Stereo Review's

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STEREO DIRECTORY & BUYING GUIDE 1976

Over 1500 Models * Latest Prices * Full Specifications

includes component buying tips & special 4-channel section

Bonus!
Hi-Fi Troubleshooting Charts

2.0 μV FM Sensitivity.

Solid-State Ceramic FM IF Filters.

Built-in Dynaquad 4-channel matrix circuit.

S-7210

MINIMUM RMS POWER OUTPUT: 26 WATTS PER CHANNEL [BOTH CHANNELS DRIVEN @ 8 OHMS, 20-20,000 Hz.; MAXIMUM TOTAL HARMONIC DISTORTION, NO MORE THAN 0.8%].

Solid-State Ceramic FM IF Filters.

The latest integrated circuitry.

1.9 μV FM Sensitivity [IHF].

Front panel switching of 4-channel decoder [doubles as second tape monitor].

Built-in Dynaquad 4-channel matrix circuit.

S-7310

MINIMUM RMS POWER OUTPUT: 38 WATTS PER CHANNEL [BOTH CHANNELS DRIVEN @ 8 OHMS, 20-20,000 Hz.; MAXIMUM TOTAL HARMONIC DISTORTION, NO MORE THAN 0.5%].

Solid-State Ceramic FM IF Filters.

Phase lock loop Multiplex.

1.8 μV FM Sensitivity.

Front panel switching of 4-channel decoder [doubles as second tape monitor].

Sherwood Electronic Laboratories
4300 North California
Chicago, Illinois 60618

SHERWOOD™

The word is getting around.

Cabinets shown are constructed of plywood with a simulated woodgrain vinyl covering.

If you can't afford the State-of-the-Art...

S-7900A

MINIMUM RMS POWER OUTPUT: 60 WATTS PER CHANNEL [BOTH CHANNELS DRIVEN @ 8 OHMS, 20-20,000 Hz.; MAXIMUM TOTAL HARMONIC DISTORTION, NO MORE THAN 0.3%].

Direct-coupled output circuitry with electronic relay protection.

Front panel four-channel provision [doubles as second tape monitor].

Ceramic FM IF Filtering; FET's, microcircuits.

Four-gang tuning capacitor.

Built-in Dynaquad 4-channel matrix circuit.

The optional cabinet shown is constructed of particle board with a simulated wood grain vinyl covering.

you can still enjoy most of the benefits.

Considering the Best Buy ratings and favorable reviews, it's not surprising that a growing number of audiophiles are settling for nothing less than Sherwood's top-of-the-line stereo receiver.

Of course, not everyone needs the high power output and operational flexibility offered by the S7900A. Which is why we produce other, more economical models.

Like the S7900, each piece of equipment in the Sherwood line provides a performance capability unsurpassed in its price category.

There are no useless gimmicks. No misleading claims. And no disappointments. The specifications we post for our products are generally quite conservative. And we utilize only the finest of proved componentry.

After all, you shouldn't have to sacrifice quality, just because you require a little less than the state-of-the-art.

S-7010

MINIMUM RMS POWER OUTPUT: 10 WATTS PER CHANNEL [BOTH CHANNELS DRIVEN @ 8 OHMS, 40-20,000 Hz.; MAXIMUM TOTAL HARMONIC DISTORTION, NO MORE THAN 0.9%].

Provision for two sets of stereo speakers.

2.8 μV FM Sensitivity [IHF].

FET Front End.

S-7110

MINIMUM RMS POWER OUTPUT: 17 WATTS PER CHANNEL [BOTH CHANNELS DRIVEN @ 8 OHMS, 40-20,000 Hz.; MAXIMUM TOTAL HARMONIC DISTORTION, NO MORE THAN 0.9%].

Direct-coupled amplifier.

The latest integrated circuitry.

The new B.I.C. 940. It eliminates the big disadvantage common to all high-performance turntables.

High-performance turntables cost a bundle.

The B.I.C. 940 doesn't. And yet at about $110...

It's a belt-drive instrument with a full 12" platter. Its low-mass tone arm tracks magnificently. It has the stylus force and anti-skate adjustments that are essential for fine-tuning an arm. It has a low-speed (300 rpm), 24-pole motor which is inherently quieter than motors found in some turntables that cost twice as much.

B·I·C™

And when you look over its wow, flutter, and rumble numbers, the standards against which experts measure all turntables, the 940 is right up there with the costliest equipment you can buy.

The B.I.C. is also versatile. It's a multiple-play manual turntable...which means you can operate it in 3-modes: single-play manual, single-play automatic, or when the occasion arises, as a multiple-play turntable that will handle as many as 6 records.

There are shinier turntables made.

There are turntables with more adjustment features.

But for pure, clean, accurate reproduction of what is on your records, this is the optimum way to spend your turntable dollars.

Ask your audio dealer about the B.I.C. 940 and the 2-year "bee-eye-cee" warranty. Or write to British Industries, Westbury, N.Y. 11590.

CIRCLE NO. 10 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE® 1976

FEATURES

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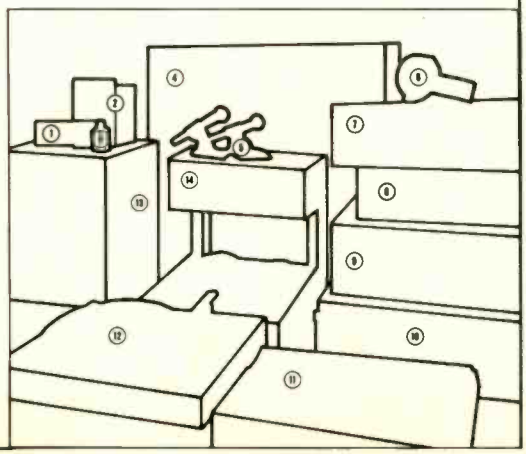
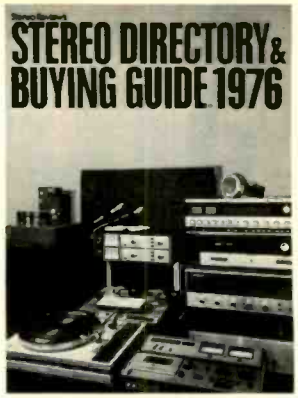
COVER

Equipment pictured on the front cover typifies hi-fi component types you'll see at high-fidelity specialist-dealers. Components shown are:

1. Columbia and Fuji cassettes
2. BASF and Maxell open-reel tape
3. Discwasher record cleaning liquid
4. Koss Model One electrostatic speaker
5. Electro-Voice Model 660 dynamic microphones
6. Pioneer SE-700 stereo headphones
7. Tandberg TR-2075 AM-FM stereo receiver
8. SAE "Mark VIII" digital FM tuner
9. Bose 4401 preamp
10. Harman/Kardon "Citation 16" power amplifier
11. JVC Model 1669-2 cassette deck
12. Philips GA209 turntable with AKG P8E cartridge
13. Acoustic Research ARπ speaker
14. Dokorder open-reel stereo tape deck





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Editorial and Executive Offices
One Park Avenue, New York, New York 10016
212-725-3500

Midwestern Office
The Pattis Group, 4761 West Touhy Ave.
Lincolnwood, Illinois 60644, 312-679-1100
Midwestern Adv. Manager, Arnold F. Hoffman

Western Office
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6 Chome, Minato-Ku, Tokyo 407-1930/6821
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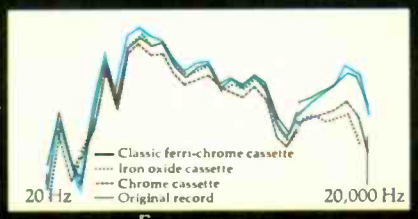
The Classic Cassette with ferri-chrome. Truer than chrome. Truer than iron oxide.

In these Classic cassettes, advanced 3M technology brings you ferri-chrome, a truly superior cassette tape with not one, but two distinct layers of oxide. Directly on the backing is a coating of gamma ferric oxide designed for rich low and middle frequencies and low noise levels. Above it is a layer of chromium dioxide coating for brilliant high output at high frequencies. Together, they combine to give you full-range performance never before possible from any single-oxide cassette tape.

To prove ferri-chrome's remarkable fidelity, we taped a broad spectrum piece of music from a disc recording with our Classic cassette, our iron oxide cassette and our chrome cassette. Then we compared the output of all three with the original source on a precise Brüel and Kjaer sound spectrum analyzer. Our graph shows you the results.



Along with superior fidelity, ferri-chrome also offers you full compatibility. These Classic cassettes will deliver optimum performance on any high quality cassette machine you may own.

But there's even more from Scotch brand. Outstanding Classic 8-track cartridges and Classic open-reel tape. Both with their own improved oxide. Both super quiet. Beautifully responsive. More brilliant than even the best previous Scotch home recording tapes.

The Classics — cassette, cartridge and reel tape — are quite simply and clearly the best we've ever made for you.

3M COMPANY

Scotch The Master Tape.

"Scotch" is a registered trademark of 3M Company.

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7733 Telegraph Rd., Montebello, Calif. 90640

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25 Aberdeen Dr., Huntington, N.Y. 11743

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185 Prospect Park West, Brooklyn, N.Y. 11215

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111 Jericho Turnpike, Syosset, N.Y. 11791

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BOSE ON INNOVATION

Multiple Acoustically Coupled Drivers

There is one, and only one, reason for innovation in loudspeaker design...to produce a better musical experience. If the innovations are based on thorough research and executed with exceptional skill, they can produce truly dramatic results.

The Bose 901® eliminates woofers, tweeters and crossover networks by using nine matched full range drivers in each enclosure. The close spacing of the drivers results in acoustic coupling which causes the resonant frequencies of each driver to diverge from those of every other driver. This means that only one driver out of nine can be in resonance at a time—a proportion which is inaudible and which effectively smooths the frequency response. The result of this patented design is a freedom from audible coloration and extreme clarity of reproduction.

Listen to the 901 in comparison to any speaker of your choosing...and understand how Bose innovation has produced the most highly reviewed speaker...regardless of size or price.

The Direct/Reflecting® 901. By Bose.

BOSE®

The Mountain, Framingham, MA 01701

Please write us for the complete story of the 901.
901 cabinet is walnut veneer on particle board.

Now you can have Dual precision any way you like.

Every Dual, from the 1225 to the CS701, is designed to fulfill one basic concept: to provide more precision than you are ever likely to need.

Perhaps this is why more component owners—audio experts, hifi editors, record reviewers and readers of the music/equipment magazines—own Duals than any other turntable. These serious music lovers, whose investment in records typically exceeds their investment in equipment, prefer Dual for only one reason. Quality.

Until recently, Dual quality has been available only with fully automatic turntables with both single-play and multi-play facility. Now the choice is much broader. Of the seven Dual models, three are single-play only. Two of these are fully automatic; one is semi-automatic. Dual turntables also use all three types of drive systems: belt, rim and direct.

The way a tonearm is moved to and from the record is not critical. Nor is the type of drive system. What is critical is how faithfully the tonearm permits the stylus to follow the contours of the groove and how accurately and quietly the platter rotates.

If precision performance and reliability are of primary importance to you—as they should be—you'll find them in every Dual.

Dual 1225
$139.95, less base

...with the 1225, the lowest priced Dual... all the turntable you may ever need.

The Dual 1225 is a perfect example of Dual's basic concept: to build every Dual turntable with more precision than you are ever likely to need.

The 1225's vernier adjustable low-mass counterbalanced tonearm can track flawlessly at as low as one gram. Stylus pressure is applied exactly as in every Dual, around the vertical pivot and perpendicular to the groove, maintaining perfect balance in all planes. Anti-skating force is also applied exactly as in every Dual, with separate calibrations for conical, elliptical and CD-4 styli.

Other features the 1225 shares with all other Duals include pitch control variable over a 6% range (one semitone) and cue-control viscous-damped in both directions to prevent bounce. The powerful hi-torque motor maintains speed within 0.1% even when line voltage varies as much as 20%. The hefty 3¾ pound, 10⅝" diameter platter provides effective flywheel action to minimize the audible effect of any possible speed variation.

There are two other models in this series, each with additional refinements. The 1226, priced at $169.95, has a one-piece, die-cast platter and a single-play spindle that rotates with the record. The 1228, priced at $199.95, has—in addition to these—a tonearm mounted in a four-point gimbal suspension, synchronous motor, built-in illuminated strobe and adjustable sylus angle to provide perfect vertical tracking in both single and multi play.

Dual 1249
$279.95, less base

Dual CS701,
$400, including base and cover

...with the new Dual 1249, which will give you more reasons than ever to own a Dual.

The new 1249, successor to the 1229Q, provides every feature, innovation and refinement of that highly-acclaimed model, plus some new ones. The 8¾" tubular tonearm pivots in a newly designed four-point gyroscopic gimbal, suspended within a rigid frame. In single play, the tonearm parallels the record to provide perfect tracking; in multi play, the Mode Selector lifts the entire tonearm to parallel the center of the stack. The tonearm can be set on the record manually or by using the viscous-damped cue-control or by simply pressing the automatic switch. In addition to single play and multiple play there is also the option of continuous repeat.

The dynamically-balanced cast platter and flywheel are driven by an 8-pole synchronous motor via a precision-ground belt. Pitch is variable over a 6% range and can be set to exact speed by means of an illuminated strobe, read directly off the rim of the platter.

A similar model, the 601, is available at lower cost ($249.95), without multi-play facility. A third Dual in this series, the 510 ($199.95) has a semi-automatic tonearm with a mechanical sensor that indicates when the tonearm is positioned precisely over the lead-in groove of a 12" or 7" record. At the end of play, the tonearm is automatically lifted by the cue-control and the motor shuts off.

...with the CS701, the quietest turntable ever made.

Independent test reports on the electronic direct-drive Dual CS701 have been extraordinary. One reason is that all reviewers acknowledge the CS701's performance to be superior to the measuring capabilities of test instruments. For example:

Hirsch-Houck Labs in Stereo Review found the wow level of the CS701 "Essentially at the residual level of our test record—about 0.03 per cent." So did Popular Electronics. The Feldman Lab Report in FM Guide was able to detect "no flutter whatsoever." Stereo & HiFi Times said "arm friction was lower than my capability to measure reliably."

It takes very advanced engineering to achieve this level of performance. For example: the motor's unique double field coil produces a perfectly consistent rotating field with no magnetic flux irregularities. Another example: two specially tuned mechanical anti-resonance filters located within the tonearm counterbalance absorb resonant energy that would otherwise transmit acoustical feedback to the stylus. The result: cleaner and smoother frequency response.

The reviewers also reached unequivocal conclusions about the CS701 performance. Note the absence of such qualifiers as "one of the" or "among the." For example: High Fidelity said: "...The Dual 701 has placed itself in the select group of products against which we must measure the performance of others." And the highly conservative English publication, HiFi News & Record Review: "The experience of listening to records of the highest quality on this turntable is not likely to be forgotten...you will never again be satisfied with anything less perfect."

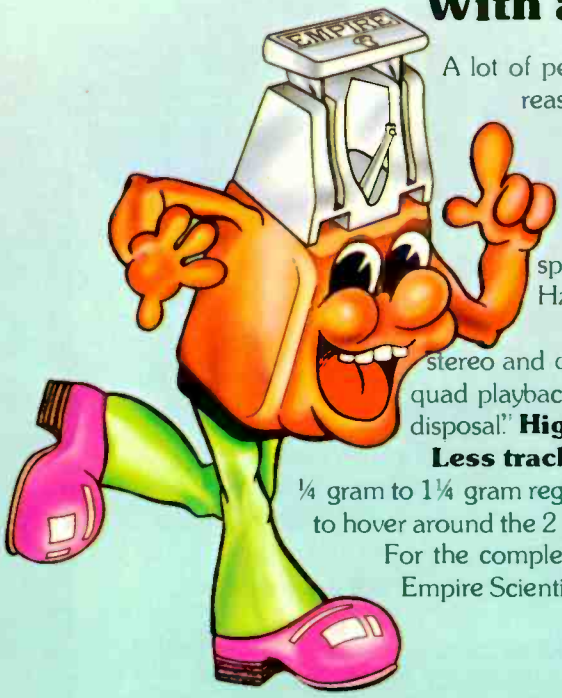
United Audio Products, 120 So. Columbus Ave., Mt. Vernon, N.Y. 10553
Exclusive U.S. Distribution Agency for Dual

Dual®

CIRCLE NO. 50 ON READER SERVICE CARD

Keep on trackin'

With an Empire wide response cartridge.



A lot of people have started "trackin'" with Empire cartridges for more or less the same reasons.

More separation: "Separation, measured between right and left channels at a frequency of 1 kHz, did indeed measure 35 dB (rather remarkable for any cartridge)." **FM Guide, The Feldman Lab Report.**

Less distortion: "...the Empire 4000D/III produced the flattest overall response yet measured from a CD-4 cartridge—within ±2 dB from 1,000 to 50,000 Hz." **Stereo Review.**

More versatile: "Not only does the 4000D/III provide excellent sound in both stereo and quadriphonic reproduction, but we had no difficulty whatever getting satisfactory quad playback through *any* demodulator or with *any* turntable of appropriate quality at our disposal." **High Fidelity.**

Less tracking force: "The Empire 4000D/III has a surprisingly low tracking force in the ¼ gram to 1¼ gram region. This is surprising because other cartridges, and I mean 4 channel types, seem to hover around the 2 gram class." **Modern Hi Fi & Stereo Guide.**

For the complete test reviews from these major audio magazines and a free catalogue, write: Empire Scientific Corp., Garden City, N.Y. 11530. Mfd. U.S.A.

EMPIRE

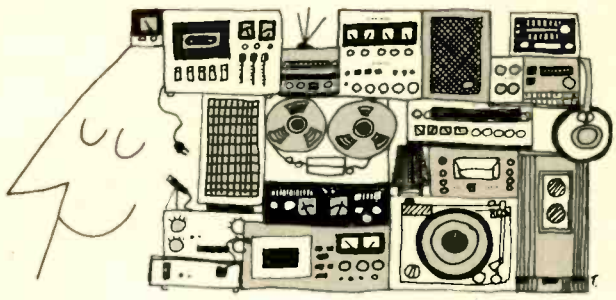
Choose the Cartridge Designed to Play Best in Your System

Plays 4 Channel Discrete (CD4) and Super Stereo — Plays 2 Channel Stereo

Plays All 4 Channel Matrix Systems (SQ, QS, RM)

Model	4000 D/III	4000 D/II	4000 D/I	2000 E/III	2000 E/II	2000 E/I	2000 E	2000
Frequency Response in Hz:	5-50,000	5-45,000	10-40,000	5-35,000	6-33,000	8-32,000	10-30,000	10-28,000
Output Voltage per Channel at 3.54 cm/sec groove velocity:	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0
Channel Separation	more than 35dB	more than 35dB	35dB	35dB	35dB	35dB	30dB	30dB
Tracking Force in Grams:	¼ to 1¼	½ to 1½	¾ to 1½	½ to 1½	½ to 1½	¾ to 1½	1 to 3	1 to 3
Stylus Tip:	miniature nude diamond with .1 mil tracing radius ™4 Dimensional	miniature nude diamond with .1 mil tracing radius ™4 Dimensional	miniature nude diamond with 1 mil tracing radius ™4 Dimensional	nude elliptical diamond .2 x .7 mil	nude elliptical diamond .2 x .7 mil	nude elliptical diamond .2 x .7 mil	elliptical diamond .3 x .7 mil	spherical diamond .7 mil
For Use In:	turntable only	turntable only	turntable or changer	turntable or changer	turntable or changer	turntable or changer	changer only	changer only
	(White)	(Yellow)	(Black)	(Clear)	(Blue)	(Green)	(Red)	(Smoke)

CIRCLE NO. 16 ON READER SERVICE CARD



A BASIC GUIDE TO BUYING HI-FI COMPONENTS

YOU can run down to your neighborhood appliance store, hand the clerk around $69.95, and come away with a "home music system" that will deliver music received via AM or FM broadcasting and probably play records as well. Or, you can go to your favorite furniture shop and spend a few hundred dollars or more for a console cabinet containing unspecified electronic elements that will do the same thing. Finally, you can shop for individual components, spending anywhere from a few hundred dollars to many thousands of dollars and, again, end up with a home music system that reproduces radio broadcasts, records, and even tape recordings. These three divergent approaches to home music reproduction have some things in common—but they are also poles apart in terms of the kind of sound you will hear.

Crammed inside the $69.95 compact system and the one-piece console are circuits which pick up radio signals and translate them back to audio signals, circuits which amplify the minute signals picked up by a self-contained record player with its tonearm and cartridge, and even a pair of loudspeakers which translate all these signals back to audible sound. Audio electronics can be further broken down into the "tuner" or radio section, the "preamplifier" or control section, and the "power-amplifier" section which activates the loudspeakers. Even a tiny portable transistorized radio contains all these elements, but you would hardly classify the sound you hear from such a portable as "high fidelity."

In order for a loudspeaker (or, a pair of loudspeakers in the case of stereo or four loudspeakers for quadraphonic sound) to reproduce music, its cone or diaphragm must vibrate, for sound is nothing more than rapid compressions or expansions of the air around us. When the air vibrates rapidly, we hear a high-pitched tone. Slower vibrations of air impinge upon our hearing mechanism to create the hearing sensation of a low-pitched note—or one of low *frequency*. But, whenever a pair of loudspeakers is mounted in the same cabinet as the delicate record-playing tonearm and pickup, the fairly violent vibrations of that speaker (needed to reproduce sound) are also transmitted via the cabinet structure to the tonearm and its pickup stylus or needle. If you try to turn up the volume to life-like levels, the vibrations generated by the speaker system can initiate a "vicious circle." They are re-amplified by the record player, reproduced as greater and greater vibration from the speakers and so on, until the entire system takes off in an annoying "howl" which is called "acoustic feedback."

Certainly, most all-in-one systems do not exhibit this phenomenon. The reason they don't is because the electronics built into such systems is generally restricted in its ability to reproduce *all* musical tones in their proper relative intensity. Since low-frequency tones (bass) involve more intense vibrations, the ability of the electronics of such systems to reproduce those tones is often severely restricted. In other words, you don't hear all the music contained in the record. The first requisite of a true high-fidelity system is that it reproduce *all* musical tones faithfully and that means separating the loudspeakers from the rest of the system—a condition easily achieved with separate components. Faithfulness of musical reproduction also means that sounds must not contain *more* tones than were present in the original program. In high-fidelity terms, that means low or negligible distortion. Distortion, broadly defined, includes *any* extraneous sounds such as harmonically related tones, electrically generated hum, or random noise or hiss. In short, the reproduced music should be an exact replica of the original performance as contained in the record or other program source. The minimal electronics, poor-quality record players, and undersized, unbaffled loudspeakers contained in most all-in-one radio-phonographs and "compacts" are just incapable of this kind of reproduction.

BUILDING-BLOCK FLEXIBILITY

There are other distinct advantages in the component approach to high-fidelity sound. Over the brief history of high fidelity we have witnessed a progression from monophonic sound (in which all music is reproduced in one-dimensional form from a single loudspeaker), to two-

dimensional stereophonic sound (in which two speakers are used to give the listener an added sense of spatial realism), to 4-channel or quadraphonic sound (in which the listener gains true concert-hall ambience reproduced from four properly positioned loudspeakers). Owners of "compacts" or consoles found their equipment hopelessly obsoleted as each of these advances gained acceptance. Owners of quality component systems, on the other hand, were able to up-date and *add* to their basic systems without any loss of original investment.

This building-block approach to good sound makes sense economically as well. Suppose, for example, that your primary interest is in a good record-playing system. You might elect to purchase a system consisting of a good *amplifier*, a pair of speakers, and a separate turntable or record-playing system at the outset. Then, if taste and budget dictate, you can add a stereo FM/AM *tuner* at a later date, connecting it in seconds to the system you already enjoy. Finally, you might even want to add tape recording and playback facilities to your expanding system by purchasing a *tape deck* of the *open-reel*, *cassette*, or *cartridge* variety. All of these added program sources will utilize the basic *amplifier* electronics and speaker systems purchased initially. You may even want sound in other listening rooms (a bedroom, or a den), which can be provided by the addition of another pair of speakers which can be connected to most high-fidelity component amplifiers or *receivers* and switched in by means of suitable front-panel controls.

ELECTRONIC OPTIONS

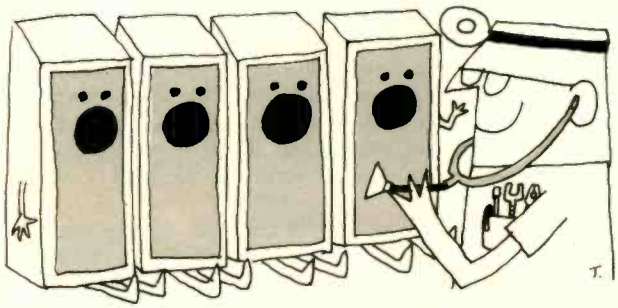
There are three basic approaches to assembling the electronics of a hi-fi system. The most popular of these involves the purchase of a component called a *receiver*. This single unit will contain all the circuitry needed to pick up AM, FM, and stereo-FM radio signals, the necessary *preamplifier* and control circuits whereby program sources are selected and adjusted for proper listening, and the *power amplifier* section needed to drive the loudspeaker systems.

In the early days of hi-fi, all-in-one receivers were rather limited in their ability to deliver sufficient power to the loudspeakers. Today, you will find all-in-one receivers which boast power-output ratings as high as 100 watts per channel or even more. Because all of the electronics is combined on a single chassis, the receiver represents the most economical approach to a hi-fi component system. A common power supply, a single front panel, a single cabinet enclosure and other parts-in-common result in savings that cannot be obtained from "separates."

Nevertheless, as you shop through this directory (and visit your hi-fi dealer) you will find an array of separate amplifiers as well. So-called *integrated amplifiers* combine two of the three previously referred to electronic sections—the preamplifier-control portion and the power-amplifier section. We have already mentioned a possible reason for choosing this option. You may want to forego FM and AM radio at the outset and concentrate on good record reproduction (or possibly tape). A *tuner* can always be purchased later and will interconnect easily with any integrated amplifier, even if your purchase is made many years from now. Furthermore, you will often find that an integrated amplifier has additional control refinements and perhaps more signal input facilities than an all-in-one receiver—another possible reason for its selection as the basic component of a system. You may also be able to purchase a more powerful integrated amplifier for the same amount of money that would be required for a more moderately powered complete receiver.

A third option, offering perhaps the greatest flexibility of all (and generally the most costly), is to purchase a separate tuner, a separate preamplifier-control unit, and a separate *basic power amplifier*. This arrangement is not nearly as popular as the other two, and usually represents the choice of those audio enthusiasts who demand the ultimate in flexibility, superior performance specifications (lowest distortion and very-high-power-output capability), and other operating features not found either in complete receivers or integrated amplifiers.

Irrespective of which of these three types of component systems you choose to assemble, you'll want to familiarize yourself with the more important technical performance specifications listed in manufacturers' advertising brochures. Tuner, preamplifier, and amplifier specifications mean the same thing whether they are used to describe those individual sections in a complete receiver, an integrated amplifier, a separate tuner, a separate preamplifier-control unit, or a basic power amplifier. A concise guide to understanding these important specifications appears in other sections of this directory.



WHAT ABOUT 4-CHANNEL SOUND?

Multiple-channel sound is certainly not new. As early as the 1930's, moviegoers thrilled to the multi-channel Walt Disney production of "Fantasia," in which listeners were surrounded by music reproduced over as many as six separate speaker systems. For many years, recording studios have used multiple tape tracks to record individual instrumentalists and vocalists under optimum studio conditions. These tape "tracks" were then "mixed down" to two-channel "stereophonic" final products in the form of stereo records. Only in 1970 did 4-channel sound reach the home music listener—first as 4-channel tapes and later in a variety of disc formats.

Musically, there are two distinct approaches to 4-channel sound. The "classical" approach involves the reproduction of the ambience of the concert hall itself. Any concert goer will readily admit that much of the sound he or she hears at a live concert is reflected from the walls and ceiling of the hall itself, rather than from the performers on stage. It is this ambient quality which distinguishes the live performance from its recorded and reproduced equivalent in a home listening room of restricted dimensions. By recording two additional channels, using microphones at the rear of the concert hall and reproducing these channels over similarly positioned speakers behind the listener, it is possible to create a sense of vast space in the home listening environment

which is not achievable with conventional two-channel reproduction systems.

Given the extra pair of channels, it is also possible to assign different instruments or soloists to specific channels so that the listener finds himself in the center of the "performance" when playing back recordings. This approach to quadraphonic sound is particularly effective when applied to modern pop and rock music, affording the listener a sense of involvement not otherwise attainable.

Recording four channels on tape is relatively simple. Both 8-track cartridges and open-reel tapes have multitrack capability. In stereo tape recordings, two of the four available tracks of an open-reel tape are recorded in one direction with a first program and the tape reel is then reversed to record or play the remaining two tracks. In the case of 4-channel open-reel tapes all four available tracks are simply recorded in the same direction, instead of two at a time in each of two directions. In the case of cartridges, instead of recording four stereo programs in the four available "loops" of the continuous tape, two programs, each utilizing four of the available 8 tracks, make up the format. Tape playback decks are readily available for handling either 2- or 4-channel tapes compatibly.

In the case of phonograph records, obtaining 4-channel sound is not so simple. Since a record contains a single continuous groove, it is no small achievement to cram *four* separate channels of information into that groove. In stereo recordings, the left wall of the groove contains left-channel information while the right wall contains information intended for the right channel and loudspeaker. Two different techniques have been developed to produce 4-channel records. One, called "matrixing," is a process of combining or encoding the four original program channels into two complex audio programs. These two "encoded" channels can then be applied to the record groove much like a stereo program. Suitable decoder circuits, often built into a four-channel amplifier or receiver, "decode" the two channels into four separate signals approximating those which were recorded at the beginning of the process. While the four extracted signals do contain some undesired program content from other channels, the listener essentially hears a quadraphonic program, with different sounds coming from the four speaker systems required in any 4-channel setup. Several companies proposed different "matrix" systems as 4-channel sound evolved. Each differed from the others in terms of degree and nature of channel separation, but each afforded a very listenable 4-channel effect. The two most popular matrix techniques currently in use in the United States are the SQ system, developed by CBS and the QS system developed by Sansui. Both are capable of excellent 4-channel reproduction and each can be further enhanced by the addition of circuits called "4-channel logic" which increase apparent separation between channels. Most modern 4-channel equipment (receivers and amplifiers) are equipped to handle either kind of matrix record. Simple front-panel switches select the proper decoding parameters for each system.

In addition to matrix records, there are also so-called discrete or CD-4 records which actually contain four separate programs in the single record groove. Two of the necessary program information channels are inscribed in the form of ultra-high-frequency signals, in addition to the two conventional left-total and right-total information channels. A circuit or unit known as a "demodulator" is required to unscramble these complex signals. When used, the demodulator recovers all four original signals with their full channel-separation capability. Because of the very high frequencies contained in these CD-4 discs (developed jointly by RCA and the Japan Victor Company of Japan), a new cartridge or phono pickup is required, since stereo phono cartridges, however excellent they may be for 2-channel record playing, were never designed to "track" these very high frequencies. Once installed in your record-playing system, however, the new CD-4 cartridges will play stereo records as well, so there is no need for two kinds of cartridges when you opt for a 4-channel system.

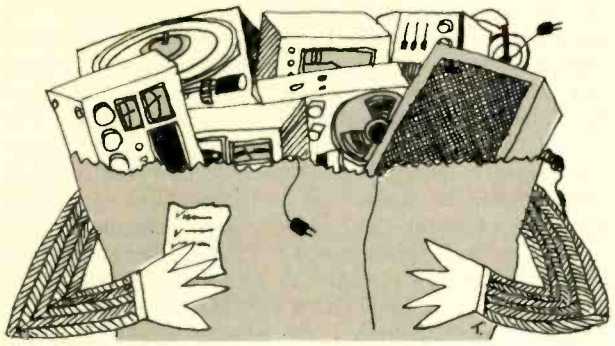
Some modern quadraphonic electronic equipment now incorporates the necessary demodulator circuitry for playback of CD-4 records as well, and the flip of a single switch lets you enjoy all forms of 4-channel discs presently available.

BASIC EQUIPMENT

A 4-channel home music system is necessarily more costly than a stereo system of equal power and performance capabilities. Any 4-channel system requires four separate loudspeakers. That means four separate channels of amplification are needed. Since the tuner or tuner section of a receiver and the record player remains the same for either 2- or 4-channel reproduction, the added cost is much less than twice as much, compared to a stereo system of equal quality.

Today, there is an ample selection of equipment and records from which the 4-channel sound enthusiast can choose. Before deciding whether to buy 2- or 4-channel equipment, listen to each type of system in a properly equipped demonstration room at your audio dealer. Bear in mind that, whether you elect to buy 4-channel or stereo, the important criteria of low distortion, good frequency response, and adequate power output apply to each type of system. If your budget is limited, you might be better off starting with a good stereo component system rather than settling for an inferior quadraphonic system. Remember, it will always be possible to upgrade and convert the system to 4-channel sound at a later date. Separately available decoders, demodulators, and extra amplifiers and speakers can be added to any existing stereo sound system in the future.

While the very first equipment offered for 4-channel sound lacked the ability to handle all 4-channel formats, that is no longer the case today. The fear of obsolescence that discouraged many from considering a quadraphonic system in the early '70's need no longer be a deterrent if you find that 4-channel sound is more exciting and realistic than stereo. If you do choose a 4-channel system, make certain that it has switch positions for both "discrete" and "matrix" record reproduction—and judge sound quality in the same terms that would apply if you were choosing a stereo system. As for available program material, record catalogues now list well over a thousand titles in the three most popular quadraphonic disc formats of SQ, QS, and CD-4, with more coming all the time. As an added bonus you will find that, played in one of the matrix modes, even your older stereo records will reproduce a kind of "synthesized" 4-channel sound over your four loudspeakers which sounds uncannily like deliberately recorded 4-channel sound. It's as if your old record collection has been given a new lease on life—and the effect can be most satisfying and startling.



HI-FI SHOPPING TIPS

Shopping for a hi-fi component system can be fun—or it can be a frustrating experience. There are four general sources of supply. (1) You can visit an audio specialist dealer who sells nothing but high-fidelity component equipment. (2) You can shop in a branch of one of the many electronic-supply stores that sell other specialized electronic equipment in addition to hi-fi, but generally have listening rooms set aside for hi-fi component selection. (3) You can order components from a variety of mail-order or catalogue houses (some of whom also have retail stores in many cities), or (4) you can visit a "discount" establishment which has a variety of merchandise available in sealed factory cartons but provides no facilities for equipment auditioning. Your choice of supplier will generally depend upon how much (or how little) personalized service you require.

The first two categories of retail establishments generally offer the most service. If you are starting from "scratch," it is essential that you be able to listen to the components you plan to buy. As a matter of fact, the first components you should select are your loudspeakers, since there is the greatest variation in sound amongst the hundreds of speaker models currently available. Zeroing in on the loudspeakers that sound best to you also puts you in a better position to decide on how powerful an amplifier or receiver you will need, since some speakers require far more power than others to deliver a given loudness level.

Generally, the well-equipped audio dealer who offers auditioning facilities and technically trained sales personnel will offer less of a discount than the "mail order" or "warehouse" type of retailer, since his overhead costs are higher. In return for the somewhat higher price you pay, you will obtain certain advantages that may or may not be important to you. For example, many audio dealers offer dealer warranties in addition to the normal factory warranties from the manufacturer. This means that if anything goes wrong within the dealer's separate warranty period, you need only bring the unit back to the dealer from whom the unit was purchased and he will promptly repair or even exchange the defective component.

DEALING WITH AUDIO SALESMEN

Selling audio requires a great deal of technical expertise. Many salesmen in the field are audio hobbyists themselves and love to impress prospective customers with their knowledge of technical terms and specifications. Often, this approach tends to frighten the neophyte music lover who simply seeks a good hi-fi component system priced within his budget. If you are familiar with the technical terms involved, chances are you can keep up with this kind of salesman, but if you are not, don't be intimidated. Simply insist upon more demonstration and less engineering talk and the salesman will soon get the idea that you couldn't care less about dB's, microvolts, watts, and impedances. After all, the most important thing is how the total system sounds—and how it's likely to sound in your listening room. If possible (and if you plan to select all your equipment in one shop), insist that the salesman demonstrate *all* your components as a complete system, once you've selected every element of that system. A good phono cartridge may sound fine in an expensive manual turntable, but may be unable to track record grooves properly when installed in a more modestly priced record changer. A fine loudspeaker, chosen by you after listening to it driven by a very-high-powered basic amplifier may be too inefficient to be driven to adequate sound levels by the low-powered receiver you have chosen.

Many retail outlets, particularly those which are branches of national chains, commission manufacturers to produce speaker systems and even receivers and amplifiers on a "private label" basis. Often, such products represent good value for their price, but just as frequently, the "house-brand" component provides an opportunity for the retailer to suggest total systems at great discounts which are somewhat deceptive. For example, a system may be offered which consists of a well-known receiver and record player, but which also includes "house-brand" speaker systems of questionable worth. By arbitrarily assigning high "list" prices to these speakers, the dealer is able to offer an entire system at what appears to be a 30% or greater discount. Certainly, this practice is not universal and some "house-brand" components are indeed well worth their price, but prospective purchasers are urged to evaluate these products even more carefully than they would in considering better known "name-brand" components.

TRADING UP

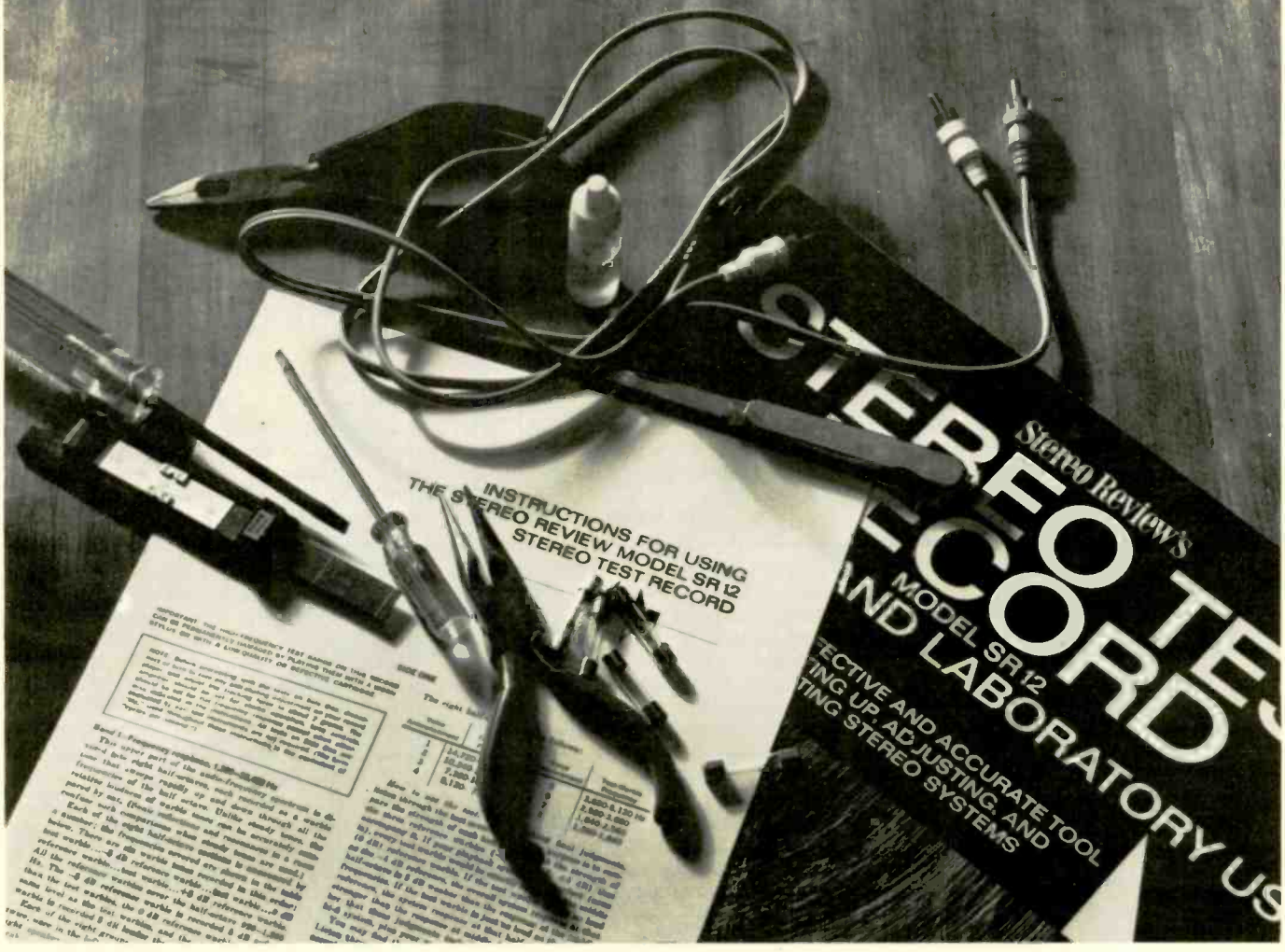
A brisk trade-in business exists within the high-fidelity component industry. As is the case with most hobbyists, many audiophiles like to upgrade their component systems from time to time. Since components are built to last for many years, buying a used but good-condition amplifier, tuner, or receiver probably represents less of a risk than buying a used car, which has a fairly limited life. Some dealers will accept trade-ins toward the purchase price of equipment, while others deal only in new equipment. As in the case of automobiles, you are likely to get a better price for used equipment when you sell privately, since dealers must be able to add a profit to items they take in trade before selling them to the next owner. If you plan to offer old equipment in trade to the dealer from whom you expect to purchase replacement equipment, don't expect more than a maximum of 25% return on your original investment—less if the equipment is really ancient and requires servicing or refurbishing.

A good high-fidelity component system represents a substantial investment on your part. Whether you plan to spend $300 or $3000, shop carefully, read the descriptions and specifications of equipment listed in this Directory and be guided by the shopping principles detailed here, and by the authoritative explanations of each component that follow. The years of listening pleasure you will derive from a good home music system are well worth the initial shopping effort. □

HI-FI TROUBLESHOOTING

You may not be able to repair it yourself, but you can at least isolate the problem

By Peter Sutheim and Larry Klein



WHEN something goes wrong with their sound systems, many component owners are so intimidated by the complexity of their setups that they turn—frequently much too quickly—to expensive professional help. Few people, it seems, are aware that just a little knowledge and applied logic will enable you to at least pinpoint the trouble in a particular part of the system, and possibly to eliminate the malfunction as well. And even if you can't fix it yourself, simply tracing the defect to a specific component can save the repairman time (and you money), turning what might have been an expensive house call into a visit to the repair shop with the offending component under your arm.

The kind of reasoning used in the set of charts that follows is basic "troubleshooting" logic. It branches, like a tree, leading you in a series of steps from problem to (probable) solution. It tells you, for example, that if *this* is happening, *these* are the most likely causes. You then check possible cause number one. It either is or is not the actual cause. If it is, fix it or get it fixed. If it is not, you proceed to check possible cause number two, and so on. Thus, though the trees contain many branches, they can always be broken down to a simple series of "if . . . then" hypotheses to which the only possible answers are yes or no.

Note particularly the phrase above, "*most likely* causes." These charts are based on probable causes, and are therefore not infallible. It is always *possible* that your left front speaker is not working properly because some malign influence has hexed it, and what you need is an exorcist, not a service technician. But that's *unlikely* to be the problem. And, for the novice, the point is worth making that just because the "poor sound" is coming out of your speakers, it doesn't mean that *they* are the source of the trouble. For example, there is no way that a speaker, in and of itself, can develop a hum, though it certainly may rattle.

The basic "system" chart on the fold-out page that follows deals with overall system failure: no sound or poor sound in the whole system. There are also

charts for troubles specific to each major component—turntable, tuner, and tape deck—and a separate check list for the somewhat special problems of turntables. If it is already obvious to you that the trouble is somewhere in, say, the tuner alone, you can therefore skip all other checks.

The charts make extensive use of the technique of substitution, based on the high probability that the two or four independent channels of your amplifier, or your two or four speakers, etc., won't *all* fail in the same way at the same time. Therefore, swapping speakers, cables, amplifier channels, etc., can give useful information. Occasionally, it is helpful to borrow another component (a functioning one, of course) from a friend and substitute it for the possibly faulty original one. If the trouble disappears, the original component has something wrong with it; if not, the source of the problem is elsewhere.

An excellent troubleshooting tool is a set of spare shielded cables. Since cables are one of the major sources of trouble (no signal or signal plus hum), extra cables not only can serve as diagnostic devices, but in addition will even provide the immediate cure—*if* the problem is in truth a shorted or open cable.

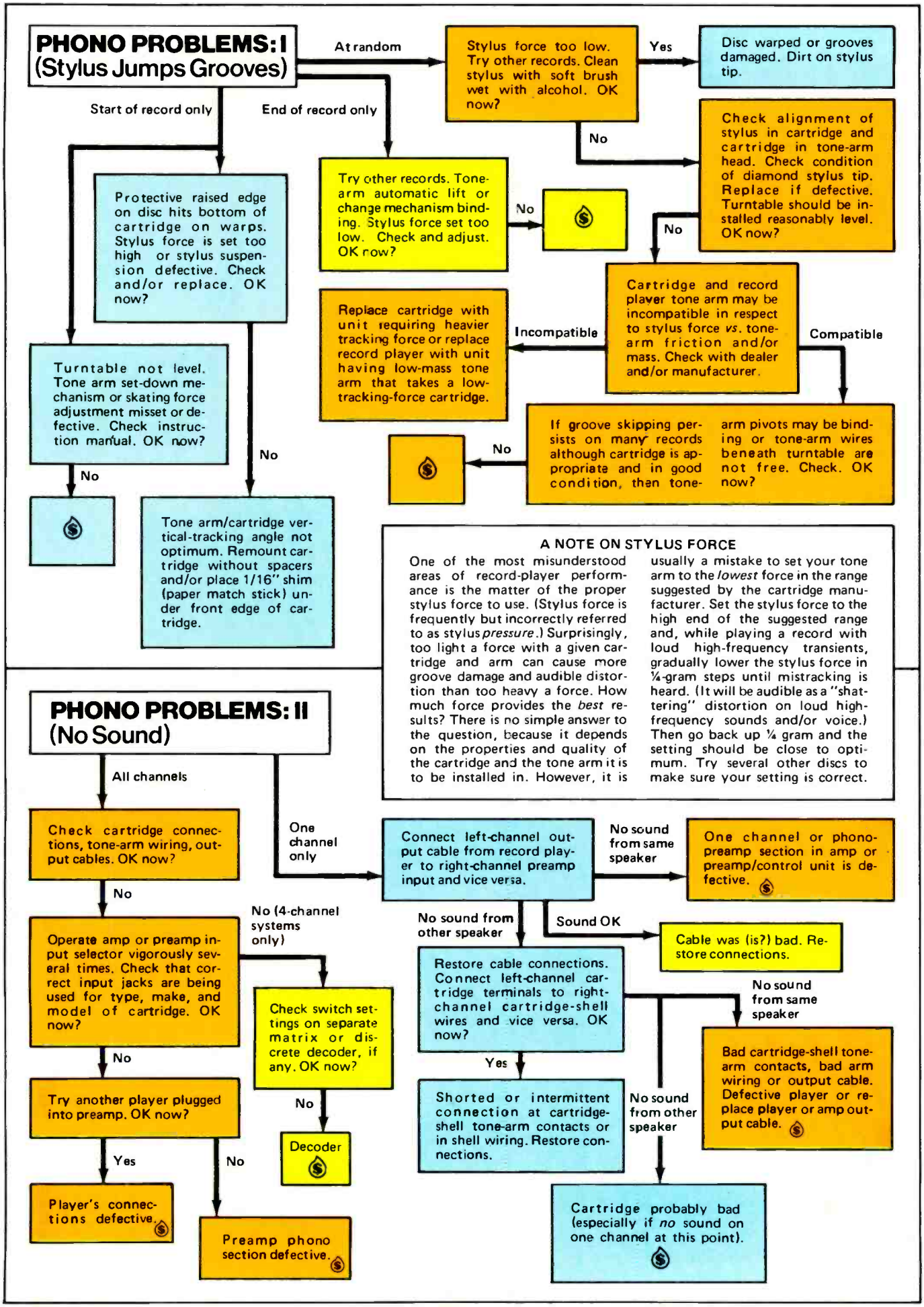
When you have worked your way through the charts and find that the trouble won't yield to home remedies, professional service is obviously called for, which is why you will find a little teardrop with a dollar sign in it at the end of each trail.

Manufacturers with whom we've discussed the contents of this article tell us that a surprisingly large number of consumer troubles are caused quite simply by misadjustment or misapplication of a component. So, when all else fails, and as a last desperate resort, try reading the instruction manuals that came with your equipment. Good luck! □

COMMON TURNTABLE TROUBLES

Malfunction	Probable cause
Skips grooves	See flow chart on next page.
Distortion	1. Improper stylus force—see note with flow chart. 2. Defective stylus assembly. 3. Improper cartridge mounting—see manufacturer's instructions. 4. Preamplifier overload. Are the turntable leads plugged into the correct phono input for cartridge type? 5. Binding tone arm, causing excessive force on outer-groove wall.
High-frequency noise, ticks, and pops	1. Worn or damaged stylus. Dirty, defective, or damaged discs. Amplifier treble control or tweeter-level control set too high. 2. Electrostatic noise because of low humidity. (Send a stamped, self-addressed #10 envelope to STEREO DIRECTORY, Dept. EN. 1 Park Ave., New York, N.Y. 10016, for a free suggestion sheet for coping with the problem.)
Hum and buzz	1. Check connections to cartridge terminals in tone-arm head shell. Check wiring beneath turntable, including plug-in leads. 2. Make sure that ground wire from turntable (if present) is connected to grounding point on amplifier. 4. Phono pickup of r.f. signals appearing either as a buzz or as radio/TV audio signals. (The problem is too complex for simple troubleshooting. Send 25¢ and stamped, self-addressed long envelope to STEREO DIRECTORY, Dept. RFI, 1 Park Ave., New York, N.Y. 10016, for article reprint on how to solve the problem.)
Speed irregularity or stalling during change or shut-off cycle	1. Oil film or dirt on idler wheel.* Clean. 2. Stretched belt. Replace. 3. Bearings of motor and idler need oil (use only the specific oil recommended by manufacturer, and use it sparingly to avoid causing further troubles). 4. Hard or out-of-round idler wheels. Replace (check with manufacturer for service notes and replacement costs).
Rumble or other low-frequency noises	1. Flat on idler wheel.* 2. Rubber motor mounts damaged or dried up. 3. Changer chassis clamped to base because transit screws were not loosened as per instruction manual. 4. Inherent rumble level of player may be inadequate for bass-performance quality of rest of system. 5. Acoustic feedback. With volume at normal and stylus in record groove but the turntable *not* rotating (you may have to unplug the a.c. cord), tap the player base. If, instead of a thump, a sustained "thrumming" sound is heard, then acoustic feedback is probably occurring. Physically isolate your player from the speakers. They should not be within several feet of each other or resting on the same shelf or in the same cabinet. Mounting the player and speakers on 1-inch foam rubber may help.
Some records do not drop properly in the change cycle	1. Check center holes of offending discs for full clearance and lack of interference from label. If necessary, carefully ream out the hole (be sure not to enlarge it unduly) with a sharp knife. 2. Electrostatic attraction between discs and dust cover will sometimes interfere with changer action (see under "High-frequency noise" above). 3. Defective or bent changer spindle.

