manual Coaxial Switches

RCA manual coaxial switches for VHF provide a convenient and rapid means of switching r-f-power circuits. They utilize standard coaxial transmission line fittings mounted on a panel in a way that switching functions are readily accomplished by the "patch cord" method. Switches differ in construction to meet the various sizes and types of transmission

lines. The accompanying table should be consulted for ordering purposes.

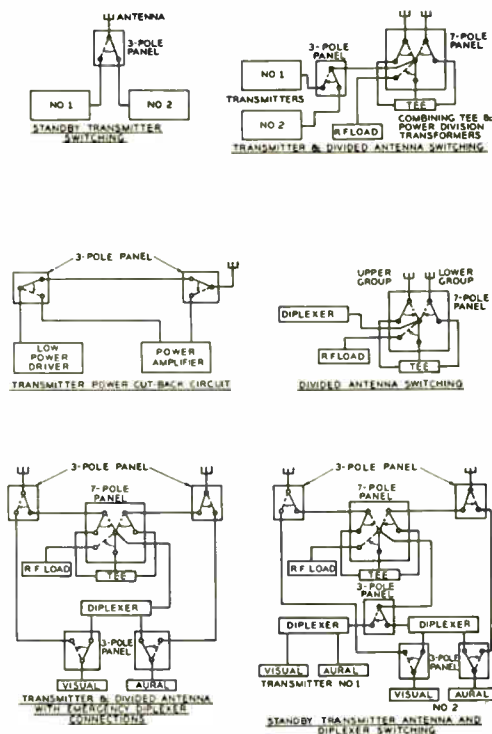
Fittings come in 1 5/8, 3/8 or 6 1/8-inch sizes and the switch plugs are constructed of double 1 5/8, 3/8 or 6 1/8-inch elbows which form a U section, maintaining line impedance throughout the switch. Panels are reinforced with angle bends on all four

sides. Holes in the side angles provide for mounting. The 3-pole switch has one U-type connector; the 4-pole switch has two U-type connectors, and the 7-pole, three. The U-connectors clamp to the fittings. Various connections and impedances are available. See *Ordering Information*, below.



- Sturdy, reinforced steel bases
- 3-pole, 4-pole and 7-pole types
- Low VSWR
- High isolation

Suggested Uses for VHF Manual Coaxial Switches



Specifications

Electrical

Power Rating.....Same as various Transmission Line to which they apply
 Ambient TemperatureTo 45° C
 Elevation5000 ft. (1500 m) max. for full power rating
 VSWR.....1.02 to 1 or better
 ImpedanceSee Ordering Information

Mechanical

Dimensions.....See Outline Drawings
 Weight:
 3 Pole, 3/8" (79 mm) Models32 lbs. (14.5 kg)
 7 Pole, 3/8" (79 mm) Models67 lbs. (30.4 kg)
 3 Pole, 6/8" (156 mm) Models75 lbs. (34 kg)
 7 Pole, 6/8" (156 mm) Models220 lbs. (100 kg)

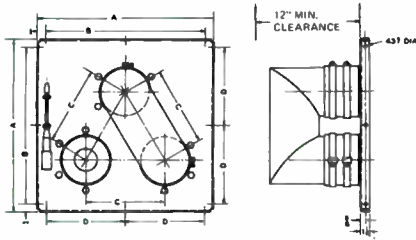
Accessories

- 3/8" 50 ohm adaptor used to connect straight sections of line to MI-27912-50 and 51MI-27912-52
- 3/8" 51.5 ohm adaptor used to connect straight sections of line to MI-27717 and MI-27718MI-27337
- 6/8" 51.5 ohm adaptor used to connect straight sections of line to MI-27719 and MI-27720MI-27709
- Spare "U" bend 3/8", 7" (178 mm) centers for use with MI-27717 and MI-27718MI-27999
- Spare "U" Bend, 1 5/8—50 Ohm (6" Centers) for use with MI-561585 & MI-561586 Manual Coaxial SwitchesMI-561777
- Spare "U" Bend, 3/8—50 Ohm (7" Centers) for use with MI-27912-50 & MI-27912-51 Manual Patch PanelsMI-561690
- Spare "U" Bend, 3/8—50 Ohm (14" Centers) Long "U" Bend for use with MI-27912-51 Patch PanelMI-561679

INSTALLATION NOTE:

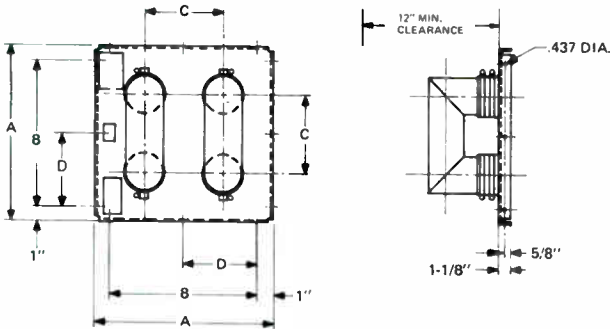
Because of inner conductor considerations, either an elbow or an adaptor component must connect to the several switch ports.