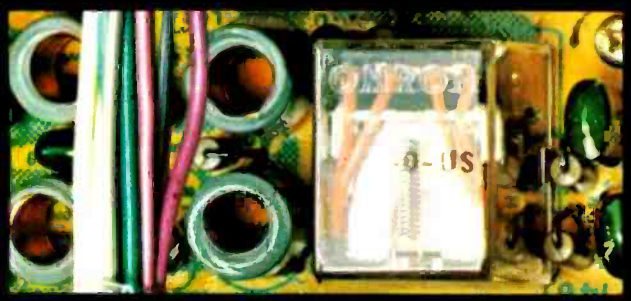
*The idler wheel is a rubber-rimmed "tire" about 2 inches wide that transmits the motor-shaft rotation to the turntable platter. It, the motor, and other parts that require cleaning and oiling can be exposed by removing the turntable platter. On many automatic turntables it will be necessary first to remove the small "C" washer (at the platter center) that holds the platter in place.


PHONO PROBLEMS: I
(Stylus Jumps Grooves)
At random
Start of record only
End of record only
Stylus force too low. Try other records. Clean stylus with soft brush wet with alcohol. OK now?
Yes
Disc warped or grooves damaged. Dirt on stylus tip.
No
Check alignment of stylus in cartridge and cartridge in tone-arm head. Check condition of diamond stylus tip. Replace if defective. Turntable should be installed reasonably level. OK now?
No
Try other records. Tone-arm automatic lift or change mechanism binding. Stylus force set too low. Check and adjust. OK now?
No
Protective raised edge on disc hits bottom of cartridge on warps. Stylus force is set too high or stylus suspension defective. Check and/or replace. OK now?
Cartridge and record player tone arm may be incompatible in respect to stylus force vs. tone-arm friction and/or mass. Check with dealer and/or manufacturer.
Incompatible
Compatible
Replace cartridge with unit requiring heavier tracking force or replace record player with unit having low-mass tone arm that takes a low-tracking-force cartridge.
If groove skipping persists on many records although cartridge is appropriate and in good condition, then tone-arm pivots may be binding or tone-arm wires beneath turntable are not free. Check. OK now?
No
Turntable not level. Tone arm set-down mechanism or skating force adjustment misset or defective. Check instruction manual. OK now?
No
No
Tone arm/cartridge vertical-tracking angle not optimum. Remount cartridge without spacers and/or place 1/16" shim (paper match stick) under front edge of cartridge.
A NOTE ON STYLUS FORCE
One of the most misunderstood areas of record-player performance is the matter of the proper stylus force to use. (Stylus force is frequently but incorrectly referred to as stylus pressure.) Surprisingly, too light a force with a given cartridge and arm can cause more groove damage and audible distortion than too heavy a force. How much force provides the best results? There is no simple answer to the question, because it depends on the properties and quality of the cartridge and the tone arm it is to be installed in. However, it is usually a mistake to set your tone arm to the lowest force in the range suggested by the cartridge manufacturer. Set the stylus force to the high end of the suggested range and, while playing a record with loud high-frequency transients, gradually lower the stylus force in ¼-gram steps until mistracking is heard. (It will be audible as a "shattering" distortion on loud high-frequency sounds and/or voice.) Then go back up ¼ gram and the setting should be close to optimum. Try several other discs to make sure your setting is correct.
PHONO PROBLEMS: II
(No Sound)
All channels
One channel only
Check cartridge connections, tone-arm wiring, output cables. OK now?
No
Connect left-channel output cable from record player to right-channel preamp input and vice versa.
No sound from same speaker
One channel or phono-preamp section in amp or preamp/control unit is defective.
No sound from other speaker
Sound OK
Cable was (is?) bad. Restore connections.
Restore cable connections. Connect left-channel cartridge terminals to right-channel cartridge-shell wires and vice versa. OK now?
No sound from same speaker
Bad cartridge-shell tone-arm contacts, bad arm wiring or output cable. Defective player or replace player or amp output cable.
Yes
Shorted or intermittent connection at cartridge-shell tone-arm contacts or in shell wiring. Restore connections.
No sound from other speaker
Cartridge probably bad (especially if no sound on one channel at this point).
Operate amp or preamp input selector vigorously several times. Check that correct input jacks are being used for type, make, and model of cartridge. OK now?
No (4-channel systems only)
Check switch settings on separate matrix or discrete decoder, if any. OK now?
No
Decoder
No
Try another player plugged into preamp. OK now?
Yes
No
Player's connections defective.
Preamp phono section defective.

Of course, trouble-free service isn't something that just happens if you coast along and design equipment the way everyone else does. It takes ideas. Carefully conceived ideas, translated into hardware that keeps trouble away.

Look at just four examples from the current Sansui line.

Sansui QRX-7001 Four-Channel Receiver with special protector circuit



Sansui's all-source 4-channel receiver offers the latest and best IC-equipped QS vario-matrix decoder as well as a CD-4 demodulator. The design is especially remarkable for its 20 dB separation on all channels in the QS mode

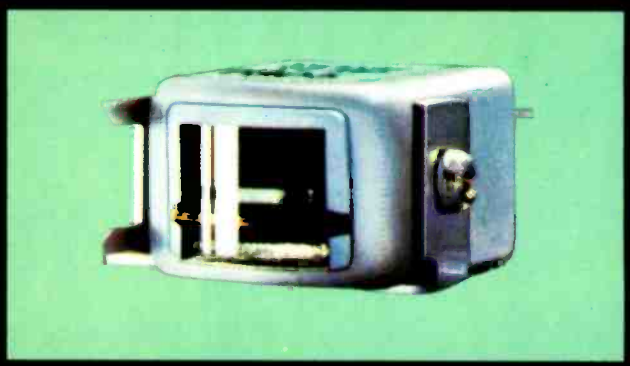
An important feature that keeps potential trouble away is the relay-equipped electronic protector circuit in the direct-coupled power amplifier section of the QRX-7001. It detects any possible DC in the output signal and instantly cuts off the speaker terminals. It also provides a slight time lag between the instant the power is turned on and the activation of the speakers.

No popping in the speakers means no dead channels, no troubleshooting.

Sansui SC-636 Stereo Cassette Tape Deck with Magni-Crystal ferrite heads

This high-performance cassette deck offers, among other things, a built-in Dolby-B noise reduction system and a frequency response of 35 to 14,000 Hz ± 3 dB with chromium dioxide tape.

The heads of the SC-636 are made of Magni-Crystal ferrite, a material that far exceeds in hardness the conventional alloys used in most tape



recorders. As a result, the heads wear much longer and you're unlikely to encounter reduced high-frequency response due to a widening playback gap.

Just another Sansui feature to keep you out of practice in troubleshooting.

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klet.

QRX-7001

Sansui

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SANSUI ELECTRIC CO. LTD. Tokyo, Japan
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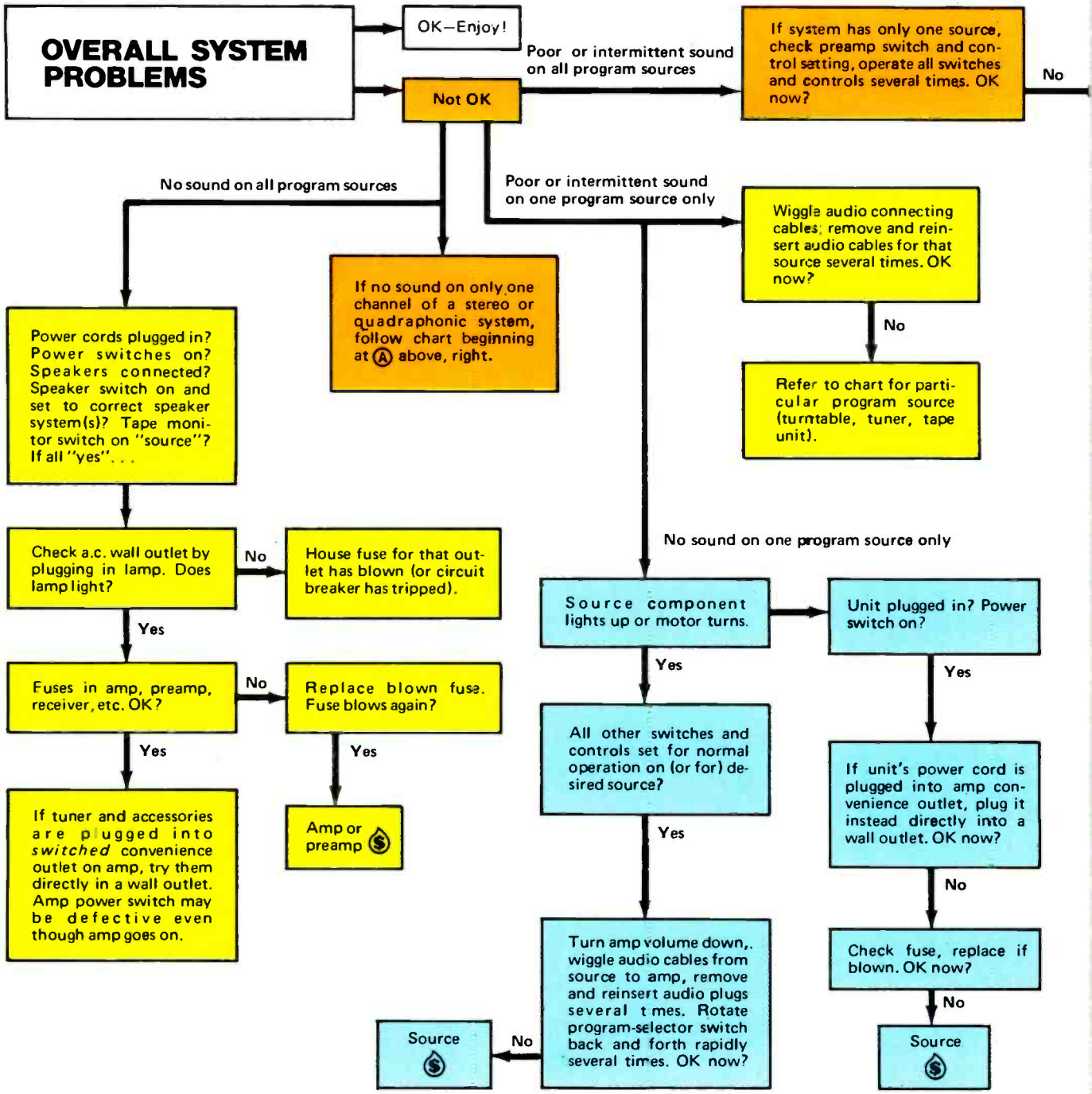
ELECTRONIC DISTRIBUTORS (Canada) B.C.

CIRCLE NO. 27 ON FEADER SERVICE CARD



TO REDUCE CONFUSION, WHEN YOU INTERCHANGE COMPONENTS OR CABLES AND TEST IS INCONCLUSIVE, PUT THINGS BACK AS THEY WERE BEFORE GOING ON TO OTHER TESTS.

FUSES

Most components—even some speaker systems—are fused, and you should lay in a supply of replacements for each fuse type in your equipment. Fuses can "fatigue" and open up without there being any fault in the equipment, but if a speaker-line fuse in the amplifier blows, it is best to check the speaker cable at *both* the amplifier and speaker ends before putting in another.

Equipment fuse holders come in four basic types. The most common has a springloaded "bayonet" head which is pushed in and twisted to the left to unscrew. Reinstallation is simply the reverse of this. Another type has a simple knurled screw-out head. A third (less common) type has a screwdriver slot inset section that is also unscrewed. Some units have uninsulated fuse clips installed *inside* the equipment, which means that the fuse is not meant to be replaced by the user. If the internal fuse goes, it usually means that professional service for some failed electronic part is needed.

Your equipment may have pushbutton circuit breakers instead of fuses. If a push of the "reset" button restores operation, fine. But if several pushes simply cause repeated click-offs, check your speaker leads for shorts at both the amplifier and speaker ends (see chart), or simply disconnect one channel's speaker leads from the amplifier and play the amplifier at normal volume. If the circuit breaker (or another fuse) opens anyway for the disconnected channel, the problem is internal to the amplifier and professional help is needed.

Actually, we can think of a number of things that are better than trouble shooting. Even though the skill to isolate and diagnose the most common hi-fi troubles can come in awfully handy.

But if there's no trouble, there's no shooting. Which is what Sansui is all about. Keeping trouble at a minimum. A very good thing.

Sansui 881
Stereo Receiver
with quick-cooling heat sink

This is our top-of-the line FM/AM stereo receiver, capable of delivering 63 watts rms per channel into 8 ohms from 20 to 20,000 Hz at less than 0.3% harmonic distortion.

The power transistors of the 881 are actually "sandwiched" into Sansui's specially designed heat sink (patent pending) to make cooling as quick and efficient as possible. The transistors are kept cool enough to withstand 24-hour operation.

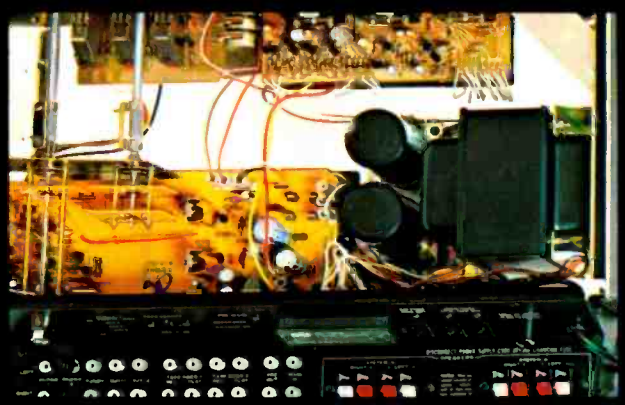
You're most unlikely to have to trouble shoot the output stage (or any other part) of the 881.

Sansui AU-7700
Integrated Stereo Amplifier
with simplified wiring

Separate power supplies for the low-level and high-level circuits of this amplifier are just one indication of its extremely sophisticated design. Differential amplifiers for the phono input stages are another.

The most remarkable trouble-preventing feature of the AU-7700 is its chassisless design with direct circuit-board connections and absolutely minimal open wiring. There's hardly any spot where, even with the worst luck, the wiring could break or come loose.

No trouble, no shooting.



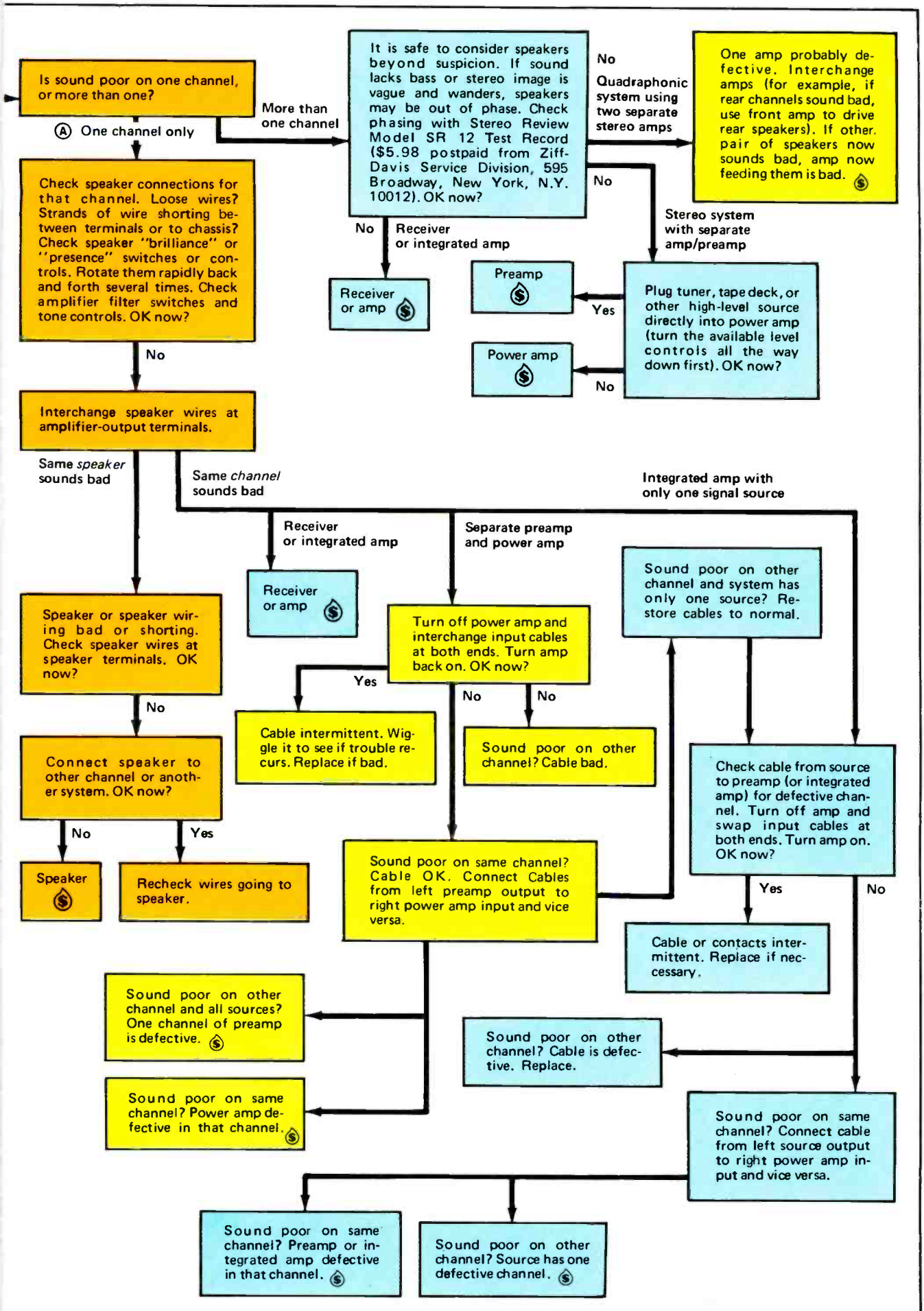
is no troubl

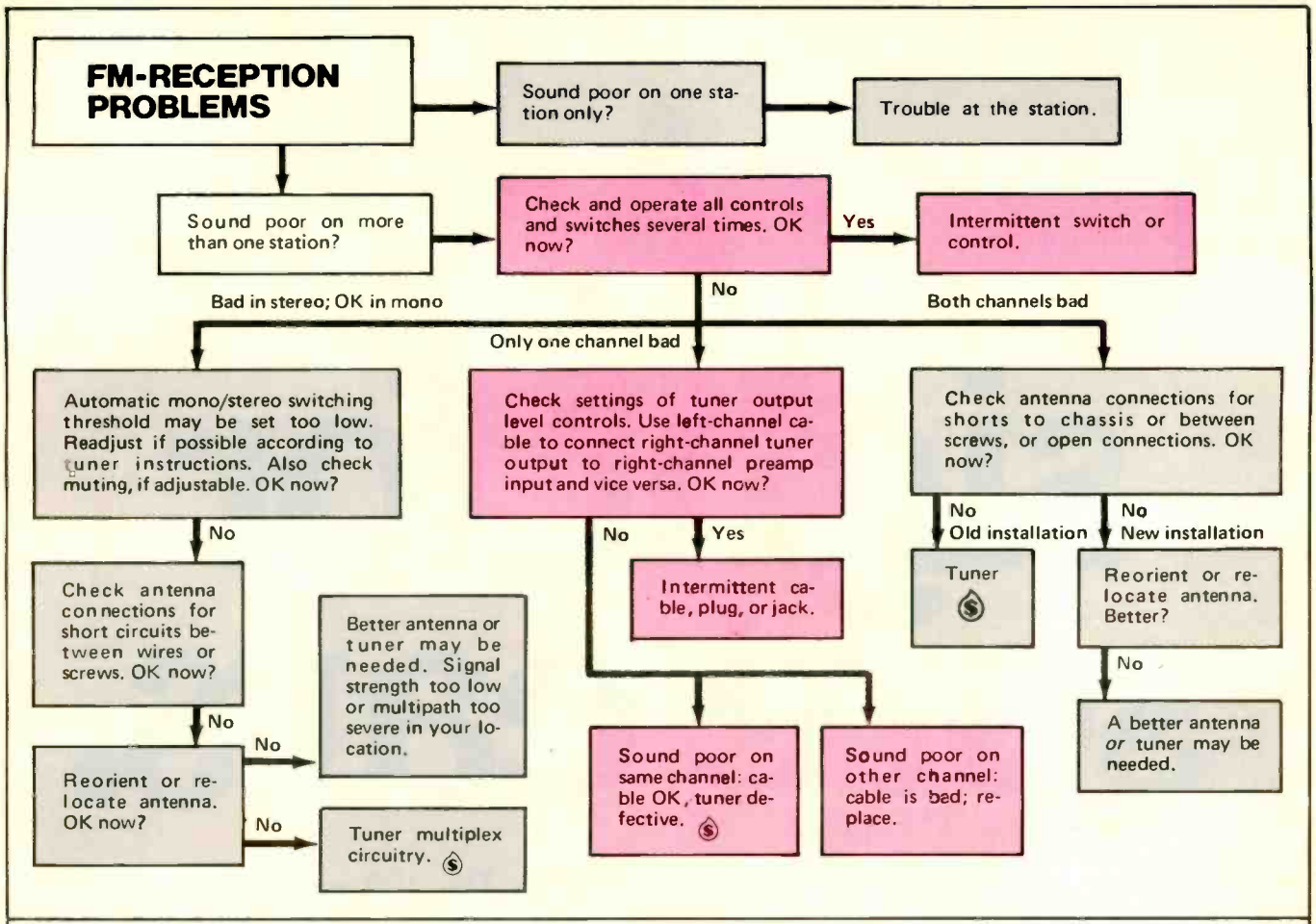
For more information on trouble-free Sansui audio equipr write for "The Sound of Sansui," a full-color illustrated boo

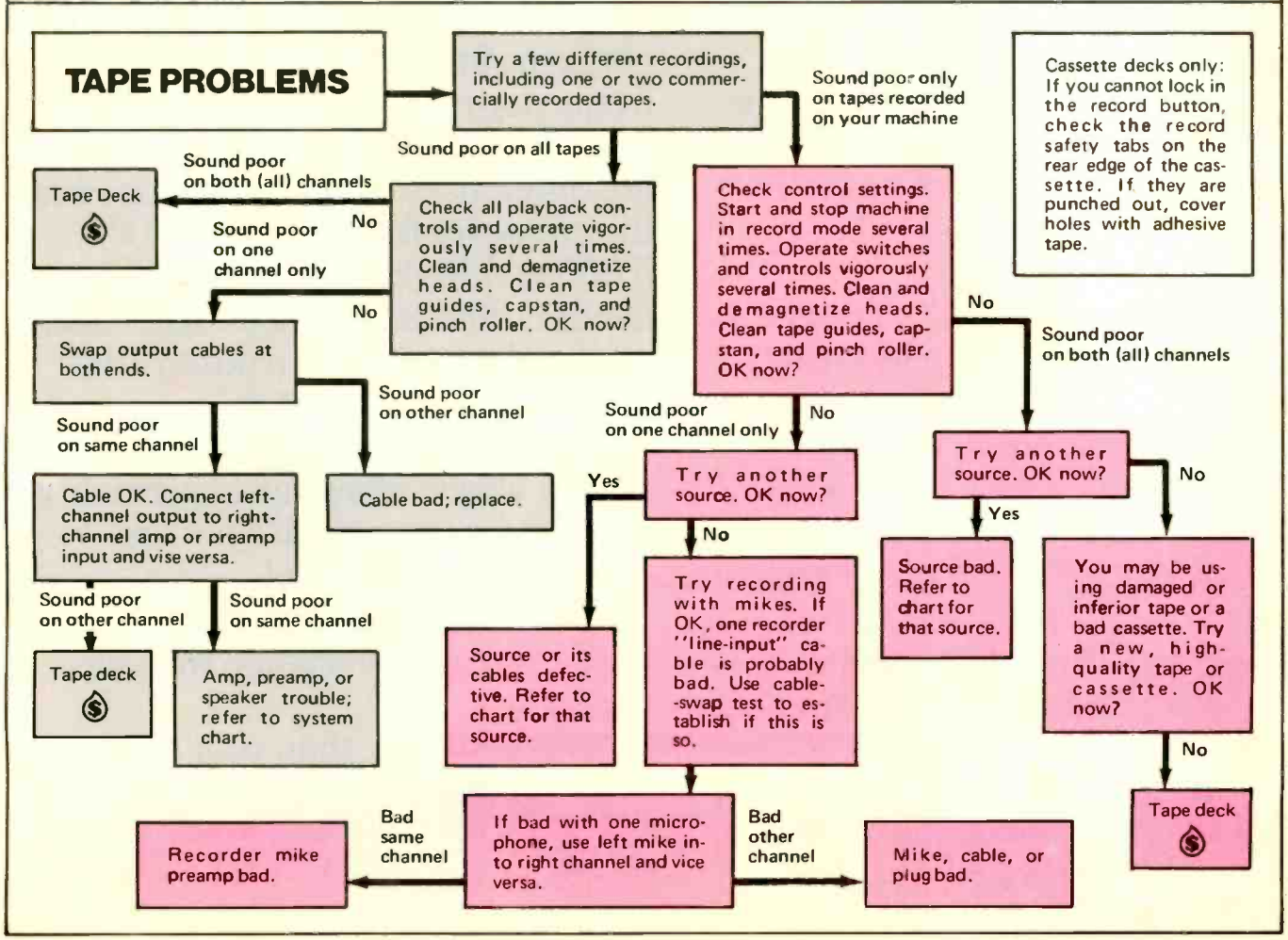
881

AU-7700

The only thing better than trouble-shooting


Is sound poor on one channel, or more than one?
Ⓐ One channel only
More than one channel
Check speaker connections for that channel. Loose wires? Strands of wire shorting between terminals or to chassis? Check speaker "brilliance" or "presence" switches or controls. Rotate them rapidly back and forth several times. Check amplifier filter switches and tone controls. OK now?
No
Interchange speaker wires at amplifier-output terminals.
Same speaker sounds bad
Same channel sounds bad
Speaker or speaker wiring bad or shorting. Check speaker wires at speaker terminals. OK now?
No
Connect speaker to other channel or another system. OK now?
No
Yes
Speaker $
Recheck wires going to speaker.
It is safe to consider speakers beyond suspicion. If sound lacks bass or stereo image is vague and wanders, speakers may be out of phase. Check phasing with Stereo Review Model SR 12 Test Record ($5.98 postpaid from Ziff-Davis Service Division, 595 Broadway, New York, N.Y. 10012). OK now?
No
Receiver or integrated amp
Receiver or amp $
No
Quadraphonic system using two separate stereo amps
One amp probably defective. Interchange amps (for example, if rear channels sound bad, use front amp to drive rear speakers). If other pair of speakers now sounds bad, amp now feeding them is bad. $
No
Stereo system with separate amp/preamp
Preamp $
Yes
Power amp $
No
Plug tuner, tape deck, or other high-level source directly into power amp (turn the available level controls all the way down first). OK now?
Receiver or integrated amp
Receiver or amp $
Separate preamp and power amp
Turn off power amp and interchange input cables at both ends. Turn amp back on. OK now?
Yes
No
Cable intermittent. Wiggle it to see if trouble recurs. Replace if bad.
No
Sound poor on other channel? Cable bad.
Integrated amp with only one signal source
Sound poor on other channel and system has only one source? Restore cables to normal.
Check cable from source to preamp (or integrated amp) for defective channel. Turn off amp and swap input cables at both ends. Turn amp on. OK now?
Yes
Cable or contacts intermittent. Replace if necessary.
No
Sound poor on other channel? Cable is defective. Replace.
Sound poor on same channel? Connect cable from left source output to right power amp input and vice versa.
Sound poor on same channel? Cable OK. Connect Cables from left preamp output to right power amp input and vice versa.
Sound poor on other channel and all sources? One channel of preamp is defective. $
Sound poor on same channel? Power amp defective in that channel. $
Sound poor on same channel? Preamp or integrated amp defective in that channel. $
Sound poor on other channel? Source has one defective channel. $


FM-RECEPTION PROBLEMS
Sound poor on one station only?
Trouble at the station.
Sound poor on more than one station?
Check and operate all controls and switches several times. OK now?
Yes
Intermittent switch or control.
No
Bad in stereo; OK in mono
Only one channel bad
Both channels bad
Automatic mono/stereo switching threshold may be set too low. Readjust if possible according to tuner instructions. Also check muting, if adjustable. OK now?
Check settings of tuner output level controls. Use left-channel cable to connect right-channel tuner output to right-channel preamp input and vice versa. OK now?
Check antenna connections for shorts to chassis or between screws, or open connections. OK now?
No
Check antenna connections for short circuits between wires or screws. OK now?
No
Reorient or relocate antenna. OK now?
No
Better antenna or tuner may be needed. Signal strength too low or multipath too severe in your location.
No
Tuner multiplex circuitry. $
No
Yes
Intermittent cable, plug, or jack.
Sound poor on same channel: cable OK, tuner defective. $
Sound poor on other channel: cable is bad; replace.
No
Old installation
Tuner $
No
New installation
Reorient or relocate antenna. Better?
No
A better antenna or tuner may be needed.


TAPE PROBLEMS
Try a few different recordings, including one or two commercially recorded tapes.
Sound poor only on tapes recorded on your machine
Cassette decks only: If you cannot lock in the record button, check the record safety tabs on the rear edge of the cassette. If they are punched out, cover holes with adhesive tape.
Sound poor on all tapes
Sound poor on both (all) channels
Tape Deck $
Sound poor on one channel only
No
Check all playback controls and operate vigorously several times. Clean and demagnetize heads. Clean tape guides, capstan, and pinch roller. OK now?
No
Swap output cables at both ends.
Sound poor on other channel
Sound poor on same channel
Cable OK. Connect left-channel output to right-channel amp or preamp input and vise versa.
Cable bad; replace.
Sound poor on other channel
Sound poor on same channel
Tape deck $
Amp, preamp, or speaker trouble; refer to system chart.
Check control settings. Start and stop machine in record mode several times. Operate switches and controls vigorously several times. Clean and demagnetize heads. Clean tape guides, capstan, and pinch roller. OK now?
No
Sound poor on both (all) channels
Sound poor on one channel only
No
Try another source. OK now?
Yes
Source or its cables defective. Refer to chart for that source.
No
Try recording with mikes. If OK, one recorder "line-input" cable is probably bad. Use cable-swap test to establish if this is so.
Try another source. OK now?
No
Yes
Source bad. Refer to chart for that source.
No
You may be using damaged or inferior tape or a bad cassette. Try a new, high-quality tape or cassette. OK now?
No
Tape deck $
Bad same channel
Recorder mike preamp bad.
If bad with one microphone, use left mike into right channel and vice versa.
Bad other channel
Mike, cable, or plug bad.

A sight for sore ears.

If you thrive on perfectly flat response, the world of speakers is loaded with frustrations.

And somewhere between the ten-foot monsters that sound good and the little boxes of mush that look good, there's got to be an answer.

Well, maybe you've found it.

The DS-303 from Mitsubishi Electric. A 4-way bookshelf system so carefully thought out and put together, it could spoil you for anything else.

Because, unlike many systems, the DS-303 isn't a compromise based on available components.

It's a total system designed and manufactured from scratch.

Nothing about it smacks of compromise and nothing about it is left to chance.

Every DS-303 we make has its day in the anechoic chamber. Where it performs in solitary terror. If the frequency response isn't properly flat from 30-35,000 Hz, it fails. If there are differences in characteristics near the crossover frequencies of 600, 5,000 and 10,000 Hz, it fails. If it can't handle 100 watts without distortion, it fails. If it can't pass a dozen other tough requirements, it fails.

And the punishment is swift.

If a woofer shows an abnormality at 5 Hz, for example, it's not just rejected. It's punctured.

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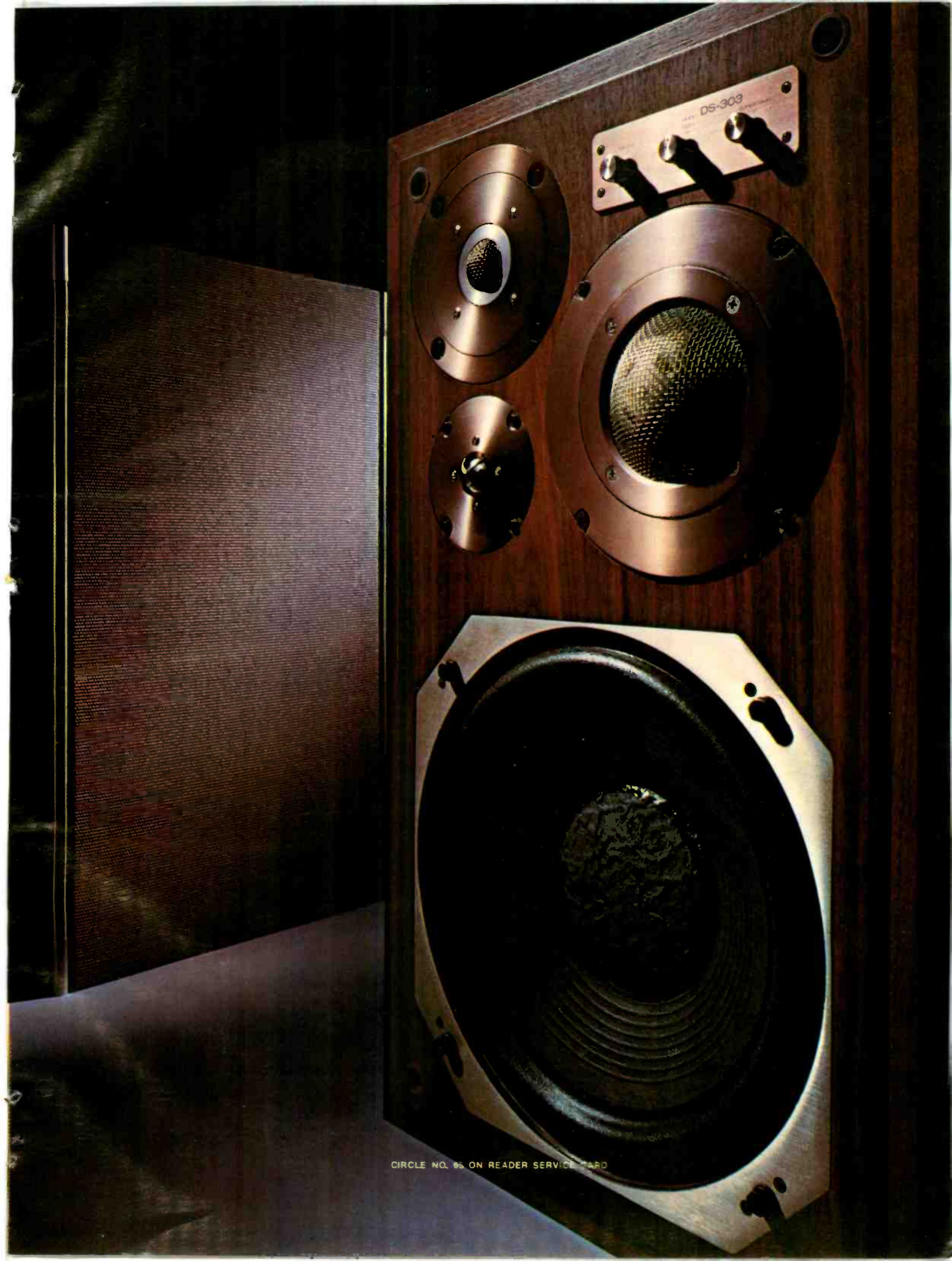

Don't buy any receiver until you compare its price, power, and specs to these.

Technics' four new stereo receivers. All with impressive specs. And a lot more.

All four have direct coupling. To give you a tighter, cleaner bass.

All with reserve power to float through complex, high-level musical passages without distortion or clipping. Because all have large capacitors, conservatively rated transformers, and bridge rectifiers in the power supplies.

All with a Phase Lock Loop IC and flat group delay filters in the tuner section. For clean, well-separated highs as well as lower distortion on FM. And about 20% less wiring. To reduce hum.

All with Technics' exclusive linear dial scale.

SPECIFICATIONS	SA-5150	SA-5250	SA-5350	SA-5550
Price*	$229.95	$299.95	$349.95	$479.95
Min. RMS Power per channel into 8 ohms	16 watts	23 watts	28 watts	58 watts
Bandwidth	40Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz
Total Harmonic Distortion (Max.)	0.8%	0.5%	0.5%	0.3%
FM Sensitivity (IHF)	1.9μv	1.9μv	1.9μv	1.8μv
Selectivity (IHF)	70dB	70dB	70dB	70dB
FM Stereo Separation at 1 kHz at 10 kHz	40dB 30dB	40dB 30dB	40dB 30dB	40dB 30dB

*Suggested minimum price, which is the fair trade price in states where Technics products are fair traded.

For effortless tuning on *both* AM and FM. Negative feedback low distortion tone controls. And all the inputs and outputs you'd expect from Technics.

Whichever Technics receiver you choose, you get all the advantages of Technics' sophisticated engineering, good power, and good specs. And all at a good price.

The concept is simple. The execution is precise. The performance is outstanding. The name is Technics.

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CIRCLE NO. 69 ON READER SERVICE CARD

Introduction to AMPLIFIERS

THERE are two functionally distinct types of amplifiers in hi-fi: the preamplifier and the power amplifier. The preamplifier is the control unit, where the desired program (phono, FM, etc.) is selected, low-level signals are amplified and equalized, and the listening volume is adjusted.

The power amplifier transforms the relatively low-power signal from the preamp to the much higher power needed to drive the loudspeakers. When both preamplifier and amplifier sections are combined, the unit is generally called an "integrated amplifier." Most of the size and weight of an amplifier is associated with its power section.

At higher power levels, the large heat-radiating fins and power-supply components required by the power amplifier often make an integrated unit heavy and bulky. Therefore, it is common for high-power amplifiers to be designed as two-piece components with the heavy, hot power amplifier section entirely separate from the preamp/control section. The transition occurs at about 100 watts per channel.

Although amplifier designers go to great pains to achieve a "flat" frequency response (uniform output over a wide frequency range), they also provide tone controls which give the user the option of altering that response to accentuate or reduce the output at low and high frequencies, and sometimes the middle frequency range as well. On some amplifiers, it is possible to change the frequencies at which the controls take effect, or to make separate adjustments in five or more frequency bands.

Except for the least expensive amplifiers (and, paradoxically, some of the most expensive), loudness compensation can be added to the volume-control circuit. This causes the mid-range level to be reduced more than the low frequencies (and, sometimes, the highs as well) as the control is turned down. Loudness compensation is supposed to correct for the reduced sensitivity of the ear to low and high frequencies at low listening levels, but is rarely completely successful. Be sure that the compensation can be switched off, as it can on almost all amplifiers.

Filters are included in most amplifiers above the lowest priced models. A high-cut filter is supposed to reduce hiss and record scratch, but most remove some of the highest program frequencies as well, dulling the sound audibly. At the other end of the frequency scale is the low-cut, or rumble filter, intended to eliminate the very-low-frequency noises introduced by turntable motor vibration. Many of these also remove the lowest program frequencies, but some are effective in correcting for turntable deficiencies.

Virtually every amplifier has a tape-monitor switch, whose principal function is to interrupt the signal path through the amplifier before the tone and volume controls, feed the signals to a tape recorder, and re-insert the playback output of the recorder at the same point in the amplifier circuit. If the tape deck has separate recording and playback heads and amplifiers (true of most open-reel machines, but of few cassette recorders), the recorded program can be heard from the tape an instant after it was recorded. This feature is useful even if your system does not include a tape deck, since it simplifies connecting accessory devices, such as equalizers and 4-channel adapters, to the amplifier without disturbing system wiring. Some amplifiers can accommodate two, or even three, tape decks, with separate monitoring facilities for each, as well as interconnecting the tape machines for copying tapes from one machine to another.

Most amplifiers have terminals for two or three pairs of speakers, with a front-panel switch to activate any one or two pairs. This is convenient for channeling sound to different parts of the house, but since all control functions remain in the amplifier, separate external level controls (known as L-pads) may be needed for the remote speakers.

Headphone jacks are standard features today and can be used to drive any type of headphone except electrostatics, which must be connected to speaker outputs. A few amplifiers have microphone inputs, chiefly useful for making public-address announcements.

Recent FTC rulings make it easy to compare the power output and distortion ratings of different amplifiers, provided their advertised frequency limits (usually, but not necessarily, 20-20,000 Hz) are the same. The FTC ratings are very conservative, and most amplifiers will deliver more power and/or less distortion under normal operating conditions than their published ratings suggest.

The power needed in any particular installation is a function of speaker efficiency, size and acoustic treatment of the room, and the desired listening volume. Using the speaker manufacturer's power recommendations as a guide, an amplifier can be chosen on the basis of its advertised power ratings. The speaker and amplifier power ratings need not be closely matched, but it is preferable to have some extra power available rather than be underpowered. A "25-watt" speaker can be used safely with a 50-watt amplifier, for example, but might prove disappointing with a 15-watt amplifier.

Power Output: Current Federal Trade Commission rules require that amplifier power output be measured with all channels operating and specified in the form "50 watts minimum rms per channel into 8 ohms with less than 0.3% harmonic distortion from 20 Hz to 20,000 Hz." The manufacturer is free to establish his own frequency and distortion rating and, implicit in the rating is the fact that the stated distortion will not be exceeded from rated power down to 0.25-watt output.

Equalization: An intentional departure from response flatness, to compensate for a complementary characteristic introduced elsewhere in the system (as with discs, tape, and FM broadcasting), resulting in a net flat response. Also used to correct for response deficiencies in speakers and other components.

Decibel (dB): A measure of the ratio between two power levels. Doubling or halving the power corresponds to a 3-dB change, and 10 dB corresponds roughly to the audible effect of doubling or halving the loudness of a signal.

Introduction to TUNERS

A TUNER is the "radio" portion of a music system. It often contains separate FM (stereo and mono) and AM sections, tuned by the same knob, but otherwise independent.

The key specifications of an FM tuner relate to its sensitivity, distortion, noise level (or S/N ratio), capture ratio, AM rejection, and the ability to reject certain unwanted signals (alternate and adjacent channel selectivity, image, i.f., and spurious). In general, the sensitivity, distortion, and noise level are better in mono than in stereo. Stereo channel separation is also of interest, but even in moderately priced tuners it is likely to be better than the separation provided by the best phono cartridges.

Although tuner performance specifications are defined, there remains the problem of interpreting them in subjective terms and of appreciating the significance of the "trade-offs" among various ratings (since most tuners will excel in some respects and trail in others, as compared with competitive units).

To many people, a "sensitive" tuner is one with the ability to pick up a clear, usable signal from a weak or distant station. In a sense, this is true, but the "IHF Usable Sensitivity" rating in the past defined an input signal that produced an audio output whose noise and distortion do not meet hi-fi standards. A more meaningful specification, based on new standards recently set but not yet in universal use, is the "50 dB Quieting Sensitivity." This is the minimum signal strength needed to give what most people would consider a listenable output.

In most cases, the received signal is far stronger than either the IHF Usable or the 50 dB Quieting Sensitivity, so that neither figure is of much practical importance unless one lives in a "fringe area" and must depend on reception of distant stations for FM listening. In such cases, a good directional antenna installation, rather than increased tuner sensitivity, is usually the key to successful reception. Newly instituted specifications use the more meaningful "power" reference instead of voltage. Both will be shown side-by-side in the future. The new rating will be in dBf instead of dB (see chart).

The ultimate quieting, or signal-to-noise ratio, is a major factor in good FM reception. Even a small amount of background "hiss" can be annoying when heard through a wide-range system. Almost any tuner can achieve a S/N ratio of better than 60 dB, which is acceptable at low-to-moderate listening levels, but the music lover who enjoys listening at more "natural" levels will appreciate the quiet background that comes with the 70 dB

A tribute to appreciation.

Music appreciation. Art appreciation. Appreciation for excellence in performance. A fulfillment that comes from the experience, not from the parameters by which it was created.

The Contrara Group of loudspeakers is a tribute to that appreciation. We should not deliberate how Amilio Contrara has sculpted the walnut, blended it with cloth and merged it with technology to bring visual satisfaction. Nor, how he has balanced the electronics with physics to provide audible gratification.

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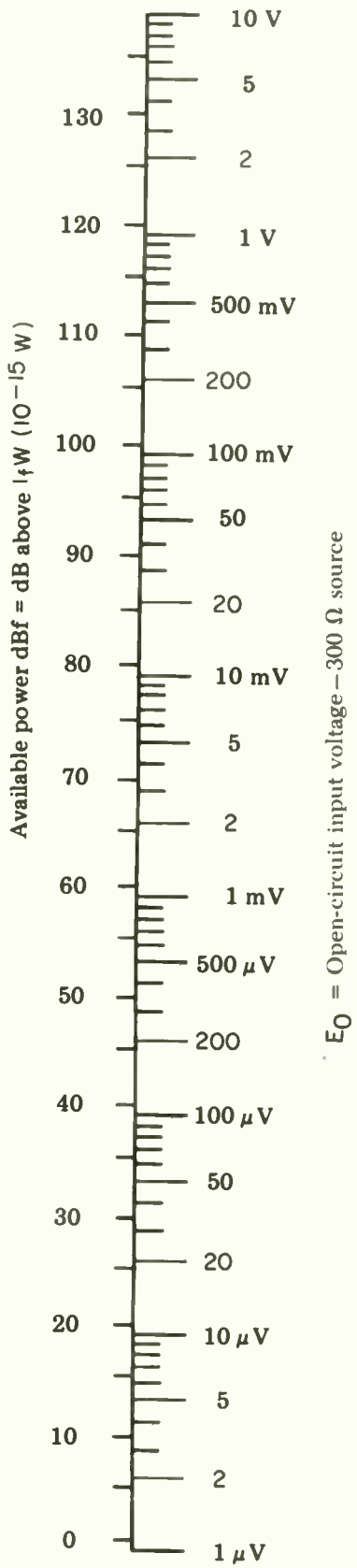
Available Power versus Equivalent Microvolts



or better S/N provided by the finest FM tuners.

Typical good-quality FM tuners, even at moderate prices, have less than 0.5% harmonic distortion in mono, and less than 0.8% in stereo and some of the best are three to five times better than this. Distortion, it would seem, should not be a serious problem in FM reception, in view of the other distortions inherent in recorded and taped programs. To a considerable extent this is true, but there are at least two exceptions that come to mind, neither of which can be easily evaluated by the prospective purchaser.

Most tuners have their lowest distortion when tuned critically to some point near, but not necessarily at, the center of the channel, and they are so tuned when distortion measurements are made. As a rule, the listener cannot expect to achieve these low distortion figures in normal home use, although some tuners are relatively non-critical in their tuning for minimum distortion. The fact that this distortion is rarely audible further emphasizes the tuner's superiority to the program source.

A major cause of FM distortion is multi-path reception, which results when a signal arrives at the receiving location from several directions, at slightly different times, due to reflections from natural or man-made objects. The best solution for multi-path distortion is to be found in a good directional antenna, but within the tuner a numerically low capture ratio and good AM rejection are helpful. A capture ratio of less than 2 or 3 dB is usually satisfactory and a few tuners measure as low as 1 dB. AM rejection may be only about 40 dB in a low-priced tuner, and as high as 70 dB in the most expensive models. As in the case of weak signal reception, a given amount of money invested in a good antenna system (if it is possible to erect one) will usually provide a greater improvement than the same amount invested in a better tuner (the combination of the two is best, of course).

Some aspects of tuner performance are best judged by simply tuning in stations, in the dealer's showroom, and observing the behavior of the tuner. Inter-station noise muting is offered on all but the lowest-priced models, but in many cases a burst of noise will be heard when tuning on or off a station. Other tuners, not necessarily the most expensive, have an ideal muting action, with the program either present or absent, and free from extraneous noises. Sometimes the muting threshold is set too high, excluding stations which would otherwise be receivable with good quality. If you do not live in a strong signal area, this could be a disadvantage.

Dial calibration accuracy and readability vary widely in tuners. If you live in a rural area and can receive only a handful of stations, this is relatively unimportant but in urban areas where 50 or more stations can be received, it may not be easy to identify a signal from its position on the dial unless the calibration is accurate. Digital tuning displays are the most accurate, but are costly.

Many tuners have outputs for connection to a discrete four-channel demodulator, should a suitable system be approved by the FCC. A few of the more expensive units also have outputs for connection to an oscilloscope for indicating multi-path distortion and as an aid to antenna orientation (some tuners even have the oscilloscope built-in). These and other features may or may not be important to you, depending on your current and anticipated needs.

While everyone is still trying to make V-FETS at any price, we now make them at a lower price.

When Sony introduced the first amplifiers with vertical field-effect transistors last year, the reactions were nothing short of incredible.

Consumers wrote in asking where they could hear the equipment. Audiophiles demanded to know where they could buy it. And our competitors wanted to know how they could make it.

In fact, the only problem was that more people couldn't afford the $1300 price.

So, we at Sony decided to do something about it. And what we've come up with is our new $400 V-FET integrated amplifier, the TA-4650. The TA-4650 is quite an advanced little piece of equipment. Because the V-FET isn't just another combination of gadgets, or a souped-up version of the same old thing. It's a completely new device that combines the good points of both bi-polar transistors and triode vacuum tubes. Without suffering the drawbacks of either. Because it's made with V-FETS, the TA-4650 gives you a new level of highly defined triode sound; along with the efficiency and stability found only in solid state devices. The TA-4650 delivers 30 watts per channel, minimum RMS at 8 ohms, 20Hz-20kHZ with no more than 0.1% total harmonic distortion.

It has a direct coupled power amplifier stage. As well as direct coupled FET amplifiers in the tone control and buffer stages.

Its bass and treble controls have a turnover frequency selector that starts at 250HZ/500HZ for bass and 2.5kHZ/5kHZ for treble.

Its volume control is equipped with a switch for 20dB muting. And it has a level control memory device so volume can be set at any predetermined point.

But as good as our new V-FET amplifier is, we're just as proud of the components we make to go along with it.

Our ST-4950 AM/FM stereo tuner, for example, has a MOS FET front end, uni-phase solid state filters and IC's in IF stages. This allows an FM capture ratio of only 1.0dB, selectivity of 80dB and an S/N ratio of 70dB. The ST-4950 also has a phase-locked loop (PLL) MPX section. Which means you get excellent stereo separation and low distortion.

Of course, if you're going around looking for a turntable, by all means take a look at our PS-4750 (cartridge sold separately).

It has a direct drive servo motor with a wow and flutter rating of only .03%.

Its base and platter are made from molded compound instead of metal, so resonance has been greatly reduced. It also has air-damped cushions, which compensate for warpness in records (again reducing resonance). The end result is a much cleaner sound.

It's no accident that Sony makes the world's first commercially available V-FET equipment. Or that we have matching components good enough to complete your system.

You see, we've got more solid state audio experience than anyone else. We've been at it for twenty years. For proof just stop by your Sony dealer. And use your ears.

*TA-8650: 80 watts per channel, min. RMS @ 8 ohms, 20Hz-20kHz, with no more than 0.1% total harmonic distortion.

SONY®

1 AMPLIFIERS & TUNERS

ACCUPHASE

P-300 Stereo Power Amplifier

150 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD (200 W/ch into 4 ohms, 75 W/ch into 16 ohms); response 20-20,000 Hz +0, −0.2 dB; 5-90,000 Hz +0, −3 dB; hum & noise 100 dB below rated output. 6" H × 17½" W × 14" D $750.00
AWC-1. Walnut case $45.00

C-200 Stereo Preamplifier

Response (high-level input) 20-20,000 Hz +0, −0.2 dB; (low-level) 20-20,000 Hz ±0.2 dB; dist. 0.5% at rated output level (20-20,000 Hz); hum & noise −74 dB at 10 mV phono input; sensitivity: phono 2-6 mV (variable); aux. 200 mV; has high- & low-cut filters; built-in headphone amplifier; tape monitor/copy facilities; mike inputs on front panel. 6" H × 17½" W × 14" D $600.00
AWC-1. Walnut case $45.00

E-202 Integrated Stereo Amplifier

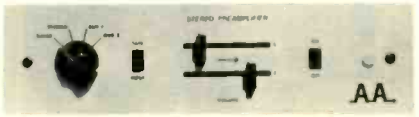
100 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD (140 W/ch into 4 ohms, 50 W/ch into

16 ohms); hum & noise: main amp. −94 dB; high level −80 dB; low level −74 dB; sensitivity: phono #1 2.5-5 mV (variable); phono imp. switch (30k, 47k, 100k ohms). 6" H × 18" W × 14" D $750.00
AWC-2. Walnut case $45.00

ACE AUDIO

Basic Stereo Preamplifier

Audio control center; high-level inputs (FM, Aux. 1 & Aux. 2): sensitivity 0.1 V for 1 V out; in-



put imp. 41,000 ohms at full-volume setting; output imp. 100 ohms; HD & IM dist. 0.05% at 2 V out (20-20,000 Hz); flat ±0.1 dB (20-20,000 Hz), ±0.5 dB (5-100,000 Hz); hum & noise 85 dB below 0.5 V input; output voltage 10 V to 15,000 ohm load; output load 15,000 ohms min.; outputs: main audio; tape out; phono input: sensitivity 2.2 mV for 1 V out; input imp. 47,000 ohms; HD 0.05% midband; equalization ±05 dB (RIAA); hum & noise 70 dB below 10 mV input; controls: volume left & right, master power, tape-monitor, selector, phono, stereo/mono; inputs: RIAA phono, FM, Aux. 1, Aux. 2, tape monitor. $122.50
Kit version $74.95

"Zero-Distortion" Preamplifier

Similar to Basic Stereo Preamp; designed as building block for use with multi-band frequency balancers, electronic crossovers, and 4-channel sound systems; has no high-level amplifiers; no tone controls; phono input: 10 mV for 1-V out; input imp. 47,000 ohms; HD 0.05% midband at 5 V output level; hum & noise 76 dB below 10 mV input; RIAA phono curve ±0.5 dB; overload 110 mV input; high-level inputs (FM, Aux. 1 & Aux. 2): sensitivity 1V for 1V output; hum & noise 86 dB below 1 V input; input imp. 50,000 ohms (no output load), 25,000 ohms (50,000 ohm output load); output load 50,000 ohms min.; output imp. 0 to 12,500 ohms (varies with volume-control setting) HD & IM dist. 0; low-freq. response flat to dc; high-freq. response −3 dB at 67,000 Hz at −6 dB setting (worst case); recommended use with amps 35 watts or more and efficient speakers; aluminum chassis; clear anodized front panel; oiled cherry end caps $99.95
Kit (with conversion sheet) $74.95

AUDIONICS

Point Zero Three Amplifier

Medium-power amplifier providing 100 W/ch at 8 ohms; 150 W/ch at 4 ohms. THD 0.03% at 100 W from 20-15,000 Hz at 4 or 8 ohms; response 5-70,000 Hz −3 dB; S/N −95 dB below rated output. Direct-coupled complementary symmetry output $399.00

Point Zero Three C Amplifier

Moderate-power amplifier providing 70 W/ch at 8 ohms; THD 0.03% at 70 W from 20-20,000 Hz; response 5-70,000 Hz −3 dB at 1W; S/N −95 dB below rated output; direct-coupled complementary symmetry output $295.00

AUDIO RESEARCH

SP-3A-1 Stereo Preamplifier

Vacuum-tube unit; response 10-30,000 Hz ±1 dB; THD 0.005% at 5 V rms output; IM

0.008% at rated output; S/N 66 dB (phono) at 10 mV input; has full complement of inputs & outputs; controls. 15⅝" × 5½" H × 12½" D. $695.00

CA-1 Stereo Preamplifier

Response 10-30,000 Hz ±1 dB; THD 0.001% at 10 V rms output; IM 0.001% at rated output; S/N 110 dB (phono) at 10 mV input; pre-amplifier for phono cartridges. 8" W × 3" H × 6" D $395.00

D150 Basic Power Amplifier

150 W rms/ch into 8 ohms (20-15,000 Hz) at 0.5% THD; IM dist. 0.3% at rated power; vacuum-tube unit; imp. 4, 8, or 16 ohms. 19" (rack mount) × 10½" W × 16½" D... $1995.00
D76A. Similar to D150 except 75 W/ch at 1.0

THD; IM dist. 0.5% at rated power. 19" (rack mount) × 7" × 12¼" D. $1195.00
D52. Similar to D76A but 50 W/ch. 16" × 10" × 8" $595.00

BGW

1000 Stereo Power Amplifier

250 W/ch continuous power into 8 ohms with both channels driven (500 W/ch into 4 ohms, 750 W/ch into 2 ohms); response 2-75,000 Hz +0, −3 dB; 20-20,000 Hz +0, −0.2 dB; hum & noise 110 dB below rated output into 8 ohms; input sensitivity 2 V for 40 V output (200 W, 8 ohms); damping factor 500; THD 0.2% at 250 W/ch. Features crowbar circuitry for surge protection; forced-air cooling; IC op-amp front-end; plug-in module construction. 19" standard rack panel with cast aluminum handles × 7" H × 17" D $1399.00

500D Stereo Power Amplifier

200 W/ch continuous sine-wave average power into 8 ohms with both channels driven over power band from 25-15,000 Hz at 0.2% THD; response 1-65,000 Hz +0, −3 dB; 20-20,000 Hz +0, −0.25 dB; hum & noise 110 dB below rated output into 8 ohms; input sensitivity 2 V for 40 V out; damping factor 1000 at low fre-

PLEASE NOTE.....
In the interests of conserving space, all power output specifications have been abbreviated in these Directory sections. For example: "30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD" should be read as: "30 watts minimum rms per channel into 8 ohms with less than 0.3% total harmonic distortion from 20 Hz to 20,000 Hz," in conformance with current Federal Trade Commission rules.

1 Amplifiers

quencies into 8 ohms. Features electronic crowbar circuitry; IC op-amp front-end; forced-air cooling system; plug-in module construction. 19" standard rack panel × 7" H × 12" D. $799.00

250B Stereo Power Amplifier

90 W/ch continuous sine-wave average power into 8 ohms with both channels driven over power band from 20-20,000 Hz at 0.1% THD; 100 W/ch into 4 ohms 20-20,000 Hz at 0.15%. Features front-panel mounted rocker-style circuit breaker; LED pilot lamp; mono/stereo bridging switch; response 2-65,000 Hz +0, −3 dB; 20-20,000 Hz +0, −0.25 dB; hum & noise 110 dB below rated output; input sensitivity 1.5 V for 30 V out; damping factor 500 at 500 Hz or less. 19" rack panel × 5¼" H × 11¾" D $489.00

750A Stereo Power Amplifier

200 W/ch minimum sine-wave continuous average output with both channels driving 8-ohm loads over a power band from 5-15,000 Hz at a THD of 0.2%; 300 W/ch driving 4-ohm loads over a power band from 5-10,000 Hz; response 1-65,000 Hz +0, −3 dB; 20-20,000 Hz +0, −0.25 dB; noise & hum 110 dB below rated output into 8 ohms; input sensitivity 2V for 40 V output; damping factor 1000 at low frequencies into 8 ohms. Features electronic crowbar circuitry; forced-air cooling system; IC op-amp front-end; plug-in circuit modules; 19" rack panel × 7" H × 12" D $949.00

202 Stereo Preamplifier

Features advanced phono preamp; high-output line amplifier; dual-tracking voltage-regulated power supply circuitry; active 18 dB/octave high- and low-pass filters; high/low gain switch for optimizing S/N; front-panel tape copy jacks; headphone jack; provisions for remote moving-coil pre-preamplifier; remote a.c. power switching control center. Has active bass & treble tone-control circuitry; frequency response 20-20,000 Hz ±0.1 dB from high-level inputs; gain: phono to tape output 42 dB at 1 kHz; high-level input to line output −22 dB (high), −10 dB (low); THD 0.01% at rated output 20-20,000 Hz; IM 0.01% at rated output or less within any combination of frequencies..... $469.00

BOSE

1801 Dual-Channel Power Amplifier

Will deliver 250 W/ch average power into an 8 ohm load (20-20,000 Hz) at 0.5% THD. Response 20-20,000 Hz ±1.0 dB. LED indicators display power output; two VU meters. Has indicators which incorporates the a.c. on/off switch and controls desired combination of VU meters and LED monitors; separate controls for each channel to provide a gain range of 0 to 30; input

selector permits choice of two inputs and can also be used to switch between equalized and unequalized sources; main/remote speaker switching. Input sensitivity 1.5 V for 250 W output into 8 ohms. 7 3/16" H × 18" W × 18½" D including knobs. Brushed aluminum control panel; black out display panel; black anodized heat sink and case. $986.00

BOZAK

929 Audio Power Amplifier

150 W/ch continuous sine-wave into 8 ohms (20-20,000 Hz) at 0.2% THD; response at full output power 20-20,000 Hz +0 dB, −0.2 dB; THD at 1000 Hz 0.1%; response 3-100,000 Hz +0 dB, −3 dB (at 1 W); damping factor 100 at 20 & 1000 Hz; S/N (unweighted) 100 dB; input imp. 35,000 to 100,000 ohms (100k pot); two power meters; matte black front panel; walnut veneer enclosure optional extra. 7" H × 17¾" W × 12" D $849.00

929-PV. Same except without the meters. $749.00

919 Mixer/Preamplifier

Designed to be used with the 929 power amplifier; features bass, treble, and mid-range equalization; high & low filters; bass turnovers at 200 & 400 Hz; treble turnovers at 2000 & 4000 Hz; three simultaneous inputs with individual level controls (phono, mike, choice of tape, tuner, or aux.); separate bass, mid-range, and treble controls for each channel; cue selector for monitoring each input separately; mode selector for stereo, reverse stereo, stereo blend, or stereo plus; response (RIAA phono equalization) 30-15,000 Hz ±0.5 dB; has full complement of inputs, outputs, and operating controls; matte black panel; walnut veneer enclosure optional extra. 7" H × 17¾" W × 10⅝" D. $797.00

BURWEN

SP5200 Stereo Preamplifier

Features 33 signal input and output jacks; monitor source; record; tape 1; tape 2; aux.;

permits tape copying without feedback; 115 dB dynamic range at 0 dB gain; frequency response 20-20,000 Hz ±0.1 dB max.; THD 0.05% max. 20-10,000 Hz; phono noise 90 dB below 10 mV input with conventional phono cartridge; metal case with solid walnut side panels. 14½" W × 4⅝" H × 10 13/16" D.. $489.95

CERWIN-VEGA

A-3000 Stereo Power Amplifier

365 W rms/ch into 8 ohms with both channels driven 5-60,000 Hz +0, −1 dB; power bandwidth 5-20,000 Hz; THD 0.08% max., typically 0.01%; damping factor 500 at 1000 Hz; hum & noise 100 dB below full power; features IC front end, "Tri-Tangential" protection circuits; dual VU meters; switchable subsonic filter; plug-in drive circuitry; brushed aluminum finish with blackout display panel. 19" W (rack mount) × 8" H × 11½" D. $1099.95

A-1800 Stereo Power Amplifier

225 W rms/ch into 8 ohms with both channels driven (350 W/ch into 4 ohms); all other specs identical to A-3000 except has no VU meters. $599.95

C/M LABORATORIES

CC3 Preamplifier

Response 5-20,000 Hz ±0.1 dB; THD 0.05% (20-20,000 Hz); IM dist. 0.02% (SMPTE) at

rated output; hum & noise 80 dB below 10 mV input (phono), 100 dB below full output (high level); over-all gain 62 dB, rated output 2 V, clipping output 13 V, purely resistive phono inputs; input and mode selectors; defeatable tone controls; balance control; volume & loudness controls; two tape monitor switches; two a.c. convenience outlets (one switched). 12½" W × 4" H × 9" D. $450.00
Optional wood cabinet $50.00

CM912 Power Amplifier

150 W rms/ch into 8 ohms (20-20,000 Hz); 225 W rms/ch into 4 ohms with both channels driven at 0.2% THD; response 20-20,000 Hz ±0.1 dB; IM dist. 0.1%; rise time 2.5 μsec; slew rate 40 V/ μsec; recovery from clipping 250 nanoseconds; built-in connection for feedback speakers. 5¼" H × 19" (relay rack) × 14" D. $900.00
Optional wood cabinet $50.00

CROWN INTERNATIONAL

D-60 Power Amplifier

28 W/ch minimum rms (both channels operating) into 8 ohms load (20-20,000 Hz) at

rated harmonic dist. of 0.05%; response 20-20,000 Hz ±0.1 dB at 1 W; IM 0.05% at rated output; sensitivity: 0.75 V ±2% at rated output with front-panel adjustments; stereo headphone output. 1¾" H × 17" W × 8¾" D. $269.00

D-150A Power Amplifier

80 W/ch minimum rms (both channels operating) into 8 ohms load (1-20,000 Hz) at

rated HD 0.05%; response d.c. −20,000 Hz ±0.1 dB at 1 W; IM 0.05% at rated output; sensitivity 1.19 V at ±2% at rated output with front-panel adjustment. 5¼" H × 17" W × 8¾" D. $479.00
5R cabinet ..... $ 45.00

DC-300A Power Amplifier

155 W/ch minimum rms (both channels operating) into 8 ohm load (1-20,000 Hz) at rated HD .05%; response d.c.−20,000 Hz ±0.1 dB at 1 W; IM 0.05% at rated output; sensitivity:

LUX offers three good reasons for the growing movement toward separate amplifiers and tuners.

Possibly the highest acclaim a receiver can be awarded is to have one or more of its elements compared favorably with its equivalent in a separate tuner, preamplifier, or power amplifier. Nevertheless, for most music lovers, a good receiver more than fulfills their requirements. But for a growing number of dedicated audiophiles, who are seeking the ultimate in music reproduction, nothing but separates will do.

They know what kind of power it takes to reproduce music's original wide dynamic range and high levels without peak clipping or distortion. (A barely detectable 3-dB increase in output level requires double the amplifier power.) A very powerful amplifier must have massive power-supply components to be able to deliver the large amounts of current demanded by high-level output circuits. The size and weight of the power transformers alone means receivers must leave off well below where really high power begins.

For those who want to hear their music at realistic sound levels, LUX audiophile/engineers have designed products such as the M-4000 power amplifier. This unit is capable of 180 watts per channel, and even with both channels driven simultaneously to full output into 8-ohm loads, each channel has no more than 0.05% harmonic and inter-modulation distortion at any frequency from 20 to 20,000 Hz.

Sophisticated protection circuits react to the electronically-subtle differences between normal high-level audio signals and abnormal voltage/current conditions. Hence, the M-4000 won't be fooled into producing unpredictable and audible distortions when operating with certain reactive loudspeaker loads. Each of the stages—Class-B output and Class-A drive—has independent power-supply sections to minimize intermodulation effects. And fully independent power-supplies for each channel maintain full wattage potential under large-signal drive conditions.

Similar considerations went into the design of the C-1000 preamplifier. Every parameter that contributes to sonic differences, subtle as well as obvious, was examined anew. Among them: phase linearity, rise time and small-signal overload. One result: the magnetic-phono input circuits are virtually overload-proof—accepting almost half a volt at 1000 Hz! Another: the phono-preamplifier circuits have astonishingly low distortion of 0.006%, and the rest of the preamplifier circuits add only 0.001% more.

The Luxman T-310 AM/FM stereo tuner has everything from calibrated Dolby circuits for decoding Dolbyized FM broadcast and tapes to variable AM muting. Among its typical specifications: an IHF-ratio sensitivity of 1.7 microvolts and an exceptional 2.2 microvolts for 50 dB of quieting. And special five-pole phase-compensating filters in the IF section contribute to a 1.5-dB capture ratio and exceptionally low distortion levels (0.1% mono, 0.12% in stereo).

Of course, it takes some technical knowledge to fully appreciate the design approaches described above. But only your ears are required to hear the end result. In either case, you may soon be among those who own one or more of the thirteen LUX power amplifiers, preamplifiers, integrated amplifiers or tuners. You'll find them at a select number of dealers who are dedicated audiophiles themselves.

Luxman C-1000 Preamplifier, $895.

Luxman M-4000 Power Amplifier, $1,495.

Luxman T-310 AM/FM Tuner, $595.

Dolby is a trademark of Dolby Laboratories, Inc.

LUX Audio of America, Ltd.

200 Aerial Way, Syosset, New York 11791

In Canada: AMX Sound Corp. Ltd., British Columbia, Gentronic Ltd., Quebec

1 Amplifiers

1.71 V ±2% at rated output. 7" H × 19" W × 9¾" D. $799.00
7R cabinet $55.00

IC-150 Preamplifier

IM 0.01% at 2.5 V output; hum & noise −80 dB at phono input. Has high-cut & low-cut filters;

loudness compensation switch; ganged tone controls; and two tape-monitoring facilities. 5¼" H × 17" W × 8½" D $299.00
Walnut cabinet $33.00

DCE

Dreadnaught 1000 Power Amp

250 W continuous power/ch into 8 ohms with both channels driven from 20-20,000 Hz at

0.25% distortion; 500 W/ch into 4 ohms; input sensitivity 1.75 V rms for full output; input imp. 100,000 ohms; hum & noise 100 dB below full output; features complementary symmetry direct-coupled output with ten 20 A power transistors per channel. Controls: power "on-off" switch, individual channel level controls, 3-pos. meter-range switching. Features professional VU meters; 2-speed cooling fan. 19" W × 7" H × 15" D. Uncased rack mount.. $1199.00
Genuine walnut veneer case..... $80.00

Dreadnaught 500 Power Amp

Same as Model 1000 except 150 W/ch into 8 ohms; 300 W/ch into 4 ohms; input sensitivity 1.2 V rms for full output. 19" W × 7" H × 12" D.
Uncased rack mount $799.00
Genuine walnut-veneer case..... $60.00

Model 10 Preamplifier

Response 5-200,000 Hz ±3 dB; THD & IM 0.05% max.; hum & noise −90 dB; phono sensitivity 1 mV; phono headroom below overload 180 mV; output voltage 4 V. 19" W × 3½" H × 12" D. $599.00
Genuine walnut-veneer cabinet $40.00

Model 20 Preamplifier

Same as Model 10 except has switchable active filters for customized contouring of high- and low-frequency signals; low-noise FET phono section; self-contained 15 W headphone amplifier; special preamp for moving-coil cartridges. 19" W × 7" H × 12" D..... $1199.00
Genuine walnut-veneer cabinet..... $80.00

DYNACO

SCA-80Q Stereo Amplifier

Combines a two-channel amplifier (Model 80) with Quadaptor decoding circuitry for recover-

ing 4-ch information from 2 channels. Preamp has most features of the company's PAT-4. 30 W/ch continuous sine wave into 8 ohms from 20-20,000 Hz at 0.5% HD with both channels driven. Sensitivity: phono 3 mV; aux. 0.13 V. 13½" × 10" × 4¼" ..... Kit $185.00
Assembled $299.00

Stereo 400 Power Amplifier

200 W/ch continuous power at 8 ohms from 20-20,000 Hz at 0.25% THD & 0.1% IM with both

channels driven with FTC preconditioning. Response 8-50,000 Hz +0, −1 dB at 1 W into 8 ohms. S/N −100 dB. Sensitivity 1.6 V. Features the "Dynaguard" power limiting capability to protect speakers. Has over 1000 sq. in of heat-sink radiating area. Includes input level controls, high- and low-filters, fuses on front panel, relay-operated d.c. protection circuit. 17" × 14" D × 7" H..... Kit $499.00
Assembled..... $669.00
Assembled with meters (ST-400M)... $769.00
MC-4. Output meter accessory kit..... $85.00
FAN-1. Cooling fan kit..... $30.00
PBK-400. Rack-mount brackets..... $14.95

Stereo 410 Power Amplifier

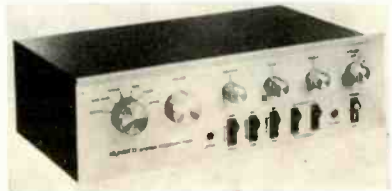
200 W/ch continuous power into 8 ohms (20-20,000 Hz) with 0.25% THD both channels driven, with FTC pre-conditioning; amplifier circuitry similar to ST-400 but with simpler heatsink design and built-in cooling fan; provision for adding level controls; rack-mount brackets available. 17" × 15" × 8" D. Kit $399.00

PAS-3X Preamplifier

Vacuum-tube preamp with loudness compensation, independent tone controls, a stereo blend control, and tape monitoring facilities. 4¼" H × 13½" W × 9" D ..... Kit $129.00

PAT-4 Preamplifier

Response 5-100,000 Hz ±0.5 dB. THD & IM 0.05% at 2 V output. Hum & noise −70 dB at phono input. Has 3-step high-cut filter, and low-cut filter, loudness compensation, indepen-



dent tone controls, front panel input & output. 600 ohm output. 4¼" H × 13½" W × 9" D. ..... Kit $119.00
Assembled $199.00

PAT-5 Stereo Preamplifier

Response 10-50,000 Hz ±1 dB (high level inputs); 30-15,000 Hz ±1 dB (low-level inputs);

THD 0.05% (0.01% typical) 20-20,000 Hz; IM 0.05% (0.005% typical) with any combination of test frequencies; hum & noise: mag. phono 70 dB below 10 mV input at 1000 Hz, high level 85 dB below 0.5 V input; low filter −12 dB at 15 Hz 6 dB/octave, high filter −10 dB at 10,000 Hz 15 dB/octave; separation at 2 V output into 10,000 ohms, undriven input terminated at 5000 ohms: 20 & 2000 Hz 70 dB, 20,000 Hz 45 dB minimum. Features two RIAA equalized magnetic phono inputs, two tape inputs, tuner, spare, external processor loop, amplifier connections; outputs: two tape ahead of controls, EPL output before volume/balance controls, two audio outputs, front panel headphone, speaker connections. Has full complement of controls. 13¼" W × 4¼" H × 11¾" D..... Kit $199.00
PAT-5/A. Assembled $325.00

Mark III Power Amplifier

Vacuum-tube mono power amplifier. 50 W continuous power into 4, 8, or 16 ohms from 50-10,000 Hz at less than 1% THD, with FTC preconditioning. Response 6-60,000 Hz ±0.5 dB (1 W output). IM 0.5% at rated output. Sensitivity: 1.6 V for rated output. 6¾" H × 9" W × 9" D. ..... Kit $139.00
Assembled $179.00
With additional 70.7 V-output .... Kit $149.00
With 125- or 500-ohm output only. Kit $159.00

Stereo 150 Power Amplifier

75 W/ch continuous power into 8 ohms (20-20,000 Hz) with 0.25% THD both channels driven, with FTC pre-conditioning. IM less than 0.25%. Circuitry d.c.-coupled after input; fully complementary output stage. MC-2 output meter accessory kit available. Supplied with walnut veneer end panels. 14½" × 13¾" × 6⅝" D.
Kit $225.00
Assembled $325.00

Stereo 120 Power Amplifier

60 W/ch continuous power output at 8 ohms (25-15,000 Hz) at 0.5% THD both channels

driven with FTC pre-conditioning. IM 0.5% at rated output. Hum & noise −95 dB at rated output. Sensitivity: 1.5 V for rated output. 4¼" H × 13½" W × 10½" D ..... Kit $189.00
Assembled $269.00

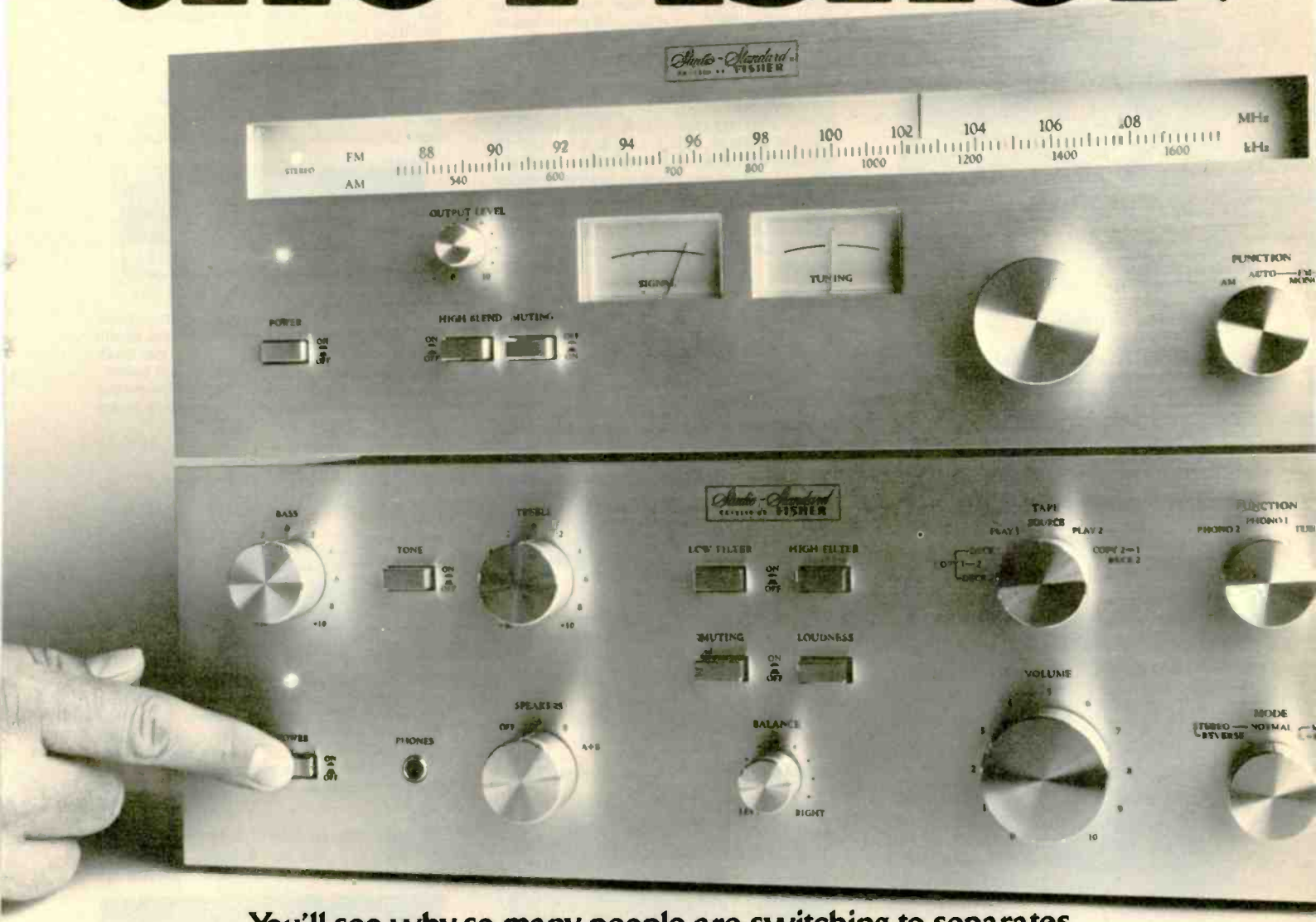
Stereo 70 Power Amplifier

Vacuum-tube stereo amplifier. 20 W/ch continuous power output at 4, 8, or 16 ohms (50-10,000 Hz) at 1% THD with both channels driven, with FTC pre-conditioning. Response (1 W output) 15-40,000 Hz ±0.5 dB. IM & THD 1% at rated output. Sensitivity: 1.3 V for rated output. 6½" H × 13" W × 19½" D.. Kit $149.00

Stereo 80 Power Amplifier

30 W/ch output at 8 ohms (20-20,000 Hz) with 0.5% THD both channels driven, with FTC pre-conditioning. IM 0.1% at rated output. Sensitivity: 1.3 V for rated output. 4¼" H × 13½" W × 9" D. ..... Kit $139.00

Turn on the Fisher.



You'll see why so many people are switching to separates.

Admit it – you've been looking for an excuse to upgrade your perfectly-OK-but-slightly-ho-hum sound system. Look no further.

The new FM-2300 tuner has the specs and the features to match units selling for much more. IHF sensitivity is conservatively rated at 1.9uV, S/N ratio is a super-clean 70 dB, and selectivity an impressive 70 dB. There are dual tuning meters, a hi-blend switch, oscilloscope connections, fixed and variable outputs, and inputs for both 75 and 300 ohm antennas.

The perfect match is the CA-2300 integrated amplifier. Power is 35 watts RMS per channel from 20 to 20kHz, with no more than 0.15% harmonic distortion into 8 ohm loads. It has precision stepped bass, treble, and volume controls; mike input, and an elaborate tape circuit that provides inputs for two decks plus dubbing in both directions.

The FM-2300 and the CA-2300. Together, one great excuse to move up to separates. Separately, two beautiful reasons to turn on the Fisher.

The tuner has a suggested retail price of $249.95. The integrated amp of $279.95.

Fisher, 11-40 45th Road, Long Island City, N.Y. 11101

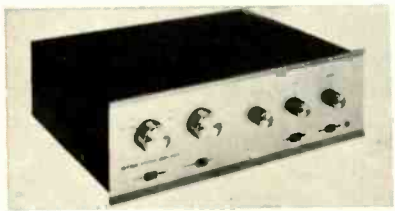
CIRCLE NO. 19 ON READER SERVICE CARD

1 Amplifiers

Assembled $199.00

SCA-35 Integrated Amplifier

Vacuum-tube stereo unit. Sensitivity: mag. phono 4.0 mV; tape head 2.5 mV; Has high-cut



filter, loudness compensation, and ganged tone controls. 4" H × 13" W × 10" D. 7 W rm/ch
Kit $139.00
All power and integrated amplifiers were measured with a continuous sine wave and on stereo designs both channels were driven.

EPICURE

Model One Power Amplifier

125 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz) at 0.2% THD; power bandwidth 10-52,000 Hz at 0.2% THD; frequency response 20-20,000 Hz +0, −1 dB; 10-100,000 Hz ±0.5 dB; 10-180,000 Hz +0, −3 dB; S/N 100 dB; features voltage, current, and thermal overload indicators; built-in multiple speaker selector; speaker and a.c. fusing; automatic thermal shut-off switch; input level sets for max. S/N performance; scope output for visual monitoring. 18½" W × 12½" D × 7½" H (19" rack mount kit available).. $649.00

ESS

Eclipse 500 Power Amplifier

250 W/ch continuous power with both channels driven into an 8-ohm load at 0.25% THD from ¼ W to full rated power; response 20-20,000 Hz ±0.25 dB (1 W to 250 W); hum & noise −120

dB below rated output (20-kHz bandwidth); input imp. 25,000 ohms nominal; features blackout front-panel with two 4½" meters; pushbutton meter-range selectors; A-B speaker selector switches; remote ac power control permits turn-on by a tuner or preamp without surge..... $795.00

FISHER

CA2400 Integrated Stereo Amplifier

60 W rms/ch into 8 ohms (20-20,000 Hz) at 0.15% THD; IM dist. 0.1%; switchable amplifier/preamp separation; direct-coupled complementary push-pull main amp stages; features switchable hi/lo filters; switchable FM muting; loudness contour control; clickstop volume, bass & treble controls (2-dB steps); dual phono & tape inputs; 5-position mode selector (normal, stereo reverse, L + R, L, R); 5-position program selector; front-mounted headphone jack..... $399.95

CA4500 Stereo Preamplifier

Features separate stepped (2-dB steps) volume, bass & treble controls; tone defeat switch;

turnover frequency selectors; stepped loudness contour; switchable audio muting; triple tape inputs with 4-pos. tape monitor & tape duplicating switch; dual aux. and phono inputs; switchable hi/lo filters; 8 convenience outlets; THD 0.02%; IM dist. 0.1%..... $699.95

BA-4500 Stereo Power Amplifier

150 W rms/ch into 8 ohms (20-20,000 Hz) at 0.15% THD; IM dist. 0.15%; input sensitivity 1.2 V (8 ohms at 1 kHz); hum & noise 100 dB; features clickstop input level control; dual LED clipping indicators; speaker system selector; illuminated VU meters with 4-pos. meter attenuation; 4-pos. power limiter; switchable subsonic filter; complementary push-pull output circuits; fast-acting overload protection circuits..... $899.95

HARMAN/KARDON

Citation 11 Stereo Preamp

Response 1-250,000 Hz ±0.5 dB. HD & IM less than 0.01%. Has high-cut & low-cut filters,

loudness compensation, equalizer tone controls, multiple speaker switching, and headphone output $395.00

Citation 12 Stereo Power Amp

60 W rms into 8 ohms (20-20,000 Hz) at 0.2% THD; response 5-75,000 Hz ±0.5 dB. HD & IM less than 0.8% at rated output; hum and noise −100 dB at rated output $295.00
Citation 12 Deluxe. Same as Citation 12 but

housed in deluxe enclosure $340.00

Citation 16 Power Amplifier

150 W rms/ch into 8 ohms (20-20,000 Hz) at 0.05% THD; frequency response 5-130,000 Hz at 0.2% THD into 8 ohms with both channels driven at 1 W/ch; IM 0.02% at 0.015 W to 150 W; hum & noise 100 dB below 150 W; input imp. 10,000 ohms; one RCA-type input terminal/ch; outputs: instrument-type binding posts. 9¼" H × 19" W × 14" D complete with metal cage .....
..... $795.00

A-401 Integrated Stereo Amplifier

20 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 10-80,000 Hz at 0.5% THD (8 ohms) with both channels driven at 1 W/ch; IM 0.12% at rated output; hum & noise 74 dB below rated output (unweighted); damping factor 30; features tape monitor facilities; multi-speaker operation; connections for two pairs of stereo phones. 13" W × 5¼" H × 10¾" D..... $185.00

HEATH

AA-29 Integrated Stereo Amplifier

35 W/ch min. rms into 8 ohms at 0.25% THD from 20-20,000 Hz; response 7-60,000 Hz −1 dB at 1 W. HD 0.2% and IM 0.2% at 35 W; hum & noise −65 dB at phono input. Sensitivity: mag. phono 2.2 mV, aux. 180 mV, tape 180 mV. Has loudness compensation switch, multiple speaker switching, center-channel speaker output, headphone output, and tape monitoring facilities. Damping factor 50.
Kit $184.95
Walnut-stained veneer case $21.95

AA-15 Integrated Stereo Amplifier

50 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz; response 8-40,000 Hz

±1 dB at 1 W. IM 0.5% at 50 W; hum & noise −60 dB at phono input. Sensitivity: mag. phono 2.2 mV, aux. 200 mV, tape 200 mV. Has loudness compensation switch, stereo null balancing, multiple speaker switch, headphone output and tape monitoring facilities. Damping factor 45. 4¾" H × 16⅞" W × 12½" D.
Kit $199.95

AA-1214 Stereo Amplifier

15 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz; inputs for phono, tape,

tuner & aux.; tape monitor jack; headphone jack; level control for phono input. Push-button program source selection, mono or stereo mode, "on-off" control of speaker systems and power; master controls actuate bass, treble, balance, and volume; includes walnut-stained veneer end panels. 3⅞" H × 12¾" W × 12" D.
Kit $109.95

AA-1640 Stereo Power Amplifier

200 W/ch min. rms into 8 ohms at 0.1% THD from 20-20,000 Hz; response 7-50,000 Hz

−1 dB; 5-100,000 Hz −3 dB; IM dist. 0.1%; input sensitivity: 1.5 V for full output; features turn-on delay, relay and fuses to protect speakers; optional peak-reading meters display output in dB and watts into 8 ohms. 19" W × 7¼" H × 18" D..... (kit) $439.95
Optional meters (kit) $69.95

IAD

B3C Preamplifier

Frequency response 5-50,000 Hz ±0.25 dB; gain: main 24 dB; phono 1, 56 or 64 dB (selectable); phono 2, 76 or 84 dB (selectable); rated output level 6 V rms into 10,000 ohms; max. output level 26 V rms into high imp.; THD & IM 0.005% at rated output (20-20,000 Hz); hum & noise: main 90 dB re 400 mV; phono 1, 90 dB re 10 mV; phono 2, 72 dB re 1 mV; volume expansion 0 dB to 20 dB max.; features 4-section rumble filter, 3-section scratch filter; 10 dB boost or attenuation; LED indicators; very-high-gain phono 2 for direct connection of low-output moving-coil cartridges. 7¼" H × 16" W × 10" D. $950.00

B3D-20 Power Amplifier

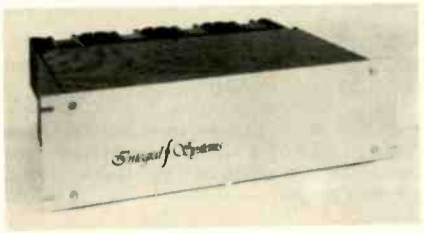
20 W rms into 8 ohms, 35 W rms into 4 ohms, 12 W rms into 16 ohms (all with both channels operating); frequency response 5-50,000 Hz ±0.25 dB at 1 W; power bandwidth 10-50,000 Hz (–3 dB points); THD & IM 0.01% at rated output; hum & noise –90 dB re 20 W; phase shift 1 degree, 20-20,000 Hz; input imp. 100,000 ohms; features 8 LED power-level indicators. 7¼" H × 16" W × 12" D. . . . $700.00

B3D-75. Same specs as B3D-20 except 70 W rms into 8 ohms (both channels operating). $1000.00

INTEGRAL SYSTEMS

200 Stereo Power Amplifier

100 W/ch rms into 8 ohms from 20-20,000 Hz. Response 10-20,000 Hz ±1 dB at 1 W output;



power bandwidth 20-25,000 Hz full power, 5-60,000 Hz half power. HD 0.2% 20-20,000 Hz; IM dist. 0.2% any combination of frequencies between 20-20,000 Hz. Anodized chassis and 19-in rack-mount gold anodized front panel. 19" × 12⅞" × 5¼". $350.00

10 Stereo Preamplifier

Designed to process a wide variety of audio signals. Control facilities include pushbutton input selection, adjustable phono sensitivity, dual tape monitors, speaker switching, steep-sloped high & low filters, and loudness contour

as well as tone, balance, and volume adjustments. On-off status is indicated by a low-voltage LED. Bandwidth 20-100,000 Hz ±0.25 dB; input impedance 250,000 ohms nominal. IM dist. 0.05% at 1 V rms; max. output voltage before clipping 4.0 V rms. Inputs: high level 0.2 V/V output; phono (1 kHz) 4 mV/140 mV rms, 1 mV/35 mV rms; Comes with anodized chassis and 19-inch front panel. $300.00

JVC

VN-900 Integrated Amplifier

50 W rms/ch into 8 ohms with both channels driven & at 0.05% THD. Power bandwidth 20-

20,000 Hz. Input sensitivity: mag. phono 2.5 mV; aux. & tape 200 mV. (S + N)/N –86 dB (aux.). Has 7-section tone control centering on 40, 150, 400, 1000, 2400, 6000, and 15,000 Hz. 5⅜" × 16⅜" × 12½" D. $399.95

KENWOOD

700-M Power Amplifier

170 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; S/N 120 dB (IHF); input sensitivity/ impedance 1 V/50,000 ohms; damping factor 40 at 8 ohms; impedance 4-16 ohms; response 20-20,000 Hz +0, –0.4 dB; subsonic filter 12 dB/octave at 18 Hz. Features direct-coupled amplifier with output stage powered by dual positive/negative supply; three Darlington amplifier stages/ch; relay-activated protection circuit; two VU meters with meter range buttons for 0 dB, –10 dB, –20 dB, plus "off;" separate left and right input-level controls; dual A-B input selector switch; 5-way speaker selector. 17⁹/₁₆" × 7⅞" × 14¹³/₁₆" $749.95

700-C Preamp/Control

Designed to be used with the 700-M power amplifier; provides control flexibility with precise, resettable volume and tone controls calibrated in 2-dB increments; selectable crossover frequencies of 200 & 400 Hz for bass, 3000 & 6000 Hz for treble, "off" position re-

1 Amplifiers

moves tone controls from circuit for flat response 20-20,000 Hz; two-step audio muting; two-step loudness control circuit; selectable low- and high-frequency filtering; selectable phono cartridge input impedance settings; "Tape-Through" circuit for playing any program source without interrupting dubbing through unit's dual tape system; has full complement of inputs, outputs, controls, and switches. 17¼" × 5¾" W × 11⅞" D . . . $649.95

KA-8006 Stereo Amplifier
70 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; damping factor 30 at 8 ohms; direct-coupled complementary symmetry output circuitry with dual positive/negative power supply; "Tape-Through" circuit; step-type controls calibrated in 2-dB increments; two low- and one high-frequency filters; muting switch; 4-channel in/out terminals for addition of 4-ch decoder/amplifier. 17⅛" W × 6³/₁₆" H × 12" D $439.95

KA-6006 Stereo Amplifier
48 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; damping factor 30 at 8 ohms; direct-coupled complementary symmetry output circuit with dual positive/negative power supply; "Tape-Through" circuit; step-type tone controls: muting switch; 4-channel in/out terminals for addition of 4-ch decoder/amplifier. 17⅛" × 6³/₁₆" H × 12" D $359.95

KA-4006 Stereo Amplifier
32 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; direct-coupled complementary symmetry output circuitry with dual positive/negative power supply bass/treble/defeat switches; 4-channel in/out terminals for addition of 4-channel adapter or demodulator; high- and low filters; muting switch. 17⅛" W × 6³/₁₆" H × 12" D. $259.95

LAFAYETTE

LA-475 Integrated Stereo Amplifier
10 W rms/ch with both channels driven at 8 ohms (40-20,000 Hz) at 0.8% THD; hum & noise: aux. & tuner −75 dB, ceramic phono −55 dB, magnetic phono −60 dB; features bass, treble, left-right balance controls plus master volume control; stereo/mono, high filter, and loudness pushbuttons; speaker selector; front-panel stereo headphone jack; inputs and outputs for adding stereo tape deck; walnut-finished wood end panels, brushed aluminum front panel. 12¼" × 4⁷/₁₆" × 10¼" D $99.95

LA-1050 Integrated Stereo Amplifier
22 W rms/ch with both channels driven at 8 ohms (20-20,000 Hz) at 0.5% THD; hum & noise: tuner, aux. 1, aux. 2 −75 dB; phono −65 dB; features concentric bass & treble tone controls; master left/right balance & volume; inputs for phono, tuner, two aux. sources; switched and unswitched a.c. outlets on rear panel; front-panel tape output, stereo headphone jack; walnut-finished wood end panels, brushed aluminum front panel. 13" × 3⅞" × 9⁷/₃₂" D $149.95

LECSON

AC-1 Preamplifier
Response 30-20,000 Hz ±0.5 dB; tone controls ±14 dB at 100 & 10,000 Hz; crosstalk 60 dB; record/replay 60 dB; THD 0.05% at 1000 Hz; hum −70 dB (CCIR); high- and low-frequency filters; outputs for power amp & tape recorder; inputs phono #1, #2, Aux. #1, #2, tuner; remote-control facility for remote input selection & volume control; tape monitor available on Aux. #2 . . . . . $565.00

AP-1 Power Amplifier
35 W rms/ch both channels driven into 8 ohms; THD 0.05% into 8 ohm load at all levels up to 35 W (200-20,000 Hz); 0.1% (20-20,000 Hz); noise −90 dB (CCIR), −80 dB (unweighted); hum −80 dB (CCIR); has two pairs of speaker outlets; response 10-20,000 Hz ±1 dB $395.00
AP-2. Same as AP-1 except 100 W rms/ch. $625.00

LUXMAN

M-6000 Stereo Power Amplifier
300 W/ch min. continuous power into 8-ohm loads from 20-20,000 Hz at 0.05% THD; rated

IM 0.05% (at 8 ohms, 300 W/ch, 60:7000 Hz = 4:1); frequency response 5-50,000 Hz ±1 dB; input sensitivity 1.25 V; input imp. 75,000 ohms; S/N 100 dB; residual hum & noise −100 dB; crosstalk −70 dB at 20,000 Hz; features VU meters; peak output power LED indicator; input level setter; quadruple protection circuitry; safety switch; remote controllable power on-off switch; 22⁷/₁₆" W × 8¹¹/₁₆" H × 16¾" D. $2995.00
M-4000. Similar to M-6000 except 180 W/ch continuous power output from 20-20,000 Hz into 8 ohm loads at 0.02% HD and 0.01% IM; features class-B output stages; class-A drive circuits; two independent power supplies. 19⅛" W × 6⅞" H × 15⅜" D $1495.00

M-1500 Stereo Power Amplifier
75 W/ch continous power output into 8 ohms with both channels driven at 0.03% HD or IM; features speaker-muting relay; subsonic filter (rolling off below 13 Hz at 12 dB/octave); heavy-duty power supply; will handle two pairs of speakers (switchable from front panel); two pairs of inputs with rear-panel sensitivity adjustments; output-level meters; styling to match CL-350 preamp and T-550 tuner. $695.00

C-1000 Stereo Preamplifier
Features three switch-selectable turnover frequencies for each control; linear equalizer; tape-monitoring and dubbing facilities for two tape decks; high- and low-frequency noise filters with selectable operating points; slopes of 12 and 18 dB/octave; step-type attenuator for adjusting volume; variable phono-input sensitivity and impedance; facilities for switching two pairs of speakers; headphone operation. 19" W × 9²/₃" H × 6⅞" D $895.00

CL-350 Stereo Preamplifier

Features six pairs of inputs: two sets of phono inputs & jacks for stereo microphones; one pair of phono inputs adjustable from 30,000 to 100,000 ohms in three steps; negative-feedback tone controls for each channel; choice of turnover points for bass & treble; low- and high-frequency filters; three auxiliary high-level inputs; tape-monitoring and dubbing facilities for two tape decks; headphone jack (8 ohm phones). $495.00

L-100 Integrated Stereo Amplifier
110 W/ch into an 8-ohm load from 20-20,000 Hz at 0.05% THD; separate transformer windings for class-A gain stages and class-B power-output section; will handle five main program sources (Phono #1, #2, tuner, Aux. #1, #2); two additional tape decks, high-level sources, or accessories (through tape-monitor jacks); dubbing facilities; phono inputs adjustable in sensitivity & impedance; bass & treble controls with choice of three turnover frequencies; "Touch-Mute" feature silences audio output for brief listening interruptions; switching for two pairs of speaker systems; turn-on delay. $995.00

L-309 Integrated Stereo Amplifier
75 W/ch continuous output into an 8-ohm load with THD 0.03% at rated output (20-20,000 Hz); features two phono inputs; built-in amplifiers for two front-panel mike inputs; separate mike gain-level controls (independent of main volume and input selector); main, remote, or both sets of speakers selectable with front-panel switch; "Linear Equalizer" augments four active selector switch positions; bass & treble controls with three turnover frequencies each; low- and high-frequency filters; tape-monitoring facilities; $795.00

L-507 Integrated Stereo Amplifier
50 W/ch continuous power into 8 ohms from 20-20,000 Hz with 0.03% HD, 0.04% IM, at rated output; phono inputs S/N 65 dB, high-level 80 dB; variable-turnover bass & treble controls; high- and low-frequency filters; tape monitoring & dubbing facilities for two decks; will drive two pairs of speakers. $495.00

MARANTZ

250M Power Amplifier
126 W/ch rms at 8 ohms; response 20-20,000 Hz ±1 dB. THD 0.1% at rated output; IM 0.1%

at rated output. Hum & noise −106 dB. Sensitivity: 1.5V for rated output. Has 8 ohm output & output metering. Damping factor 100. 6⅛" H × 15⅜" W × 9½" D $599.95

240 Power Amplifier
126 W/ch continuous power into 8 ohms and at 0.1% THD with both channels driven into 8 ohms; IM 0.1% at rated output; hum & noise −106 dB. Input sensitivity 1.5 V at rated output. Damping factor 100. 6⅛" H × 15⅜" W × 9½" D. Has no meters. $349.95

510 Power Amplifier
256 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz ±0.1 dB; IM & THD 0.1% at rated output; hum & noise −110 dB; input sensitivity: 2 V for rated output: imp. 25,000 ohms; damping factor 100. Features peak load indicators $899.95
510M. Same specifications as the Model 510 except includes two illuminated output-level meters which monitor actual output power to speakers and indicate left/right channel balance; gain controls for left/right channels . . . . .