VHF Manual Switches



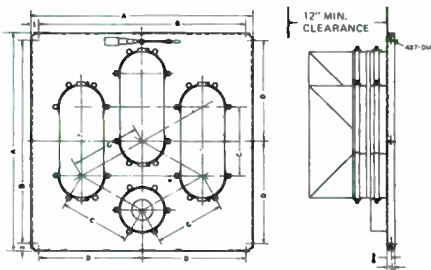
SIZE	A	B	C	D	For use with:	Switch MI
1 5/8" 41 mm	15" 381	13" 330	6" 152	—	MI-561565	561585
3 3/8" 79 mm	15 1/2" 393	13 1/2" 343	7" 178	—	MI-19313	27717
3 3/8" 79 mm	15 1/2" 393	13 1/2" 343	7" 178	—	MI-27791-K	27912-50
6 1/8" 156 mm	25" 635	23" 584	13" 330	11 1/2" 292	MI-19314-C	27719

Outline Dimensions, 3-Pole Panels



SIZE	A	B	C	D	For use with:	Switch MI
1 5/8" 41 mm	12" 305	10" 254	3 3/4" 95	—	MI-561565	561780
3 3/8" 79 mm	15 1/2" 394	13 1/2" 343	7" 178	6 3/4" 171	MI-27791-K	561680

Outline Dimensions, 4-Pole Switches



SIZE	A	B	C	D	For use with:	Switch MI
1 5/8" 41 mm	20" 508	18" 457	6" 152	—	MI-561565	561586
3 3/8" 79 mm	23" 584	21" 533	7" 178	—	MI-27791-K	27912-51
3 3/8" 79 mm	23" 584	21" 533	7" 178	—	MI-19313	27718
6 1/8" 156 mm	38" 965	36" 914	13" 330	18" 457	MI-19314-C	27720

Outline Dimensions, 7-Pole Switches

Ordering Information

Stock Identification	Diameter	Impedance	Poles	Type Connector	For Use with RCA Line
MI-561585	1 5/8" (41 mm)	50 ohms	3	Sleeve	MI-561565
MI-561780	1 5/8" (41 mm)	50 ohms	4	Sleeve	MI-561565
MI-561586	1 5/8" (41 mm)	50 ohms	7	Sleeve	MI-561565
MI-27717	3 3/8" (79 mm)	51.5 ohms	3	Sleeve	MI-19313
MI-27912-50	3 3/8" (79 mm)	50 ohms	3	Sleeve	MI-27791-K
MI-561680	3 3/8" (79 mm)	50 ohms	4	Sleeve	MI-27791-K
MI-27718	3 3/8" (79 mm)	51.5 ohms	7	Sleeve	MI-19313
MI-27912-51	3 3/8" (79 mm)	50 ohms	7	Sleeve	MI-27791-K
MI-27719	6 1/8" (156 mm)	51.5 ohms	3	Sleeve	MI-19314-C
MI-27720	6 1/8" (156 mm)	51.5 ohms	7	Sleeve	MI-19314-C

The above are standard designs fitting most requirements. Other configurations to fit special switching requirements are available on special order.

UHF Manual Coaxial Switches

Convenient and efficient switching of coaxial r-f power lines is achieved by this advanced UHF manual coaxial switch. Power cutback, dummy-load switching, emergency-antenna connection and standby-transmitter switching are accomplished easily and quickly. Three switch types are available: a 3-pole switch

with a single U-connector, a 4-pole switch with two U-connectors and 7-pole switch with three U-connectors. Typical switching arrangements are shown in the diagrams.

Quick disconnect Marman clamps on universal flanges hold U-connectors securely in place. Each port includes an in-

ner conductor, anchored in place with an insulator and locking flange ring on the "rear" side of the port. Flange connections on this side of the switch accommodate 3/8-inch (MI-19089), 50-ohm line, 6/8-inch, 75-ohm line (MI-19387), 8-3/16-inch line (MI-561566-D), or 9-3/16-inch, 75-ohm line (MI-27793-D).