..... $999.95

3600 Preamp/Control Center
Features graphic tone controls for bass, treble & mid-range; low and high filters; precision-tracking volume control; tape monitor circuitry for two decks; two sets of preamp-out jacks; front-panel mike jacks; response 20-20,000 Hz ±0.25 dB; THD 0.02% at rated output; output level 3 V; impedance 150 ohms..... $499.95
3800. Same as Model 3600 except includes Dolby noise-reduction circuit; tape EQ switch; $599.95

3200 Preamp/Control Center
Features graphic tone controls for bass, treble, and mid-range; variable tone turnover points; tape monitor circuitry for two decks; speaker switching; response 20-20,000 Hz ±0.05 dB; THD 0.05% at rated output; output level 3 V; imp. 600 ohms $219.95

1030 Integrated Amplifier
15 W/ch rms at 8 ohms. Power bandwidth 15-40,000 Hz; response 20-40,000 Hz ±2 dB. HD & IM 0.5% at rated output; hum & noise −64 dB at phono input. Sensitivity: mag. phono 1.8 mV; aux 180 mV. Has high-cut filter, loudness compensation switch, stepped tone controls, multiple speaker switching, headphone output, tape monitoring facilities, and mike input on front panel. Damping factor 50. 4¾" H × 14½" W × 12" D..... $179.95
1040. Same as Model 1030 except 20 W/ch; IM & HD 0.3% $199.95

1060 Integrated Amplifier
30 W/ch rms at 8 ohms. Power bandwidth 15-40,000 Hz; response 15-40,000 Hz ±2 dB. HD & IM 0.5% at rated output; hum & noise −67 dB at phono input. Sensitivity: mag. phono 1.8 mV; aux. 180 mV; tuner 180 mV. Has high-cut & low-cut filters, loudness compensation switch, ganged tone controls, multiple speaker switching, headphone output, tape monitoring facilities, mike input on front panel, and a mid-range tone control. Damping factor 50. 4¾" H × 12" W × 14½" D..... $239.95
1070. Same as Model 1060 except 35 W/ch; IM & HD 0.3% $279.95

1150 Integrated Amplifier
75 W/ch continuous power at 8 ohms at 0.1% THD with both channels driven (20-20,000 Hz)

input sensitivity: mag. phono & mike 1.8 mV; aux. 180 mV. Has main/remote speaker switch, graphic tone controls for bass, treble, mid-range; high & low filters, tape monitor circuitry for two decks. 15⅜" × 5¾" × 14" D. Gold anodized front panel..... $449.95
1150D. Same except includes Dolby noise-reduction circuitry $549.95

1200B Integrated Amplifier
100 W/ch rms at 8 ohms. Power bandwidth 10-40,000 Hz; response 20-20,000 Hz ±0.1 dB. HD

& IM 0.15% at rated output; hum & noise −100 dB. Sensitivity: mag. phono 1.3 mV; aux. 100 mV. Has high-cut & low-cut filters, loudness compensation switch, independent tone controls, multiple speaker switching, headphone output, tape monitoring facilities. Damping factor 100. 5" H × 15⅜" W × 14" D..... $699.95

MODULAR SOUND

Dyna Double Stereo 400 Amp
200 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD; modified Dyna ST-400 with 8 additional output transistors; will play reliably at 2 ohms allowing use of four 8-ohm speakers in parallel per channel for total of 8 speakers; switch to bypass volume controls, first unity gain stage, filter circuits, and Dynaguard circuit (d.c. sensor and relay still function); cooling fan; converted unit same size as stock Dyna 400 kit $850.00
Meters $100.00

NIKKO

TRM-210 Integrated Stereo Amplifier
8 W rms/ch into 8 ohms (20-20,000 Hz); response 20-30,000 Hz ±1 dB; THD & IM dist. 1.0% at rated output; damping factor 25 into 8 ohms; input sensitivities: phono 1 mV/50,000 ohms; tuner, tape, Aux. 200 mV/100,000 ohms; has full complement of controls & switches. 12⅜" W × 9½" D × 4½" H..... $139.95

TRM-800 Integrated Stereo Amplifier
60 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; IM 0.1% (1 W output); features three-stage direct-coupled negative-feedback equalizer preamp; two-stage direct-coupled negative-feedback preamp tone-control amp; direct-coupled OCL pure complementary circuit in main amp section; has full complement of inputs, outputs, filters, and switches. 18" W × 6" H × 13½" D..... $379.95

ONKYO

A-7055 Integrated Stereo Amp
23 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; S/N 110 dB. Response 10-70,000 Hz +0, −1 dB. Preamp input sensitivity: Phono #1 & #2 1.2, 2.4, 4.8 mV at 50,000 ohms; tuner, aux., tape play 100 mV at 100,000 ohms. THD 0.03% and IM 0.05%. Controls: power; speakers (off, A, B, A + B); selector; tape monitor dubbing; volume/balance; treble; bass; frequency shift; low- & high-filter; loudness; mode; amp muting; 3-position phono gain; preamp/main amp separating switch. 16⅜" W × 5⅜" H × 14⅛" D. Walnut grained vinyl on Lauan plywood..... $239.95

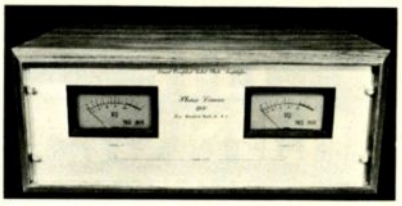
A-7022 Integrated Stereo Amp
Same features and specifications as the A-

7055 except 54 W rms into 8 ohms (20-20,000 Hz) at 0.5% THD. 16⅜" W × 5⅜" H × 14¾". Walnut-grained vinyl on Lauan plywood..... $359.95

PHASE LINEAR

400 Power Amplifier
201 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD. Response 0-0.25 MHz at 1 W; HD 0.25%. Phase shift leading 0 degrees at 20 Hz, lagging 12 degrees at 20 kHz. Hum & noise 100 dB below rated power; recommended load 4-16 ohms. Sensitivity 1.75 V. Light brushed gold,

1 Amplifiers



baked enamel, and black anodized panel. 19" × 7" × 10" D. $499.00
Walnut cabinet $37.00

700B Power Amplifier

345 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD. Response 0-0.25 MHz at 1 V with

direct-coupled inputs. HD 0.25% (typically 0.01%). Phase shift leading 0 degrees at 20 Hz, lagging 10 degrees at 20 kHz. Sensitivity 1.14 V. Hum & noise 100 dB below rated power; recommended load 4-16 ohms. Light brushed gold, baked enamel panel $799.00
Walnut cabinet $37.00

2000 Stereo Preamplifier

Features separate bass/treble tone controls for each channel; tone-defeat switch; active equalizer to boost low frequencies; independently adjustable tone turnover controls; two tape monitor circuits; five-position input selector switch (phono, aux., tuner, tape #1, #2); two switched, one unswitched a.c. outlets; THD 0.1% at rated output (IHF); frequency response (phono) ±0.5 dB of RIAA standard; input sensitivity: high level 40,000 ohms, low level 47,000 ohms, 290 pF; hum & noise (20-20,000 Hz, inputs shorted) high level 88 dB below 2 V, low level 74 dB below 10 mV input; 15½" H × 19" W × 6" D $299.00
Walnut cabinet available optional extra.

PHILIPS

SC-102A Stereo Preamplifier

Response 5-20,000 Hz ±0.1 dB; 2-120,000 Hz ±0.5 dB; high-level input (47k load) 2 V rms

output; phono input ±1 dB (RIAA); THD 0.05%, IM dist. 0.02% both from any input, 2 V rms output; hum & noise 100 dB below IHF "A" weighted; phono 80 dB below 10 mV input; input impedance: high-level 50,000 ohms; phono 47,000 ohms; features input selector (low-level phono, high-level tape, tuner, aux.); mode selector; tone controls; balance, volume, and loudness controls; tape monitor jack; subsonic filter; two a.c. outlets (one switched). $299.50
Cabinet. $19.95
Rack panel. $19.95

PILOT

225 Integrated Stereo Amplifier

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; response 20-20,000 Hz ±1 dB; has a complementary symmetry, fused outputs, center-channel output; main amplifiers & preamps accessible by removing rear-panel jumpers; dual-concentric bass & treble controls; 5-position input selector (two phono, tuner, and two aux.); push-buttons for tape monitor, high filter, loudness, mono/stereo mode; separate main, remote, reverse speaker switches; tape in and out plus headphone jacks on front panel; master volume control; separate a.c. power button; rear panel switched and unswitched a.c. receptacles; back-lighted blackout panel. Walnut veneer wood enclosure $259.90

PIONEER

SA-5200 Integrated Stereo Amp

10 W/ch continuous power output at 8 ohms from 20-20,000 Hz with both channels driven; 15 W/ch at 4 ohms at 1000 Hz. IM & HD 0.8% continuous power output. Power bandwidth 10-40,000 Hz (IHF, with both channels driven) at 0.8% HD. Output: speaker A, B, A+B (4 to 16 ohms); headphone 4 to 16 ohms. Input sensitivity/imp.: phono 2.5 mV, 50,000 ohms; tuner, aux. #1 & #2, tape monitor, tape monitor (DIN) 150 mV, 100,000 ohms. Output level/imp.: tape rec. 150 mV, tape rec. (DIN) 30 mV, 80,000 ohms. Has individual bass & treble tone controls. Can handle two pairs of speaker systems, two auxiliary sound sources, a tuner, and a turntable. 16 15/16" W × 5 3/16" H × 12 7/8" D. . . $139.95

SA-7500 Integrated Stereo Amp

40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; IM & THD 0.05% (1 W/ch output, 8 ohms); response 10-80,000 Hz +0 dB, −1 dB; input sensitivity: phono #1, #2 2.5 mV/50,000 ohms; mike 7.5 mV, 85,000 ohms; tuner, aux. #1, tape PB #1, #2 150 mV, 50,000 ohms; frequency response: phono (RIAA equalization) 30-15,000 Hz ±0.3 dB, tuner, aux. tape PB 10-50,000 Hz +0 dB, −1 dB; features bass & treble tone controls; low & high filters; loudness contour control; full complement of controls. 16½" W × 5 13/16" H × 13 3/8" D; walnut case optional extra. $299.95
SA-8500. Similar to SA-7500 except 60 W rms/ch at 0.1% THD; response: tuner, aux., tape PB 7-40,000 Hz +0, −1 dB; walnut case optional extra $399.95
SA-9500. Similar to SA-8500 except 80 W rms/ch at 0.1% THD 16½" W × 6½" H × 15 7/8" D $499.95

SA-9900 Integrated Stereo Amp

110 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; IM & THD 0.04% (1 W/ch output, 8

ohms); response 10-80,000 Hz +0 dB, −1 dB; input sensitivity: phono #1, #2 2.5 mV; mike 6-24 mV/85,000 ohms; tuner, aux. #1, #2, tape PB #1, #2 150 mV/50,000 ohms; frequency response: phono (RIAA equalization) 30-15,000 Hz ±0.2 dB; tuner, aux., tape PB 7-40,000 Hz +0 dB, −1 dB; has full complement of inputs, outputs and controls. 16½" W × 6½" H × 15 7/8" D $749.95

SPEC-2 Stereo Power Amplifier

250 W rms/ch 8 ohms (20-20,000 Hz) at 0.1% THD; response 1-80,000 Hz +0 dB, −1 dB; impedance selector (4 or 8 ohms); input sensitivity control; damping factor 70; hum & noise 110 dB (IHF) short-circuited A network; peak-power level meter for each channel; built-in surge current-control and protection circuits. 18 15/16" W × 6 7/8" H × 13 9/16" D $899.95

SPEC-1 Stereo Preamplifier

Input sensitivity/impedance: phono #1, #2, mike 2.5 mV/50,000 ohms; tuner, aux. #1, #2, tape PB #1, #2 150 mV/100,000 ohms; THD 0.05% (20-20,000 Hz) at 2 V output; frequency response 30-15,000 Hz ±0.2 dB (RIAA phono equalization); tuner, aux. tape PB 1, 2 10-70,000 Hz +0 dB, −0.5 dB; has full complement of tone controls, filters, mixing facilities, level adjust and input imp. selector. 18 15/16" W × 6 7/8" H × 16 5/16" D $499.95

PM

Stereo 200 Power Amplifier

100 W/ch continuous sine-wave output (20-20,000 Hz) at 0.3% THD; input sensitivity 1.0 V for rated output; input imp. 20,000 ohms at 1000 Hz; damping factor 50; hum & noise 100 dB below 100 W; channel separation 100 dB; has a.c. and d.c. fuse, output, SCR transient overcurrent, thermal, and load-line-latch protection. 5 7/16" H × 15½" W × 12¼" D . . . $459.00
Stereo 400. Similar to the 200 except 200 W/ch at 0.02% THD; input sensitivity 1.5 V for rated output; damping factor 1000; features volume controls on rear panel for each channel; forced-air cooling (fan); taut-band meters calibrated to read 0 to −50 dB continuously. Hand-rubbed walnut or oak cabinet available extra. 19" W × 7" H × 13" D $975.00

QUAD

50E Power Amplifier

Single-channel power amp.; output power 47½ W into 8 ohms (1 kHz); 54.8 W into 4 ohms; re-

sponse (unbalanced input) −1 dB 30-20,000 Hz (ref. 1 kHz); (600 ohm bridging) −2 dB 30-20,000 Hz (ref. 1 kHz); hum & noise 80 dB (ref. full output); input level: 0-5 V for full output (balanced or unbalanced), preset adjustment for higher levels; input imp. 14-50,000 ohms (unbalanced) depending on preset gain; stable with any load; power input 110, 120, 220, 240 volts, 50-60 Hz; 24-150 watts depending on signal level; output source imp. 0.5 ohm in series with 25 μH for 5.5-ohm connection, others in direct proportion 4¾" W × 6¼" H × 12¾" D (plus 1½" for connectors) $305.00

303 Power Amplifier

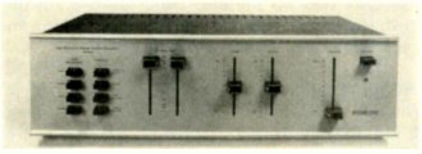
28 W/ch into 16 ohms; 45 W/ch into 8 ohms (both channels driven) or 90 W (mono) into 4 or 16 ohms; freq. response −1 dB (ref. 1 kHz) 30 and 35,000 Hz into 8 ohms; 20 and 35,000 Hz into 16 ohms; hum & noise −100 dB below full output; crosstalk 60 dB 30-10,000 Hz (input load 1000 ohms); for home applications can be used with speaker imp. between 4 and 25 ohms; high-level sine wave and applications involving reactive loads, imp. should not be

less than 8 ohms; power input 100-125 or 200-250 V, 50-60 Hz; 40-200 watts (depending on signal level); 4¾" W × 6¼" H × 12¾" D (plus 1¼" for connectors) $275.00

RADFORD

HD250 Integrated Stereo Amp

60 W/ch stereo amplifier combined with the ZD22 preamp; has two tape monitors, tape-to-



tape dubbing, tone-control defeat, graphic controls; preamp THD & IM dist. 0.001% up to 1 V output, less than 0.01% at 10 V output; 17 V max. output; amp THD 0.05%, IM dist. at rated output 0.01%; RIAA S/N 83 dB ref. 5 mV input, weighted −88 dB ref. 5 mV input; push-button input selection (phono, tuner, tape #1 & #2); function (tone cancel, mono, tape monitor #1 & #2); slide controls for channel gain, treble, bass & volume, headphone output. 11" × 17" × 4¾" $725.00

ZD22 Preamplifier

Response 20-35,000 Hz ±1 dB; RIAA equalization within ±1 dB 30-20,000 Hz; THD & IM dist. 0.001% below 1 V output (0.01% at 10 V output); 17 V max. output from 150-ohm source, magnetic input, tuner, and two tape inputs; tone-control defeat; S/N −83 dB on RIAA input (ref. 5 mV input), −85 dB on high-level input (ref. 100 mV signal input). 8" D × 17" W × 4¾" H $499.00

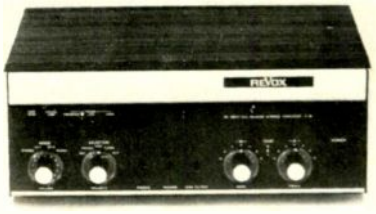
HD1002 Stereo Power Amplifier

100 W rms/ch into 8 ohms; 150 W/ch into 4 ohms; THD & IM dist. 0.01% at any frequency from 20-20,000 Hz (4 to 8 ohm output); direct-coupled complementary symmetry output $795.00

REVOX

A78 Integrated Amplifier

Power output; 40 W rms/ch into 4 ohms with both channels fully driven; power bandwidth:



40-15,000 Hz at stated output power; dist. 0.3% max. throughout power bandwidth at any output; response 20-20,000 Hz ±1 dB. Sensitivity: mike 3 mV; tuner 100 mV; tape 250 mV. Has tape monitoring input with before/after switch and switched outputs for two pairs of speakers. 16⅜" W × 6¼" H × 9⅝" D .. $600.00

A722 Stereo Power Amplifier

Power output: 60 W rms/ch into 4 ohms with both channels fully driven; power bandwidth:

40-15,000 Hz at stated output power; dist. 0.2% max. throughout power bandwidth at any output power from 100 mV rms to 60 W rms; response 20-20,000 Hz +0 dB/0.5 dB; features remote "on/off" switching with opto coupler; limit switches for reducing output power to 20% or 50%; automatic output disconnect to avoid speaker burn-out; forced air cooling with built-in blower; output selector for two sets of stereo speakers; headphone output on front panel $525.00

ROTEL

RA-1210 Integrated Stereo Amplifier

55 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.2% THD. HD 0.3% 20-20,000 Hz at 55 W/ch; IM 0.1% at 55 W/ch. Response 3-100,000 Hz +0, −3 dB; power bandwidth (IHF) 5-50.000 Hz at 8 ohms. Hum & noise: phono #1, phono #2 70 dB at 2 mV; tuner, aux. #1, aux. #2, tape in 80 dB. Has loudness switch; high filter; low filter; muting; bass & treble controls: front-panel headphone jack. Will handle two pairs of speaker systems; two tape recorders with monitoring & dubbing features; two record players. 16½" W × 12" D × 5½" H $399.95

RA-810 Integrated Stereo Amplifier

40 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD. HD 0.3% 20-20,000 Hz at 40 W/ch; IM 0.1% at 40 W/ch. Response 4-75,000 Hz +0, −3 dB; power bandwidth (IHF) 5-50,000 Hz at 8 ohms. Hum & noise: phono #1, phono #2 65 dB; tuner, aux. #1, aux. #2, tape input 75 dB. Has full complement of inputs/outputs and controls. 16½" × 12" × 5½" H $349.95

RA-611 Integrated Stereo Amplifier

27 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 1% THD; HD 01% at 1 kHz and 15 W/ch; Response 15-90,000 Hz; power bandwidth 15-50,000 Hz. (S + N)/N 65 dB phono; 75 dB aux. Has full complement of controls and inputs. Wood cabinet $269.95

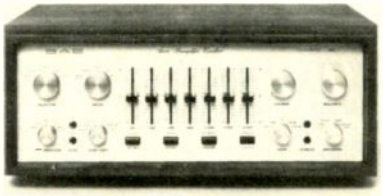
SAE

Mark IXB Preamp-Equalizer

Features slide-type controls; 14 toroidal LC-type bandpass filters with 12 dB/octave slope. Equalizers have dual range ±16 dB or ±8 dB at 40, 120, 320, 960, 2500, 7500, and 15,000 Hz. Response high-level inputs 10-100,000 Hz ±0.25 dB. HD 0.02% from 20-20,000 Hz & 2.5 V output. Max. output 18 V into high impedance. Overall size 17" × 7" × 5.75" H $500.00

Mark IB Preamp-Equalizer

Can serve as complete control center. Has a professional 7-band equalizer instead of conventional controls. Response (high-level inputs) 10-100,000 Hz ±0.25 dB; (phono inputs) 20-20,000 Hz ±0.5 dB. Equalizers have dual range of ±8 dB or ±16 dB with 12 dB/octave slope. Features include stepped volume control, EQ



Line/EQ Tape switch for equalized recordings; volume control range extender; tape copy control with provision for three tape recorders (six possible positions); two headphone output jacks; scope outputs for testing phase, stereo separation, or balance or level measurements; gain switch; four phono circuits for four separate phono preamps. 17" W × 10½" D × 5¾"H $825.00

1 Amplifiers

Mark IM. Same as Mark IB except has no tone controls but features two high-accuracy VU

meters instead which display the unit's output in volts. Has meter-range switch $660.00

Mark IV D Stereo Power Amplifier

100 W rms/ch continuous power output (20-20,000 Hz) with both channels driven; 0.1% THD from 250 mW to full rated power; IM 0.1% at 100 W/ch. Response 20-20,000 Hz ±0.1 dB at 1 W; 20-20,000 Hz ±0.1 dB at 100 W. Power bandwidth 8-50,000 Hz 3 dB down. (S + N)/N 100 dB below 100 W/ch. Input required: 1 V rms for 100 W, 100,000 ohms. 17" W × 5¾" H × 13¾" D. Walnut cabinet $500.00

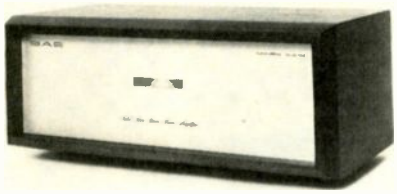
Mark IV OM. Same except has two VU meters to monitor power output. 17" W × 5¾" H × 15" D. Does not include cabinet. $600.00

Mark XXX Stereo Preamp

Response 10-100,000 Hz ±0.25 dB (high-level inputs); 20-20,000 Hz ±1 dB (phono inputs). HD (rms) 0.03% 20-20,000 Hz at 2.5 V; IM 0.03% at rated output. (S + N)/N 72 dB below 10 mV (phono); 90 dB below rated output (high-level). Gain: phono 57 dB at 1 kHz; high-level 15 dB. Maximum output 9 V into 100,000 ohms. 15" W × 4¾" H × 8" D $250.00

Mark XXXIB Stereo Power Amplifier

50 W rms/ch continuous power output (20-20,000 Hz) with both channels driven; 0.1%



THD from 250 mW to full rated power. IM 0.1% at 50 W. Response 20-20,000 Hz ±0.1 dB at 1 W; 20-20,000 Hz ±0.1 dB at 50 W. (S + N)/N 100 dB below 50 W. 1 V rms input required for 50 W. 15" W × 4¾" H × 8" D $275.00

Mark IIIC Stereo Power Amplifier

200 W rms/ch continuous power output (20-20,000 Hz) with both channels driven; 0.1% THD from 250 mW to full rated power. IM 0.05% at full power; features relay protection circuit for speakers; volt/amp limiter; complementary double differential inputs and full complementary series-connected output stages; feedback level controls. 17" × 5¾" × 13½" $900.00

Mark IIICM. Same except with direct-reading power meters for watts, voltage, and dB. 17" × 5¾" × 14½" $1000.00

Mark XXV Stereo Power Amplifier

300 W rms/ch continuous power output (20-20,000 Hz (both channels driven); 0.05% THD from 250 mW to full rated output; 450 W rms/ch into 4 ohms at 0.10% THD; IM 0.05% at full rated power (any combination of frequencies); features relay protection for speakers; fully complementary plus parallel series output stage. 19" W × 7" H × 15.75" D..... $1250.00

Mark 2500. Same except standard rack-mount front panel, high-speed fan, rack handles $1250.00

SANSUI

AU20000 Integrated Stereo Amplifier

170 W rms/ch into 8 ohms both channels driven (20-20,000 Hz) at 0.05% THD; power band-

width 20-20,000 Hz at or below rated min. rms power output & THD; channel separation: phono #1 & #2 55 dB; tuner & aux. 60 dB; hum & noise: phono #1 & #2 70 dB; tuner & aux. 80 dB; features dual-amplifier phono equalizer; triple tone controls; triple protection circuits; selectable phono sensitivity/impedance; accepts up to three stereo tape decks with individual monitoring & deck-to-deck dubbing; tone defeat switch; 3-step audio muting switch; 2-step low/high filters; mode switch; meter sensitivity switch; illuminated level meters. 18⅛" W × 7" H × 15¾" D. $999.95

AU11000. Similar to AU20000 except 110 W rms/ch; input/output facilities for two stereo tape decks; hum & noise: phono #1 & #2 65 dB; no level meters. 18⅛" W × 6⁵⁄₁₆" H × 14⅞" D $749.95

AU9900. Similar to AU11000 except 80 W rms/ch; frequency response (at 1 W) 10-50,000 Hz +0 dB, −1 dB; $599.95

AU-7700 Integrated Amplifier

54 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); THD & IM dist. 0.1% (at

any level below rated output); power bandwidth 5-40,000 Hz; response 10-50,000 Hz +0.5, −1.0 dB at 1 W; hum & noise (IHF) 85 dB; features dual high-voltage power sources; parallel push-pull power stage; triple tone control; active hi- and low filters; loudness control with two modes; tape mode switch; two-step audio muting switch; preamp and main amps may be separated for individual use. $399.95

AU-6600 Integrated Amplifier

42 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); THD & IM dist. 0.15%; power bandwidth 5-35,000 Hz; frequency response 10-40,000 Hz; hum & noise: 70 dB (phono); 85 dB (Aux.); 100 dB (main) all below rated output; dual power supplies; three tone controls with selective turnover frequency; full complement of inputs, outputs, switches, and controls. $359.95

AU-5500 Integrated Amplifier

32 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); THD & IM dist. 0.15%; power bandwidth 5-30,000 Hz; response 10-35,000 Hz +0.5, −1.0 dB at 1 W; hum & noise (IHF) 85 dB; triple tone controls; full complement of inputs, outputs, switches, and controls. $299.95

AU4400 Integrated Stereo Amplifier

20 W rms/ch into 8 ohms with both channels driven (40-20,000 Hz) at 0.3% THD; frequency response 20-30,000 Hz +1.0 dB, −2.0 dB at 1 W; channel separation at rated power output 1000 Hz 45 dB; features phono equalizer, tone control circuit; low/high filters; loudness switch; mode switch; speaker selector switch; two a.c. power outlets (one switched, one unswitched); full complement of inputs & outputs. 15¾" W × 4¾" H × 9½" D $199.95

AU2200. Similar to AU4400 except 10 W rms/ch at 0.8% THD; response 30-40,000 Hz, +1.0 dB, −2.0 dB; high filter; click-stop tone controls. $149.95

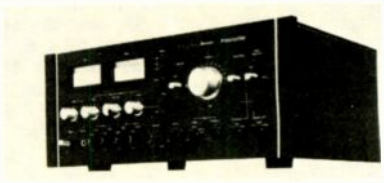
BA-5000 Stereo Power Amplifier

300 W rms/ch with both channels driven (20-20,000 Hz) into 8 ohms at 0.1% THD; frequency response 15-30,000 Hz +0 dB, −2 dB (at 1 W); features two VU meters; triple protection circuit; forced-ventilation system. Designed for rack mounting 19" W × 8¾" H × 18¹¹⁄₃₂" D. $1299.95

BA-3000. Similar to BA-5000 except 170 W rms/ch at 0.05% THD; frequency response 5-100,000 Hz +0 dB, −1 dB; 18⁷⁄₆₄" W × 7" H × 15¾" D. $899.95

CA-3000 Preamplifier

Frequency response 10-100,000 Hz ±0.5 dB (at rated output); THD 0.03% (at rated output);



channel separation 60 dB; hum & noise: phono #1 & #2 70 dB; tuner, aux. & tape monitor 90 dB; has full complement of inputs & outputs, controls, switches, a.c. outlets (switched & unswitched). 18⅛" W × 7⅛" H × 14¹¹⁄₁₆" D $699.95

SCOTT, H.H.

A236S Integrated Stereo Amplifier

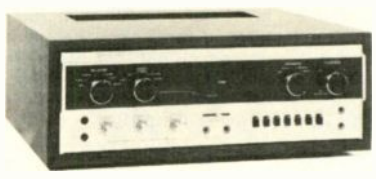
15 W/ch continous sine-wave power into 8 ohms with both channels driven; response 20-20,000

Hz ±1 dB; HD 0.5% at rated output; has volume/loudness compensation switch; tape monitor switch; speaker #1 or #2; mono/stereo; front-panel headphone jack; phono inputs on rear panel for magnetic or ceramic cartridges. 15⅜" W × 5¼" H × 9⅝" D. $159.95

SHERWOOD

SEL-400 Stereo/Dynaquad Amp

85 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD; IM 0.25% at 8 ohms rated output;



S/N 100 dB; crosstalk −60 dB (20-20,000 Hz); hum & noise 85 dB; phono hum & noise 75 dB; monolithic IC's for all preamp functions; high/low 12 dB/octave filters; wide-range bass, mid-range & treble controls; front-panel tape dubbing jack; built-in Dynaquad 4-channel decoder; preamp/amp sections can be separated for bi-amplification applications. 16⁹⁄₁₆" W × 5" H × 14¼" D ..... $399.95 Walnut-grained vinyl case available as optional extra.

SONY

TA-1150 Integrated Amplifier

30 W/ch continuous rms power at 8 ohms from 20-20,000 Hz with both channels driven and 0.2% HD. HD 0.1% at 1 W. Has input/

output jacks for connecting a 4-channel matrix decoder. 15¾" × 15⅞" × 12½" D.... $280.00

TA-2000F Stereo Preamp

Response 10-100,000 Hz −2 dB; HD 0.03%, IM 0.05%. Hum & noise −90 dB at phono input.

Sensitivity: mag. phono 1.2 mV; aux. 110 mV. Has high-cut & low-cut filters, ganged tone controls, headphone output, tape monitoring facilities, microphone input on front panel, and VU meters. 5¹³⁄₁₆" H × 15¾" W × 12⅜" D. $580.00

TA-1130 Integrated Amplifier

50 W rms/ch into 8 ohms with both channels driven (20,20,000 Hz). Power bandwidth 7-30,000 Hz; response 10-200,000 Hz −2 dB. HD & IM 0.1% at rated output. Hum & noise −110 dB at phono input. Sensitivity: mag. phono 1.2 mV; aux., tuner & tape 130 mV. Has high-cut and low-cut filters, loudness compensation switch, ganged stepped tone controls, multiple speaker switching, headphone output, and tape monitoring facilities. Damping factor 100. 5⅞" H × 15¾" W × 12⅞" D..... $430.00

TA-3200F Stereo Power Amplifier

100 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz). Power bandwidth 5-

35,000 Hz; response 5-200,000 Hz −2 dB. HD & IM 0.1% at rated output. Hum & noise −110 dB at rated output. Has multiple speaker switching and level input adjustment. Damping factor 170. 5⅞" H × 15¾" W × 12¾" D..... $400.00

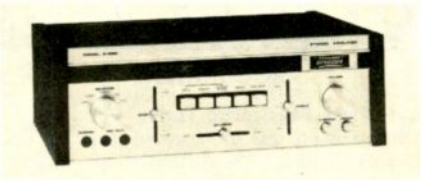
SUPERSCOPE

A-235 Integrated Stereo Amplifier

3 W/ch continuous into 8 ohms (100-20,000 Hz) at 1% THD. Response 30-15,000 Hz. Has push-button "on-off" switch with pilot light; stereo headphone jack; stereo balance control; bass & treble controls; input selector switch for tuner, phono, tape, or aux. positions. Output for one pair of stereo speakers. 14⅜" W × 4½" H × 7⅜" D $89.95

A-260 Integrated Stereo Amplifier

12 W/ch continuous into 8 ohms (40-20,000 Hz) at 1% THD. Features "Quadraphase" switch to simulate 4-ch sound from 2-ch stereo sources



with addition of pair of speakers. Response 20-40,000 Hz −3 dB. Has straight-line tone and balance controls; tape monitor switch; main/remote speaker switches; selector switch for tape, tuner, phono, mike, or aux. positions; mike inputs for home recording or p.a.; stereo headphone jack; and illuminated function indicators. 14½" × 5⅛" × 11¹¹⁄₁₆" D..... $189.95

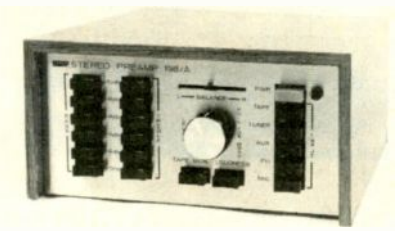
A-245 Integrated Stereo Amplifier

8 W/ch continuous into 8 ohms (60-20,000 Hz) at 1% THD. Response 20-30,000 Hz −3 dB. Has tape monitor switch; input selector switch for tuner, phono, or aux. positions; main/remote speaker switch. Speaker outputs for main and remote speaker pairs. 14⅜" × 4½" × 7½" D $119.95

SWTP

198/A Stereo Preamplifier

Preamp/control center with push-button input and tone-control settings; features loudness



compensation; tape monitor functions; inputs: tape, tuner, aux., phono, mike; bass & treble tone controls: +4, +8, +12, −4, −8, +12 dB; left/right balance controls; frequency response 10-100,000 Hz ±1 dB; dist: 0.05% IM or HD at rated output; noise: phono & mike 65 dB down; others 70 dB down; sensitivity: phono & mike 2.0 mV for 1 V output; others 100 mV for 1 V output; two switched a.c. receptacles on rear. Comes with brushed gold finished front panel and wood-grain cover. Kit $74.50

207-A Power Amplifier

Single-channel power amp designed to be used in any multiples as required (for stereo or 4-channel systems); 60 W min. continuous sine wave (20-20,000 Hz) at 0.05% THD into 4 or 8 ohms; IM dist. 0.01%; damping factor 100; hum & noise 90 dB; sensitivity 1 V rms; features volt-amp & fuse protection plus overheat thermostat; output meter on front panel; perforated metal cover. 4¼" W × 5" H × 15" D (four will fit standard 19" relay rack)..... $110.00
207. Kit version $77.50

215 Stereo Power Amplifier

25 W continuous sine-wave power into 4 or 8 ohms (20-20,000 Hz) at 0.05% THD; IM 0.01%; damping factor 100; hum & noise 85 dB; output meter for each channel. 4¼" × 4¾" × 13" D. Kit $69.50

275 Power Amplifier

Single-channel power amp designed to be used in any multiples as required; 85 W continuous sine wave into 4 ohms, 70 W into 8 ohms (20-20,000 Hz) at 0.05% THD; IM dist. 0.03%; damping factor 100; hum & noise 90 dB; sensitivity 1.0 V rms; has volt-amp protection, speaker, power-supply, and line fuses. 4¼" W × 5" H × 15" D (four will fit standard 19" relay rack)... $64.25
2-275. Pair for stereo $125.00
AC-275. Accessory kit with front-panel switch, overheat indicator, output meter, and level-control for rear panel $7.90

TECHNICS BY PANASONIC

SU-9600 Stereo Control Center

Features fixed and variable phono input sensitivity; switchable phono input imp.; separate L & R bass and treble controls in 2.5-dB steps; switch-selected bass & treble tone-control turnover frequencies (215/500 Hz and 2/8 kHz); tone-control defeat buttons; interdeck tape dubbing (2 decks); wide dynamic range in phono input with high overload tolerance (1350 mV max. input at 3 mV sensitivity); 18 dB/octave high & low filters with selectable cut-off frequencies (low: 15 or 30 Hz; high: 10 or 15 kHz); click-stop attenuator-type calibrated volume controls; 20 dB audio muting switch; ultra-stable power supply; frequency response (phono) RIAA curve ±0.3 dB, (Aux.) 2-100,000 Hz +0, −3 dB; THD & IM dist. 0.02%; S/N 69-76 dB (phono), 95 dB (Aux. & tuner); rack mountable 6³⁄₁₆" H × 17¾" W × 13¾" D.... $629.95

SE-9600 Stereo Power Amplifier

Ultra-stable, constant-current, constant-voltage power supply eliminates transient IM dist.;

variable output impedance; peak-level power output meters with range switching; outputs for two sets of speakers; independent R & L channel level adjust; thermosensitive color indicators on heatsink fins; negative feedback; full overload protection for amplifier & speakers; 110 W rms/ch at 8 ohms; THD 0.08% (5-60,000 Hz); IM 0.08%; power bandwidth 5-60,000 Hz; frequency response 5-150,000 Hz +0, −3 dB; S/N 110 dB; damping factor 1 to 100 in four steps; input sensitivity/impedance 1V/40,000 ohms. Rack mountable. 7⅜" × 17¾" W × 13¾" D..... $799.95

TOSHIBA

SB-500 Integrated Stereo Amplifier

35 W/ch continuous power at 8 ohms with both channels driven and 0.2% THD; HD & IM 0.2% at rated ouput. Response 10-70,000 Hz ±1 dB; power bandwidth 10-40,000 Hz (IHF, 0.2%). Imp. 4-16 ohms. Preamp input sensitivity; phono #1, mag. 2.5 mV, 47,000 ohms; condenser cartridge 30 mV, 70,000 ohms; phono #2 2.5 mV, 47,000 ohms; aux, tape, tuner 150 mV. response 20-30,000 Hz; THD 0.03% at rated rms output. Has bass, treble, and loudness controls; input for 4-channel adapter. Walnut cabinet. 15¾" W × 5" H × 2⅜" D..... $249.95

YAMAHA

CA1000 Integrated Stereo Amplifier

75 W/ch continuous rms power into 8 ohms at 0.1% THD. THD & IM at 1 W 0.08% and 0.05%,

1 Amplifiers

respectively. Power bandwidth 5-50,000 Hz; (S + N)/N 70 dB (phono); phono sensitivity 0.1-3.0 mV. Has two tape, two phono, and two aux. tuner inputs; bass & treble controls; low and high filters. $600.00

CA800. Same as CA1000 except 50 W/ch and 3.0 mV phono sensitivity. $470.00

CA600 Integrated Stereo Amplifier

35 W/ch continuous rms power into 8 ohms at 0.1% THD. THD & IM at 1 W 0.08% and 0.05%, respectively. Power bandwidth 5-70,000 Hz; (S + N)/N 65 dB (phono); phono sensitivity 3.0 mV. $330.00

CA400 Integrated Stereo Amplifier

22 W rms/ch into 8 ohms with both channels driven at 1000 Hz; 20 W/ch at 20-20,000 Hz; HD & IM dist. 0.1% at rated power; power bandwidth 8-70,000 Hz; frequency response 20-50,000 Hz +0.5 dB, −1.0 dB; has 4-stage direct-coupled phono amplifier; two phono inputs; bass & treble controls; loudness control; high & low filters; microphone input; tape monitor & dubbing facilities; two aux. inputs; four convenience a.c. outlets; separable preamp & power amp. $270.00

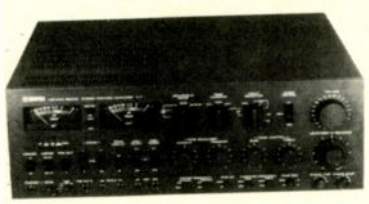
B-1 Basic Power Amplifier

150 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; 180 W rms/ch at 1000 Hz; IM dist. at rated power 0.1%; frequency response 5-100,000 Hz +0, −1 dB at 1 W; power bandwidth 5-50,000 Hz (dist. 0.5% both channels driven); hum & noise 110 dB (closed-circuit A network); damping factor 100 (1 kHz, 8 ohms); load imp. 4 to 16 ohms $1600.00

UC-1. Control unit for use with B-1; has power switch; rumble filter switch; speaker switches including on/off and level controls for five separate speaker pairs; peak-reading meters calibrated in dB and watts output; separate overload warning indicators and thermal overload indicator; comes with connecting cable $250.00

C-1 Master Control Center

Features all-stage FET circuitry; built-in audio test instrument produces four different sine-



wave frequencies for calibration/alignment; pink-noise source for acoustic measurement/compensation adjustments; dual peak-reading output meters; frequency response: phono RIAA deviation ±0.2 dB (20-20,000 Hz); aux. tuner, tape 10-50,000 Hz +0, −0.5 dB; mike 20-20,000 Hz +0, −0.5 dB; continuous loudness control; adjustable phono input imp. (six different levels); phono input level continuously adjustable 2 mV to 8 mV; tone equalizer section; separate level controls for all inputs (except tuner); monitor lamps for each function; inputs: phono #1, #2, #3; tuner; aux. #1, #2; tape #1, #2, #3; mike; outputs: pre-out; tape recorder out #1, #2, #3; headphones; osc. $1800.00

1 Tuners

ACCUPHASE

T-100 AM-FM Stereo Tuner

FM sensitivity 2.0 μV; capture ratio 1.5 dB; S/N 75 dB; THD 0.1% at 1000 Hz; stereo separation 45 dB at 1000 Hz; response 20-15,000 Hz +0, −1 dB. 6" H × 17½" W × 14" D. $650.00
AWC-1. Walnut case $45.00

T-101 AM-FM Stereo Tuner

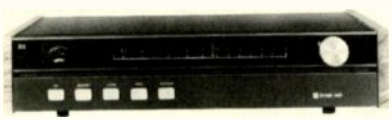
FM sensitivity 2.0 μV; capture ratio 2.0 dB; S/N 70 dB; THD 0.1% at 1000 Hz; stereo sepa-

ration 45 dB at 1000 Hz; response 20-15,000 Hz +0, −1 dB. 6" H × 18" W × 14" D ... $450.00
AWC-2. Walnut case $45.00

DYMEK

AM5 AM Tuner

AM-only solid-state tuner; sensitivity 4 μV for 10 dB S/N; a.g.c. characteristic: 6 dB output



variation for input level change of 10 μV to 10 mV; bandwidth −3 dB r.f.: narrow mode 6 kHz, wide mode 20 kHz; i.f. rejection 45 dB; audio frequency response −3 dB at 15 Hz & 10,000 Hz in wide operation; dist (1 μV at 1 MHz and 1 kHz) 30% modulation; 0.5%; 50% modulation 1.0%; 80% modulation 1.5%; front-mounted slide volume control. 3.5" H × 17.5" W × 10" D (option 19" rack-mount hardware). Designed to be used with active directional antenna (Dymek DA3 & DA4) $255.00

DYNACO

FM-5 FM Stereo Tuner

Response 30-52,000 Hz ±1 dB. 40 dB stereo separation at 1000 Hz. FM sensitivity 1.75 μV

at 30 dB quieting; 1.5 dB capture ratio. THD 0.5%. 65 dB S/N. Has 55 dB 38-kHz subcarrier and 19 kHz suppression and 80 dB SCA carrier suppression. 2 V output. Features stereo indicator light, signal-strength meter, interstation muting, ceramic i.f. filters, and automatic tuning for exact center-of-channel. 4½" H × 13½" W × 9" D ..... Kit $185.00
Assembled $289.00

AF-6 AM-FM Stereo Tuner

The FM section is similar to that used in the Model FM-5. ..... Kit $240.00
Assembled $350.00

FISHER

FM2100 AM-FM Stereo Tuner

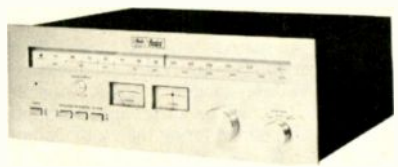
FM usable sensitivity 2.0 μV; alternate channel selectivity 65 dB; capture ratio 1.8 dB; stereo separation (1 kHz) 40 dB; i.f. rejection 75 dB; image rejection 58 dB; spurious rejection 65 dB; features 3-gang dual-gate MOSFET front-end; center-of-channel tuning meter; switchable muting; switchable noise filter; fixed and variable outputs; 75- & 300-ohm antenna terminals. $149.95

FM2300 AM-FM Stereo Tuner

FM usable sensitivity 1.9 μV; alternate channel selectivity 70 dB; capture ratio 1.0 dB; stereo separation (1 kHz) 50 dB; i.f. rejection 95 dB; image rejection 90 dB; spurious rejection 100 dB; features 5-gang dual-gate MOSFET front-end; signal-strength and center-of-channel tuning meters; switchable high blend & muting; fixed and variable outputs; oscilloscope output $249.95

FM2400 AM-FM Stereo Tuner

FM usable sensitivity 1.8 μV; alternate channel selectivity 70 dB; capture ratio 1.0 dB; stereo



separation (1 kHz) 50 dB; i.f. rejection 95 dB; image rejection 90 dB; spurious rejection 100 dB; features signal-strength and center-of-channel tuning meters; fixed and variable outputs; switchable frequency lock; high blend; 75- & 300-ohm FM antenna terminals; oscilloscope output; dual a.c. outlets; 4-gang dual-gate MOSFET front-end; 16-pole linear-phase filter $349.95

HARMAN/KARDON

Citation 14 FM Tuner

Stereo design with built-in Dolby noise-reduction circuit. Features inter-station muting, qui-

eting-type tuning meter, and center-channel tuning meter. Has special 400-Hz tone generator to be used to set recording level when recording off-the-air. Sensitivity 2 μV for 30 dB quieting; (S + N)/N −70 dB; image rejection −90 dB. Dist. 0.2% in stereo $525.00

Citation 15 FM Tuner

Stereo design featuring inter-station muting, quieting-type tuning meter, center-channel tuning meter, and noise filter. Has a special 400-Hz tone generator to be used to set recording level when recording off-the-air. Sensitivity

For 4-channel amplifiers, receivers, record players, phono cartridges, decoders, and various accessories, refer to Section 9 of this Directory.

2 μV for 30 dB quieting; (S + N)/N −70 dB, image rejection −90 dB. Dist. 0.2% on stereo $395.00

HEATH

AJ-1510A Digital FM Stereo Tuner

Frequency-synthesized FM tuning using digital technique for 0.005% accuracy. Follows com-

puter-type design with digital frequency read-outs. Frequency of station can be punched into circuit or special punched cards can be used. Also features automatic frequency sweep. FM sensitivity is 1.8 μV IHF. Response 20-15,000 Hz ±1 dB. Channel separation 40 dB at mid-frequencies.

Kit $579.95
AJA-1510-1 Pecan-stained veneer case. $26.95

AJ-15 FM Stereo Tuner

Stereo design featuring solid-state circuitry. Sensitivity 1.8 μV (IHF). Response 20-15,000

Hz ±1 dB. 40 dB stereo separation at 1000 Hz. Capture ratio 1.5 dB. 0.5% HD; 50 dB SCA suppression. 1.5 V output. Features stereo indicator light, signal-strength meter, center-of-carrier meter, inter-station muting, multi-path indicator. Has crystal i.f. filters. 4¾" H × 16⅞" W × 12½" D.

Kit $249.95
Walnut-stained veneer case $21.95

AJ-29 AM-FM Tuner

Stereo design. Same tuner circuitry as AR-29 receiver. Pre-assembled, factory aligned FM front-end provides 1.8 μV sensitivity for 30 dB quieting. Computer-designed nine-pole LC filter in i.f. strip gives 70 dB selectivity. "Mute" function attenuates between-station noise on FM.

Kit $199.95
AE-19 Pecan-stained veneer case $21.95

AJ-1214 AM-FM Stereo Tuner

Features single-knob flywheel tuning for AM and FM; push-button mode controls; stereo broadcast light; inputs for 75 or 300 ohm ex-

ternal FM antenna. Solid-state circuitry; pre-assembled and aligned FM tuning unit; FM sensitivity 2 μV; selectivity 60 dB; 40 dB typical channel separation; distortion 0.5%. 3⅞" H × 12¾" W × 13" D. Includes walnut-stained veneer end panels.

Kit $109.95

HITACHI

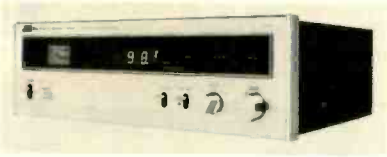
FT-600 AM-FM Tuner

Stereo design. Features FM sensitivity 1.8 μV for 30 dB quieting. Stereo separation 40 dB at 1 kHz; (S + N)/N 70 dB at 1 mV input. Has muting switch, noise filter, and large signal meter. $229.95

JVC

VT-900 FM Stereo Tuner

Features 1.7 μV sensitivity for 30 dB quieting. THD 0.5% for stereo; (S + N)/N 65 dB. Capture



ratio 0.8 dB; image rejection −90 dB; AM suppression −55 dB. Output 0 to 1 V variable (0.4 V fixed). Features inter-station muting, 75 & 300 ohm antenna inputs, and digital frequency readout. 5⅜" × 16⅝" × 12½" D $399.95

KENWOOD

700-T Frequency-Synthesizing Tuner

Companion tuner to the 700-M power amplifier and 700-C preamp/control unit. Combines

standard crystal oscillator, plus variable-tuned oscillator, for digital tuning and crystal-controlled frequency synthesizing for tuning accuracy better than 0.0024%; positive illuminated red and green LED's signal precision tuning; multi-element ceramic filters; pulse-noise blanking system; double-switching demodulator plus phase-lock-loop circuit in MPX stage; signal-strength meter doubles as multi-path detection meter. FM usable sensitivity (IHF) 2.0 μV; quieting slope 4.0 μV, S/N 50 dB; response 20-15,000 Hz ±10 dB, 50-10,000 Hz ±0.5 dB; HD 0.3% stereo at 400 Hz, 100% modulation; S/N 70 dB at 1 mV input; image rejection 100 dB; selectivity (IHF alternate channel) 100 dB; capture ratio 0.8 dB; stereo separation 45 dB at 1000 Hz, 40 dB at 100 Hz, 40 dB at 10,000 Hz. 17¼" W × 5¾" H × 11⅞" D $749.95

KT-8007 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.5 μV; quieting slope 55 dB at 3 μV; S/N 75 dB; capture ratio 1.0 dB; alternate channel selectivity (IHF) 100 dB; response 20-15,000 Hz; stereo separation 50 dB at 1000 Hz, 42 dB at 10,000 Hz; HD 0.2% at 400 Hz, 100% modulation; image rejection 100 dB; spurious rejection 110 dB. 17⅛" W × 6⅜" H × 11 13/16" D $419.95

KT-6007 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.7 μV; quieting slope 55 dB at 3 μV; S/N 70 dB; capture ratio 1.3 dB; alternate channel selectivity (IHF) 70 dB; response 20-15,000 Hz +0.5, −2 dB; stereo separation 45 dB at 1000 Hz, 38 dB at 10,000 Hz; HD 0.2% at 400 Hz, 100% modulation; image rejection 85 dB; spurious rejection 100 dB; 17⅛" W × 6⅜" H × 11 13/16" D $319.95

KT-4007 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.0 μV; quieting slope 48 dB at 3 μV; S/N 65 dB; alternate channel selectivity (IHF) 60 dB; response 20-15,000 Hz +0.5, −2 dB; stereo separation 40 dB at 1000 Hz, 30 dB at 10,000 Hz; HD 0.4% at 400 Hz, 100% modulation; image rejection 50 dB; spurious rejection 90 dB; has FM det. output for 4-channel MPX decoder. 17⅛" W × 6⅜" H × 11 13/16" D $229.95

LAFAYETTE

LT-825 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.2 μV; capture ratio 2.5 dB; S/N 65 dB; 0.25% THD; stereo separation 35 dB; features slide-rule tuning; signal-strength meter; stereo light; front-panel tape outputs; FM mute and MPX filter push-buttons; vinyl-covered metal case, walnut-finish wood end panels. 12⅝" × 3⅞" × 9¼" $149.95

LT-D10 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.65 μV; 1.5 dB capture ratio; selectivity 60 dB; (S + N)/N 70 dB. Has Dolby-B noise-reduction circuitry; front and rear panel tape output jacks; function mode indicator lights for Dolby, FM, stereo, MPX fil-

ter, and FM mute. Features FM detector output for the addition of discrete 4-ch adapter at later date. Walnut finished cabinet with blackout dial. 15⅜" × 11⅞" × 4½" (less knobs) $269.95

LUXMAN

T-300 AM-FM Stereo Tuner

FM sensitivity 1.7 μV (IHF); 2.2 μV for 50 dB quieting; four-gang tuning capacitor; MOSFET front-end; five-pole phase-compensated filter

1 Tuners

in i.f. section; controls: mode selector (AM, FM stereo, mono, or stereo or mono only); FM interstation muting (fixed or variable thresholds or out); facilities for mixing high frequencies on stereo FM broadcasts; scope outputs on rear panel; four-channel decoder outputs (for 4-ch FM broadcast system, when adopted). $495.00

T-310. Same as T-300 but with addition of Dolby-B decoding circuits (de-emphasis

switchable from 75 μsec to 25 μsec characteristic); Dolby circuits switchable to decode Dolbyized tape recordings; two pairs of tape-input jacks; pair of tape outputs; complete Dolby-circuit calibration controls; built-in Dolby-level test oscillator; calibration tapes for cassette and open reel. $595.00

T-110 FM Stereo Tuner

FM sensitivity 1.6 μV; THD 0.06%; five-gang tuning capacitor; MOSFET's in r.f. amplifier and mixer stages; IC's in i.f. stages; four-element LC and ceramic filters; stereo separation 40 dB over range of 50-10,000 Hz; separate signal-strength & center-of-channel tuning meters; illuminated dial pointer. $525.00

T-550. Similar to T-110 except has AM tuner; FET front end with four-gang tuning capacitor; ceramic filters in i.f. stage; IC front-end and multiplex section; rear-panel audio output-level control & scope jacks. $325.00

MARANTZ

150 AM-FM Stereo Tuner

FM usable sensitivity 1.7 μV (IHF). 45 dB stereo separation at 1000 Hz; 1.0 dB capture ratio.

THD 0.25% stereo; S/N 66 dB. Features stereo beacon, signal-strength meter, center-of-channel meter, inter-station muting, and 3" scope with 4-ch display. 25 μsec Dolby de-emphasis switch. 5¾" H × 14⅜" W × 12" D $599.95

125 AM-FM Stereo Tuner

FM usable sensitivity 1.8 μV (IHF); 42 dB stereo separation at 1000 Hz; 1.1 dB capture ratio; THD 0.2% stereo; S/N 65 dB stereo; features stereo beacon, signal-strength meter, center-of-channel meter, 4-position muting control, 25 μsec Dolby de-emphasis switch. . . $339.95

112 AM-FM Stereo Tuner

FM usable sensitivity 2.2 μV (IHF); 40 dB stereo separation at 1000 Hz; 1.5 dB capture ratio; THD 0.3% stereo; S/N 64 dB stereo; features stereo beacon, center-of-channel meter, inter-station muting, 25 μsec Dolby de-emphasis switch. 4¾" H × 14¼ W × 12" D $219.95

104 AM-FM Stereo Tuner

FM sensitivity 3.0 μV for 30 dB quieting; capture ratio 3 dB; image rejection −50 dB; features inter-station muting; signal-strength tuning meter. 14¼" W × 4¾" H × 12" D . . $169.95

NIKKO

FAM-500 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.0 μV; image rejection 80 dB; (S + N)/N 60 dB; capture ratio 2 dB; distortion 0.5% at 1000 Hz; stereo separation 38 dB at 1000 Hz. Features FM muting, signal-strength and center-tuning meters, terminals for 4-channel adapter, tape output jack, and overload protection circuits. 15" W × 12⅝" D × 8⅞" H. Has blackout linear-scale dial and needle illumination $179.95

FAM-220 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.3 μV; muting sensitivity 20 μV; selectivity 40 dB ±400 kHz; image rejection 50 dB; i.f. rejection 80 dB; S/N 60 dB; capture ratio 3 dB; dist. 0.5% at 1000 Hz;

stereo separation 38 dB at 1000 Hz; FET r.f. stage; biresonator ceramic filters in i.f. stage; IC multiplex demodulator; push-button controls; center-tune meter; 12⅝" W × 10¹³⁄₁₆" D × 4½" H $139.95

FAM-800 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.8 μV; selectivity 80 dB; image rejection 95 dB; capture ratio 1 dB; spurious rejection 100 dB; frequency response 15-15,000 Hz; THD 0.4% stereo; stereo separation 40 dB; 300-ohm balanced, 75-ohm unbalanced antenna connections; dual-gate FET circuits; FM muting. 18" W × 6" H × 14½" D $259.95

ONKYO

T-4055 AM-FM Stereo Tuner

FM sensitivity 1.7 μV; frequency 20-15,000 Hz +0, −2 dB; stereo separation 40 dB at 400 Hz. Has a 4-channel terminal on rear panel for reception of discrete 4-ch broadcasts, illuminated signal-strength and center-tuning meters, lighted dial and pointer on the linear

FM scale. Image rejection 90 dB; i.f. rejection 95 dB; alternate channel attenuation 80 dB; capture ratio 1.2 dB; HD 0.5% stereo. Outputs include two oscilloscope jacks for FM antenna multipath orientation. Front-panel controls include mode selector, tuning, on-off, FM muting, noise filter, output level control, and audible switch for FM antenna orientation. Walnut-grained vinyl over Lauan plywood cabinet. 16⅝" W × 14" D × 5⅛" H $219.95

PILOT

211 AM-FM Stereo Tuner

FM sensitivity 1.8 μV for 30 dB (S + N)/N; selectivity 65 dB. Response 20-15,000 Hz ±1 dB. Dist. 0.5%; (S + N)/N 65 dB; capture ratio 1.5 dB. Image rejection −80 dB. Features FM interstation muting and a center-channel tuning meter. Walnut veneer wood cabinet. 15" W × 5⅛" H × 11½" D $199.90

PIONEER

TX-6200 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.9 μV; capture ratio (IHF) 1.5 dB; selectivity (IHF) 60 dB. (S + N)/N 70 dB. Image rejection at 98 MHz 60 dB; spurious rejection 75 dB. Response 20-15,000 Hz +0.2 dB, −2.0 dB. Stereo separation 40 dB at 1000 Hz. Antenna input 300 ohms balanced, 75 ohms unbalanced. Features junction-type FET front end, IC 5-stage limiter, two phase-linear ceramic filters, high-performance IC in multiplex circuit plus low-pass filter for suppressing carrier leakage. Has large center-tuning meter, linear dial scale, plus fixed and variable output level controls. 16⁵⁄₁₆" W × 5⁹⁄₁₆" H × 13⅜" D $139.95

TX-7500 AM-FM Stereo Tuner

FM sensitivity 1.9 μV (IHF); S/N 68 dB stereo; THD 0.3% (100 & 1000 Hz), 0.6% (10,000 Hz); capture ratio 1.0 dB; selectivity 80 dB (±400 kHz); response 20-15,000 Hz +0.2 dB, −2.0 dB; separation 40 dB (1 kHz); image rejection 85 dB; i.f. and spurious rejection 90 dB; subcarrier suppression 65 dB; antenna input 300 ohms balanced, 75 ohms unbalanced; 16½" W × 5⅞" H × 14⅜" D $249.95

TX-9500 AM-FM Stereo Tuner

FM sensitivity 1.5 μV (IHF); S/N 75 dB stereo; THD 0.2% (100 & 1000 Hz), 0.5% (10,000 Hz);

capture ratio 1.0 dB; selectivity 85 dB (±400 kHz); response 20-15,000 Hz +0.2 dB, −1.5 dB; separation 40 dB (1 kHz); image i.f., and spurious rejection 110 dB; subcarrier suppression 65 dB; antenna input 300 ohms balanced, 75 ohms unbalanced; built-in recording signal-level check; signal-strength and center-of-channel meters. 16½" W × 5⅞" H × 14⅜" D $399.95

QUAD

FM3 Stereo Tuner

Sensitivity 1 μV for 80 dB S/N; audio output 100 mV; frequency response 20-15,000 Hz ±1

dB; two-lamp tuning indicator; 75-ohm coax or 300-ohm balanced antenna input; channel separation 40 dB at 1 kHz; image rejection 56 dB; recommended load imp. greater than 50,000 ohms; illuminated tuning scale; five "markers" on tuning scale for locating stations; 10¼" W × 3⅝" H × 6½" D $275.00

Wood sleeve to house FM3 tuner & 33 control unit $47.00

RADIO SHACK

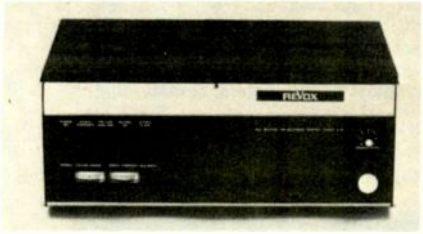
TM-1000 AM-FM Stereo Tuner

Features dual-gate FET front end; three ceramic filters; four low-noise IC's; "Auto-Magic" tuning system fine-tunes station electronically; FM sensitivity 2 μV; selectivity 65 dB; capture ratio 2 dB; image rejection 50 dB; stereo separation 35 dB at 1000 Hz; S/N 65 dB; has blackout dial, lighted AM-FM meter. Wanut veneer wood case. 4⅝" × 15¼" × 11½" $159.95

REVOX

A76 FM Stereo Tuner

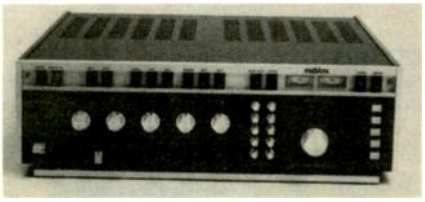
Sensitivity 1 μV for 30 dB quieting. Response 30-15,000 Hz −1 dB; capture ratio 1 dB. Distor-



tion 0.2%; (S + N)/N 70 dB; pilot suppression 40 dB. Output 1 V. Has signal-strength meter, center-tuning indicator, multi-path indicator, interstation muting, and preset output level controls. 16⅜" W × 6¼" H × 9⅝" D..... $750.00

A720 Digital FM Tuner/Preamp

Features step-type channel tuning and pre-set push-button tuning; volume & balance controlled by sliding-type faders; stepped independent tone controls for bass, presence, treble; two headphone outputs on front panel; interconnect facilities for two tape recorders; additional tape output on front panel; two stereo phono & one stereo aux. input; high & low pass



filters effective on all inputs; two switchable stereo outputs; FM capture ratio 1 dB at ±40 kHz deviation; response 30-15,000 Hz ±1 dB; distortion 0.2% at 1000 Hz & ±40 kHz deviation; quartz-stabilized frequency synthesizer; five-digit frequency display; signal-strength & center-channel tuning meters; remote-control facility. $1665.00

ROTEL

RT-1220 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.5 μV; HD 0.5% (S + N)/N 70 dB; capture ratio 1.0 dB; selectivity 90 dB; stereo separation 40 dB at 1 kHz. Has MOSFET front-end; ceramic i.f. filters; illuminated linear dial scale; illuminated signal-strength and center-tuning meters; rotary FM muting control with three settings; 300-ohm balanced and 75-ohm unbalanced antenna connections 16½" W × 12" D × 5½" H $349.95

RT-622. Similar to RT-1220 except 1.7 μV FM sensitivity; (S + N)/N 65 dB; selectivity 60 dB $269.95

SAE

Mark VIB FM Digital Tuner

Features digital readout (four Nixie tubes) frequency display; display of tuning & audio sig-

nals on a 3" rectangular scope. Has "Stereo Only" position which mutes all except stereo transmissions. Sensitivity 1.6 μV for 30 dB quieting. Capture ratio 1.9 dB. Response 20-15,000 Hz ±0.5 dB. A 14-pole Butterworth-type toroid phase-linear i.f. filter provides 75 dB selectivity. 17" W × 10½" × 5¾" $1250.00
Optional walnut cabinet $44.00

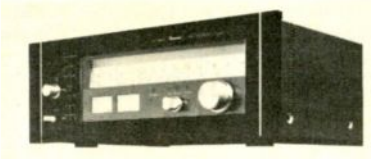
Mark VII FM Digital Tuner

Includes 5-gang dual-gate FET front-end with 1.6 μV sensitivity; linear-phase monolithic i.f. filters with PLL MPX for stereo; THD 0.2%; stereo separation 30 dB (50-15,000 Hz); LED digital readout of frequency (display); log meters for center-channel tuning & signal-strength. 17" W × 5.75" H × 10.5" D... $650.00

SANSUI

TU-9900 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.5 μV; THD 0.08% (stereo wide), 0.8% (stereo narrow) both at 1000 Hz;



stereo separation 40 dB (50 and 10,000 Hz), 50 dB (1000 Hz); frequency response 30-15,000 Hz +0.5 dB, −0.8 dB; S/N 76 dB (stereo); spurious rejection 100 dB (98 MHz). 18⅛" W × 6⁹⁄₁₆" H × 12¼" D..... $499.95

TU-7700 AM-FM Stereo Tuner

FM sensitivity 1.8 μV (IHF); HD 0.3% stereo; S/N 75 dB; selectivity 80 dB; capture ratio 1.5

dB; stereo separation 40 dB at 1000 Hz; frequency response 20-15,000 Hz; linear signal-strength meter; multi-path meter; features output level control; FM muting; multiplex noise canceller; FM antenna attenuation switch; discriminator output for 4-ch ready; three outputs..... $329.95

TU-5500 AM-FM Stereo Tuner

Designed to be used with the company's AU-7700, AU-6600, or AU-5500 integrated amplifiers; FM sensitivity 1.9 μV; HD 0.5% stereo; S/N 70 dB; selectivity 60 dB; capture ratio 2 dB; stereo separation 40 dB at 1000 Hz; frequency response 20-15,000 Hz; has full complement of controls and outputs.. $279.95

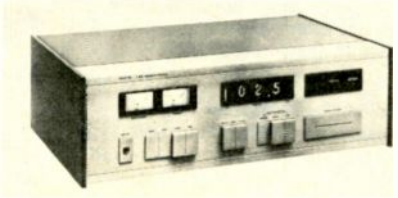
TU-4400 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.0 μV; THD 0.4% (stereo); S/N 70 dB; selectivity 60 dB; capture ratio 2.0 dB; spurious rejection 70 dB (98 MHz); stereo separation 40 dB at 1000 Hz; frequency response 30-15,000 Hz; MOSFET front end; three IC's; 50 μsec/75 μsec FM de-emphasis switch; matches AU-2200 integrated stereo amplifier. 15¾" W × 4¾" H × 9½" D..... $199.95

SCOTT, H. H

T33S Digital FM Stereo Tuner

Sensitivity 1.8 μV for 30 dB quieting. Response 20-15,000 Hz. Stereo separation 40 dB; capture ratio 1.2 dB. HD 0.25%; (S + N)/N 70 dB; pilot suppression 70 dB. 2.5 V output. Has stereo beacon, signal-strength meter, inter-station muting, multipath indicator, punched-card sta-



tion selection, card-programmed digital frequency synthesizer, automatic scanning, and digital frequency readout. 6" H × 17⅜" W × 13" D $999.50

T311S AM-FM Stereo Tuner

Sensitivity 2.5 μV for 30 dB quieting. Response 20-15,000 Hz. Stereo separation 35 dB; capture ratio 2.5 dB; HD 0.6% (S + N)/N 60 dB; pilot suppression 50 dB. Has stereo beacon, FM interstation muting; JFET front end; high-frequency filter; signal-strength meter. 15⅜" W × 5¼" H × 9⅝" D..... $169.95

SEQUERRA

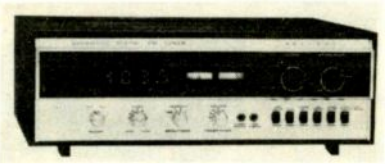
Model 1-BR FM-Stereo Tuner

Sensitivity 1.3 μV; capture ratio 1 dB; selectivity 120 dB (400 kHz), 20 dB (200 kHz); THD

(stereo) 0.1% (400 Hz), 0.2% (10 kHz); stereo separation 48 dB (30 Hz), 55 dB (400 Hz), 40 dB (10 kHz), 36 dB (15 kHz); response (75 μsec de-emphasis) 20-15,000 Hz ±0.2 dB; Dolby frequency response ±1 dB; Dolby de-emphasis 25 μsec; antenna input imp. 300 ohms (balanced), 75 ohms (unbalanced); 19" W × 7" H × 14¼" D (behind panel)..... $2500.00
Rosewood cabinet $150.00
Clear or black anodized panel $25.00
19-inch rack panel and frame $150.00
Remote push-button tuning assembly. $150.00

SHERWOOD

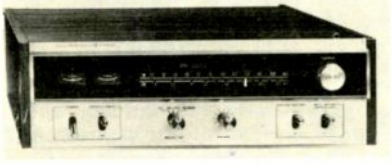
SEL-300 AM-FM Stereo Tuner



FM sensitivity 1.5 μV for 30 dB quieting; S/N −70 dB; stereo dist. 0.3% at 100% mod; spurious rejection 100 dB; stereo separation 40 dB (1000 Hz). Has stereo indicator light, signal-strength meter, center-tuning meter, inter-station muting, multi-path indicator output, FET front-end, tape recording/monitoring facilities, front-panel tape dubbing, separate headphone amp., provision for future 4-ch broadcasts, and 7-segment digital station frequency readout $499.95
Walnut-grained vinyl case available optional extra.

S-2400 AM-FM Stereo Tuner

FM sensitivity 1.8 μV for 30 dB quieting; 1.5 dB capture ratio. Has signal-strength meter, cen-



ter-tune meter, FM muting, scope outputs, variable output, and ceramic filter. Walnut case. 7½" W × 5½" H × 14" D $229.95

SONY

STC-7000 AM-FM Tuner/Preamp

Stereo design. FM sensitivity 1.7 μV for 30 dB quieting. Selectivity 100 dB; (S + N)/N −70 dB.

1 Tuners

HD 0.5% in stereo & at 400 Hz, 100% modulation. Capture ratio 1 dB. Preamp response 10-100,000 Hz ±2 dB. HD 0.1% at rated output. Has solid-state i.f. filters, center-of-channel tuning meter, output jacks for oscilloscopes, 75-ohm antenna input, monitor circuits for two tape recorders. Overall size 18¼" × 5⅜" × 13⅜" D. $589.50

ST-5150 AM-FM Tuner

Features 2 μV FM sensitivity for 30 dB quieting, solid-state i.f. filters. (S + N)/N −70 dB; selec-

tivity −70 dB. HD 0.5% on stereo. Has multipath scope outputs, inter-station muting, and two meters. Overall size 15¾" × 5⅞" × 13⅜" D. $280.00

ST-5130 AM-FM Stereo Tuner

FM sensitivity 1.5 μV (IHF); image & spurious rejection 100 dB; capture ratio 1 dB; selectivity 100 dB. (S + N)/N 75 dB. HD 0.3% stereo. Features a special pulse-sensing discriminator (INS circuit) which applies short-term muting to man-made noise pulses. Has linear dial scale, two tuning meters, terminals for oscilloscope. 5⅞" H × 15¾" W × 13½" D $370.00

ST-5055 AM-FM Stereo Tuner

FM sensitivity 2.2 μV (IHF); image rejection 45 dB; spurious rejection 75 dB; capture ratio 1 dB; selectivity 70 dB. (S + N)/N 68 dB. HD 0.6% stereo. Features black-out linear dial scale with illuminated pointer; muting circuit; tuning meter. 4¾" H × 16¼" W × 11¼" D $210.00

SUPERSCOPE

T-210 AM-FM Stereo Tuner

FM usable sensitivity 5 μV (IHF); (S + N)/N 60 dB; HD 1% at 1 kHz; image rejection 40 dB; capture ratio 6 dB. Features signal-strength tuning meter; push-button on/off switch which does not affect other pre-set controls; mode switch; flywheel tuning. 14⅜" W × 4½" H × 7⅞" D $119.95

T-220 AM-FM Stereo Tuner

FM usable sensitivity 2.8 μV (IHF); stereo separation 32 dB at 1 kHz; capture ratio 3.0 dB; THD 0.6% stereo. Has full complement of controls. 13¾" W × 5¼" H × 12½" D ... $179.95

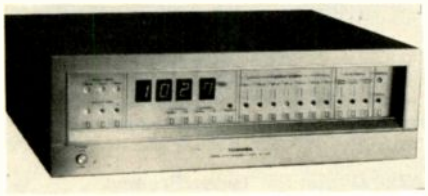
TOSHIBA

ST-410 AM-FM Stereo Tuner

FM sensitivity 1.8 μV for 30 dB (S + N)/N; S/N −66 dB; capture ratio 1.5 dB. Selectivity −80 dB; image rejection −80 dB; i.f. rejection −80 dB; AM suppression −50 dB. Has 75 & 300 ohm antenna inputs; output 600 mV fixed & 0 −2 V variable. Features signal-strength & center-of-channel tuning meters, ceramic filter. $239.95

ST-910 FM Digital Synthesizer Tuner

FM sensitivity 1.5 μV for 30 dB S/N; S/N 70 dB; capture ratio 1.0 dB; selectivity 100 dB; image

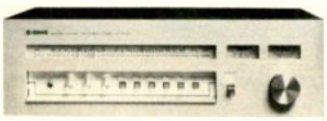


rejection 100 dB; 75 & 300 ohm antenna inputs; output: 1.5 V fixed; 0-1.5 V variable; features crystal-controlled PLL frequency-synthesizer tuner; no knob control; digital display; has seven programmable pre-set stations; automatic searching; manual tuning $1800.00

YAMAHA

CT7000 FM Stereo Tuner

Features negative-feedback multiplex decoder; front-panel selectable i.f. mode of operation



for 85 dB selectivity (normal) or 18 dB (broad); i.f. stage has 7-stage differential amplification, ceramic filter block, and discriminator circuit for 1.0 dB capture ratio; ceramic and LC filters; 7-gang tuning capacitor for 120 dB (IHF) spurious signal rejection; phase lock loop decoder; two meters (three functions); automatic high-blend circuit; OTL headphone amp (20-20,000 Hz at 0.3% dist.); frequency linear dial scale. $1200.00

CT800 AM-FM Stereo Tuner

FM sensitivity 1.7 μV; capture ratio 1.0 dB; selectivity 80 dB (IHF); S/N 72 dB stereo (IHF);

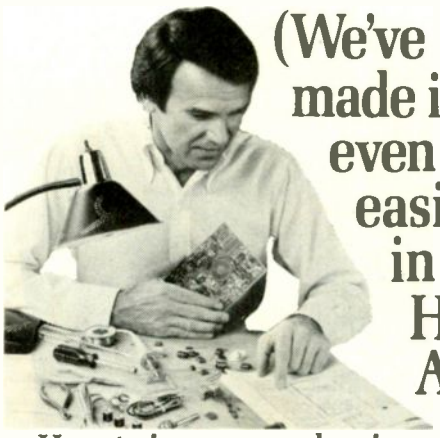
THD 0.3% stereo at 400 Hz, 1% 50-10,000 Hz; stereo separation 45 dB (400 Hz), 35 dB (50-10,000 Hz); frequency response 50-10,000 Hz +0.5 dB, −0.5 dB; 20-15,000 Hz +1.5 dB, −1.5 dB; has full complement of inputs, outputs, meters, and switches. Walnut cabinet. 17¼" × 5¾" H × 12¾" D $370.00

CT600. Similar to CT800 except 2.0 μV FM sensitivity; capture ratio 1.5 dB; selectivity 75 dB (IHF); S/N 66 dB stereo (IHF); stereo separation 40 dB; frequency response 50-10,000 Hz +1.0 dB, −1.0 dB. $270.00

CT400 AM-FM Stereo Tuner

FM sensitivity 5.0 μV (IHF); FET front-end; THD 0.5% stereo; image rejection 55 dB; spurious response rejection 75 dB; selectivity (IHF) 75 dB; S/N 66 dB; capture ratio 1.5 dB; frequency response 20-14,000 Hz +1.5, −3.0 dB; one unswitched a.c. outlet. Walnut-grain enclosure. 17¼" W × 5¾" H × 11¾" D $210.00

If you want a better receiver... build it yourself.

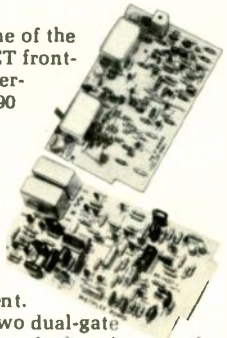


(We've made it even easier, in the Heathkit AR-1500A)

How to improve a classic

The Heathkit AR-1500 set new standards for stereo performance when it was introduced in 1971. So, in designing the AR-1500A, we set out with two goals in mind: first, to make our best receiver even better and second, to make it even easier to build than before.

The "inside" story



To start with, the FM tuner ranks as one of the finest in the industry, with its 4-ganged FET front-end; sensitivity under 1.8 μV; two computer-designed 5-pole LC filters delivering over 90 dB selectivity; a 1.5 dB capture ratio. It all means you'll hear more FM stations, less noise and practically no interference.

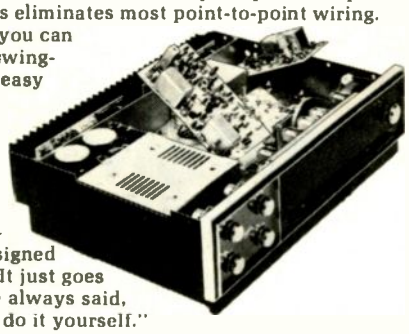
Our new phase lock loop multiplex demodulator maintains excellent separation at all frequencies, not just 1000 Hz so FM stereo will sound even better. And the new multiplex section requires only one simple adjustment.

Even the AM rates hi-fi status—with two dual-gate MOSFETS, one J-FET and a 12-pole LC filter. And we improved the Automatic Gain Control to keep AM signals rock steady.

The amplifier is so good we had a hard time improving it — 60 watts per channel into 8 ohms at less than 0.25% total harmonic distortion from 20 to 20,000 Hz and less than 0.1% intermodulation distortion. So we refined it by adding an impedance-sensing device to the protective circuitry. It prevents false triggering at low frequencies, which means deep, solid bass with less noise.

Who can build it? Anyone!

You can build the AR-1500A even if you've never built a kit before. The illustrated assembly manual guides you step by step and a separate check-out meter tests the work as you go. The parts for each subassembly are packed separately and a wiring harness eliminates most point-to-point wiring.



And since you built it, you can service it. The meter and swing-out circuit boards make it easy to keep your AR-1500A in peak operating condition year after year.

Without a doubt the AR-1500A is one of the world's finest stereo receivers. It ought to be — it's been painstakingly designed to be handcrafted by you. It just goes to prove what people have always said, "if you want it done right, do it yourself."

Kit AR-1500A, less cabinet, 53 lbs., mailable 399.95*
ARA-1500-1, walnut stained veneer case, 8 lbs., mailable ... 24.95*

AR-1500A SPECIFICATIONS—AMPLIFIER—POWER OUTPUT: 60 WATTS RMS PER CHANNEL INTO 8 OHMS AT LESS THAN 0.25% TOTAL HARMONIC DISTORTION FROM 20-20,000 HZ. Frequency response (1 watt level): –1 dB, 9 Hz to 80 kHz. Intermodulation Distortion: Less than 0.1% with 60 watts output. Damping Factor: Greater than 60. Channel Separation: Phono, 55 dB. FM SECTION (Monophonic): Sensitivity: 1.8 μV.* Selectivity: 90 dB.* Image Rejection: 100 dB.* IF Rejection: 100 dB.* Capture Ratio: 1.5 dB.* Harmonic Distortion: 0.5% or less.* Intermodulation Distortion: 0.1% or less.* (Stereophonic): Channel Separation: 40 dB or greater at midfrequencies; 35 dB at 50 Hz; 25 dB at 10 kHz; 20 dB at 15 kHz. AM SECTION: Sensitivity: 50 μV with external input; 300 μV per meter with radiated input. Selectivity: 20 dB at 10 kHz; 60 dB at 20 kHz. Image Rejection: 70 dB at 600 kHz; 50 dB at 1400 kHz. IF Rejection: 70 dB at 100 kHz. Dimensions: Overall – 18½" W x 5⅛" D x 13⅞" D.

*Rated IHF (Institute of High Fidelity) Standards.

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HF-296

CIRCLE NO. 25 ON READER SERVICE CARD

We're not afraid to turn our back on you.

The Sylvania RS4744

We can afford to be very forward about our back.

Because the back of our RS 4744 stereo receiver is one of the most versatile you'll ever see. We've got phono inputs for two different turntables. And two sets of tape monitor input and output jacks. And terminals for main speakers, remote speakers, and PQ4 speakers. And three AC power outlets, one switched and two unswitched. The rest you can see for yourself in the picture above.

But what's behind our back is just as impressive as the back itself.

As *Popular Electronics** put it, the RS 4744 "met or surpassed all the published specifications we were able to test" and was "...well above average in the important performance aspects."

Take power, for example. *Popular Electronics* found the RS 4744 "conservatively rated" at 60 watts per channel, min. RMS at 8 ohms from 20Hz to 20kHz with no more than .25% Total Harmonic Distortion. Which made it "outstanding for a receiver in the RS 4744's price range." FM 50 dB quieting sensitivity was equally impressive—"a very good 3μv in mono and 35μv in stereo."

But don't take our word for it. Or their word for it. Go see the RS 4744 for yourself.

Back or front, any way you look at it, the RS 4744 is one fine stereo receiver.

*Popular Electronics, December 1974 Issue.

GTE SYLVANIA

CIRCLE NO. 21 ON READER SERVICE CARD

2 RECEIVERS

A receiver is a combination of an integrated amplifier and a tuner, sharing the same chassis, power supply, and cabinet. This lowers costs as compared to separate components. (See Amplifier and Tuner section for details on the components that make up a receiver.)

Few receivers have such niceties as switchable muting thresholds or oscilloscope outputs. Also, separate amplifiers may have one or two extra inputs or other convenience features not found in receivers. In the higher price ranges, however, receivers can be fully equivalent to many separate component systems.

Traditionally, the major limitation of a receiver has been in its power output. As with integrated amplifiers, the problems of heat dissipation and the bulk and weight of heavy-duty power-supply components combine to make a very powerful receiver impractical for most installations. Until recently, the upper power limit for receivers was about 80 watts per channel, but some of the newest deluxe stereo receivers can deliver as much as 120 watts per channel.

Some people prefer to retain the option of up-dating or assembling a system piecemeal, which is the major advantage of separate components. On the other hand, receivers avoid many interconnecting cables with their potentially unreliable connectors. Also, they are more compact, simplifying placement in or on a cabinet or shelf.

Sensitivity (IHF Usable): The least signal at the antenna terminals that results in less than 3.2% (−30 dB) noise plus distortion in the tuner output from a signal modulated 100% at 1000 Hz.

Sensitivity (50 dB Quieting): The least signal at the antenna terminals that results in a noise level in the tuner output 50 dB less than the output from a 100% modulation at 1000 Hz.

Signal-to-Noise Ratio (S/N): Also known as ultimate quieting. The noise level in the tuner output with a 1000 microvolt (μV) input signal, relative to the output when the signal is modulated 100% at 1000 Hz. Expressed in dB.

Distortion: The harmonic distortion in the tuner output from a 1000 μV signal modulated 100% at 1000 Hz.

Capture Ratio: A measure of the tuner's ability to respond only to the stronger of two signals on the same frequency.

Interference Rejection: Includes Alternate Channel Selectivity (rejection of a signal 400 kHz removed from the desired signal), rejection of signals further removed from the signal channel (image, i.f., spurious rejection), and rejection of an amplitude modulation on the same frequency as the desired frequency-modulated signal. Expressed in dB.

Stereo Channel Separation: The amount of left-channel modulation appearing in the tuner's right-channel output, and vice versa.

Muting: A circuit that silences the receiver except when it is tuned to a station of sufficient strength. The muting threshold is the least input signal that will cause a station to be heard.

AKAI

AA-810 AM-FM Stereo Receiver

10 W/ch minimum rms at 8 ohms imp. 20-20,000 Hz at 0.8% THD continuous power output; power bandwidth (IHF) 20-40,000 Hz at 8 ohms (both channels fully driven); frequency response 20-65,000 Hz +0 dB, −3 dB; S/N (IHF) phono 75 dB, aux. 80 dB; channel separation 75 dB (phono, at rated output); IHF FM sensitivity 2 μV; HD 0.8% stereo; S/N 70 dB; full complement of controls. 20.8" W × 4.2" H × 11.7" D. $199.95

AA-810DB. Same except includes Dolby circuit for recording and playback with tape recorder or deck. $249.95

AA-1010DB AM-FM Stereo Receiver

13 W/ch minimum rms at 8 ohms imp. 40-20,000 Hz at 0.8% THD; Dolby noise-reduction

circuit for FM broadcast reception and record or playback with external tape machine; inputs for tape, phono, aux.; stereo headphone output; multiple speaker selection; IHF FM sensitivity 2 μV; 60 dB FM selectivity; 1.5 dB capture ratio; Dolby tone for adjusting external tape machine to 0 VU level. $299.95

AA-1030 AM-FM Stereo Receiver

30 W/ch minimum rms at 8 ohms imp. 20-20,000 Hz at 0.3% THD; IHF FM sensitivity

1.9 μV; 70 dB FM selectivity; 1 dB capture ratio; features variable FM muting; two each inputs for tape and phono, one aux. input; stereo headphone output; tape dubbing capability; convenience a.c. outlet. $350.00

AA-1050 AM-FM Stereo Receiver

50 W/ch minimum rms at 8 ohms imp 20-20,000 Hz at 0.15% THD; IHF FM sensitivity 1.8 μV; 80 dB FM selectivity; 1.0 dB capture ratio; variable FM muting; two each inputs for tape and phono, one aux. input; stereo headphone output; tape dubbing capability; multiple-speaker selection; three a.c. convenience outlets. $450.00

BANG & OLUFSEN

Beomaster 4000 FM Stereo Receiver

40 W/ch continuous power at 8 ohms (60 W/ch at 4 ohms). Power bandwidth 10-35,000 Hz. THD less than 0.1%. Darlington-coupled output

stage. Features ambiophonic stereo circuitry. Second stereo pair can be used for ambio or stereo. Has slide-rule dials; illuminated tuning indicator; signal-strength indicator. Compact design with black aluminum front, wooden top and sides. Cabinet available in rosewood, teak, or oak. 3¾" × 23" × 10⅝". Will fit standard bookshelf. $575.00

3002 FM Stereo Receiver

30 W/ch continuous power at 8 ohms (40 W/ch at 4 ohms) and at 0.6% THD. Power band-

PLEASE NOTE. . . . . .

In the interests of conserving space, all power output specifications have been abbreviated in these Directory sections. For example: "30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD" should be read as: "30 watts minimum rms per channel into 8 ohms with less than 0.3% total harmonic distortion from 20 Hz to 20,000 Hz," in conformance with current Federal Trade Commission rules.

2 Receivers

width 10-30,000 Hz; response 20-40,000 Hz ±2 dB. FM sensitivity 2 μV for 30 dB quieting. Has main/remote speaker switch; signal-strength and center-of-channel tuning meters. Anodized aluminum front, wood top and sides. Cabinet available in rosewood, teak, oak, or white lacquer. 3¾" × 23" × 10¼". Will fit standard bookshelf $475.00

C/M LABORATORIES

RR-805 AM-FM Stereo Receiver

54 W rms/ch with both channels driven and at 0.3% THD; frequency response 20-15,000 Hz ±1 dB; FM sensitivity 1.8 μV (IHF); inputs: phono 2.2 & 4 mV; tape & aux. 115 mV; main 1 V. Has two phono, two tape and two aux. inputs; two main and two remote speaker outputs. Ready to drive feedback speakers. 5¼" H × 19" (relay rack) W × 17" (inc. rack handles) D $600.00
Optional wood cabinet $50.00

CONCORD

CR-50 AM-FM Stereo Receiver

4.5 W/ch continuous power at 8 ohms, 70-20,000 Hz; THD 2%; response 28-25,000 Hz at 1 W output; IHF usable sensitivity 4.5 μV; 30 dB image rejection; i.f. rejection 72 dB; capture ratio 6 dB; S/N 50 dB; stereo separation 25 dB; selectivity 40 dB. Features edge-lighted dial, AM-FM tuning meter; full complement of controls and inputs. Walnut-finished vinyl cabinet. 16⅛" W × 4¼" H × 11½" D $119.95

CR-110 AM-FM Stereo Receiver

5.5 W/ch continuous power at 8 ohms, 40-20,000 Hz, THD 1%; response 28-25,000 Hz at 1 W output; IHF usable sensitivity 3.0 μV; image rejection 49 dB; i.f. rejection 80 dB; capture ratio 3.0 dB; S/N 55 dB; HD 0.8%; stereo separation 35 dB; selectivity 50 dB. Features black-out dial; AM-FM tuning meter; duo-glo indicator to indicate stereo or mono broadcasts; full complement of controls and inputs. Walnut wood-grained vinyl cabinet with champagne-colored brushed aluminum panel. 15½" W × 5" H × 11½" D $149.95

CR-210 AM-FM Stereo Receiver

9.6 W/ch continuous power into 8 ohms, 40-20,000 Hz, THD 1%; response 20-30,000 Hz at 1 W output; IHF usable sensitivity 2.9 μV; image rejection 51 dB; i.f. rejection 83 dB; capture ratio 2.0 dB; S/N 65 dB; HD 0.6%; stereo separation 35 dB; selectivity 43 dB. Features separate fine-tuning control for FM, duo-glo indicator; AM-FM tuning meter; flywheel tuning; full complement of controls and inputs; black-out dial. Walnut wood-grained vinyl cabinet. 16⅛" W × 5¾" H × 12¾" D $199.95

CR-260 AM-FM Stereo Receiver

18.6 W/ch continuous rms power at 8 ohms, 40-20,000 Hz, THD 1%; response 22-40,000 Hz at 1 W output; IHF usable sensitivity 2.3 μV; image

rejection 53 dB; i.f. rejection 85 dB; capture ratio 1.5 dB; S/N 65 dB; HD 0.5%; stereo separation 37 dB; selectivity 46 dB. Features fine-tuning control for FM; duo-glo indicator; separate AM and FM tuning meters; electronic circuit breaker; full complement of controls and inputs. Walnut wood-grain vinyl cabinet. 18½" W × 5¼" H × 13¼" D. $249.95

FISHER

SR132 AM-FM Stereo Receiver

15 W rms/ch into 8 ohms (40-20,000 Hz) at 1.0% THD; FM usable sensitivity 2.8 μV; alternate channel selectivity 40 dB; capture ratio 3 dB; features separate bass & treble controls; loudness contour; tape monitor; FM muting; signal-strength tuning meter; speaker selector switch; front-mounted headphone jack. Walnut-grain vinyl veneer cabinet. $229.95

SR232 AM-FM Stereo Receiver

20 W rms/ch into 8 ohms (20-20,000 Hz) at 1.0% THD; FM usable sensitivity 2.0 μV; capture ratio 1.5 dB; alternate channel selectivity 40 dB; features separate bass & treble controls; loudness contour; switchable FM muting; signal-strength tuning meter; 4-pos. speaker selector switch; 4-pos. program selector; tape monitor; front-mounted headphone jack. Walnut-grain vinyl veneer cabinet $279.95

SR332 AM-FM Stereo Receiver

30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; FM usable sensitivity 1.8 μV;

capture ratio 1.2 dB; alternate channel selectivity 60 dB; features switchable hi/lo filters; dual tape inputs with two-way tape monitor for dubbing; separable amp & preamp sections; oscilloscope output; front-mounted headphone & tape output jacks. Mar & stain-resistant walnut-grain vinyl veneer cabinet. ... $369.95
SR432. Similar to SR332 except 42 W/ch. $449.95

HARMAN/KARDON

330B AM-FM Stereo Receiver

18 W rms/ch into 8 ohms (50-20,000 Hz) at 0.8% THD; power bandwidth 25-20,000 Hz into

8 ohms at 1.0% THD; IM dist. 0.5% from 1 W to full power; hum & noise 75 dB below rated output (unweighted); damping factor 30:1. Response 20-20,000 Hz ±1.0 dB at 1 W/ch. FM sensitivity 2.5 μV (IHF); S/N 60 dB; capture ratio 3 dB; image rejection 40 dB; spurious response rejection 60 dB. Has full complement of controls and inputs. 15⅜" W × 13" D × 4½" H $199.95

430 AM-FM Stereo Receiver

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 4-140,000 Hz at 0.5% THD into 8 ohms with both channels

driven at 1 W/ch; IM 0.12% at rated power output; hum & noise 65 dB below rated output (unweighted); damping factor 40; FM sensitivity 1.9 μV; S/N 77 dB; capture ratio 1.7 dB; image rejection 60 dB; spurious response rejection 82 dB; alternate channel selectivity 50 dB; stereo separation 39 dB. 17" W × 5½" H × 14½ D $319.95

HEATH

AR-1500A AM-FM Stereo Receiver

60 W/ch min. rms into 8 ohms at 0.25% THD from 20-20,000 Hz; IM 0.1% at full power. Response 5-120,000 Hz +0, −3 dB at 1 W. Input sensitivity: mag. phono 1.8 mV, tape, aux, tape

monitor 140 mV. FM sensitivity 1.8 μV for 30 dB quieting. Capture ratio 1.5 dB. 18½" × 5⅛" × 13⅞" D.
Kit $399.95
ARA-1500-1 Walnut-stained veneer case. $24.95

AR-1302 AM-FM Stereo Receiver

20 W/ch min. rms into 8 ohms at 0.25% THD from 20-20,000 Hz. Response 6-35,000 Hz ±1 dB. Input sensitivity: mag. phono 2.4 mV, aux. 180 mV. FM sensitivity 1.6 μV for 30 dB quieting. Capture ratio 2.5 dB (IHF). Features signal-strength and center-of-channel meters; main/remote speaker selection or center-channel output. FM front-end pre-assembled and aligned. 117/230 V, 50-60 Hz operation. 16¾" × 5⅛" × 14½" D.
Kit $279.95
Pecan-stained veneer case $21.95

AR-29 AM-FM Stereo Receiver

35 W/ch min. rms into 8 ohms at 0.25% THD from 20-20,000 Hz; IM 0.2% at full power; 0.1% at 1 W. Response 7-60,000 Hz ±1 dB at 1 W output. Input sensitivity: mag. phono 2.2 mV, aux. 180 mV. FM sensitivity 1.5 μV for 30 dB quieting. Capture ratio 1.5 dB. Has field-strength and center-of-channel tuning meters, main/remote speaker capability or center-channel output. FET tuning unit assembled and pre-aligned. 117/230 V, 50-60 Hz operation. 16¾" × 5⅛" × 14½" D.
Kit $329.95
Pecan-stained veneer case $21.95

AR-14 FM Stereo Receiver

9 W/ch min. rms into 8 ohms at 1.0% THD from 20-20,000 Hz. Response 12-60,000 Hz ±1 dB. FM sensitivity 5 μV for 30 dB quieting. Capture ratio 3 dB (IHF). Pre-assembled front end. 15¼" × 3⅞" × 12" D.
Kit $124.95
Walnut-stained veneer cabinet $13.95
Beige steel cabinet $4.95

AR-1214 AM-FM Stereo Receiver

15 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz. Frequency response 7-100,000 Hz ±1 dB. FM response 20-15,000 Hz ±1 dB; channel separation 40 dB typical, 35 dB minimum; 19 and 38 kHz suppression 55 dB; SCA suppression 55 dB; 2 μV sensitivity;

2 dB capture ratio. Features pre-assembled FM

tuning section; Black Magic panel lighting; flywheel tuning; stereo indicator light; headphone jack; speaker "on-off" button; complete tape monitor facilities. Has full complement of inputs and outputs. 3⅞" H × 17" W × 13" D. Includes walnut-stained veneer end panels. Kit $199.95

AC-1118 AM-FM Stereo Receiver
4½ W/ch min. rms into 8 ohms at 1.0% THD from 50-15,000 Hz; FM tuner sensitivity 5 μV; selectivity 60 dB; 30 dB stereo separation; inputs for ceramic phono and aux.; bass & treble controls; headphone jack; speaker on/off switch. Simulated walnut-grained vinyl-clad metal and plastic case. 17" W × 4" H × 15" D. Kit $139.95
AC-1120. Same as AC-1118 but with a factory assembled and aligned 8-track stereo tape player. 22" W × 4" H × 15" D. Kit $179.95

HERVIC

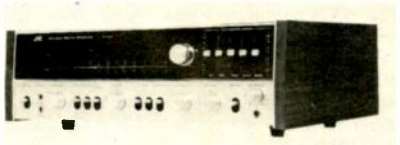
HR150 FM Digital Receiver
Solid-state stereo receiver with large, bright FM digital readout; select any of 100 channels

available across FM band; exact station frequency assignment displayed by four Nixie tubes; fast dialing across band possible because readout count is corrected 60 times/sec.; precision-ground, twin-ball-bearing tuning knob; 100 dB selectivity with 9-pole Butterworth-type toroid phase-linear i.f. filter; slide-switches for bass, mid-range, treble, volume, and balance control. Has front-panel tape in/out jacks; A & B mono/stereo control; lo/high filters; main/remote speaker switch; tape monitoring facilities; aux. 1 & 2, FM, phono switches; headphone jack; 80 W rms/ch into 8 ohms (20-20,000 Hz)..... $849.95
Walnut enclosure $44.95

JVC

All JVC receivers have what is called SEA (Sound Effect Amplifier) 5-section-type tone control system. Controls operate in 2-dB steps up and down within ±12 dB. Center frequencies are 40(60)/250/1000/5000/15,000 Hz.

VR-5535 AM-FM Stereo Receiver
28 W/ch continuous rms power 20-20,000 Hz into 8 ohms and at 0.5% THD. IHF power bandwidth 10-25,000 Hz. Pure complementary OCL power amplifier. SEA control. FM usable sensitivity 2.0 μV; capture ratio 2.0 dB; image rejec-



tion 55 dB; stereo separation 35 dB. Has high filter & low filter, FM muting, two tuning meters, source indicator lights, mike mixing facilities. Four-channel ready for future 4-ch FM broadcasts and will handle matrixed and CD-4 sources with appropriate adapters... $429.95

VR-5525 AM-FM Stereo Receiver
Same as the VR-5535 except 18 W/ch continuous rms power into 8 ohms and at 0.5% THD. Does not have low filter. FM usable sensitivity is 2.2 μV; capture ratio 2.5 dB; stereo separation 33 dB..... $369.95
VR-5515. Same as VR-5525 except 15 W/ch; IHF power bandwidth 15-25,000 Hz; no filters. Has FM line antenna..... $299.95

VR-5505 AM-FM Stereo Receiver
8 W rms/ch into 8 ohms with both channels driven (25-20,000 Hz); THD & IM dist. 1% at

rated power; power bandwidth 30-20,000 Hz; frequency response 20-30,000 Hz ±1 dB; FM sensitivity 2.2 μV (IHF); selectivity 55 dB; linear dial scale; signal-strength/tuning meter; does not include SEA. 5¾" H × 18¼" W × 13" D..... $199.95

KENWOOD

KR-1400 AM-FM Stereo Receiver
10 W rms/ch into 8 ohms (50-20,000 Hz) at 1.0% THD; damping factor 20 at 8 ohms; FM sensitivity (IHF) 2.6 μV; S/N 60 dB; capture ratio 3 dB; alternate channel selectivity 45 dB; response 20-15,000 Hz +0.5, −2 dB; stereo separation 33 dB at 1000 Hz; image rejection 50 dB; spurious rejection 75 dB; HD 0.5% (stereo) at 400 Hz, 100% modulation. Has separate RC-type bass and treble controls; full complement of inputs & outputs. 110-120 V, 50-60 Hz. 21 15/16" × 6 3/16" H × 15" D... $179.95

KR-2400 AM-FM Stereo Receiver
13 W rms/ch into 8 ohms (20-20,000 Hz) at 1.0% THD; FM sensitivity 2.5 μV; quieting slope 40 dB at 5 μV; S/N 62 dB; capture ratio 3.0 dB; alternate channel selectivity 45 dB; response 20-15,000 Hz +0.5, −2.0 dB; stereo separation 0.6% (stereo) at 400 Hz, 100% mod.; image rejection 50 dB; spurious rejection 75 dB; IC bass & treble control circuit; tape monitor circuit; dual-speaker selector; linear FM dial scale; full complement of inputs, outputs, and controls. 110-120 V, 50-60 Hz. 18 15/16" W × 5⅜" H × 13 9/16" D..... $219.95
KR-3400. Similar to KR-2400 except 16 W rms/ch. $259.95

KR-4400 AM-FM Stereo Receiver
25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity 2.1 μV; quieting slope 45 dB at 5 μV; S/N 65 dB; capture ratio

2.0 dB; alternate channel selectivity 55 dB; response 20-15,000 Hz +0.5, −2 dB; stereo separation 35 dB at 1000 Hz; HD (stereo) 0.6% (400 Hz, 100% modulation); image rejection 60 dB; spurious rejection 80 dB. Has full complement of inputs & outputs, including special input and output terminals for any 4-channel decoder or adapter, also special FM "Det Out" for future discrete broadcasts. 110-120 V, 50-60 Hz. 18 15/16" W × 5⅜" H × 13 9/16" D. $299.95

KR-5400 AM-FM Stereo Receiver
35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity (IHF) 1.9 μV; quieting

2 Receivers

slope 48 dB at 5 μV; S/N 68 dB; capture ratio 1.5 dB; selectivity (alternate channel) 65 dB; response 20-15,000 Hz +0.5, −1.5 dB; stereo separation 35 dB at 1000 Hz; HD 0.5% stereo (400 Hz, 100% modulation); image rejection 70 dB; spurious rejection 90 dB; full complement of inputs & outputs; 4-channel ready. 110-120 V, 50-60 Hz. Walnut cabinet. 18 15/16" W × 5 15/16" H × 13 9/16" D. $379.95

KR-6400. Same as KR5400 except 45 W rms/ch. $449.95

KR-7400 AM-FM Stereo Receiver

63 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; FM sensitivity 1.7 μV; quieting slope

55 dB at 5 μV; S/N 70 dB; capture ratio 1.3 dB; alternate channel selectivity 80 dB; response 20-15,000 Hz +0.5, −1.5 dB; stereo separation 40 dB at 1000 Hz, 30 dB at 10,000 Hz; HD 0.5% stereo (400 Hz, 100% mod.); image rejection 90 dB; spurious rejection 100 dB. Has mid-range control as well as bass & treble tone controls. 110-120 V, 50-60 Hz. Walnut cabinet. 18 15/16" W × 5 15/16" H × 13 9/16" D $519.95

KR-9400 AM-FM Stereo Receiver

120 W/ch rms into 8 ohms (20-20,000 Hz) at 0.1% THD; features tape-through circuit; in-

jection circuit; triple tone controls. FM sensitivity 1.7 μV; quieting slope 56 dB at 5 μV; S/N 72 dB; capture ratio 1.3 dB; alternate channel selectivity 80 dB; stereo separation 45 dB at 1000 Hz, 35 dB at 10,000 Hz; HD 0.5% stereo (400 Hz, 100% mod.); image rejection 80 dB; spurious rejection 90 dB; multi-path detection meter; deviation meter. 21 15/16" W × 6 9/16" H × 15 9/16" D. $749.95

KLH

Fifty-Two/A AM-FM-Stereo Receiver

32 W rms/ch into 8 ohms (25-20,000 Hz) at 1.0% THD; response 15-22,500 Hz ±2 dB at

1 W. FM usable sensitivity 1.8 μV for 30 dB. quieting. Sensitivity: mag. phono 3.5 mV; aux. & tape monitor 500 mV. FM capture ratio 2.0 dB. Has signal-strength & center-of-channel tuning meters and ceramic filters in i.f. stages. 18" W × 5 1/4" H × 11 1/2" D. Walnut grained cabinet $349.95

Fifty-Five/A AM-FM-Stereo Receiver

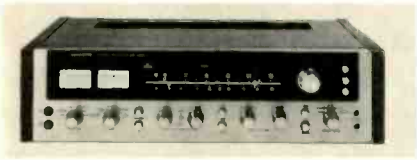
13 W rms/ch into 8 ohms (45-15,000 Hz) at 1.0% THD; response 15-22,500 Hz ±2 dB at 1

W. FM usable sensitivity 2.0 μV for 30 dB quieting; capture ratio 2.5 dB. Input sensitivity: mag. phono 2.5 mV; aux. & tape monitor 330 mV. has four-stage i.f. with two ceramic filters. 16 1/2" W × 5 1/4" H × 12 1/4" D. Walnut grained cabinet $259.95

LAFAYETTE

LR-3500 AM-FM Stereo Receiver

Features two sets of tape-recorder outputs for recording simultaneously or tape duplicating;



47 W rms/ch into 8 ohms at 0.5% THD (20-20,000 Hz) with both channels driven; power bandwidth 12-50,000 Hz; input sensitivity: mag. phono #2 150 mV (low), 40 mV (high), aux. 250 mV, tape A & B 500 mV, mike 6 mV; hum & noise: mag. −68 dB, aux. −75 dB; FM sensitivity 1.65 μV; capture ratio 1.5 dB; stereo separation 40 dB; has FM and audio muting, main/remote speaker outputs. 19 1/8" W × 5 1/2" H × 14 1/4" D $399.95

LR-1100 AM-FM Stereo Receiver

22 W rms/ch into 8 ohms at 0.5% THD (20-20,000 Hz) with both channels driven; power bandwidth 15-30,000 Hz; input sensitivity: mag. phono #2 6 mV (low), 2.5 mV (high), aux. 250 mV, tape 500 mV; hum & noise: aux. −75 dB, mag. phono −65 dB; FM sensitivity 1.75 μV; capture ratio 1.5 dB; main/remote speaker switching; tape monitor; FM muting; front-panel stereo tape & headphone output. 17 5/16" W × 5" H × 14" D $249.95

LR-310A AM-FM Stereo Receiver

13 1/2 W rms/ch into 8 ohms at 0.8% THD (40-20,000 Hz) with both channels driven; input sensitivity: mag. phono 4 mV, ceramic phono 135 mV, tape play 500 mV, aux. 250 mV; hum & noise: mag. −60 dB, aux. −75 dB; FM sensitivity 2.5 μV; capture ratio 25 dB; selectivity 60 dB; features blackout dial; AM-FM signal-strength meter; FM stereo indicator; front-panel tape and headphone jacks. Vinyl-clad walnut-finish case. 14 5/8" × 4 3/8" × 12". $199.95

LR-2200 AM-FM Stereo Receiver

27 W rms/ch with both channels driven at 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity (IHF) 1.75 μV; selectivity 60 dB; separation 40 dB (1000 Hz); capture ratio 1.5 dB; S/N 70 dB; features source selector switch; derived 4-channel; dual tuning meters; blackout slide-rule tuning dial; walnut-finish wood case. 17 5/16" × 5" H × 14" D $299.95

MARANTZ

2220B AM-FM Stereo Receiver

20 W/ch continuous power at 8 ohms with both channels driven (20-20,000 Hz) at 0.5% THD. FM sensitivity 2.0 μV for 30 dB quieting; THD 0.5% stereo; capture ratio 2.5 dB; stereo separation 40 dB at 1 kHz; Has provisions for mag-

netic phono, tape decks, phones. Features bass, treble, and mid-range tone controls; 25 μsec Dolby de-emphasis switch $299.95

2235 AM-FM Stereo Receiver

35 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD. FM sensitivity 1.9 μV for 30 dB quieting; capture ratio 1.5 (IHF). THD 0.4% stereo; stereo separation 40 dB at 1000 Hz. Has provisions for magnetic phono, two tape decks, phones. Features bass, treble, and mid-range tone controls; 25 μsec FM Dolby de-emphasis switch. 16 7/8" × 5" × 14" D ..... $399.95 Walnut cabinet optional extra.