- Fast disconnect Marman clamps
- Anchored inner conductor
- 3 pole 4-pole and 7-pole types
- Low VSWR

Specifications

Power Rating.....	Same as various transmission lines to which they apply
Ambient Temperature.....	45°C max.
VSWR.....	1.02 to 1 or better
Impedance	See Ordering Information
Dimensions	See Outline Drawings
Weight (Approx.):	
3-pole, 3/8" (79 mm)65 lbs. (30 kg)
3-pole, 6/8" (156 mm)	1.75 lbs. (80 kg)
3-pole, 8/8" (208 mm)	3.55 lbs. (160 kg)
3-pole, 9/8" (233 mm)	3.70 lbs. (167 kg)
7-pole, 3/8" (79 mm)	1.65 lbs. (75 kg)
7-pole, 6/8" (156 mm)	4.00 lbs. (182 kg)

Accessories

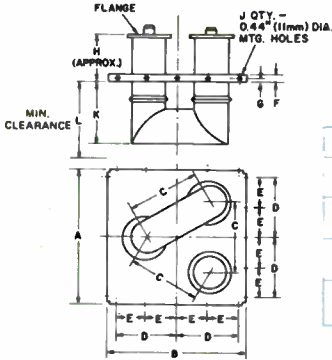
Spare "U" bend, 3/8", 7" (178 mm) centers for use with MI-27333-A and MI-27334-A	MI-27098 (CH)*
Spare "U" bend, 6/8", 13" (330 mm) centers for use with MI-27710-A and MI-27711-A	MI-27099 (CH)*
Spare "U" bend, 8/8", 22" (559 mm) centers for use with MI-561570	MI-561571 (CH)*
Spare "U" bend, 9/8", 23" (584 mm) centers for use with MI-561568	MI-561567 (CH)*

Ordering Information

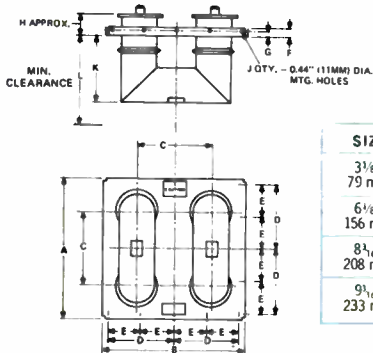
Stock Identification	Diameter	Impedance	Pole	Type Connector	For use with RCA Line
MI-27333-A (CH)*	3/8" (79 mm)	50	3	EIA Flange	MI-19089
MI-561597 (CH)*	3/8" (79 mm)	50	4	EIA Flange	MI-19089
MI-27334-A (CH)*	3/8" (79 mm)	50	7	EIA Flange	MI-19089
MI-27710-A (CH)*	6/8" (156 mm)	75	3	EIA Flange	MI-19387
MI-561595 (CH)*	6/8" (156 mm)	75	4	EIA Flange	MI-19387
MI-27711-A (CH)*	6/8" (156 mm)	75	7	EIA Flange	MI-19387
MI-561570-A (CH)* Female	8/8" (208 mm)	75	3	Universal Flange	MI-561566-D
MI-561570-B (CH)* Male	8/8" (208 mm)	75	3	Universal Flange	MI-561566-D
MI-561587-A (CH)* Female	8/8" (208 mm)	75	4	Universal Female	MI-561566-D
MI-561587 B (CH)* Male	8/8" (208 mm)	75	4	Universal Male	MI-561566-D
MI-561568 (CH)*	9/8" (233 mm)	75	3	Universal Flange	MI-27793-D
MI-561588-A (CH)* Female	9/8" (233 mm)	75	4	Universal Female	MI-27793-D
MI-561588-B (CH)* Male	9/8" (233 mm)	75	4	Universal Male	MI-27793-D

*Sales order must specify customer's channel.

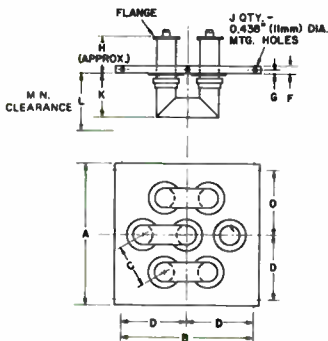
UHF Manual Switches



SIZE	A	B	C	D	E	F	G	H	J	K	L	Flange	For Use With:	Switch MI
3 7/8" 79 mm	15 1/2" 394	15 1/2" 394	7" 178	6 3/4" 171	—	1 1/8" 29	5/8" 16	4" 102	12" 305	7" 178	9" 229	EIA	MI-19089	27333-A
6 1/8" 156 mm	25" 635	25" 635	13" 330	11 1/2" 292	—	1 1/2" 38	31/32" 25	3 1/4" 83	12" 305	11 3/4" 298	13 3/4" 349	EIA	MI-19387	27710-A
8 1/8" 208 mm	41" 1041	38" 965	22" 559	16" 406	8" 203	2 1/4" 57	1 3/8" 35	10 3/4" 273	20" 508	14 1/2" 368	18 1/2" 470	Universal	MI-561566-D	561570-A (F) 561570-B (M)
9 1/8" 233 mm	43" 1092	40" 1016	23" 584	16" 406	8" 203	2 1/4" 57	1 3/8" 35	10 3/4" 273	20" 508	15" 381	19" 483	Universal	MI-27793-D	561568