2240 AM-FM Stereo Receiver

40 W/ch continuous into 8 ohms with both channels driven (20-20,000 Hz) at 0.3% THD. FM sensitivity 1.9 μV for 30 dB quieting; capture ratio 1.5 dB (IHF). Features phase-lock-loop FM multiplex demodulator; bass, treble, and mid-range tone controls; two tape monitor facilities. 25 μsec FM Dolby de-emphasis switch ..... $449.95 Walnut cabinet optional extra.

2250 AM-FM Stereo Receiver

50 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD. FM sensitivity 1.9 μV for 30 dB quieting; THD 0.4% stereo; capture ratio 1.5 dB; features phase-lock-loop FM multiplex demodulator; bass, mid-range, and treble controls; variable tone turnover; two tape monitor facilities; 25 μsec FM Dolby de-emphasis switch $499.95

2275 AM-FM Stereo Receiver

75 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz); IM & THD 0.25%; frequency response 20-20,000 Hz ±0.25 dB; power bandwidth 7-70,000 Hz (IHF) with both channels driven; FM sensitivity 1.9 μV; THD 0.35% stereo; selectivity 80 dB; capture ratio 1.5 dB; stereo separation 42 dB at 1000 Hz; spurious rejection 100 dB; features variable-frequency tone control turnover points and mid-range tone control; Dolby FM de-emphasis switch; facilities for two tape recorders; mode switch (left, right, stereo, stereo reverse, mono); full complement of inputs and outputs $649.95

2325 AM-FM Stereo Receiver

125 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz); IM & THD 0.15%; frequency response 20-20,000 Hz ±0.25 dB; power bandwidth 5-70,000 Hz (IHF) with both channels driven; FM sensitivity 1.8 μV; THD 0.3% stereo; selectivity 80 dB; capture ratio 1.25 dB; stereo separation 42 dB at 1000 Hz; spurious, image, and i.f. rejection 100 dB; features built-in Dolby noise reduction system; variable-frequency tone control turnover points and mid-range tone control; complete facilities for two tape recorders; mode switch. $799.95

MX

1570 AM-FM Stereo Receiver

35 W rms/ch into 8 ohms with (20-20,000 Hz) at 0.5% THD. IM 0.8%; frequency response

20-25,000 Hz; FM sensitivity (IHF) 1.8 μV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB at 1000 Hz, 35 dB at 10,000 Hz; HD 0.3%; image rejection 97 dB; spurious rejection 94 dB; features 6-pole linear phase filters; switchable signal-strength/center-tuning meter; low-pass audio filters; OCL direct-coupled differential amplifier; full complement of inputs, outputs, switches, and controls. 6" H × 19" W × 15" D. Veneer cabinet. $399.95

1580 AM-FM Stereo Receiver

60 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD. IM dist. 0.8%; frequency response

20-25,000 Hz ±2 dB; FM sensitivity 1.8 μV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB at 1000 Hz, 35 dB at 10,000 Hz; HD 0.3%; image rejection 97 dB; spurious rejection 94 dB; features 6-pole linear phase filters; high-gain IC quadrature FM detector; switchable signal-strength/center-channel meter; full complement of controls, inputs, outputs, and switches; auto/off power switch for use with automatic turntable. 6" H × 19" W × 15" D. Veneer with grained walnut finish.. $479.95

1142 AM-FM Stereo Receiver

15 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; IM dist. 0.8%; response 20-25,000 Hz ±2 dB; FM sensitivity 2.2 μV; selectivity 58 dB; capture ratio 1.7 dB; stereo separation 35 at 1000 Hz; HD 0.8% stereo; image rejection 60 dB; spurious rejection 75 dB; features center-of-channel tuning meter; full complement of inputs & outputs; modular construction. walnut-grained veneer cabinet. 5½" H × 17¾" W × 12¾" D $239.95

1143. Similar to 1142 except 20 W rms/ch; FM sensitivity 2.1 μV; selectivity 65 dB. $299.95

1561 AM-FM Stereo Receiver

28 W rms/ch into 8 ohms (20-20,000) at 0.3% THD; IM dist; 0.5% frequency response 20-

25,000 Hz ±2 dB; FM sensitivity 1.8 μV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB (1000 Hz), 35 dB (10,000 Hz); image rejection 97 dB; spurious rejection 94 dB; has full complement of controls. Walnut-veneer cabinet. 6" H × 19" W × 15" D $379.95

1571. Same as 1561 except 40 W rms/ch; THD 0.3% $429.95

1581. Same as 1571 except 60 W rms/ch $529.95

NIKKO

2025 AM-FM Stereo Receiver

10 W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD; features phase-lock-loop multiplex circuits; ceramic filters; FM sensitivity 2.5 μV; selectivity 40 dB; capture ratio 3.0 dB. Comes with wooden cabinet $199.95

3035. Similar to 2025 except 15 W rms/ch at 0.8% THD; features direct-coupled OCL pure complementary power amp; quadrature detector; FM sensitivity 2.0 μV; selectivity 55 dB; capture ratio 1.5 dB $249.95

5055. Similar to 3035 except 18 W rms/ch at 0.18% THD; features phase-linear ceramic filters. Comes with brushed aluminum front panel and wooden cabinet $299.95

6065. Similar to 5055 except 30 W rms/ch at 0.5% THD $349.95

7075. Similar to 6065 except 38 W rms/ch; FM sensitivity 1.9 μV; selectivity 65 dB; capture ratio 1.3 dB $399.95

8085. Similar to 7075 except 45 W rms/ch $449.95

9090 AM-FM Stereo Receiver

58 W rms/ch at 8 ohms (20-20,000 Hz) at 0.3% THD; frequency response 10-50,000 Hz ±1 dB;

THD & IM dist. 0.5% at rated output; FM sensitivity 1.8 μV; selectivity 70 dB; image rejection 80 dB; i.f. rejection 90 dB; S/N 70 dB; capture ratio 1.8 dB; stereo separation 40 dB at 1000 Hz; features 5-position mode switch; bright function indicators; FM stereo indicator; three stereo-pair speaker selector; FM muting switch; high & low filters; loudness control; stereo headphone jack; three a.c. outlets (one switched); 4-channel composite signal output; pre/power amplifier separable for 4-channel and other uses; has full complement of controls, inputs, and outputs. 18¹⁵⁄₁₆" W × 15¼" D × 6½" H $499.95

ONKYO

TX-670 AM-FM Stereo Receiver

56 W rms into 8 ohms (20-20,000 Hz) at 0.3% THD. Frequency response 15-30,000 Hz ±1 dB. FM sensitivity 1.8 μV; capture ratio 1.5 dB; (S + N)/N 70 dB; selectivity 70 dB; image rejection 80 dB; dual tuning meters (center-of-channel & signal-strength), separable left/right tone control, outputs for three speaker systems, tape-to-tape dubbing, full complement of input/output terminals. 21" W × 5½" H × 16¾" D $519.95

TX-440 AM-FM Stereo Receiver

24 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD. Frequency response 20-30,000 Hz. FM sensitivity 2.0 μV; capture ratio 2 dB; selectivity 65 dB; (S + N)/N 70 dB. HD 0.8% stereo. Response 20-15,000 Hz ±1.5 dB; stereo separation 40 dB at 400 Hz. Features linear dial scale, two tuning meters (signal-strength and center tuning), FM muting, tape-to-tape record & monitoring, two a.c. outlets. 18½" W × 14¾" D × 5½" H $349.95

TX-560 AM-FM Stereo Receiver

48 W rm/ch into 8 ohms (20-20,000 Hz); at 0.5% THD; frequency response 15-30,000 Hz

±1 dB; FM sensitivity 1.8 μV (IHF); capture ratio 1.5 dB; image rejection 70 dB; S/N 70 dB; HD 0.7% stereo; features signal-strength and center-tuning meters; separable left & right tone controls; outputs for three speaker systems; tape-to-tape dubbing facilities; full complement of input and output terminals, jacks, switches, and terminals. Walnut-grained vinyl over Lauan plywood. 18½" W × 14¾" D × 5½ H $449.95

TX-330 AM-FM Stereo Receiver

17 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 20-30,000 Hz ±1 dB; FM sensitivity 2.5 μV (IHF); capture ratio 2 dB; selectivity 60 dB; image rejection 50 dB; S/N 65 dB; stereo separation 35 dB at 400 Hz; frequency response 20-15,000 Hz ±2 dB; features center-tuning and signal-strength tuning meters; built-in 4-ch matrix circuit for synthesizing 4-channel sound; full complement of inputs and outputs, jacks, switches, and terminals. Walnut-grained vinyl over Lauan plywood. 18½" W × 14¾" D × 5½" H $299.95

TX-220 AM-FM Stereo Receiver

12 W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD; S/N 60 dB (phono), 70 dB (aux.); frequency response 25-30,000 Hz ±1 dB; FM sensitivity 3 μV (IHF); capture ratio 2 dB; image rejection 50 dB; stereo separation 35 dB at 400 Hz; frequency response 20-15,000 Hz ±2 dB; features dual-purpose tuning meter; built-in 4-channel synthesizer; mike mixing circuit; full complement of inputs & outputs. Walnut-grained vinyl over Lauan plywood. 16⅝" W × 13¾" D × 5⅜" H $219.95

PILOT

252 AM-FM Stereo Receiver

25 W rms/ch at 8 ohms (20-20,000 Hz) at 0.5% THD; response 20-20,000 Hz ±1.0 dB. FM sensitivity 2.2 μV for 30 dB (S + N)/N. Selectivity −50 dB. (S + N)/N − 60 dB; capture ratio 2 dB. Supplied with walnut veneer wood cabinet. 18" × 5⅛" × 13½" D $309.90

253 AM-FM Stereo Receiver

35 W rms/ch at 8 ohms (20-20,000 Hz) at 0.5% HD; response 20-20,000 Hz ±1 dB. Input sensitivity: mag. phono #1 & #2 2.5 to 4.5 mV; mike 1 mV; aux. 250 mV; tape output 250 mV. The AM-FM tuner circuitry is the same as in the Model 211 stereo tuner. With walnut wood cabinet. 18" × 5⅛" × 13½" D $389.90

254 AM-FM Stereo Receiver

Same as the Model 253 AM-FM receiver except has greater power output: 65 W rms/ch into 8 ohms (20-20,000 Hz) at 0.4% THD. Features mike mixing and two tuning meters. With cabinet. 18½" W × 6½" H × 17½" D. $549.90

525 AM-FM Stereo Receiver

25 W rms/ch into 8 ohms at 0.5% THD from 20-20,000 Hz; response 20-20,000 Hz ±1 dB; complementary symmetry, fused outputs, separate dual-concentric bass & treble controls; linear FM dial & AM-FM tuning meter; automatic stereo light; phase lock loop multiplex; FM sensitivity 2.2 μV; selectivity 65 dB (IHF); 2 dB capture ratio; has FET front end, ceramic filters, FM muting; 75/300 ohm antenna inputs; push-buttons for tape monitor, high filter, loudness, main/remote speakers; features front-panel headphone jack, phono input, a.c. receptacle, separate power switch. Walnut-veneer wood cabinet $349.90

540 AM-FM Stereo Receiver

40 W rms/ch into 8 ohms at 0.3% THD (20-20,000 Hz); response 20-20,000 Hz ±1 dB; electronic output circuit protection; main amps/preamps accessible by removing rear jumpers; has linear FM dial scale, "Pilotune" center-channel tuning indicator, automatic stereo indicator, AM-FM tuning meter, function lights; FM sensitivity 1.8 μV (IHF); selectivity 75 dB; capture ratio 1.5 dB; 75/300 ohm antenna input; features FM muting, tape monitor, high filter, loudness, main/remote speaker switches; front-panel jacks for headphones, mike, tape; two phono inputs, two a.c. receptacles, separate power switch $419.90

PIONEER

SX-434 AM-FM Stereo Receiver

15 W/ch continuous power into 8 ohms (40-20,000 Hz); 16 W/ch into 8 ohms at 1000 Hz;

2 Receivers

HD & IM dist. 0.8% continuous power outputs; power bandwidth 10-70,000 Hz; FM sensitivity (IHF) 1.9 μV; capture ratio 1 dB; selectivity 60 dB; S/N 70 dB; image rejection 60 dB, i.f. rejection 90 dB; spurious rejection 75 dB; HD 0.4% stereo; response 20-15,000 Hz +0.2 dB, −2.0 dB; 50-10,000 Hz +0.2 dB, −0.5 dB; stereo separation 40 dB (1000 Hz), 30 dB (50-10,000 Hz); features full complement of inputs, outputs, switches, and controls. 16⅞" W × 5½" H × 13⅜" D $239.95

SX-535. Same as SX-434 but 20 W rms/ch into 8 ohms (40-20,000 Hz); 22 W/ch into 8 ohms at 1000 Hz; 18⅞" W × 5¾" H × 15⅞" D . . $299.95

SX-636 AM-FM Stereo Receiver

25 W/ch continuous power into 8 ohms (20-20,000 Hz); 27 W/ch into 8 ohms at 1000 Hz; HD & IM dist. 0.5%; power bandwidth 5-60,000 Hz; FM sensitivity (IHF) 1.9 μV; capture ratio 1 dB; selectivity 60 dB; S/N 70 dB; image rejection 60 dB; i.f. rejection 90 dB; spurious rejection 75 dB; HD 0.4% stereo; response 20-15,000 Hz +0.2 dB, −2.0 dB; 50-10,000 Hz +0.2 dB, −0.5 dB; stereo separation 40 dB (1000 Hz), 30 dB (50-10,000 Hz); 18⅞" W × 5¾" H × 15⅞" D $349.95

SX-737. Same as SX-636 except 35 W/ch (20-20,000 Hz), 40 W/ch (1000 Hz); FM image rejection 80 dB; i.f. & spurious rejection 100 dB; 19⅝" W × 6¼" H × 17¼" D. $399.95

SX-838 AM-FM Stereo Receiver

50 W/ch continuous power output into 8 ohms (20-20,000 Hz); 55 W/ch at 1000 Hz; HD & IM dist. 0.3%; power bandwidth 5-40,000 Hz; frequency response 10-70,000 Hz; FM sensitivity (IHF) 1.8 μV; capture ratio 1 dB; selectivity 80 dB; S/N 70 dB; image rejection 85 dB; i.f. & spurious rejection 100 dB; HD 0.4% stereo; frequency response 20-15,000 Hz +0.2 dB, −2.0 dB; 50-10,000 Hz +0.2 dB, −0.5 dB; stereo separation 40 dB (1000 Hz), 30 dB (50-10,000 Hz); has full complement of inputs, outputs, switches; signal-strength & tuning meters; 20⅜" W × 6⅞" H × 16½" D $499.95

SX-939. Same as SX-838 except 70 W/ch; amplifier frequency response 7-100,000 Hz. $599.95

SX-1010 AM-FM Stereo Receiver

100 W/ch continuous power output into 8 ohms (20-20,000 Hz); 110 W/ch at 1000 Hz; HD & IM dist. 0.1%; power bandwidth 5-40,000 Hz; frequency response 7-100,000 Hz; FM tuner sensitivity 1.7 μV; capture ratio 1 dB; selectivity 90 dB; S/N 72 dB; image, i.f., and spurious rejection 110 dB; HD 0.3% stereo; response 20-15,000 Hz +0.2 dB, −2.0 dB; 50-10,000 Hz +0.2 dB, −0.5 dB; stereo separation 40 dB (1000 Hz); 30 dB (50-10,000 Hz); features twin tone control system that provides approx. 3000 different combinations on tonal characterstics; signal-strength & tuning meters; full complement of inputs, outputs, switches & controls. 20⅞" W × 6⅞" H × 17½" D $699.95

RADIO SHACK

STA-77 AM-FM Stereo Receiver

16 W rms/ch into 8 ohms with both channels driven at 1% THD (20-20,000 Hz); 18 W rms/ch at 1000 Hz; response 15-35,000 Hz ±2 dB; S/N 60 dB (phono & aux.); FM sensitivity 2.5

μV; capture ratio 3 dB; image rejection 50 dB; alternate channel rejection 50 dB; THD 1% 1 mV mono; S/N 65 dB 1 mV; stereo separation 34 dB at 1000 Hz; features FM muting; regulated power supply; "Quatravox" for synthesizing 4-channel by adding second set of speakers; has tape monitor; headphone jack; main/remote speaker switch; 75 & 300 ohm FM antenna inputs; blackout dial. Wood cabinet. 5¼" × 18¾" × 13½". $249.95

STA-82 AM-FM Stereo Receiver

22 W rms/ch into 8 ohms with both channels driven at 1% THD (20-20,000 Hz); response

30-20,000 Hz ±1 dB; S/N 60 dB (phono), 80 dB (aux.); FM sensitivity 2.5 μV (IHF); capture ratio 2 dB; stereo separation 35 dB at 1000 Hz; features "Auto-Magic" tuning system which fine-tunes station electronically; "Perfect Loudness" slide controls for volume and balance settings; "Quatravox" 4-ch synthesizer; FM muting; tape monitor; high filter; main/remote speaker switching; headphone jack. Walnut veneer cabinet. 5" × 17⅞" × 12½". $299.95

ROTEL

Company has five AM-FM receivers in its line; all of them quite similar in design & appearance. All feature main/remote speaker switches, signal-strength meters, illuminated dial pointers, and are supplied with walnut cabinets.

RX-150A. 5 W rms/ch into 8 ohms (100-20,000 Hz) at 1% THD $149.95

RX-152. 10 W rms/ch into 8 ohms (50-20,000 Hz) at 1% THD; 2-stage direct-coupled negative-feedback amp; loudness control; 4-channel simulation; speaker system switching 1 & 2, 1 + 2 . . . . . $189.95

RX-202. 15 W rms/ch into 8 ohms (50-20,000 Hz) at 1% THD; FM sensitivity 2.5 μV; 2-stage direct-coupled negative-feedback circuit; tape monitor; tape dubbing; hi-filter; loudness controls; 4-channel simulation; speaker system switching 1 & 2, 1+2 . . . . . $229.95

RX-402. 25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phase lock loop circuitry; split power supply; direct-coupled output circuit; preamp out, main amp in; tape monitor; tape dubbing; concentric stepped bass & treble control; FM sensitivity 2.0 μV; FM muting, hi-filter, loudness controls $289.95

RX-602. 35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phase lock loop circuit; di-

rect-coupled output; split power supply; signal-strength & center-tuning meters; two phono & 2 aux. inputs; tape monitor; tape dubbing; FM & audio muting; tone-control defeat; hi-filter, loudness, and dual concentric bass & treble controls $399.95

SANSUI

881 AM-FM Stereo Receiver

60 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); THD & IM dist. 0.03%; power bandwidth 10-40,000 Hz; hum & noise 80 dB; FM sensitivity 1.8 μV (IHF); THD 0.5%

stereo; S/N 70 dB; selectivity 70 dB; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; features circuit board module construction; full complement of inputs, outputs, switches, and controls; signal-strength and center-channel meters. $529.95

771 AM-FM Stereo Receiver

40 W/ch continuous into 8 ohms at 0.5% THD and 0.5% IM. 120 W (IHF) power. Amplifier is direct-coupled. Response 20-40,000 Hz ±2 dB. FM sensitivity 2.0 μV. Has two tape monitors; provision for 4-ch adapter; three sets of speakers; outboard noise-reduction system; and mike input. 18⅞" W × 5⅜" H × 11 13/16" D. $429.95

661 AM-FM Stereo Receiver

30 W/ch continuous power into 8 ohms at 0.5% THD and 0.5% IM. 100 W(IHF) power. Amplifier is direct-coupled. Response 20-40,000 Hz ±2 dB. FM sensitivity 2.2 μV. Has two tape monitors; outputs for two sets of speakers; 4-ch ready. 17½" W × 5⅜" H × 11 13/16" D . . . $349.95

551 AM-FM Stereo Receiver

16 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); THD & IM dist. 0.8%; power bandwidth 25-30,000 Hz; FM sensitivity 2.5 μV (IHF); capture ratio 2.5 dB; S/N 65 dB; THD 0.7% stereo; has signal-strength meter; full complement of controls, inputs, and outputs. $259.95

331 AM-FM Stereo Receiver

12 W rms/ch into 8 ohms with both channels driven (40-20,000 Hz) at 1.0% THD; power

bandwidth 40-20,000 Hz; frequency response 25-30,000 Hz +2.0 dB, −3.0 dB (at 1 W); complete input/output facilities for tape recording & playback; FM sensitivity (IHF) 2.5 μV; stereo separation 35 dB at 1000 Hz; frequency response 30-12,000 Hz +1 dB, −3 dB; inputs for phono; will drive two pairs of speaker systems. 16¾" W × 4 15/16" H × 10½" D $199.95

221. Similar to 331 except 8 W rms/ch. $169.95

SCOTT, H. H.

R77S AM-FM Stereo Receiver

70 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz); THD 0.3% at rated output; frequency response 8-40,000 Hz ±1 dB; power bandwidth 15-30,000 Hz; 4-16 ohms imp.; FM sensitivity 1.8 μV (IHF); selectivity 75 dB; capture ratio 1.2 dB; S/N 70 dB; THD 0.4% stereo; stereo separation 40 dB at 1000 Hz; has two meters; six-pole

lumped filters; six-way speaker switching; optical function indicator. Black and natural anodized aluminum enclosure. 18" × 15" × 5¾" $499.95

R75S. Same as R77S except 50 W/ch. $399.95

Introducing one of the finest collections of stereo receivers in the world: the MX1580.

Power* of the Sony 7065. FM Sensitivity* of the Pioneer 838. Selectivity* of the Sherwood 7900A. Capture ratio* of the Marantz 2270. Total Harmonic Distortion* of the JVC VR-5660.

With so many excellent AM/FM stereo receivers around these days, who needs another? So instead of making just "another," we collected the most significant specs and useful features of five of the best, and "combined" them in one: the MX 1580.

Of course, some of these five receivers have features our one doesn't have (we think you can manage without *two* phono inputs).

But then, ours has features they don't have; features you *shouldn't* do without.

You pay for—and get—what you really need.

The MX 1580 has exclusive ASNC, which automatically reduces the noise level on weak stereo stations without reducing separation on strong ones.

And special thermal protection for output transistors and the power transformer.

Plus lots more we were able to include and, at $479.95;** save you a few bucks in the bargain.

How? It wasn't easy. But we had help.

The oldest new company in the business.

Although we're a completely separate group, we were able to draw on the resources of a company that's been a leader in the industry since 1915. So we could afford to wait until we had the MX 1580 right.

And now it's so right, we insist that every single one be inspected twice before it's shipped. After all, we have one of the world's finest stereo collections to protect.

Features and Specs:

- Sensitive front-end with three dual gate MOSFET's and 4-gang tuning capacitor.
- Two 6-pole linear phase filters for improved selectivity and phase response.
- High gain IC quadrature FM detector.
- Switchable signal-strength/center-tuned meter.
- Phase lock loop IC circuit for FM stereo multiplex.
- Computer designed low pass audio filters for suppression of ultrasonic frequencies.
- OCL direct-coupled differential amplifier for extended frequency response and wide bandwidth.

Power	60 watts per channel, min. RMS
Power Bandwidth	20Hz-20kHz
Total Harmonic Distortion	0.5%
Load	8 ohms
IM distortion	0.8%
Frequency response	20Hz-25kHz
Usable sensitivity (IHF)	1.8uV
Selectivity (IHF)	75dB
Capture ratio (IHF)	1.5dB
50dB signal to noise mono	2.5uV
Stereo separation @ 1kHz	50dB
@ 10kHz	40dB

All specs subject to change without notice.
Specs of competitive receivers taken from manufacturers own published data sheets.
**Manufacturer's suggested retail price; optional with dealer.

MX™

We're being heard from.

MX High Fidelity Components, Ft. Wayne, Indiana 46804

CIRCLE NO. 53 ON READER SERVICE CARD

2 Receivers

R74S. Same as R77S except 40 W/ch. $369.95

R36S AM-FM Stereo Receiver

30 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz); THD 0.5%; HD 0.5% at rated output; 4-8-16 ohms imp.; FM sensitivity 1.9 μV; frequency response 25-15,000 Hz; capture ratio 2.5 dB; selectivity 46 dB; stereo separation 35 dB at 1000 Hz; has full complement of inputs, outputs, jacks, and switches; separate signal-strength and center-tuning meters. 18" × 13" × 5¾". $299.95

R33S. Same as R36S except 18 W/ch; capture ratio 2 dB; single signal-strength meter. 18" × 13" × 5½" $249.95

R31S AM-FM Stereo Receiver

15 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz); THD

0.5%; HD 0.5% at rated output; 8-16 ohms imp.; FM sensitivity 2.5 μV; frequency response 20-15,000 Hz ±3 dB; capture ratio 2.5 dB; selectivity 55 dB; stereo separation 35 dB; stereo beacon; FM interstation muting; signal-strength meter; full complement of controls, inputs and outputs; speaker switching for two sets of stereo speakers. 17⅞" W × 5⅜" H × 12" D $199.95

SHERWOOD

S-7900A AM-FM Stereo/Dynaquad

60 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; IM dist. 0.3% into 8 ohms at rated

output (0.1% at 10 W); features automatic speaker & thermal protection circuits; regulated low-level power supplies; adjustable phono input sensitivity; wide-range bass & treble controls; high-frequency filter; front-panel tape dubbing; built-in Dynaquad 4-ch circuit; FM sensitivity 1.7 μV; S/N 70 dB; capture ratio 1.9 dB; stereo separation 40 dB at 1000 Hz; hum & noise 90 dB; phono hum & noise 75 dB. 17" W × 6¼" H × 14" D.. $459.95
Optional walnut-grained vinyl case ... $24.95

S-8900A. Same features as S-7900A except FM only $439.95

S-7110A AM-FM Stereo Receiver

20 W rms/ch into 8 ohms (40-20,000 Hz) at 0.8% THD; IM dist. 0.9% into 8 ohms at rated output (0.2% at 10 W); direct-coupled amplifier; FM sensitivity 2.0 μV; S/N 70 dB; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; features switchable FM muting; signal-strength meter; provision for switching two sets of speakers; wide-range bass & treble controls; comes with case. 18¾" W × 5¼" H × 15¼" D. $239.95

S-7010 AM-FM Stereo Receiver

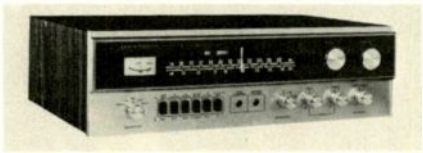
10 W rms/ch into 8 ohms (40-20,000 Hz) at 0.9% THD; IM dist. 1.0% into 8 ohms at rated output (0.35% at 5 W); FM sensitivity 2.8 μV; S/N 65 dB; capture ratio 3.0 dB; stereo separation 35 dB at 1000 Hz; features signal-strength meter; flywheel-assisted tuning; hum & noise 80 dB; phono hum & noise 70 dB; provides output for two sets of speakers; tape monitor; wide-range bass & treble controls; balance control; mode switch; comes with case. 17½" W × 5¼" H × 13¼" D $189.95

S-7210 AM-FM Stereo/Dynaquad

30 W rms/ch into 8 ohms (40-20,000 Hz) at 0.5% THD; IM dist. 0.8% into 8 ohms at rated output (0.2% at 10 W); direct-coupled power amplifier; FM tuner sensitivity 1.9 μV; S/N 70 dB; capture ratio 1.4 dB; hum & noise 85 dB; features signal-strength meter; flywheel-assisted tuning; FM muting; output for future 4-channel broadcasts; provision for 4-channel adapter; outputs for two sets of speakers; front-panel dubbing jack; built-in Dynaquad 4-channel circuit; wide-range bass & treble controls; comes with case. 17½" W × 5¼" H × 13¼" D $299.95

S-7310 AM-FM Stereo/Dynaquad

40 W rms/ch into 8 ohms (40-20,000 Hz) at 0.5% THD; IM dist. 0.5% into 8 ohms at rated

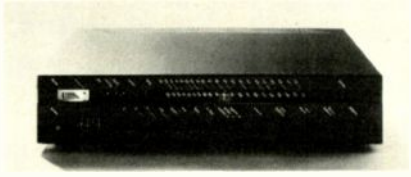


output (0.15% at 10 W); FM tuner sensitivity 1.8 μV; S/N 70 dB; capture ratio 1.2 dB; stereo separation 40 dB at 1000 Hz; features built-in Dynaquad circuit to recover 4-channel information from stereo program material; center-tune meter; FM muting; provision for two sets of speakers; provision for future 4-channel FM broadcasts, 4-channel adapter; wide-range bass & treble controls; high-frequency filter; front-panel tape dubbing jack; comes with case. 17½" W × 5¼" H × 13¼" D ... $379.95

SONAB

R3000 FM Stereo Receiver

30 W rms/ch into 8 ohms (25-20,000 Hz) at 0.2% THD; features tone-balance and bass-



adjust controls covering the entire frequency range; two separate inputs for tape recorders and tape monitoring (one low-level, one high-level); S/N 56 dB; sensitivity 1.5 μV; capture ratio 1; full complement of controls & outputs. Black enclosure. 17" W × 4" H × 14" D. $465.00

SONY

STR-6036A AM-FM Stereo Receiver

15 W/ch continuous power into 8 ohms (20-20,000 Hz); 18 W/ch into 8 ohms (1 kHz); HD &

IM 0.8% at rated output. FM tuner sensitivity 2.2 μV (IHF); selectivity 60 dB; image rejection 55 dB; capture ratio 1.5 dB. (S + N)/N 68 dB; response 30-15,000 Hz +0, −2 dB; stereo separation 35 dB at 400 Hz. Has full complement of controls. Dual input and output jacks for tape recorder monitoring as well as connection of SQ or other matrix decoders. Oiled walnut cabinet. 5¹¹⁄₁₆" H × 17⅛" W × 13¾" $230.00

STR-6046A. Similar to STR-6036A except 20 W/ch continuous power output $280.00

STR-7055 AM-FM Stereo Receiver

35 W/ch continuous power output into 8 ohms (20-20,000 Hz); 45 W/ch into 8 ohms (1 kHz); HD & IM 0.2% at rated output. FM sensitivity 2.0 μV (IHF); selectivity 70 dB; capture ratio 1.0 dB; image rejection 70 dB. (S + N)/N 70 dB. Has full complement of controls. Two pairs of inputs and outputs for monitoring two recorders; accepts any 4-ch decoder. Oiled walnut cabinet. 6¼" × 18¼" × 14¾" D... $450.00

STR-7065. Similar to STR-7055 except 60 W/ch and includes mike input and mixing facilities. Oiled walnut cabinet. 5⅞" × 17¼" × 9" D. $550.00

SUPERSCOPE

R-310 AM-FM Stereo Receiver

6 W/ch continuous power into 8 ohms (60-20,000 Hz) at 1% THD; response 30-30,000 Hz; features "Quadraphase;" illuminated signal-strength/tuning meter; stereo multiplex indicator; tape monitor jack; line balance control; remote/Quadraphase speaker switch; magnetic/ceramic phono input switch. FM sensitivity 5 μV. Walnut-grained cabinet. 16¹³⁄₁₆" W × 4¹³⁄₁₆" H × 11⁹⁄₁₆" D $179.95

R-330B AM-FM Stereo Receiver

8 W/ch continuous power into 8 ohms (60-20,000 Hz) at 1% THD; Response 20-20,000 Hz −3 dB. FM usable sensitivity 5 μV; (S + N)/N 55 dB; stereo separation 32 dB at 1 kHz. Has volume controls, mode selector switch, loudness and tape monitor switches, balance control, main/remote speaker switch, stereo headphone jack, signal-strength tuning meter, FM stereo indicator light, output for 4-ch FM decoder when 4-ch multiplex FM broadcasting is approved. 16⅞" W × 5¼" H × 12⅜" D..... ..... $219.95

R-340B AM-FM Stereo Receiver

12 W/ch continuous power into 8 ohms (40-20,000 Hz) at 1% THD. Response 30-30,000 Hz. FM usable sensitivity 2.2 μV (IHF); stereo separation 40 dB at 1 kHz; Includes Quadraphase circuit to simulate 4-ch from standard stereo sources with addition of two speakers. 16⅞" W × 5" H × 12⅜" D..... $259.95

R-350 AM-FM Stereo Receiver

Similar to R-340B except 15 W/ch; response 20-20,000 Hz −3 dB; FM usable sensitivity (IHF) 2.8 μV; stereo separation 35 dB at 1 kHz; capture ratio 3.0 dB; spurious rejection 84 dB (FM). Includes Quadraphase $299.95

SYLVANIA

RS4744 AM-FM Stereo Receiver

60 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD; power bandwidth 5-30,000 Hz; frequency response 7-70,000 Hz (tape input ±1 dB); FM sensitivity 1.8 μV; S/N 67 dB; capture ratio 1.5 dB; THD stereo 0.4%; stereo separation 40 dB (1000 Hz), 30 dB (10,000 Hz); has full complement of inputs, outputs, controls and switches. Walnut-grained vinyl cabinet. 6" H × 17¾" W × 15" D. $449.95

RS5741 AM-FM Stereo Receiver

10 W rms/ch into 4 to 8 ohms (40-20,000 Hz) at 0.5% THD; frequency response 40-20,000 Hz (aux. input ±2 dB); FM sensitivity 1.9 μV; S/N 72 dB; capture ratio 1.3 dB; THD stereo 0.4%; stereo separation 35 dB (1000 Hz), 25 dB (10,000 Hz); Walnut-grained vinyl cabinet.

18" W × 5¾" H × 13¾" D $229.95

RS5742 AM-FM Stereo Receiver
20 W rms/ch into 4 to 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 20-20,000 Hz (aux. input ±1 dB); FM sensitivity 1.9 μV; S/N 67 dB; capture ratio 1.3 dB; THD stereo 0.4%; stereo separation 35 dB (1000 Hz, 25 dB (10,000 Hz). Walnut-grained vinyl cabinet. 18" W × 5¾" H × 13¾" D $279.95

TANDBERG

TR-1055 AM-FM Stereo Receiver
55 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz), 0.2% dist.; power bandwidth 4-40,000 Hz into 8 ohms, 0.2% dist.; frequency range (linear inputs) 7-70,000 Hz −1.5 dB; FM sensitivity-2 μV (IHF); S/N 66 dB stereo; dist. 0.3% stereo; frequency range 20-15,000 Hz −3 dB; i.f. rejection 95 dB; image rejection 70 dB; capture ratio 0.9 dB (1 mV antenna signal); channel separation 40 dB 100-12,000 Hz; signal strength/power output indicator; center-channel tuning meter; features full complement of inputs, outputs, switches, and controls. 17¾" W × 5 9/16" H × 12¼" D + ¾" knobs $649.90

TR-1040 FM-Stereo Receiver
40 W/ch continuous sine wave into 8 ohms (20-20,000 Hz) at 0.2% dist.; FM sensitivity

0.8 μV (into 75 ohms), 1.6 μV (into 300 ohms); S/N 66 dB; other features same as TR-1055 ..... $549.90

TR-2075 AM-FM Stereo Receiver
75 W rms/ch into 8 ohms with both channels driven; response 20-20,000 Hz; dist. 0.2%;

finger-tip switching facilities. $999.00

TECHNICS BY PANASONIC

SA-5550 AM-FM Stereo Receiver
58 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; 72 W rms/ch into 4 ohms; IM dist.

0.4%; FM sensitivity (IHF) 1.8 μV; FM THD 0.2% (mono), 0.4% (stereo); capture ratio 1.6 dB; three-way speaker protection; click-stop tone controls; hi/lo cut filters; two tape-monitor positions with deck-to-deck dubbing; phase-lock loop in FM stereo; main/remote speaker selector; center-channel & signal-strength meters $479.95

SA-5350 AM-FM Stereo Receiver
28 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; 30 W rms/ch into 4 ohms; IM dist. 0.7%; FM sensitivity (IHF) 1.9 μV; FM THD 0.3% (mono), 0.4% (stereo); capture ratio 1.6 dB; features dual speaker protection; low-distortion tone controls; hi-cut filter; two tape monitors; phase-locked loop in FM stereo; main/remote speaker selector; tuning meter $349.95

SA-5250. Similar to SA-5350 except 23 W rms/ch into 8 ohms; 26 W rms/ch into 4 ohms $299.95

SA-5150 AM-FM Stereo Receiver
16 W rms/ch into 8 ohms (40-20,000 Hz) at 0.8% THD; IM dist. 0.8%; FM sensitivity (IHF) 1.9 μV; FM THD 0.3% (mono), 0.4% (stereo); capture ratio 1.8 dB; speaker/amplifier fuse protection; tape monitor; main/remote speaker selector; tuning meter $229.95

YAMAHA

CR-100 FM Stereo Receiver
70 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD at rated power; frequency response (amp.) 10-100,000 Hz +0.5 dB, −1 dB; damping factor 70 (1000 Hz); channel separation 60 dB (rated power, 1000 Hz); hum & noise 100 dB; FM tuner sensitivity 1.7 μV (mono); capture ratio 1.0 dB; selectivity 80 dB; S/N 72 dB; frequency response 50-10,000 Hz ±0.5 dB, 20-15,000 Hz ±1.5 dB; stereo separation 45 dB; features separable preamp/power amp; will handle two pairs of speakers; four a.c. convenience outlets; headphone jack; i.f. output for 4-channel capability; multipath output; full range of inputs & outputs; switches & controls. 20" W × 6¾" H × 13¼" D $850.00

CR-800 AM-FM Stereo Receiver
45 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD at rated power; frequency response (amp) 10-100,000 Hz +0, −1 dB; channel separation 60 dB (at rated power, 1000 Hz); FM sensitivity 1.7 μV (mono); capture ratio 1.0 dB; selectivity 75 dB; S/N 72 dB; stereo separation 45 dB; frequency response 50-10,000 Hz ±0.5 dB, 20-15,000 Hz ±1.5 dB; two switched, two unswitched a.c. outlets; separable preamp/power amp; two phono input circuits; i.f. output for 4-channel capability; 18¾" W × 6¼" H × 11¾" D $580.00

CR-600. Similar to CR-800 except 30 W rms/ch; FM sensitivity (mono) 2.0 μV; capture ratio 1.5 dB; dual meters $460.00

NOTICE TO READERS

We consider it a valuable service to our readers to continue, as we have in previous editions of this guide, to print the price set by the manufacturer or distributor for each item described as available at presstime. However, almost all manufacturers and distributors provide that prices are subject to change without notice.

We would like to call our readers' attention to the fact that during recent years the Federal Trade Commission of the U.S. Government has conducted investigations of the practices of certain industries, in fixing and advertising list prices. It is the position of the Federal Trade Commission that it is deceptive to the public, and against the law, for list prices of any product to be specified or advertised in a trade area, if the majority of sales of that product in that trade area are made at less than the list prices.

It is obvious that our publication cannot quote the sales price applicable to each trading area in the United States. Accordingly, prices are listed as furnished to us by the manufacturer or distributor. It may be possible to purchase some items in your trading area at a price that differs from the price that is reported in this edition. The Publisher

Introduction to RECORD PLAYERS AND PHONO CARTRIDGES

A record player consists of a turntable, tonearm, and phono cartridge. It is possible to assemble such a system from its basic components, which can even be of different manufacture. In most cases, however, the turntable and arm are designed to operate together and are supplied pre-assembled. Some manufactures offer complete record-playing "modules," with a factory-mounted cartridge.

Turntables: A turntable can be either automatic or manual in its operation. Automatic models can be further sub-divided into single-play or multiple-play units (the latter are often called "record changers"). Among automatic single-play turntables, there are varying degrees of automation. The most advanced go into operation at the touch of a button or lever or even by simply placing a record on the platter, and the arm is automatically indexed to the correct diameter and lowered to the record. At the end of play, the arm returns to its rest and the unit shuts off. In effect, these players perform exactly like a record changer, except that they cannot play a stack of records in sequence. Other "semi-automatic" players require the arm to be picked up and indexed manually, which starts the motor, and will shut off automatically at the end of play. The simplest fully manual record players require the user to turn the motor on and off, and to return the pickup to its rest after playing a record. Most multiple-play units can also be operated as single-play turntables, with some degree of automation.

The turntable "platter" is usually a cast disc of non-ferrous alloy, carefully machined to rotate without "wobble" or eccentricity. Lower priced record players sometimes use pressed-steel platters, which are less precise in their construction. Most record players operate at 33⅓ and/or 45 rpm, although a few still provide the older 78 rpm speed. Several types of drive systems are used. The most common is the four-pole induction motor, whose speed is nearly constant but can be affected slightly by line-voltage and load changes. Deluxe changers often use synchronous motors whose speed is dependent only on power-line frequency, or special motors combining the best characteristics of both induction and synchronous types.

The motor shaft is usually coupled to the inside of the platter through a rubber idler wheel. The speed is changed by shifting the idler to a different diameter of the motor shaft. Most single-play turntables use belt drive between the motor shaft and the platter. A belt-drive system, especially when a low-speed motor is used, can have lower rumble and flutter than idler drive. But since these characteristics also reflect the precision of manufacture, there are numerous exceptions to this rule. Belt drive is also used on a few record changers.

Some belt-drive players use electronic circuits to control and stabilize their operating speeds. Most electronic turntables, however, are the direct-drive type with a specially designed motor turning directly at the record speed of 33⅓ or 45 rpm, and the platter resting directly on its rotor. Direct-drive turntables are relatively expensive, but achieve the lowest rumble and flutter specifications. Almost all direct-drive players are single-play types, but there is at least one direct-drive record changer on the market.

Vernier speed adjustment is a feature of many turntables. On an idler-driven unit, the direct-drive and other electronically controlled turntables are adjusted by purely electronic means. A control range of ±3% to ±6% is typical. On the more expensive models, illuminated stroboscope markings make it easy to check and adjust the speed while a record is being played.

Tonearms: Conventional tonearms are pivoted at one end, with the cartridge mounted at the other end, at an offset angle that minimizes tracking error by keeping it nearly tangent to the grooves as it moves across the record. On most arms, the mass of the cartridge and arm is balanced by an adjustable counterweight. The necessary vertical tracking force is set by a re-adjustment of the counterweight by a second, smaller weight sliding on the arm, or by a spring.

Friction between the stylus and the record material causes an inward-tending force to be exerted on an offset tonearm. To correct for this force, which can impair the reproduction of the right stereo channel at low tracking forces, and cause uneven stylus wear, most arms have an anti-skating correction system. Generally, a small dial near the arm, or in some cases a weight on a string attached to the arm, is set to correspond to the tracking force used.

A few high-priced record players use radial arms, which are always tangent to the record grooves and, in theory, completely eliminate tracking error (in practice, there is always a slight, but negligible, error due to cartridge mounting tolerances and other causes). However, the real benefit of a radial arm is not in the reduction of tracking error, which is an insignificant contributor to the total distortion of the record-playing process. Since a radial arm has no skating force, it has no need for an anti-skating system, which is at best only an approximate correction. This makes it possible to obtain optimum results from any cartridge at the lowest tracking force of which it is capable, instead of having to add some extra force as a safety factor. In addition, radial arms have less mass than most conventional arms, further enhancing their ability to play warped or eccentric records. One manufacturer offers a pivoted arm which changes its offset angle as the record is played, effectively reducing tracking error to zero.

Much of the cost of a tonearm is accounted for in the precision with which it is manufactured and assembled and in the low-friction bearings on which it moves. There are several techniques for pivoting an arm, including knife edge and single-point needle bearings, and precision ball bearings mounted on gimbals for equal freedom of movement in vertical and horizontal planes. In practical terms, none of these systems has any clear superiority, and all are capable of being used with the best cartridges, if properly handled. As a guide, follow the tonearm or record-player manufacturer's recommendations for minimum tracking force; if this is less than the minimum force recommended by the cartridge manufacturer, the two should work together properly.

Cartridges: The task of the phono cartridge is to trace the microscopic "wiggles" in the record groove and to generate an electrical voltage which is (ideally) identical in waveform to the complex program signal that was used to cut the record. The key to this operation is the shape and size of the diamond stylus, which must conform to the contour of the groove, and be able to gyrate in a complex path at a rate of many thousands of times per second.

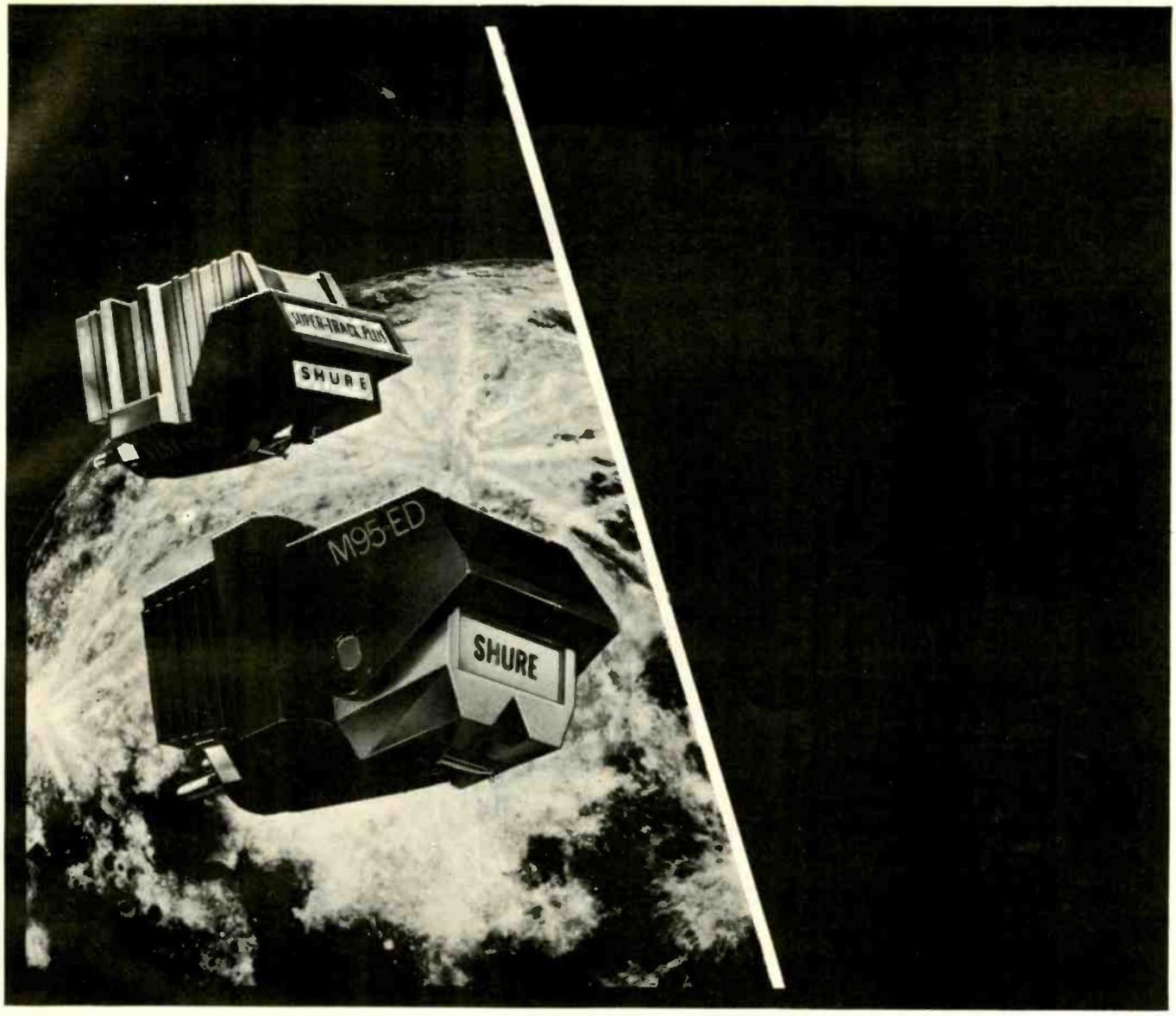
In most cartridges, the stylus motion is coupled to the internal generating elements through a tiny cantilever whose mass and stiffness are closely related to the ultimate performance of the cartridge. Almost all high-quality cartridges use magnetic generating systems, although there are several variations within that category, including moving coil, moving magnet, induced magnet, and moving iron, among others. Each has its advantages and disadvantages, but all are capable of excellent performance.