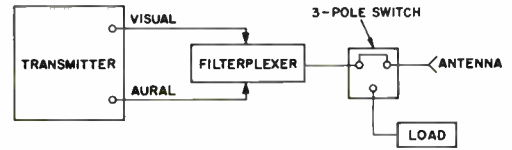


SIZE	A	B	C	D	E	F	G	H	J	K	L	Flange	For Use With:	Switch MI
3 1/8" 79 mm	15 1/2" 394	15 1/2" 394	7" 178	6 3/4" 171	—	1 1/8" 29	5/8" 16	4" 102	12" 305	7" 178	9" 229	EIA	MI-19089	561597
6 1/8" 156 mm	25" 635	25" 635	13" 330	11 1/2" 292	—	1 1/2" 38	31/32" 25	3 1/4" 83	12" 305	11 3/4" 298	13 3/4" 349	EIA	MI-19387	561595
8 1/8" 208 mm	41" 1041	41" 1041	22" 559	16" 406	8" 203	2 1/4" 57	1 3/8" 35	10 3/4" 273	20" 508	14 1/2" 368	18 1/2" 470	Universal	MI-561566-D	561587-A (F) 561587-B (M)
9 1/8" 233 mm	43" 1092	43" 1092	23" 584	16" 406	8" 203	2 1/4" 57	1 3/8" 35	10 3/4" 273	20" 508	15" 381	19" 483	Universal	MI-27793-D	561588-A (F) 561588-B (M)

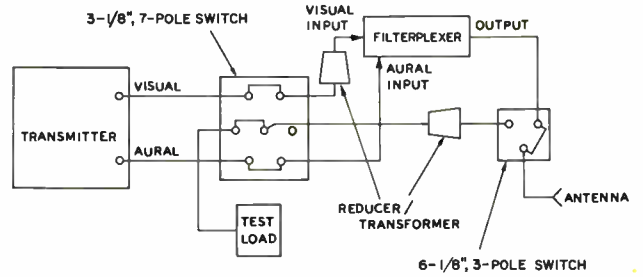


SIZE	A	B	C	D	F	G	H	J	K	L	Flange	For Use With:	Switch MI
3 1/8" 79 mm	23" 584	21" 533	7" 178	10 1/2" 267	1 1/8" 29	5/8" 16	4" 102	12" 305	7" 178	9" 229	EIA	MI-19089	27334-A
6 1/8" 156 mm	38" 965	36" 914	13" 330	18" 457	1 1/4" 32	3/4" 19	3 1/4" 83	12" 305	11 3/4" 298	13 3/4" 349	EIA	MI-19387	27711-A

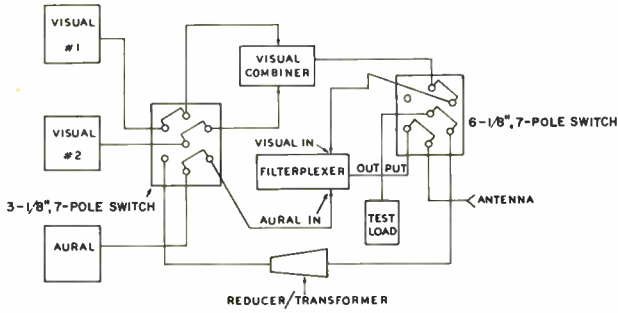
**Suggested Uses for
UHF Manual Coaxial Switches**



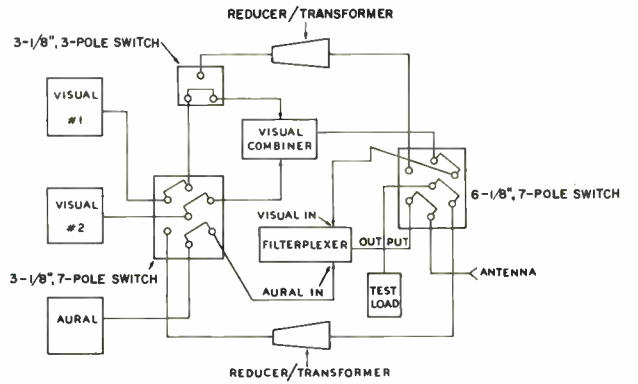
Basic Antenna/Test Load Switch Circuit



**Adding a 7-Pole Switch to Basic Circuit
Increases Switching Flexibility**



Typical Dual 7-Pole Switch Arrangement



Two 7-Pole and One 3-Pole, Maximum Flexibility

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