There are a few high-quality non-magnetic cartridges (the ceramic cartridges used in mass-produced phonographs are *not* high-fidelity units). One make uses electret elements (permanently polarized capacitors) to generate a voltage from the stylus motion and is compatible with ordinary magnetic preamplifier inputs. Another company makes a semiconductor strain-gage cartridge (designed for playing CD-4 quadraphonic records) whose resistance changes with stylus deflection. A d.c. current must be passed through the element to develop a voltage and this current, as well as the necessary equalization, is provided by receivers and 4-channel demodulators manufactured by the same company.

Phono cartridge prices span a wide range, reflecting the degree of precision and refinement that went into their construction. As a rule, higher-priced cartridges are more delicate, have somewhat less output voltage, will track higher recorded levels at lower vertical forces, and have smoother, wider frequency response and better channel separation characteristics than less expensive cartridges. Also associated with higher prices is the accuracy with which the diamond stylus is ground and polished and mounted on the cantilever. These factors cannot be appreciated without microscopic examination, but can have a considerable effect on record wear as well as electrical performance.

Most cartridges are recommended for use over a range of tracking forces, such as 1 to 3 grams, but operation at their lower limits invites audible distortion from mis-tracking, as well as possible record damage. Most cartridges will perform at their best in the upper half of their rated range of tracking forces, although the upper limit should never be exceeded.

Since cartridge mounting dimensions are fairly well standardized, it is possible to install almost any cartridge in any tonearm. However, this does not mean that any cartridge can be used successfully in any arm. Be sure that the arm is designed to operate at vertical forces somewhat less than the lowest force for which the cartridge was designed.



II'nd only to the III.

The new Shure M95ED phono cartridge combines an ultra-flat 20-20,000 Hz frequency response and extraordinary trackability with an utterly affordable price tag! To achieve this remarkable feat, the same hi-fi engineering team that perfected the incomparable Shure V-15 Type III cartridge spent five years developing a revolutionary all-new interior pole piece structure for reducing magnetic losses. The trackability of the M95ED is second only to the Shure V-15 Type III. In fact, it is the new "Number 2" cartridge in *all* respects and surpasses much higher priced units that were considered "state of the art" only a few years ago. Where a temporary austerity budget is a pressing and practical consideration, the M95ED can deliver more performance per dollar than anything you've heard to date.

Shure Brothers Inc.
222 Hartrey Ave., Evanston, IL 60204
In Canada: A. C. Simmonds & Sons Limited

SHURE®

Manufacturers of high fidelity components, microphones, sound systems and related circuitry.

CIRCLE NO. 40 ON READER SERVICE CARD

Instant Success—the NEW Stanton Gyropoise® turntable

Look at all these quality features, many of them exclusively ours!

1. Gyropoise®—frictionless magnetic suspension of the platter.
2. Die cast aluminum T-Bar for sturdy structure.
3. 2-Speed changer for 33 rpm and 45 rpm playback.
4. 24-Pole synchronous high torque motor.
5. Belt drive for noiseless operation.
6. 12" die cast machined high polish aluminum platter.
7. Unipoise®—single point tone arm suspension.
8. Anti-skate control adaptable to all types of styli.
9. Magnetic hold bar for tone arm convenience.
10. Stylus force slide (range 0 - 4 grams).
11. Stanton state-of-the-art stereo or discrete cartridge.
12. Viscous damped cueing control for featherlight lowering of stylus.
13. Handsome walnut veneer base (comes complete with dust cover).

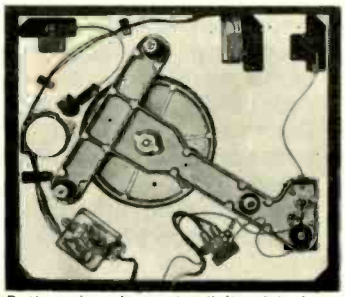
ADDITIONAL FEATURES:

(a) Comes equipped with low capacitance cables
(b) Wow and Flutter—≤.07% din 45507 weighted
(c) Rumble—≤−60 dB din 45539 weighted

It's the important exclusive features that make the difference. Only Stanton Turntables have Gyropoise®, the patented frictionless magnetic suspension bearing—thus the platter makes no vertical contact with the body of the structure. This isolation eliminates vertical rumble.

Only Stanton Turntables have Unipoise®, the patented single point tone arm suspension. The arm is supported by a single pivot for both lateral and vertical movement.

Only Stanton Turntables come equipped with a state-of-the-art Stanton cartridge, either the 681 Triple-E calibrated to the tone arm for stereo playback, or the magnificent 780/4DQ for discrete.


Bottom view shows simplicity of design.

See your franchised Stanton dealer for a demonstration of this great new product.

STANTON

MADE IN U.S.A.

For further information, write: Stanton Magnetics, Inc., Terminal Drive, Plainview, N.Y. 11803

CIRCLE NO. 43 ON READER SERVICE CARD

3 RECORD PLAYERS

ACOUSTIC RESEARCH

AR-XA Manual Turntable

Two-speed (33 & 45 rpm) manual turntable. Features permanent-magnet synchronous motor, belt drive, 4-lb platter, removable cartridge shell. Comes complete with tonearm, base, and dust cover. 12¾" × 16¾" × 5¼" walnut-grained vinyl finish. $115.00

XAU/Universal. Same except for 110-220, 50-60 Hz operation. $122.00

AR-XA-91. Same as AR-XA but with Shure M91ED cartridge premounted. $169.95

AR-XB Manual Turntable

Two-speed (33 & 45 rpm) manual turntable. Features permanent-magnet synchronous motor, belt drive, 4-lb platter, viscous-damped cueing, and removable cartridge shell. Comes complete with base, dust cover, and tonearm. 12¾" × 16¾" × 5½"; walnut-grained vinyl finish. $130.00

AR-XB-91 Same as AR-XB but with Shure M91ED premounted. $184.95

BANG & OLUFSEN

Beogram 3000 Automatic Turntable

Two-speed (33 & 45 rpm) fully automatic single-record unit. Has single operating switch; facility for manual operation. Constant-voltage asynchronous motor; built-in self adjusting anti-skating. Rumble 60 dB (DIN B); wow & flutter ±0.15% peak value (DIN); fine-speed adj. 6%. Adjustable counterweight on tonearm; adjustable stylus pressure 0 to 3.5 g. Comes with SP 12A elliptical, naked-diamond stylus. Low-profile, functional design. Hinged dust cover which can be removed if desired. Will play all size records with dust cover closed. $300.00

B•I•C

980 Multiple-Play Manual Turntable

Record-changing turntable with belt drive; features 24-pole, low-speed (300 rpm) synchronous motor; fundamental vibration frequency 5 Hz. Has solid-state electronic frequency generator module to adjust speed; adjustable for ±3% pitch variation. Features the "Programmer" by which a single record

can be repeated up to six times before the machine turns off; also used for automatic play of up to six different records; cycling information is set by user on the control panel. All automatic functions activated by single cycle button requiring only 90 gr of perpendicular force and 0.0625" of travel to operate. Anti-skating and stylus pressure functions handled by tandem controls operating along a single scale. Knob control for cueing rate adjustment (continuously varied between 1 and 3 sec.); plug-in male/female pin connectors for attaching cartridge head to tonearm; gimbaled tonearm with needle bearings; 15° tracking adjustment for stack of records, 12" cast single-piece platter, die-cast isolated tonearm counterweight; 10-spoke turntable mat. $199.95

960. Same except without electronic speed control and variable pitch feature. $159.95

9450 Multiple-Play Manual Turntable

24-pole synchronous motor; belt drive; multiple-play capability; die-cast 12" turntable; Programmer and cycle button; tonearm system with gimbaled pivot ring; damped up and down cueing; anti-skating adjustment; 10-spoke turntable mat. $109.95

Solid oiled-walnut base, matte black molded base, and hinged dust cover available extra.

BSR McDONALD

2620W Automatic Turntable

Two-speed (33 & 45 rpm) unit for 7", 10" & 12" records; features variable pitch control & strobe disc; synchronous motor; die-cast platter; viscous damped cue & pause control; dual-range anti-skate control and slide-in cartridge head; comes with ADC K6E elliptical magnetic cartridge, walnut base, and dust cover $150.80

200BAX Automatic Turntable

Two-speed (33 & 45 rpm) automatic record changer/single play manual unit; will handle up to six records; belt drive; S-shaped adjustable counterweighted tonearm; gimbal arm suspension; calibrated stylus-force adjust; viscous-damped cue/pause control; stylus wear indicator. Comes with ADC VLM Mk II induced magnetic cartridge, walnut-grained base, hinged dust cover $204.85

100BAX. Similar to 200 BAX except has adjustable counterweighted tonearm; no stylus wear indicator. Comes with ADC K8E magnetic cartridge $154.80

20BPX. Similar to 100 BAX but for single-play only; automatic arm return and shutoff; S-shaped tonearm. Comes with ADC K6E cartridge, base, and hinged dust cover .. $142.80

20BP. Identical to 20BPX except without cartridge $102.85

810QX Turntable

Two-speed (33 & 45 rpm) manual/changer combination; Quad-Ready; features anti-skating

control; synchronous motor; direct-drive; record repeat, cueing & pitch controls; stylus wear indicator; accessory tray; stylus pressure adjustable from 0 to 4 g; 7¼-lb platter; removable cartridge shell; comes with walnut base, dust cover, and Shure M-91ED magnetic cartridge $299.80

710QX. Similar to 810QX except has lighter platter and different tonearm gimbal; comes with Shure M-91E magnetic cartridge $255.80

CONCORD

BA-300 Single-Play Turntable

Two-speed (33 & 45 rpm) single-play, semi-automatic turntable; will handle 7", 10", 12" records; wow & flutter 0.1%; rumble 60 dB; 4-pole synchronous motor; static-balanced 8½" tonearm; auto return and shut-off; viscous-damped cueing; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17⅝" W × 14" D × 7¼" H. $129.95

BA-600 Single-Play Turntable

Two-speed (33 & 45 rpm) single-play, automatic turntable; will handle 7", 10", 12" records; wow & flutter 0.09%; rumble 60 dB; 4-pole synchronous motor; static-balanced 8½" tonearm; auto play; auto return and shut-off; auto repeat; viscous-damped cueing; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17⅝" W × 14" D × 7¼" H. $159.95

BD-7000 Single-Play Turntable

Two-speed (33 & 45 rpm) single-play semi-automatic turntable; will handle 7", 10", 12" records; wow & flutter 0.04%; rumble 65 dB; 4-pole synchronous motor; static-balanced 8½" tonearm; servo-controlled motor; auto return and shut-

3 Record Players

off; pitch control; strobe indicator; friction-hinged dust cover. 17⅝" W × 14" D × 7¼" D. $219.95

BD-1000 Manual Turntable

Two-speed (33 & 45 rpm) manual turntable; will handle 7", 10", 12" records; wow & flutter

0.1%; rumble 60 dB; 4-pole synchronous motor; static-balanced 8½" tonearm; viscous-damped cueing; anti-skate feature; low-mass cartridge head; hinged dust cover. 18" W × 14" D × 7¼" H. $99.95

CONNOISSEUR

BD2/Mark IV Turntable

Integrated turntable with SAU2 arm and pick-

up assembly. Has push-button speed control; hydraulic lift and lowering of tonearm; anti-vibration springs; lightweight cartridge shell with self-cleaning contacts. Two-speed (33 & 45 rpm); 60-Hz synchronous constant speed 450 rpm; belt drive. Rumble −50 dB (RIAA); hum −80 dB; wow & flutter 0.1%. Has 10¼" aluminum platter. 13¾" × 15½" × 4½" H (including dust cover). Comes with arm, base, dust cover but without cartridge. $144.95

SAU2. Tonearm with head shell $50.45

HS. Head shell for SAU2 tonearm $6.50

DUAL

All Dual multiple-play models offer these features: dynamically balanced tonearm which does not require critical leveling of chassis; direct-dial setting for stylus force; anti-skating calibrated for conical, elliptical, and CD-4 styli; 6% pitch control for both speeds (33 & 45); automatic and manual operation in both single- and multiple-play modes; interchangeable single- and multiple-play spindles; self-stabilizing multiple-play spindles hold up to six records; records removable from platter without removing spindle; cueing system damped in both directions; jam-proof slip-clutch engagement between tonearm and cycling mechanism; quick-release cartridge holder with stylus overhang adjustment; low-capacitance tonearm leads compatible with all CD-4 cartridges. All prices are less base and cartridge, except as noted.

1225 Single/Multi-Play Turntable

Additional features include: tracking as low as

1 gram. 3¾-lb platter. 12⅘" × 10¾". 5" above and 2¾" below mounting board. $139.95

1226 Single/Multi-Play Turntable

Additional features include: tracking as low as ¾ g. 4-lb one-piece die-cast platter. Rotating single-play spindle. 12⅘" × 10¾", 5" above 2¾" below mounting board. $169.95

1228 Single/Multi-Play Turntable

Additional features include: four-point gyroscopic gimbal tonearm suspension. Tracking

angle selector for single- and multiple-play. Tracking down to ½ gram. Damped counterbalance with coarse and fine adjustments. Synchronous/hi-torque motor, 4-lb one-piece die-cast platter; illuminated strobe. 13" × 10¾" plus 1" at rear and right for tonearm overhang. 5" above and 2¾" below mounting board. $199.95

Accessories for 1228, 1226, 1225

MB-10. Molded base $9.95
WB-12. Walnut-veneer base $15.95
DC-4. Cover for MB-10, WB-12 ..... $12.95
LB-12. Low-profile base $15.95
DC-6. Low-profile cover for LB-12 ..... $13.95
DC-9. High-profile cover for LB-12 .... $15.95

1249 Single/Multi-Play Turntable

Additional features include: mode selector which lowers tonearm base to parallel tonearm

to record for correct vertical stylus tracking in single-play mode, raises tonearm base to parallel tonearm to center of stack in multiple-play mode. Tonearm suspension centers tonearm within four-point gyroscopic gimbal. Tonearm tracks down to ¼ gram. Damped counterbalance. Tracking pressure dial calibrated in tenths of a gram. 8-pole synchronous motor linked to dynamically balanced 12" platter via precision ground belt. Four-point-damped spring suspension. 14¾" × 12" plus 1" at rear and right for tonearm overhang. 5" above, 3" clearance below mounting board. $279.95
DCB-6. Danish-style combination base and dust cover $44.95
DC-9X. Deluxe dust cover with lift-open front $39.95
WB-19. Oiled walnut base $14.95
DC-9. Smoke-tinted dust cover $14.95

601 Automatic Single-Play Turntable

Similar to 1249 except single-play only .....
..... $249.95
With base and tilt-hold dust cover.... $270.00

510 Semi-Automatic Turntable

Similar to 601 but with semi-automatic tonearm; mechanical sensor indicates when tonearm is precisely positioned over 12" and 7" lead-in grooves; tonearms lifts at end of play and motor shuts off. Less base $199.95

Accessories for 1249, 601, 510

WB-19. Walnut-veneer base $16.95
LB-19. Simulated wood base $15.95
DC-6. Low-profile cover $13.95
DC-9. High-profile cover $15.95

CS701 Automatic Single-Play Turntable

All-electronic direct-drive brushless d.c. motor with regulated power supply. An exclusive overlapping coil design provides gapless rotating magnetic field. Two Hall-effect generators for electronic self-regulating speed monitoring. Motor rotates at actual record speed: 33⅓ or 45 rpm; top of shaft functions as record spindle. Separate 8% pitch-control for each speed. Illuminated strobe with adjustable viewing angle. 12" one-piece dynamically balanced die-cast platter; combined rotating weight (platter

plus rotor) 9.7 lbs. Gimbal-mounted 8¾" tonearm. Two anti-resonance filters integral with counterbalance, tuned to tonearm/cartridge system and chassis. Stylus pressure 0-3.0 g, calibrated in 10ths of a gram. Anti-skating. Cueing system damped in both directions. Rumble: −70 dB. Wow & flutter: 0.03%. 16.5" × 14.4" × 5.8". With base and dust cover $400.00

ELAC/MIRACORD

50H Mark II Automatic Turntable

Three speeds (33, 45, & 78 rpm); rumble −40 dB (NAB); wow 0.06%; flutter 0.02%. Stylus

force adjustable 0 to 6½ g ±0.1 g. Mounting clearance 5½" above board, 2⅞" below. Has hysteresis motor and anti-skating device, cueing lever, and built-in lighted stroboscope. 14⅛" W × 12⅛" D. Without base or cartridge. $249.95

760 Automatic Turntable

Features 4-pole induction motor. Operates at 78, 45, and 33 rpm. Will handle 7", 10", or 12" records. Rumble 44 dB (NAB); wow 0.06%; flutter 0.02%. Tracking error less than 0.4 degree per inch. Stylus force adjustment calibrated 0-6½ g (accurate to within 0.1 g). Speed adjustable over a 6% range for semitone of pitch adjustment. 12" die-cast platter; dynamically balanced tonearm. 14⅛" W × 12⅛" D × 5½" above

Introducing the BSR Silent Performer

The only rumble from this belt-drive turntable comes from our competitors.

For years most expensive manual record-playing devices have used belt-drive as a smooth, trouble-free—and most important—silent method for transmission of power. Now, our engineers have succeeded in integrating a highly-refined belt-drive system into more affordably-priced turntables. They offer a combination of features and performance not yet available in even more expensive competitive models. We call them the Silent Performers.

Our Model 20 BPX is a fully automated single-play turntable with a precision machined platter, high-torque multi-pole synchronous motor, tubular "S" shaped adjustable counter-weighted tone arm in gimbal mount, viscous cueing, quiet Delrin cam gear, automatic arm lock, dual-range anti-skate and much more. It is packaged with base, hinged tinted dust cover, and ADC K6E cartridge. See your audio dealer for more information, or write to us.

BSR

Consumer Products Group
BSR (USA) Ltd.
Blauvelt, N.Y. 10913

CIRCLE NO. 7 ON READER SERVICE CARD

3 Record Players

motorboard, 2⅞" below. $199.95

820 Automatic Turntable

Features 4-pole asynchronous motor; three-speed (33, 45 & 78 rpm) operation; automatic programming of tonearm for 12" records at 33, 7" records at 45; push-button start and stop; variable pitch control (up to 5% range); built-in strobe speed indicator; calibrated anti-skate for elliptical and conical styli; viscous-damped up and down cueing in all modes; low-mass arm and head assembly; tracking as low as 1 gr; heavy pressure-formed platter. Less base and cartridge. $129.95

EMPIRE

Troubador III 598 Turntable

Two-speed (33, 45 rpm) manual turntable. Has anti-skating device, hysteresis synchronous

motor, belt drive, cueing control, and removable cartridge shell. Wow & flutter 0.01%; stylus pressure adjustable from 0 to 4 g; rumble −90 dB. Has built-in 45-rpm spindle, 12" platter. 17½" W × 15⅛" D × 3¼" above mtg. board, 3½" below. Comes with 4000D/III low-tracking cartridge, base, and Plexiglas cover. $399.95

FISHER

MT6010 Auto Return Turntable

Two-speed (33 & 45 rpm) belt-driven turntable; 4-pole synchronous motor; wow & flutter 0.1%; rumble 58 dB; speed variation ±0.3%; automatic reject & shut-off; die-cast aluminum platter; viscous-damped cueing control; comes with S-shaped static-balanced tonearm; dual-magnet-type cartridge. Walnut-grain vinyl laminated base & dust cover. $129.95

MT6020 Automatic Turntable

Two-speed (33 & 45 rpm) belt-driven turntable; 4-pole synchronous motor; wow & flutter 0.08%; rumble 62 dB; speed variation ±0.3%; features adjustable anti-skating; lateral balance control; viscous-damped cueing; record size selector; auto-repeat control; comes with S-shaped static-balanced tonearm; die-cast aluminum platter. Walnut-grain vinyl laminated base & dust cover. $169.95

MT6030 Auto Return Turntable

Two-speed (33 & 45 rpm) belt-driven turntable; 6-pole a.c. servo motor; wow & flutter 0.08%; rumble 65 dB; speed variation ±0.3%; features built-in illuminated strobe; auto reject & shut-off; viscous-damped cueing & pause control; variable anti-skating control; variable pitch control (±3%); S-shaped static balanced tonearm. Walnut-grain vinyl laminated base & dust cover. $199.95

MT-6040 Direct-Drive Turntable

Two-speed (33 & 45 rpm) d.c. servo motor direct-drive turntable; wow & flutter 0.03%; rumble 70 dB; speed variation ±0.2%; features dual variable pitch controls; variable anti-skating; viscous-damped cueing; S-shaped static balanced tonearm with gimbal suspension. Integrated die-cast metal base & hinged plastic dust cover. $249.95

FONS

CQ30 Automatic Turntable

Three speed (33, 45 & 78 rpm) single-play turntable; total variable range 29-100 rpm; full electronic control features closed-loop, negative-feedback, tachometer-controlled d.c. motor to eliminate speed variation due to line voltage/frequency changes; 12" high-mass platter; main bearing is hyper-concentric (tolerance ±0.00003); rumble, wow & flutter −80 dB at 0.02%; base incorporates anti-feedback phase-cancellation suspension system. Comes with smoked cover and Grace 840F tonearm. 6" H × 17½" W × 13½" D. $395.00
Same unit but without arm $295.00

GALE

GT2101 Optical Servo Turntable

Electronic, d.c., brushless, direct-drive motor with continously variable speeds from 10 to 99 rpm; plus lock-on control for 33⅓ rpm, with 10 ppm accuracy; speed referenced to 1.048 MHz quartz crystal with optical servo-control monitoring 600 times per revolution; logic system makes instantaneous corrections. Features constant digital readout of all speeds on separate control unit; motor, platter, and shaft rotate on magnetic field maintained on non-degenerating rare-earth material; self-regulating suspension system virtually immune to shock in any direction; chassis and turntable of 13 mm plexiglass and anti-magnetic stainless steel. Available with SME 3002/improved tonearm or with special adapter plates for other tonearms. Less tonearm $1875.00

GARRARD

Zero 100SB Single-Play Turntable

Features an articulated tonearm with zero tracking error; magnetic anti-skating control;

built-in record counter; viscous damped cueing; Synchro-Lab motor; belt driven 4-lb dynamically balanced zinc alloy platter. Includes teak wood base and hinged dust cover. $209.95
86SB. Same as Zero 100SB except has non-articulated low-mass aluminum tonearm with sliding weight anti-skate control. $159.95

Zero 2000B Automatic Changer/Turntable

Two-speed (33 & 45 rpm); Synchro-Lab drive with belt/idler linkage; will handle stack of six records or operate single-play; rumble −64 dB (DIN B); wow 0.06%; flutter 0.04%; variable offset tonearm; adjustable counterweight; sliding weight stylus-force adjustment; magnetic anti-skating adjustment with CD-4/elliptical calibration; viscous-damped cue control (both

directions); built-in record counter/stylus timer; 15 degree vertical tracking adjust; 11½" die-cast alloy platter. 15⁵⁄₁₆" W × 14⅛" D × 4⅜" above & 2¹⁵⁄₁₆" below motorboard ... $229.95
BW30. Base $15.95
D30. Dust cover $9.95
LRS100. 45 rpm automatic spindle ... $5.95
990B. Similar to Zero 2000B except with low-mass "S" tubular tonearm; adjustable stylus counterweight; three speeds (33, 45, 78 rpm) $169.95

770M Automatic Changer/Turntable

Three-speed (33, 45 & 78 rpm); Synchro-Lab motor; idler-wheel drive; will handle stack of five records; fixed single-play spindle; rumble (DIN B) −57 dB; wow 0.08%; flutter 0.05%; fixed offset tonearm; adjustable counterweight; spring stylus-force adjust; viscous-damped cue control; low-capacitance CD-4 cables; comes with base, dust cover, Shure M93E magnetic cartridge. 16½" W × 8½" H (with base & cover) × 14" D $119.95
LRS50. 45 rpm spindle $5.95

440M Automatic Turntable

Three-speed (33, 45 & 78 rpm); 4-pole induction motor; idler-wheel drive; rumble −55 dB; wow 0.10%; flutter 0.08%; fixed offset tonearm; spring stylus-force adjust; viscous-damped cue control; will handle stack of six records; fixed single-play spindle; comes with low-capacitance CD-4 cables; Pickering V15/ATE-4 cartridge; base; dust cover. 16½" W × 8½" H (including cover & base) × 15" D. $79.95
440C. Same as 440M except supplied with ceramic cartridge $69.95
F45. 45 rpm spindle for either model. ... $3.25

125SB Single-Play Turntable

Three-speed (33, 45 & 78 rpm) single-play turntable; Synchro-Lab motor; flexible belt drive; rumble −58 dB; wow 0.08%; flutter 0.05%; low-mass "S" tubular tonearm; adjustable counterweight; anti-skate adjust with CD-4/elliptical calibration; viscous-damped control; comes with base & dust cover. 14⅜" W × 12½" D. $109.95

GLENBURN

All automatic turntables in the line feature low-mass precision tonearms; oversize turntable bearing; Delrin tripping pawls for minimum tracking and tripping force; uni-planar construction with all operating parts in one horizontal plane; re-designed base with hinged dust cover.

2155B Record Changer

Heavy-duty 4-pole motor; 11" turntable platter with protective mat; bi-directional viscous-damped cue and pause control; adjustable anti-skate control calibrated for conical and elliptical styli; calibrated stylus-pressure control; interchangeable automatic and manual spindles; ball-race pivoted tonearm; automatic tonearm locking rest; record stabilizer arm with finger-lift; comes with audio cables and ADC K7E magnetic cartridge. $109.95
2155S. Same except without dust cover, base, or cartridge. $79.95

3 Record Players

1100A Automatic Turntable
Automatic locking tonearm rest; cue and pause control; interchangeable manual and automatic play spindles; 45 rpm adapter; ceramic cartridge/diamond stylus. $59.95
1100S. Same except without dust cover, base, or cartridge. $49.95

1120A Record Changer
Features 11" turntable platter with cushioned protective mat; bi-directional viscous-damped cue and pause control; ceramic cartridge/diamond stylus; adjustable anti-skate control; stylus pressure control with indicator; automatic locking tonearm rest; interchangeable manual and automatic play spindles; 45 rpm adapter spindle. $79.95

2110B Record Changer
Automatic turntable with 4-pole motor; cue and pause control; automatic locking tonearm rest; comes with molded, walnut-grain base, hinged dust cover, ADC K8 magnetic cartridge. $89.95

2175B Automatic Turntable
Features counterbalanced tonearm; slide-in cartridge adapter; 4-pole synchronous motor; comes with ADC K6E magnetic cartridge with elliptical stylus, molded walnut-grained base, and deluxe hinged dust cover. $129.95

2195B Automatic Turntable
Features umbrella spindle; gimballed counterbalanced tonearm; slide-in cartridge adapter;

4-pole synchronous motor; comes with simulated walnut-grain wood base, deluxe hinged dust cover, ADC K3E magnetic cartridge with elliptical stylus. $159.95

JVC

JL-B44 Stereo Turntable
Direct-drive d.c. motor; adjustable speed control with neon strobe; 12" die-cast aluminum turntable; two speed (33 & 45 rpm); wow & flutter 0.05% W rms; S/N 60 dB; effective arm length 9⅝"; features balanced S-shaped tonearm; calibrated stylus pressure adjust; adjustable anti-skating; resonance-free beechwood base & dust cover; 4-channel adaptable. 7½" H × 19¼" W × 16¼" D $299.95

VL-5 Manual Turntable
Four-pole synchronous motor; belt-drive system; features viscous damped cueing; anti-skating adjust; push-button speed selection (33 & 45 rpm); auto lift at end of record; S-shaped tubular tonearm; plug-in head. 7⅜" H × 18⅛" W × 14⅞" D $129.95

KENWOOD

KD-5033 Automatic Turntable
Two-speed (33 & 45 rpm), direct-drive fully

automatic single-play turntable; 8-pole, 24-slot d.c. servo motor (turntable), 24-pole synchronous gear motor (automatic operation); 12" solid die-cast aluminum-alloy platter; wow & flutter 0.05%; rumble −70 dB; adjustable speed control (±3%); strobe adjustment; comes with lightweight static-balance, S-shaped pipe tonearm with lateral balancer; stylus pressure 0-4 gr; usable cartridge weight 4-13 gr; tracking error ±1.5 degrees; anti-skate adjust; automatic repeat, return, and power shut-off; dust cover. 18⅞" W × 13¾" D × 6⅝" H $279.95

KD-3033 Automatic Turntable
Two-speed (33 & 45 rpm), belt-drive single-play turntable; 4-pole synchronous motor (turntable) and 24-pole synchronous gear motor (automatic operation); 12" solid die-cast aluminum-alloy platter; wow & flutter 0.06%; rumble −63 dB; lightweight static-balance, S-shaped pipe tonearm with lateral balancer; EIA plug-in; stylus pressure 0-4 gr; usable cartridge weight 4-13 gr; tracking error ±1.5 degrees; anti-skate adjust; automatic repeat, return, power shut-off; dust cover. 18⅞" W × 13¾" D × 6⅝" H $179.95

KD-2033 Turntable
Two-speed (33 & 45 rpm) belt-drive single-play turntable; 12" solid die-cast aluminum-alloy platter; wow & flutter 0.06%; rumble −63 dB; lightweight static-balance S-shaped pipe tonearm with EIA plug-in; stylus pressure 0-4 gr; usable cartridge weight 4-10 gr; tracking error ±1.5 degrees; anti-skate adjustment; auto return of arm; dust cover. 18⅞" W × 14 7/16" D × 6⅝" H $129.95
KP-1022. Same as KD-2033 except wow & flutter 0.07%; rumble −62 dB; does not have auto arm return. 17 9/16" W × 13 15/16" D × 6⅞" H $119.95

KLH

M-60 Manual Turntable
Two-speed (33 & 45 rpm) manual turntable; will handle 7", 10" & 12" discs; rumble −58 dB (CBS-RRLL); wow & flutter 0.1% (DIN); 24-pole synchronous motor; motor drift ±0.5% (DIN); adjustable tracking force 0.5-4.0 g; aluminum alloy, 12" dynamically weighted and balanced platter; viscous-damped cueing; low-deflection equilibrium field suspension; plug-in shell capability for all standard cartridges; adapter for 45 rpm records; 9" tonearm; tracking error ±0.7 degree; 5/16 aluminum alloy tube; automatic operational capability lifts tonearm off record and unit shuts off. Walnut veneer base and hinged dust cover. 17" W × 13⅜" D × 6¼" H (with dust cover) $150.00

Research Ten Line

Model 60 Manual Turntable
Two-speed (33 & 45 rpm) belt-driven single-play turntable; push-button control of on/off and cueing; adjustable automatic lift off & shut-off by means of light transmission and detection system; electrically operated viscous-damped cueing; low-mass coplanar tonearm assembly; one-piece die-cast aluminum-alloy platter; 24-pole 300-rpm synchronous motor; anti-skate feature; tonearm balance & stylus tracking force adjust; rumble 57 dB; wow & flutter 0.09%; tracking force adjustable from

0.5-4.0 gr.; tracking error 0.5 degree; will handle 7", 10", 12" records; comes with oiled-walnut veneer base; plastic dust cover; two plug-in cartridge shells. 17" W × 13⅜" D × 7½" H (with cover) $150.00
Model Sixty Plus. Same except comes equipped with Pickering XV-15 750 E cartridge. . $175.00

LENCO

L-85 Single-Play Turntable
Two speed (33 & 45 rpm) design with ±3% speed adjustment. Wow & flutter ±0.08% weighted; rumble −63 dB weighted. Has 16-pole synchronous motor with belt drive. Stylus force adjustment 0-5 g. 12½" platter. Has built-in illuminated stroboscope, anti-skating device, four viscous-damped suspension spring, automatic shut-off, and automatic arm lift. Mounting clearance above board 2⅝", below 2⅜". 16¾" × 12⅞" $303.50

L-78 Single-Play Turntable
Four-speed (16, 33, 45 & 78 rpm) design with continuously variable speed from 30 to 86 rpm. Will handle 7", 10", or 12" records. Rumble (NAB) −40 dB; wow & flutter 0.06%. Features electronic shut-off and arm lift; balanced tonearm; automatic viscous-damped cueing; anti-skating; low-mass cartridge head; high-mass base suspension system. Tonearm 8"; turntable diameter 11¾". Motor is 4-pole constant-velocity type with conical shaft. $208.50

L-65 Automatic Turntable
Two-speed (33 & 45 rpm) design with 16-pole synchronous motor; automatic tonearm return; lightweight aluminum tonearm; viscous-damped suspension and tonearm lift; anti-skating device with separate scales for elliptical and spherical styli; wow & flutter weighted ±0.12%; rumble (weighted) −57 dB; comes with base and dust cover. $190.75

L-75 Single-Play Turntable
Four-speed (16, 33, 45, 78 rpm) design with capability for continuous selection of any speed from 30 to 86 rpm. Features low-mass cartridge head, anti-skating device, automatic viscous-damped cueing lever. 12", 8.8 lb. platter. Wow & flutter 0.06%; rumble −38 dB. 17½" W × 13⅞" × 6⅛". With walnut base and hinged dust cover $184.95

B-55 Single-Play Turntable
Four-speed (16, 33, 45, 78 rpm) design with capability for continuous selection of any speed from 30 to 86 rpm. Has automatic viscous damped cueing lever. Wow & flutter 0.18%; rumble −60 dB. 11.8" platter. Anti-skating device. 14¾" W × 11⅞" × 5¼" $175.75
B-52. Same as B-55 but without base and cover. $119.50

LINN SONDEK

LP12 Manual Turntable
Single-speed (33 rpm) manual turntable; belt-drive; rumble −60 dB unweighted (10 cm/sec 1000 Hz signal); wow & flutter 0.04% rms; features oil-bath bearing assembly that runs in

Introducing the MESA Simplimatic™ family of fully automatic turntables.

Five years ago MESA, the Southern Hemisphere's largest producer of record changers, decided to strike a new note in turntable technology.

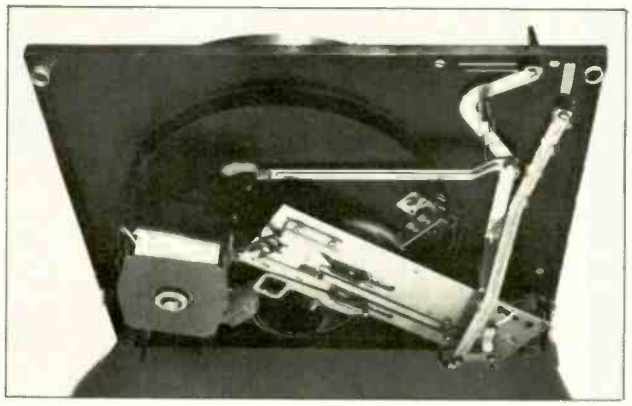
This time, put the user's needs first. This time, give the user peak performance at a price he can afford. This time, engineer out the service problems *before* the unit reaches the user.

The result is a deceptively simple, fully automatic turntable series for Americans and Canadians that effectively bridges the price-performance gap. A second generation family with a proud heritage—and unlimited future.

The series even includes a quadraphonic model with an Audio-Technica #AT14S magnetic pickup and a genuine Shibata nude stylus.

MESA gives you *more* on top because the company's experienced engineers and skilled designers have eliminated potential problems on the *bottom*.

By developing the silent, Simplimatic™ mechanism common to all members of the MESA family.



All MESA fully automatic turntables have this silent, Simplimatic™ mechanism with up to 60 per cent fewer parts for 60 per cent fewer problems.

The main reason why MESA fully automatic turntables can be repaired in only minutes by any serviceman in the United States or Canada.

And why each MESA unit carries a two-year, *full* warranty on parts and labor.

The MESA silent, Simplimatic™ family...the amazingly quiet, fully automatic turntable series with more premium features, fewer moving parts than any other turntable in its moderately priced range.

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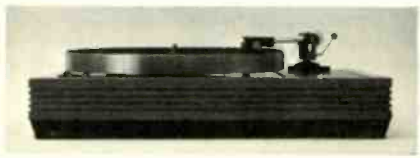
CIRCLE NO. 64 ON READER SERVICE CARD

3 Record Players



zero-wear configuration; 9-lb platter machined to within 0.001"; kiln-dried Afromosia base; hinged dust cover; comes with base and cover but less arm $359.00

LUXMAN

P-121 Turntable
Direct-drive unit; two-speed (33 & 45 rpm); vernier controls for fine-tuning speed over

range ±4%; illuminated strobe markings; rumble 70 dB; wow & flutter 0.03% W rms; will accommodate most tonearms; comes with two tonearm mounting plates (one pre-cut for Shure/SME arm), base, hinged removable dust cover..... $495.00

MESA

Model I Automatic Turntable
Two-speed (33 & 45 rpm) automatic turntable; two-pole induction motor; removable umbrella spindle with automatic sensing for last record shut-off; two stub spindles for single play; automatic tonearm unlocking device; viscous-damped cueing and pause control; stylus pressure adjust (0-5 gr); comes with base, dust cover. double-diamond flipover stylus, ceramic cartridge. 17⅛" W × 8" H × 14½" D . . . $49.95
Model I-M. Same as Model I except four-pole synchronous motor and Audio-Technica AT10 magnetic cartridge..... $59.95

Model II Automatic Turntable
Two-speed (33 & 45 rpm) automatic turntable; 4-pole synchronous motor; removable umbrella spindle; single-lever control for selection of record speed & size; low-mass tubular tonearm with fixed counterweight; viscous-damped cueing and pause control; calibrated stylus pressure adjust (0-5 gr); calibrated adjustable anti-skate mechanism; comes with base, dust cover, and Audio-Technica AT11 magnetic cartridge. 17½" W × 8" H × 14½" D $69.95
Model III. Same as Model II except with adjustable counterweight; Audio-Technica AT11E

magnetic cartridge. 17⅛" W × 8" H × 14½" D $89.95

MX

1230 Automatic Turntable
Three-speed (33, 45 & 78 rpm); 4-pole synchronous motor; viscous-damped cue control; counterbalanced tonearm; anti-skate adjustment; rotating spindle for single-play operation; plays six records automatically; muting switch; automatic shut-off; tonearm safety lock; lock-down slide latches; min. tracking force 1 gr (manual), 1½ gr (auto); wow (DIN peak, weighted) 0.15%; rumble (weighted) −58 dB; 11" die-cast nonferrous platter; Shure M-75 cartridge. 8¾" H × 16⅞" W × 14¼" D. Comes with base and dust cover $169.95
1220. Similar to 1230 except min. tracking force 1¼ gr (manual), 1¾ gr (auto); wow (DIN peak, weighted) 0.20%; rumble (weighted) −52 dB $129.95

PE

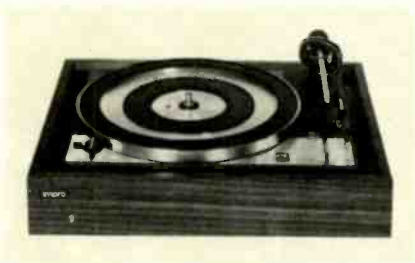
All PE automatic turntables provide the following features: Dynamically balanced tonearms; fully automatic and manual single play; self-stabilizing changer spindle holds up to six records; stylus pressure dialed directly around pivot; anti-skating; cue-control damped in both directions; 6% pitch control for all speeds; adjustable stylus overhang. Prices are less base and cartridge.

PE-3044 Turntable
One piece tonearm tracks as low as 1½ g; 3-position anti-skating; laminated 10⅝", 3-lb platter..... $119.95

PE-3046 Turntable
One piece counterbalanced tonearm tracks as low as 1 g; anti-skating separately calibrated for conical, elliptical, and CD-4 styli; die-cast 10⅜" dynamically balanced 4.4-lb platter $149.95

PE-3048 Turntable
Tonearm tracks as low as 0.5 g; tracking force calibrated from 0-3 g; anti-skating separately calibrated for conical, elliptical, and CD-4 styli; vertical tracking-angle adjustment; heavy-duty induction/synchronous motor $169.95

PE-3060 Turntable
Double-ring gimbal-mounted tubular tonearm



tracks as low as 0.5 g; anti-skating; vertical tracking angle adjustment for single and multiple play; fail-safe feature prevents tonearm from descending to platter when no record is on it; automatic record-size scanner; heavy-duty induction/synchronous motor; die-cast 10⅝" dynamically balanced 4.4-lb platter .. $199.95

PHILIPS

GA212 Automatic Turntable
Servo-controlled, 2-speed (33 & 45 rpm) belt-driven design for single play, complete with tonearm, hinged but removable dust cover, slide-out cartridge plate, and stroboscopic ring. Features anti-skating device, hydraulically damped cueing control. Has two independent potentiometers for speed calibration (±3%). Drift 0.2%; wow & flutter 0.07%; rumble −40 dB NAB unweighted. Stylus force range 0.5-4 g.

Arm resonance 7 Hz. 11½" platter. 110 to 240 V, 50/60 Hz operation. 6¼" × 13¼" D × 15½" W. With dust cover & base $169.50

GA209 "Electronic" Turntable

Two-speed (33 & 45 rpm) fully automated, electronically controlled turntable; three motors

(turntable drive, pickup arm movement, cueing); separate fine-speed adjustment ±3%; wow & flutter 0.07%; rumble −43 dB (DIN A); stylus force 0.75-3 g adjustable; anti-skating force adjustable for spherical & elliptical styli; turntable drive 9 V d.c. motor with 72-pole tacho generator; pickup arm lift touch-controlled, viscosity damped pickup arm lift; optional manual operation; photoelectric end-of-record switch-off system. 6½" H × 17⅛" W × 12¾" D $299.50

GA427 Manual Turntable

Single-play, two-speed (33 & 45 rpm) unit; fea-

tures damped cueing; tracking force adjust; anti-skating adjust; comes with integrated tonearm & hinged removable dust cover; arm accepts any phono cartridge with standard ½" mounting center $99.50

PIONEER

PL-12D-II Manual Turntable

Belt-driven with 4-pole synchronous motor. Features 33- & 45-rpm operation. Wow & flutter 0.08% (W rms). S/N 48 dB. 12" die-cast platter. Comes with static-balanced S-shaped tonearm, base, and free-stop dust cover. Stylus pressure from 0.75 g. Has anti-skating control, cueing device, direct-reading counterweight, lateral balancer, and stylus position gauge (overhang indicator). 16¹⁵⁄₁₆" W × 6½" H × 14¼" D. $99.95

PL-15D-II Automatic Turntable

Features 33 & 45 rpm operation. Belt-driven with dual motor design (a 4-pole synchronous for rotating platter & a gear motor for all automatic operations). Provides automatic repeat & tonearm return. Complete with oil-damped cueing and anti-skating devices. Comes with base & dust cover. Wow & flutter 0.08% (W rms); tracking force 1.5 to 2.1 g. 12" platter. 16⅞" W × 6½" H × 16⅜" D $129.95

PL-A45D Automatic Turntable

Two-speed (33 & 45 rpm), two-motor belt-drive system; 4-pole synchronous motor (for platter), gear motor (for automatic functions); wow & flutter 0.1% W rms; S/N 47 dB; 12" aluminum alloy die-cast platter; static-balance S-shaped pipe tonearm; usable cartridge weight 4 to 10 g; anti-skating; oil-damped cueing device; stylus pressure direct-readout counterweight; lateral balancer; plug-in headshell. 18⅞" W × 6¾" H × 16⅜" D $169.95

PL-71 Manual Turntable

Two-speed (33 & 45 rpm), all-electronic, direct-

drive turntable with brushless d.c. servo motor; electronic speed change; speed control range ±2%; wow & flutter 0.05% W rms; S/N 60 dB; 12¼" aluminum alloy die-cast platter; static-balance S-shaped pipe tonearm; usable cartridge weight 4 to 32 g; anti-skating; oil-damped cueing device; stylus pressure direct-readout counterweight; lateral balancer; arm height adjustment; plug-in headshell. 18⅞" W × 7⅛" H × 16⅜" D $299.95

PL-55X Manual Turntable

Has brushless d.c. servo-controlled motor; direct-drive system. Operates at 33 & 45 rpm (electronic speed change). Speed change control range within ±2%. Wow & flutter 0.05% (W rms). S/N 58 dB. 12¼" aluminum alloy die-cast platter. 8¹¹⁄₁₆" static-balanced S-shaped pipe arm with plug-in head shell; ⅝" overhang. Has

3 Record Players

anti-skating control, lateral balancer, stylus pressure direct-readout counterweight. Comes with wooden cabinet and metal base with free-stop dust cover; induced magnet cartridge with 0.5-mil diamond stylus. 18⅞" W × 7¼" H × 16⅛" D $249.95

RABCO

ST-7 Turntable/Arm Assembly

Two speed (33 & 45 rpm, adjustable ±5.5%);

brushless d.c. (Hall Effect) motor with precision-ground belt; tracking error, skating force, vertical friction, lateral friction all 0; rumble (DIN B) −68 dB; wow & flutter (NAB weighted) 0.04%; (DIN B) 0.09%; hum −76 dB; speed constancy ±0.3%; viscous-damped cueing control; tonearm mass 6 gr.; comes with straight-line tracking arm; dust cover. 6¾" H (with dust cover)× 16½" W × 16¼" D. $400.00

RADIO SHACK

Realistic/Miracord 46 Changer

Three-speed (33, 45 & 78) manual/changer combination. Has anti-skating device, cueing control, and removable cartridge shell with Shure cartridge. Supplied with tonearm and base. $198.50

Realistic LAB-100 Turntable

Belt-driven turntable; play/stop/cycle control with automatic shut-off; S-shaped tonearm

with gimbal suspension; dual-range calibrated conical/elliptical anti-skate control; decoupled counterweight; automatic tonearm lock; rotating spindle; 45 rpm adapter; slide-in cartridge holder; sliding record size and speed selectors; low-capacitance audio cables for four-channel use (with CD-4 cartridge); will handle all size records at 33 & 45 rpm; flutter & wow 0.09% W rms; rumble −58 dB (DIN B). 7½" × 16¾" × 14½" (with cover closed). Comes with base with storage compartment; simulated walnut-grain finish. $99.95

Realistic LAB-50 Changer

Multi-pole synchronous motor; will handle all size records at 33 & 45 rpm; belt-drive; tonearm features micrometer stylus-pressure force adjustment; adjustable counterweight; cue/pause control; viscous damping; walnut-grained vinyl base. 7" × 16⅞" × 14¼" .. $99.95
Smoke-tint dust cover $6.95

Realistic LAB-34 Changer

Three-speed changer; tonearm with vernier counterbalance; micrometer tracking-force adjustment; downward-damped cueing; anti-skate scales for elliptical & conical styli; synchronous motor; comes with elliptical cartridge; base with walnut-grained vinyl insert & storage compartment. 6½" × 16⅜" × 14" $79.95
42-3000. 45 rpm spindle $1.49

SANSUI

SR-717 Electronic Turntable

Two-speed (33 & 45 rpm), direct-drive servo-controlled turntable with electronically controlled 20-pole d.c. brushless motor; wow & flutter 0.035%; S/N 60 dB; features electron-

ically controlled speed change/vernier adjustment; built-in Strobo-Lamp for visual speed check; engraved stroboscope platter edge; knife-edge/one-point support S-shaped tonearm; lateral balance adjustment; direct readout arm counterbalance; viscous damping; natural rubber hemispherical insulators; laminated genuine wood cabinet; free-stop removable plastic dust cover. $349.95
SR525. Similar to SR-717 except wow & flutter 0.03% (W rms); S/N 64 dB; min. tracking force 0.5 gr; frequency response 10-23,000 Hz; channel separation 25 dB (1000 Hz); tracking force 1.5-2.0 gr; 18½" W × 5¹⁵⁄₁₆" H × 14¹³⁄₁₆" D. $279.95

SR-212 Automatic Turntable

Two-speed (33 & 45 rpm), belt-driven auto-cut/auto-return unit; four-pole synchronous motor; wow & flutter 0.1% (W rms); S/N 45 dB; statically balanced S-shaped tubular tonearm; frequency response 20-20,000 Hz; walnut-grained cabinet; free-stop hinged cover. 17⁷⁄₁₆" W × 6⁹⁄₁₆" H × 13⅞" D $129.95

SR-313 Belt-Drive Turntable

Two-speed (33 & 45 rpm), belt-drive turntable; 4-pole synchronous outer-rotor motor; wow & flutter 0.06% W rms; S/N 50 dB; S-shaped 8¹¹⁄₁₆" tonearm; counterweight with direct stylus pressure scale; 4-contact plug-in head shell; hinged self-retaining dust cover. $169.95

SONY

PS-2251 Turntable/Arm

Two-speed (33 & 45 rpm) unit with direct-drive a.c. servo-motor. Speed control range ±4%; wow & flutter 0.07% weighted (DIN); (S + N)/N 67 dB weighted. Tonearm is 13¼" static-balanced type; stylus force adjustment 0-3 g; anti-skate adjustment range 0-330 mg; viscous-damped cue control; stylus overhang gauge. 19¼" × 7¼" × 15⁹⁄₁₆". Comes with tonearm, wood base, and removable dust cover. $429.50

STANTON

8004 "Gyropoise" Turntable

Two-speed (33 & 45 rpm ±0.3%) turntable; 24-pole synchronous high-torque motor with belt

drive; viscous-damped cueing control; wow & flutter 0.017% (DIN 45507 weighted); rumble −60 dB (DIN 45539 weighted); stylus force range 0-4 gr; tracking error ±1.7 degrees max.; adjustable anti-skate with separate scales for all types of styli. Comes with dust cover, walnut base, cartridge, low-capacity tonearm, extension cord cables. 13" × 14¾" × 7" D.
8004-II. With TT681 stereo cartridge; frequency response 10-22,000 Hz; channel separation 35 dB; output 0.7 mV/cm/sec ±2 dB; 1 gr tracking; 0.2 × 0.7 mil elliptical stylus. $199.95
8004-IV. With TT780 four-channel discrete cartridge; frequency response 10-50,000 Hz; channel separation 35 dB; output 0.6 mV/cm/sec ±2 dB; 2 gr tracking; Quadrahedral stylus. $224.95

TECHNICS BY PANASONIC

SP-10 Single-Play Turntable

Two speeds (33 & 45 rpm). Has d.c. servo motor, direct drive, and pitch control. Features built-in illuminated strobe speed indicator; 12" 6-lb platter. Build-up time within ½ rotation. Wow & flutter 0.03%; rumble −65 dB. Supplied without tonearm. 4" H × 14" W × 14" D. $449.95

SP-10-II Single-Play Turntable

Three-speed (33, 45 & 78 rpm) turntable with phase-lock quartz-crystal speed control of low-speed, direct-drive d.c. brushless motor; build-up time to precise speed within 25 degree rotation (0.25 sec.) at 33⅓ rpm; stop time (magnetic brake) within 30 degree rotation (0.3 sec); long-term speed stability ±0.002% (within ±36 ms over 30-min. period, less than ¾ sec. in 10 hours); wow & flutter 0.025% W rms; rumble −70 dB; solenoid controls (including remote). 14.5" W × 3¹⁵⁄₁₆" H × 14.5" D $499.95

SL-1100A Turntable With Arm

Features direct-drive, slow-speed brushless d.c. motor with electronic speed control regulation without belts, idlers, or pulleys. Two speeds (33 & 45 rpm). Variable pitch, ±5%, independently adjustable for each speed. Dynamically balanced turntable has 13½" platter, weighs 4.4 lbs. Wow & flutter 0.03% W rms; rumble −70 dB (DIN B). Build-up time within ½ rotation. Tonearm is static-balanced low-mass tubular with 9¼" pivot-to-stylus distance. Direct-reading tracking force adjustment from 0 to 5 g. Anti-

skating control; viscous-damped cueing; universal-type cartridge head shell. Has built-in illuminated speed strobe. Dust cover included $369.95

SL-110A. Similar to SL-1100A but without arm; blank removable mounting panel may be cut for arm selected $299.95

SL-1200 Turntable With Arm

Similar to SL-1100A except has 13" diecast aluminum platter weighing 3.86 lbs and a 8 11/16" tonearm. Has hinged, removable plexiglass dust cover..... $279.95

SL-120. Similar to SL-1200 but without arm. Includes two mounting platforms: one precut for SME tonearm, other blank to be cut for other arms $229.95

SL-1300 Single-Play Turntable/Arm

Automatic set-down, lift-off, arm return, and shut off, using direct-drive servo motor; two speeds (33 & 45 rpm) with 10% range of pitch variation (separately for each); 13" dynamically balanced platter; built-in illuminated strobe speed indicator; "Memo-Repeat" permits repeat play of record up to five times before shut-off or indefinite repeat; gimbal-suspended tonearm (9 1/16" pivot-to-stylus) with low mass, low resonance, four pairs of pivot bearings for rotational sensitivity; anti-skating; hinged detachable dust cover; feedback-cancelling legs; low-capacitance phono cables for CD-4; wow & flutter 0.03% W rms; rumble −70 dB (DIN B). 5 1/2" H × 17 3/4" W × 14 3/8" D . . . $299.95

SL-1350. Similar to SL-1300 except can play stack up to six records 7", 10", or 12"; "Memo-Gram" selector programs change function or repeat/play selection; includes manual and changer spindles for regular & 45 rpm records; wow & flutter 0.04% W rms; rumble −70 db (DIN B). 17 3/4" W × 7 3/8" H × 14 3/8" D . . $349.95

SL-1500 Turntable With Arm

Features electronically controlled direct-drive, low-speed brushless d.c. motor without belts, idlers, or pulleys; two speeds (33 & 45 rpm); pitch variable 10%, independently adjustable for each speed; 13" dynamically balanced platter; wow & flutter 0.03% W rms; rumble −70 dB (DIN B); tonearm static-balanced low-mass tubular type; features anti-skating, cueing; universal-type cartridge head shell; hinged detachable dust cover; low-capacitance cables. 17 3/4" W × 5 1/2" H × 14 3/8" D . . . $199.95

THORENS

TD-165 Integrated Turntable

Two-speed (33 & 45 rpm) unit with double synchronous 16-pole motor; will handle 7", 10", 12" records; wow & flutter 0.06%; rumble −43 dB (unweighted), −65 dB (weighted); non-ferrous, anti-magnetic 12" platter; unified suspension system for tonearm mount & platter; anti-skate control; tonearm balance & stylus tracking force adjustable 0.5-3.5 g in 1/2-g increments; viscous-damped cueing control; 9" tonearm; arm resonance below 10 Hz. Comes with base, dust cover, plug-in shell for all standard cartridges. 17. W × 12 1/2" D × 7 3/4" with dust cover. $169.95

TC-160C Integrated Turntable

Two-speed (33 & 45 rpm) unit with belt-driven 16-pole synchronous motor; 12" non-magnetic platter; rumble −43 dB (unweighted), −65 dB (weighted); wow & flutter 0.06% weighted; unified suspension system for tonearm & drive system; magnetic anti-skating control; cueing control; tonearm 9.06"; stylus overhang 0.55" adjustable. Comes with tonearm, walnut base and dust cover. 17" × 13 1/2" W × 7 3/4" H. $249.95

TD-145C Integrated Turntable

Two-speed (33 & 45 rpm) transcription turntable; features exclusive electronic sensing system for automatic tonearm lift & power shut-off; wow & flutter 0.06% (DIN 45 507) weighted; rumble (DIN 45 539) −43 dB unweighted; −65 dB weighted. 17" L × 13 1/2" W × 7 3/4" H (with dust cover). $299.95

TD-125AB Mark II Turntable

Three-speed (16, 33 & 45 rpm) unit with belt-driven 16-pole synchronous motor; fine-speed

adjustment ±2%; illuminated strobe speed control; 12" non-magnetic zinc alloy platter; wow & flutter 0.06% weighted; rumble −45 dB (unweighted), −68 dB (weighted); features magnetic anti-skating control; isolated tonearm & drive system; cueing control. Comes with walnut base and TP-16 9.06" tonearm. 18" × 5" H × 14" W (with 9" tonearm) × 16" (with 12" tonearm) $410.00

TOSHIBA

SR-80 Automatic Turntable

Two-speed (33 & 45 rpm) belt-driven design with electret condenser cartridge (Type C-402S). Has S-shaped pipe tonearm with tracking error of ±1.5 degrees. Wow & flutter 0.1% (W rms). Stylus 0.5-mil round diamond. Output 200 mV at 5 cm/sec at 1000 Hz. Compliance 25 × 10^{-6} cm/dyne (d.c.); 8 × 10^{-6} cm/dyne (100 Hz). Stylus pressure 2.5 ±0.5 g. Response 20-20,000 Hz; (S + N)/N −50 dB. Features automatic return & cut, cueing control, walnut base, and dust cover 9 3/4" × 7 7/8" × 15 7/8" . . . $299.95

SR-305 Automatic Turntable

Two-speed (33 & 45 rpm) belt-driven design; has S-shaped pipe tonearm with tracking error of +3, −1.5 degrees; wow & flutter 0.1% W rms; S/N 48 dB; features automatic return & cut; automatic cueing. Walnut base and dust cover $119.95

SR-355 Direct-Drive Turntable

Two-speed (33 & 45 rpm) d.c. servo direct-drive design; has S-shaped tonearm with tracking error of ±1.5 degrees; wow & flutter 0.04% W rms; S/N 60 dB. Walnut base and dust cover $219.95

V-M

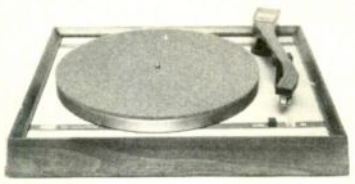
1687 Automatic Turntable

Four-speed unit features 10" platter, ceramic cartridge, diamond stylus, removable center spindle, finger lift; will handle 7" & 12" discs automatically; adjustable stylus force; wow 0.6%, flutter 0.3%. Walnut-grained base & tinted dust cover included. 15 1/8" W × 7 3/4" H × 14 1/8" D. $44.95

WIN

Lab 10 Turntable

Dual-synchronous drive motors; 33 rpm; speed accuracy 0.1%; direct rim-drive; rumble −70



dB; wow & flutter 0.06%; vertical damping of tonearm; photocell-activated automatic stop; warning light system to protect record & stylus; S-shaped, static-balance natural wood tonearm, 9 1/4" pivot-to-stylus; tracking force range 0.5-6 g; universal cartridge mount. Base and tonearm of solid Afromosia 17 1/2" × 15 1/2" × 6 7/8" $150.00

YAMAHA

YP800 Stereo Turntable

Two-speed (33 & 45 rpm, electronic switching), direct-drive turntable; brushless 12-pole d.c. servo motor; 12.2" cast turntable with cushioned mat; ±3% speed control (each speed); wow & flutter 0.03% W rms; S/N 60 dB; static balanced S tonearm; 9.5" long; tracking error 1.5 degrees; tracking force 0-3 g; universal plug-in cartridge shell. Walnut cabinet with clear acrylic dust cover. 18.9" W × 6.9" H × 14.6" D $500.00

YP701 Stereo Turntable

Two-speed (33 & 45 rpm), belt-drive; synchronous outer-rotor motor; automatic pickup and return; wow & flutter 0.08%; S/N 48 dB; 12" aluminum platter; static balanced S tonearm; stylus pressure 0-4 g; universal plug-in cartridge shell. Wood/synthetics cabinet. 19" W × 16 1/4" D × 6 1/2" H $220.00







Creation of the new Calibration Standard filled a need... the acceptance of Stanton's 681 TRIPLE-E is unprecedented!

It was no accident!

The Recording Industry needed a new calibration standard because it had been cutting discs with higher accuracy to achieve greater definition and sound quality.

So, the engineers turned to Stanton for a cartridge of excellence to serve as a primary calibration standard in recording system check-outs.

The result: the *new* calibration standard, The Stanton 681 TRIPLE-E.

The rest is history!

Major recording studios adopted it . . . as did many of the smaller producers. Radio stations across the world put the 681 TRIPLE-E on all of their turntables, both for on-the-air broadcasting and for disc-to-tape transfer.

And, audiophiles by their purchases have voted it the oustanding stereo cartridge available.

The Stanton 681 TRIPLE-E offers improved tracking at all frequencies. It achieves perfectly flat frequency response beyond 20 kHz. Its ultra miniaturized stylus assembly has substantially less mass than previously, yet it possesses even greater durability than had been previously thought possible to achieve.

Each 681 TRIPLE-E is guaranteed to meet its specifications within exacting limits and each one boasts the most meaningful warranty possible. An individually calibrated test result is packed with each unit.

As Julian D. Hirsch of Hirsch-Houck Labs wrote in Popular Electronics Magazine in April, 1975: "When we used the cartridge to play the best records we had through the best speaker systems at our disposal, the results were spectacular".

Whether your usage involves recording, broadcasting, or home entertainment, your choice should be the choice of the professionals . . . the STANTON 681 TRIPLE-E.

STANTON

Write today for further information to Stanton Magnetics, Terminal Drive, Plainview, New York 11803

CIRCLE NO. 44 ON READER SERVICE CARD

4 PHONO CARTRIDGES

ADC

Q Series Stereo Cartridges

Q-30. Response 15-20,000 Hz ±3 dB; tracking force range 1-2 g; output 5 mV at 5.5 cm/sec; channel separation 24 dB; 0.0005″ spherical stylus tip. Replacement stylus R-Q36. . $39.95

Q-32. Response 15-20,000 Hz ±3 dB; tracking force range 1-2 g; output 5 mV at 5.5 cm/sec; channel separation 24 dB; 0.0007″ × 0.0003″ elliptical stylus tip. Replacement stylus R-Q32. . . . . $49.95

Q-36. Response 15-22,000 Hz ±3 dB; tracking force range ¾-1½ g; output 5.5 mV at 5.5 cm/sec; channel separation 26 dB; 0.0007″ × 0.0003″ elliptical stylus tip. Replacement stylus R-Q36. . . . . $59.95

K Series Stereo Cartridges

Designed to be used with automatic turntables and changers.

K8E. Output at 5.5 cm/sec. 5 mV; tracking force range 2-3 g; response 15-18,000 Hz ±3 dB; channel separation 20 dB; elliptical 0.0007″ × 0.0003″ stylus. $29.95

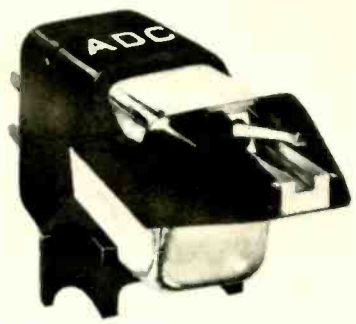
K6E. Output at 5.5 cm/sec. 5.5 mV; tracking force 2-3 g; response 15-18,000 Hz ±3 dB; channel separation 20 dB; elliptical 0.0007″ × 0.0003″ stylus. $39.95

K5E. Output 5 mV; tracking force range 1½-2½ g; response 15-20,000 Hz ±3 dB; channel separation 24 dB; 0.0007″ × 0.0003″ elliptical stylus. $44.95

K3E. Output 5 mV; tracking force range 1-2 g; response 15-20,000 Hz ±3 dB; channel separation 24 dB; elliptical 0.0007″ × 0.0003″ stylus. $49.95

XLM MKII Phono Cartridge

Sensitivity 0.9 mV/cm/sec; response 15-20,000 Hz ±1.5 dB. Tracking force ¾-1½ g. Channel separation 28 dB elliptical 0.0007″ × 0.0003″ stylus. Replacement stylus RXL. $100.00



For turntables equipped with CD-4 cartridges and designed for 4-channel, see Section 9

VLM MKII Phono Cartridge

Same styling as XLM except for 1-2 g tracking force. Response 15-20,000 Hz ±1.5 dB. Channel separation 24 dB; elliptical 0.0007″ × 0.0003″ stylus. Replacement stylus #RVL. $75.00

AUDIO-TECHNICA

The company's exclusive "Dual Magnet" generating system is used in all models.

AT10 Dual-Magnet Stereo Cartridge

Response 20-20,000 Hz; has 0.7-mil spherical stylus; output 4.8 mV at 5 cm/sec; channel separation 20 dB at 1 kHz; channel balance 2.0 dB; tracking force 2½-4 g; vertical tracking angle 20°. Has slip-on stylus guard $24.95

AT11. Same as AT10 except response 15-25,000 Hz and tracking force 2-3 g. $34.95

AT11E Dual-Magnet Stereo Cartridge

Response 15-28,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 2-3 g. Output 4.8 mV at 5 cm/sec; channel separation 20 dB at 1 kHz; channel balance 2.0 dB; vertical tracking angle 20°. Has slip-on stylus guard $44.95

AT12E Dual-Magnet Stereo Cartridge

Response 15-30,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 1¼-2 g. Output 3.5 mV at 5 cm/sec; channel separation 22 dB at 1 kHz; channel balance 2.0 dB; vertical tracking angle 20°. Has slip-on stylus guard $54.95

AT-13Ea Dual-Magnet Stereo Cartridge

Response 15-45,000 Hz. Has 0.2 × 0.7 nude square-shank elliptical stylus; tracking force 1.2 g. Output 4.2 mV at 5 cm/sec; channel separation 25 dB at 1 kHz; channel balance 2.0 dB; vertical tracking angle 20°. Has flip-guard stylus guard $64.95

Note: AT10, AT11, AT11E, and AT12E styli are interchangeable.

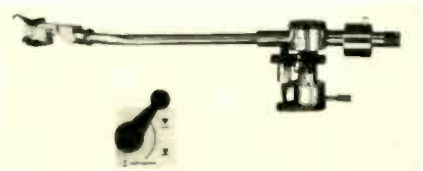
AT-1005 II Tonearm

Features calibrated adjustments to permit exact selection of desired tracking force, anti-skating, and stylus overhang; perforated plug-in shell with sliding cartridge mounting, attaches by means of knurled locking ring and spring-loaded contacts; sliding main counterweight; tracking force selected by sliding ring weight along length of arm (calibrations permit adjustment to 0.5 g); one-hole installation of arm. Stylus force 0-3 g, calibrated to 0.5 g; cartridge weight 5-24 g; effective mass 20 g (set for AT14S cartridge) $79.95

AT-S. Plug-in shell $7.95

AT-L2. Optional hydraulic arm lift $16.95

AT-1009 Tonearm



Includes all basic elements of the AT-1005 II plus exclusive pneumatic arm lift with convenient lever control; special low-mass plug-in shell; sliding counterweight with set screw for setting static balance; separate micro-adjust for precise balance; precision lever and dial scale for anti-skating adjust; arm height ±2½ mm adjustment with separate micro-adjust lever; stylus force gauge with sliding ringweight calibrated to 0.1 g. $139.95

AT-D. Plug-in shell $11.95

BANG & OLUFSEN

SP-10 Phono Cartridge

Moving-iron type. Output 1 mV/cm/sec. Response 15-25,000 Hz ±3 dB. Has 0.6-mil spherical stylus; tracking force 1 to 1½ g. 15-degree tracking angle. Channel separation 25 dB at 1000 Hz. Compliance 25 × 10^{-6} cm/dyne. Replacement stylus #5429 . . . . . $75.00

SP-12 Phono Cartridge

Moving-iron type. Output 1 mV/cm/sec. Response 15-25,000 Hz ±3 dB. Has 0.2 × 0.7-mil elliptical stylus; tracking force 1 to 1½ g. 15-degree tracking angle. Channel separation 25 dB at 1000 Hz. Compliance 25 × 10^{-6} cm/dyne. Replacement stylus #5430 . . . . . $85.00

SP-14 Phono Cartridge

Moving-iron type. Output 1 mV/cm/sec. Response 15-25,000 Hz ±4 dB. Has 0.6-mil spherical stylus; tracking force 1½ g. 15-degree tracking angle. Channel separation 20 dB at 1000 Hz. Compliance 15 × 10^{-6} cm/dyne. Replacement stylus #5434 . . . . . $45.00

DECCA

London MK5 Gold Elliptical

Frequency response 20-20,000 Hz; output 5 mV at 1 kHz 5 cm/sec; tracking force 1-1.5 gr; load resistance 50,000 ohms; stylus radius 0.3-0.65 mil; factory-replaceable stylus $149.50

MK5-2g. Same except tracking force 1-2 gr; spherical stylus; 0.6-0.7 mil radius; factory-replaceable stylus $134.50

London MK5 Export

Frequency response 20-20,000 Hz; output 7.5 mV at 1 kHz 5 cm/sec; tracking force 2-3 gr; load resistance 50,000 ohms; spherical stylus; 0.6-0.7 mil radius; factory-replaceable stylus $125.00

MK5 . . . . . $99.50

EMPIRE

1000ZE/X Phono Cartridge

Moving-magnet type. Output 5 mV. Response 4-40,000 Hz. Has 0.2 × 0.7 mil miniature nude elliptical stylus. Tracking force ¼—1¼ g. 15-degree tracking angle. Stereo separation 35 dB. Compliance 35 × 10^{-6} cm/dyne. Replacement stylus #S1000ZE/X-ERD $99.95

999VE/X Phono Cartridge

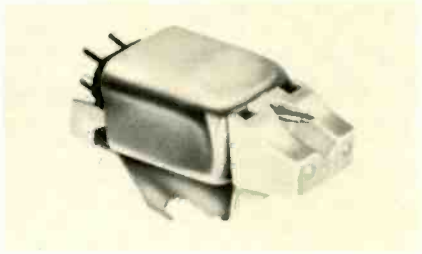
Similar to 1000ZE/X except response 6-35,000

4 Phono Cartridges

Hz. Tracking force ¼-1½ g. Replacement stylus #S999VE/X-ERD $79.95

999TE/X Phono Cartridge
Moving-magnet type. Output 6 mV. Response 6-32,000 Hz. Has 0.2 × 0.7 mil nude elliptical stylus. Tracking force ½ to 1½ g. Stereo separation 35 dB. Replacement stylus #S999TE/X-ERD. $64.95

Rex 66/X Stereo Cartridge
Response 10-30,000 Hz; tracking force ¾-3 g.



Has 0.7-mil spherical diamond stylus. Stereo separation 30 dB. Replacement stylus #S66/X-ERD Red $19.95
66E/X. Response 8-30,000 Hz; tracking force ¾-3 g. Has 0.3 × 0.7 mil elliptical diamond stylus. Stereo separation 30 dB. Replacement stylus #S66E/X-ERD Black $29.95
66PE/X. Response 8-34,000 Hz; tracking force ¾-1½ g. Has 0.2 × 0.7 mil elliptical hand-polished diamond stylus. Stereo separation 30 dB. Replacement stylus #S66PE/X-ERD White. $44.95

909/X Phono Cartridge
Moving-magnet type. Output 8 mV. Response 15-25,000 Hz. Has 0.7 mil spherical stylus; tracking force ¾-2 g. 15-degree tracking angle. Stereo separation 30 dB. Compliance 15×10^{-6} cm/dyne. Replacement stylus #S909/X-ERD $24.95

90EE/X Phono Cartridge
Moving-magnet type. Output 8 mV. Response 15-25,000 Hz. Has 0.3 × 0.7 mil elliptical stylus; tracking force 1½-3 g. 15-degree tracking angle. Stereo separation 30 dB. Compliance 10×10^{-6} cm/dyne. Replacement stylus #S90EE/X-ERD. $24.95

2000E/III Stereo Cartridge
Response 5-35,000 Hz; stereo separation 35 dB; 0.2 × 0.7-mil bi-radial nude elliptical diamond stylus; tracking ½ to 1½ g. $69.95
2000E/II. For use with highest quality turntables; tracking ½ to 1½ g; response 6-33,000 Hz; stereo separation 35 dB; 0.2 × 0.7-mil bi-radial nude elliptical diamond stylus... $54.95
2000E/I. For good-quality turntables & changers; response 8-32,000 Hz; tracking ¾ to 1½ g; stereo separation 35 dB; 0.2 × 0.7-mil bi-radial nude elliptical diamond stylus. $39.95
2000E. For automatic changers; response 10-30,000 Hz; tracking 1 to 2 g; separation 35 dB; 0.3 × 0.7-mil bi-radial elliptical diamond stylus. $34.95
2000. For record changers; tracking 1 to 2 g; response 10-28,000 Hz; separation 35 dB; 0.7-mil spherical diamond stylus. $29.95

EMT

XSD-15 Stereo Cartridge
Professional stereo studio cartridge; moving-coil transducer; integrated cartridge and shell (designed for use with SME3009 tonearm with detachable shell or Sony tonearm); spherical diamond stylus; requires high-gain preamp or accessory transformers (TR/BV 347.015.006). $300.00
Transformers (two required). ..... $29.95 ea.

KMAL

M9BA MkII Laboratory Tonearm
Features unipivot with micro-ball race; low-mass 9" arm with counterweight close to fulcrum; mercury contacts; damped cueing; magnetic anti-skating; will accept cartridges weighing 4-6 grams; stylus force of 1½ gr; lead capacity core to screen 80 pF; color-coded phono plugs; lightweight drilled cartridge shell; lift lever. $149.95

MICRO/ACOUSTICS

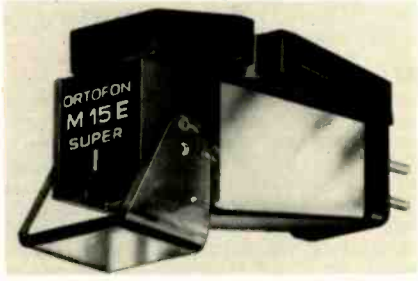
QDC-1e Stereo Cartridge
Response 5-20,000 Hz ±2 dB; tracking force 0.75-1.5 g; channel separation 30 dB at 1000 Hz, 20 dB at 10,000 Hz; output voltage 3.5 mV/ch at 5 cm/sec peak recorded velocity; load 47,000 ohms; stylus 0.0002 × 0.0007 elliptical solid nude diamond $110.00

QDC-1s Stereo Cartridge
Response 5-20,000 Hz ±2 dB; tracking force 0.9-1.5 g; channel separation 30 dB at 1000 Hz, 20 dB at 10,000 Hz; output voltage 3.5 mV/ch at 5 cm/sec peak recorded velocity; load 47,000 ohms; stylus 0.0005 spherical solid nude diamond $100.00

ORTOFON

SL-15EMKII Moving Coil Cartridge
Total cartridge weight 7 grams. Features elliptical, diamond stylus; tracking force range 1½-2 g. Response 10-50,000 Hz. Output impedance 2½ ohms and in most applications will require use of STM-72 transformer. $100.00
STM-72 Transformer. Designed for use with SL-15E cartridge. Input impedance 2 ohms; load impedance 47,000 ohms $35.00

M-15E Super-Magnetic Cartridge
Features the VMS (patented) principle for highest trackability and lowest distortion. Designed for low-mass tonearms. Includes a user replaceable stylus with hand-polished, whole-diamond tip and a hinged stylus guard. Tracking force range 0.75-1.5 g. Output voltage 0.8 mV/ch at 1 kHz per cm/sec. $90.00
M-15 Super. Same as M-15E except with spherical stylus. $80.00
VMS-20E. Similar performance characteristics to M-15E but slightly less critical as to tonearm



requirements; tracking force 0.75-1.5 g; output 1.0 V. $65.00

F-15E Magnetic Cartridge
Features VMS principle, but with lower compliance and higher tip mass for automatic turntables and older transcription tonearms. Tracking force range 1-2 g. $50.00
F-15. Same as F-15E but with spherical stylus $40.00

PICKERING

V-15 Micro IV AC Phono Cartridge
Output 8.0 mV at 5.5 cm/sec. Response 20-17,000 Hz. Has 0.7 mil spherical stylus; tracking force 5 g ± 2 g. Channel separation 26 dB. Features Dustamatic brush. Replacement stylus #DIV-AC $24.95

V-15 Micro IV ACE Phono Cartridge
Output 8.0 mV at 5.5 cm/sec. Response 20-17,000 Hz. Has 0.5 × 0.7 mil elliptical stylus; tracking force 4 ± 1 g. Channel separation 26 dB. Has Dustamatic brush. Replacement stylus #DIV-ACE $29.95

V-15 Micro IV AM Phono Cartridge
Output 6.0 mV at 5.5 cm/sec. Response 20-20,000 Hz. Has 0.7 mil spherical stylus; tracking force 2 ± 1 g. Channel separation 30 dB. Features Dustamatic brush. Replacement stylus #DIV-AM $34.95

V-15 Micro IV AME Phono Cartridge
Output 5.5 mV at 5.5 cm/sec. Response 20-20,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 1½ ± ½ g. Channel separation 30 dB. Features Dustamatic brush. Replacement stylus #DIV-AME $49.95

V-15 Micro IV AT Phono Cartridge
Output 8.0 mV at 5.5. cm/sec. Response 20-18,000 Hz. Has 0.7 mil spherical stylus; tracking force 3 ± 1 g. Channel separation 28 dB. Features Dustamatic brush. Replacement stylus #DIV-AT $29.95

V-15 Micro IV ATE Phono Cartridge
Output 6.5 mV at 5.5 cm/sec. Response 20-18,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 3 ± 1 g. Channel separation 28 dB. Features Dustamatic brush. Replacement stylus #DIV-ATE $39.95

XV-15/100 Phono Cartridge
Output 8.0 mV at 5.5. cm/sec. Response 10-20,000 Hz. Has 0.7 mil spherical stylus; tracking force 5 ± 2 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D100 ..... $29.95

XV-15/140E Phono Cartridge
Output 8.0 mV at 5.5. cm/sec. Response 10-20,000 Hz. Has 0.5 × 0.7 mil elliptical stylus; tracking force 4 ± 1 g; Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D140 ..... $34.95

XV-15/150 Phono Cartridge
Output 8.0 mV at 5.5 cm/sec. Response 10-25,000 Hz. Has 0.7 mil spherical stylus; tracking force 3 ± 1 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D150 ..... $34.95

XV-15/200E Phono Cartridge
Output 8.0 mV at 5.5 cm/sec. Response 10-25,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 3 ± 1 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D200 ..... $49.95

XV-15/350 Phono Cartridge
Output 6.0 mV at 5.5 cm/sec. Response 10-25,000 Hz. Has 0.7 mil spherical stylus; tracking force 2 ± 1 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D350 ..... $39.95

XV-15/400E Phono Cartridge
Output 5.5 mV at 5.5 cm/sec. Response 10-

25,000 Hz. Has 0.4 × 0.7 mil elliptical stylus; tracking force 1½ ± ½ g. Channel separation 35 dB. Features Dustamatic brush. Replace-

All cartridges are not created equal. Here's proof.

"...Tracking ability at low and middle frequencies was exceptional...the high level required half the tracking force of most other cartridges...One of the best 2-channel stereo cartridges and better than most CD-4 types."

HI-FI NEWS AND RECORD REVIEW

Our new Super XLM MK II ($125.) is the finest cartridge available. It was engineered solely for the true audiophile and the serious music listener who own the very finest components.

It embodies principles found in no other cartridges, as evidenced by our U.S. Patent. It features a unique "induced magnet" whereby the magnet is fixed and the magnetism is induced into a tiny hollow soft-iron collar. This collar in turn moves between the pole pieces thereby allowing for a major reduction in the mass of the moving system. This LOW MASS permits the Shibata type stylus to trace the most intricate modulations of stereo and CD-4 record grooves with a feather-light tracking force—as low as ¾ of a gram.

This results in super-linear pick up especially at the higher frequencies of the audible spectrum, which other cartridges either distort or fail to pick up at all. This low tracking force also assures minimal erosion and a longer playing life for the records.

This family of LOW MASS Cartridges is also offered with elliptical diamond stylus for stereo play exclusively—the XLM MK II ($100) and VLM MK II ($75).

For detailed specifications, write ADC.

U.S. PAT. NO. 3294405

ADC Super XLM MK II

AUDIO DYNAMICS CORPORATION

A BSR Company • New Milford, Conn. 06776

CIRCLE NO. 4 ON READER SERVICE CARD

Introduction to TAPE MACHINES

THREE distinct formats are used in home tape recorders. Known as open-reel, cassette, and cartridge systems, each has its advantages and disadvantages.

Open-Reel: Open-reel recorders use reels of ¼-inch-wide magnetic tape, which must be loaded on a supply hub, threaded over the heads, and wound on a take-up reel. The most popular system (four-track) records two stereo channels on parallel tracks and, after the tape has been fully recorded, the supply and take-up reels are interchanged and two more tracks are recorded, interleaved with the first two. For more demanding professional applications, a two-track format is often used, completing the recording in a single pass of the tape. Compared to four-track recording, the two-track format gives a slightly greater dynamic range and can be edited (not possible on a fully utilized four-track tape, since a portion of the program recorded on the reverse tracks would be lost). Of course, for a given recording time, the two-track system uses twice as much tape.

Most home recording is done at tape speeds of 3¾ ips (9.5 cm/sec) or 7½ ips (19 cm/sec). Higher tape speeds make it possible to record a wider frequency range, with an improved S/N ratio, as well as easier editing, but use correspondingly more tape for a given recording time. For the finest quality, especially when recording "live" performances, the 15 ips (38 cm/sec) speed is often used, and many two-speed recorders are available with a choice of either the two lower speeds or the two higher speeds. Some recorders also have a 1⅞ ips (4.75 cm/sec) speed, which gives maximum tape economy, at some sacrifice of quality.

A few open-reel recorders, mostly in the lower-price ranges, use a single induction motor or synchronous motor to drive the capstan (which moves the tape past the heads) and both reel hubs, through a system of belts and clutches. Most machines priced at $500 or more have three motor transports, with each reel driven by its own motor. This can provide improved mechanical reliability, somewhat lower flutter, and faster tape movement in the rewind and fast-forward modes.

Most recorders have three heads—erase, record, and playback—with separate recording and playback amplifiers, so that the recording can be monitored from the tape an instant after it is made. This is especially convenient when the associated amplifier has a tape monitor, as almost all do.

The most popular size tape reel is 7 inches in diameter and holds from 1200 feet to 2400 feet of tape (and, in a few cases, as much as 3600 feet), depending on the tape thickness. A growing number of new recorders are designed to handle 10½-inch reels, which hold twice as much tape as the 7-inch size. This doubles the uninterrupted recording and playing time, but roughly doubles the cost of a reel of tape.

The bias and equalization of any tape recorder should be optimized for the tape used with it. In the case of open-reel machines, this is not a very critical factor, but a number of recorders have switches with two or three steps of bias and equalization for "standard" and "low noise" or "high-energy" tapes.

Some recorders have special features such as the ability to play back—or even record—in the reverse direction without interchanging reels or Dolby noise-reducing circuits. The latter is of limited value in open-reel recorders whose S/N is usually good enough for most amateur needs. As a rule, tape recorders are "decks," delivering an output of about one volt, suitable for connection to the high-level inputs of any amplifier or receiver. Some models are available with low-power built-in playback amplifiers and, in a very few instances, with speakers. However, the full potential of any open-reel machine can only be realized with a good external amplifier and speakers.

Special effects such as "sound-with-sound" or echo recording are possible with most open-reel recorders, which can be set to record on one channel while playing back on the other. A variation of this is the "multi-sync" system (each manufacturer has its own name for this) featured on some four-channel recorders. Four-channel open-reel machines are similar to stereo models, except that they can record four parallel tracks simultaneously. When they are designed so that any of the channels on the recording head can be switched to serve as a playback head (while listening through headphones), they can be used to record different parts of a program at different times, in perfect synchronism.

Cassette: The cassette was originally developed by Philips of Holland as a simple, low-fidelity mono recording system (the original Philips machines were small battery-operated portable models). A cassette is a plastic case containing the tape and the supply and take-up hubs. When it is inserted into the transport, the erase head and the combined record/playback head contact the tape through access holes in the cassette. The tape (about half the width of open-reel tape) moves at 1⅞ ips (4.75 cm/sec) and parallel tracks are recorded as in the case of open-reel tape systems. Most cassettes have a total playing time of 60 minutes (30 minutes on each side) or 90 minutes; 120-minute cassettes are available, but not all recorders will function properly with their very thin tape.

For stereo cassette recording, the two channels are recorded on adjacent tracks (unlike open-reel tape, where they are interleaved with the reverse pair of tracks). At the end of the tape, the cassette is turned over and the other pair of tracks used. This meets Philips' licensing requirement that cassettes must be fully compatible between stereo and mono. A stereo recording will be heard with both channels combined in a mono playback system, and a mono tape will play back equally through both channels of a stereo system. This compatibility requirement has also limited cassettes to the 1⅞ ips speed, although they are mechanically able to operate at higher speeds.

Their narrow tracks and slow speeds made it appear that cassettes could never be a true high-fidelity medium, but the efforts of recorder and tape manufacturers have overcome these obstacles to an astonishing degree. Today's best cassette machines are, for all practical purposes, as good as some open-reel machines operating at 7½ ips, at least with respect to frequency response within the audio range. Newly developed tape formulations and head designs have extended the upper frequency limit to beyond 15,000 Hz on many machines and to beyond 20,000 Hz on the best cassette recorders. These tapes also have exceptionally low inherent noise and, with the aid of noise-reducing techniques such as the Dolby system (used on almost all good cassette recorders), a S/N ratio of 60 dB is readily attainable. This is not quite as good as that of a top-grade open-reel recorder, but is better than most home recordists will ever require.

The chief inherent limitation of the cassette system is the saturation of the tape coating at high recorded levels. This can cause distortion and a dulling of the high-frequency sounds unless care is taken to keep the maximum levels well below the system's limits (and thus sacrifice some of the potential S/N of the recording). Open-reel recorders are much less critical in this respect.

Another weakness of cassette recorders has been their relatively high flutter, which made some of the earlier models unsuitable for music recording and playback. To some extent, this was due to mechanical imperfections in the cassette itself. But today's high-quality cassettes have been greatly improved. Similar improvements have been made in the transport mechanisms, including the use of two or three motors to provide greater control of the tape movement. While all but the most expensive cassette recorders have slightly more measured flutter than the better open-reel machines, the difference is slight and rarely audible.

Since the designers of the cassette system did not envision it as a high-fidelity medium, they did not provide room for insertion of separate recording and playback heads. The design requirements for the two functions are quite different so that most cassette heads represent a compromise that keeps the full potential of the medium from being realized. With considerable ingenuity, some recorder manufacturers have managed to fit separate heads into the available space, improving performance and giving the cassette system the off-the-tape monitoring ability of open-reel recorders. However, due to licensing requirements, it is still not possible to record on one track while playing back the other, and the cassette is inherently so difficult to splice and edit that it probably can never match open-reel tape in these respects.

Cartridges: The 8-track cartridge was originally developed as a convenient source of music for automobile tape players, with no pretensions to high-fidelity performance. The cartridge, which is larger than a cassette, contains a roll of ¼-inch-wide tape, formed into an endless loop. The tape unwinds from the center of the pack, passes over the head which contacts it when it is inserted in the transport mechanism, and rewinds on the outside of the pack. Specially lubricated tape is used so that adjacent layers can slip over each other without excessive friction.

The cartridge tape moves at 3¾ ips (9.5 cm/sec). It carries eight parallel tracks, each about the width of a cassette track. The transport is turned on automatically when the cartridge is inserted, and the playback head is shifted mechanically to contact the desired

tracks. When the tape has played completely through, a metal foil at the splice closes a contact and the head shifts to the next pair of tracks (the shift can also be made manually at any time). The machine can be set to shut off and partially eject the cartridge after one or all four pairs of tracks have been played. Cartridges are also a major source of four-channel recorded programs, with two tape passes needed to play both groups or four tracks.

In automobile service, there is little need for low noise level or extended frequency response. Many, if not most, commercially recorded cartridges cannot match the quality of a record or even a commercially recorded cassette when played through a good home music system. Nevertheless, to utilize the cartridges in the home as well as in the car, a number of cartridges players are available. Since many people prefer to make their own cartridge tape recordings, by dubbing from records or FM broadcasts, some home units have been designed as recorders as well as players. Like the cassette system, the cartridge openings are of limited size and permit only an erase head and a combined record/playback head to be used.

Because of its higher tape speed, one would expect the cartridge to be somewhat superior to the cassette in frequency response and dynamic range. In practice, this is rarely the case, perhaps because there has been less emphasis on developing cartridge tapes comparable to the best cassette tapes. Recently, some cartridge recorders have been produced with built-in Dolby systems and with switchable bias for the newest tapes giving, for the first time, a frequency response extending to 15,000 Hz and a S/N of close to 60 dB. Some commercial cartridge tapes are recorded with Dolby processing and many of these are comparable to commercial cassette tapes in their over-all quality.

Cartridges are made with total playing times up to 80 minutes (a 120-minute cartridge has recently been announced). Although the playing is essentially continuous, there is a slight pause and, generally, an audible sound when the tape head shifts to the next pair of tracks. Some cartridge machines have a "fast-forward" mode, but this is only three to five times normal speed, as compared to 30 times normal speed of a typical cassette recorder. Reverse, or rewind operation, is not possible with a cartridge. These limitations have made cartridge recording a slow and cumbersome process, aggravated by the fact that one cannot tell exactly when the track switching is about to take place.

The chief performance weakness of cartridges is their high—or rather, variable and unpredictable—flutter. Some cartridge tapes will play on some machines with inaudible flutter, yet can be almost unlistenable on other machines (which, in turn, might be satisfactory with a different cartridge). Fortunately, a moderate amount of flutter does not seem to interfere with the enjoyment of the program in a mobile environment.

Glossary

Head: A magnetic component containing a coil through which the signal current is passed, and a narrow gap in its pole structure against which the tape presses. Heads are used to supply erase signals, to record a program, and to play back a recorded tape.

Bias: A high-frequency current which is combined with the signal being recorded. Necesary for low distortion and noise, and must be adjusted for the properties of the tape used.

Equalization: (See definition in AMPLIFIERS). Different equalization characteristics are used in the recording and playback amplifiers of a tape recorder, to compensate for the magnetic characteristics of the tape and the heads. Playback equalization is standardized to give flat frequency response with any properly recorded tape, while recording equalization is a property of a particular machine, depending on its head design and the tape for which it was meant.

S/N Ratio: The playback noise from a section of tape recorded with no signal input, relative to the recorder output from a 1000-Hz signal recorded at a level corresponding to 3% distortion on playback. Expressed in dB.

Saturation: An effect that occurs when a tape is fully magnetized, and further increase of signal input level does not produce a corresponding increase in recorded level.

Flutter: A rapid pitch fluctuation, caused by uneven tape movement across the heads. Usually heard as a slight roughness, and in extreme cases as a "gargling" sound.

Dolby: The Dolby "B" system is a method of reducing the hiss introduced in the recording and playback process by as much as 10 dB, without affecting program frequency response. It must be applied during recording, and again in playback. Dolby processing is a form of dynamic equalization, controlled by the signal characteristics.

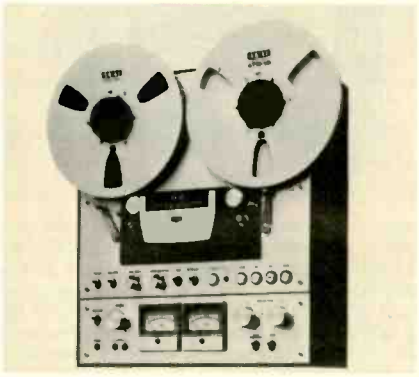
CIRCLE NO. 57 ON READER SERVICE CARD

5 OPEN-REEL TAPE MACHINES

AKAI

GX-650D Stereo Tape Deck

Three-speed (15, 7½ & 3¾ ips), four-track, two-channel stereo/mono system; will handle up to



10½" reels; features closed-loop double capstan mechanism; three motors with a.c. servo-controlled capstan drive; glass & crystal ferrite heads; response 30-30,000 Hz ±3 dB at 15 ips, 30-26,000 Hz ±3 dB at 7½ ips (both with LN-150 tape); dist. 0.4% at 15 & 7½ ips (1000 Hz 0 VU); has line/mike mixing; sound-on-sound recording facilities; dual-monitoring system; remote control (with optional RC-17 accessory); automatic stop; pause lever switch; cue switch; individual line-output volume control; tape selector switch (low noise/wide-range); 4-digit tape index counter; two VU meters; two mike input jacks; stereo headphone jack; RCA-type line input & output jacks; record and pause indicator lamps; 20.6" H × 17.4" W × 10" D. $995.00

GX-630D Stereo Tape Deck

Two-speed (7½ & 3¾ ips), four-track, two-channel stereo/mono system; will handle up to 10½" reels; features direct capstan-drive a.c. servo motor; three-motor tape transport; glass & crystal ferrite heads; response 30-25,000 Hz ±3 dB at 7½ ips (LN-150 tape); dist. 0.5% at 7½ ips (1000 Hz 0 VU); has dual monitoring system; line/mike mixing; individual recording-mode selector buttons; automatic stop; line-output level control; pause lever switch; two VU meters; headphone output jack; two mike input jacks; recording indicator lamp; DIN connector; RCA-type line input and output jacks; 18.3" H × 17.4" W × 9.4" D. $695.00
TX-630DB. Same except includes Double Dolby process circuits. $775.00

GX-265D Stereo Tape Deck

Two-speed (7½ & 3¾ ips), four-track, two-channel stereo/mono system; will handle up to 7" reels; features automatic reverse record & playback; direct capstan-drive a.c. servo motor; three-motor transport; six-head function; dual monitoring system; glass & crystal ferrite heads; line/mike mixing; individual recording safety-lock buttons; pause lever switch; automatic stop; line-output volume control; 4-digit tape index counter; DIN connector; RCA-type line input/output jacks; stereo headphone jack; two mike inputs; two VU meters; directional indicator lamps at recording & playback modes; 17.4" W × 15.9" H × 8.2" D. $675.00
GX-270D. Similar to GX-265 but with three heads (four-head function); peak-level indicator lamp; add-on recording; 17.4" W × 15.9" H × 8.3" D. $599.95

GX-230D Stereo Tape Deck

Two-speed (7½ & 3¾ ips), four-track, two-channel stereo system; will handle up to 7" reels; glass & crystal ferrite heads; features automatic and manual reverse playback; automatic stop; pause control; tape selector switch; output level control; expanded VU meters; dual monitoring; independent line/mike controls; sound mixing; 17.3" W × 15.6" H × 8.1" D. $499.95

4400 Stereo "Convert-a-Deck"

Stereo design featuring front-panel converter switch which changes unit from recorder to deck. Has SOS, SWS, sound mixing, dual monitoring, output level control, pause control, automatic shutoff. Two speeds (7½ & 3¾ ips). three heads, one motor. (S + N)/N 50 dB; wow & flutter 0.15%; distortion 1.5%, 7½ ips $399.95

1722W Tape Recorder

Two-speed (3¾ & 7½ ips), 4-track, 2-channel stereo. Wow & flutter 0.14% rms at 7½ ips. Response 30-21,000 Hz ±3 dB at 7½ ips. THD 2%. (S + N)/N −50 dB. Bias frequency 63 kHz. Has one record/playback & one erase head. Inputs: mike (0.5 mV) & line (150 mV). Two built-in 5" × 7" speakers. Features p.a. capability, automatic shut-off, equalizer preamp for direct phono input, selector switch for regular or low-noise tape. 14⅛" × 14½" × 9⅞" $349.95

4000DS Stereo Tape Deck

Two-speed (3¾ & 7½ ips), 4-track, 2-channel stereo. Wow & flutter 0.07% rms at 7½ ips. Response 30-26,000 Hz ±3 dB at 7½ ips. THD 1.5%. (S + N)/N −50 dB. Bias frequency 100 kHz. Has separate record, play, and erase heads. Line output 1.23 V. Inputs: mike (0.8 mV) & line (60 mV). Features selector switch for regular or low-noise tape; sound-on-sound; sound-with-sound; mixing; automatic shut-off; pause control. 16" × 12½" × 7⅝" $299.95
4000DB. Same as 4000DS but with Dolby built in $379.95

CROWN INTERNATIONAL

CX822 Tape Recorder

Three-speed (15, 7½, 3¾ ips), 2-track, 3-motor design. Will handle up to 10½" reels. Response 30-30,000 Hz ± 2.0 dB. Wow & flutter 0.06% at 15 ips. (S + N)/N 60 dB. Has braking, two VU meters, automatic shut-off, pause control, monitoring facilities, optional counter, and remote record. $1995.00
Four track version $1995.00
Four-channel in-line version $2995.00

CX722 Tape Recorder

Three-speed (15, 7½, 3¾ ips), 2-track, 3-motor design. Will handle up to 10½" reels. Has three

heads. Response 20-20,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. Features braking, automatic shut-off, two VU meters, pause control, and optional counter $1595.00
CX724. Same except 4-track version; response 20-25,000 Hz ±2 dB $1595.00

SX724 Tape Recorder

Two-speed (7½, 3¾ ips), 2-ch, ¼-track, 3-motor design. Will handle up to 10½" reels. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. (S + N)/N 60 dB. Has braking, two VU meters, automatic shut-off, monitoring facilities, pause control, and optional counter. 15 and 1⅞ ips available $1195.00
SX724-P4C. 2- and 4-track version; plays 4-channel in-line $1495.00

DOKORDER

7100 Reel-to-Reel Tape Deck

Two-speed (7½ & 3¾ ips), 3-head, 4-track stereo tape deck. Features a four-pole induction

and 2 six-pole eddy-current type induction motors; automatic tape lifters; automatic shut-off; tape selector switch; echo & sound-on-sound; tape/source monitor. Wow & flutter 0.08% W rms at 7½ ips. (S + N)/N 55 dB. Response 40-21,000 Hz at 7½ ips $399.95

5 Open-Reel Tape Machines

9200 Stereo Tape Deck

Two-speed (7½ & 3¾ ips) bi-directional record & playback for continuous recording of up to 1½ hours at 7½ ips on 1800-foot tape; automatic memory for programming order of selections for playback; adjustable recording bias; pause control; tape tension switch; computer-controlled transport; professional mixing; echo, sound-on-sound, sound-with-sound. Has six heads for recording and monitoring in either direction; center capstan drive; built-in reel holders; quick-change head housing; turntable height adjustment; automatic tape lifters; remote-control operation (optional extra); built-in head demagnetizer. Features three motors; will handle 5" & 7" reels; response 25-26,000 Hz, S/N 58 dB, stereo channel separation 50 dB, crosstalk 55 dB, all at 7½ ips. 17" W × 16½" D × 20" H $949.95

1120 Stereo Tape Deck

Two-speed (7½ & 3¾ ips), three-motor deck; will handle 10½" reels. Can be used as 4-track,

2-channel deck or can be converted to a 2-track, 2-channel record/play deck; provides built-in circuitry for synthetic echo, sound-on-sound, sound-with-sound, and locking pause control for editing tape while recording or during playback. Wow & flutter 0.06%, S/N 60 dB, crosstalk 58 dB at 1 kHz, response 25-24,000 Hz, all at 7½ ips. 16⅞" W × 17¾" H × 6¾" D. $649.95

FERROGRAPH

Super Seven Series Tape Recorders

Three speeds (7½, 3¾, 1⅞ ips). Has three heads and three motors; braking; VU meters; electronics editing; sound-on-sound, sound-with-sound, echo, and re-record facilities; variable speed wind/rewind; 10½" reel capacity; solid-state FET front end at mike input; 4-digit

counter. Has full range of inputs and outputs. Response (record/play) 30-17,000 Hz ±2 dB at 7½ ips, 40-14,000 Hz ±3 dB at 3¾ ips, 50-7000 Hz ±3 dB at 1⅞ ips. Available in 2- and 4-track stereo models; with or without amplifiers and speakers; 15, 7½, 3¾ ips operation; optional Dolby-B noise reduction with every speed configuration. . . . . $1025 to $1200

JVC

RD-1696 Tape Recorder Deck

4-track, 3-speed (7½, 3¾ & 1⅞ ips), 2-channel stereo design. Response 30-18,000 Hz ±3 dB at

7½ ips; (S + N)/N −52 dB; wow & flutter 0.13% rms at 7½ ips. Has mike (0.5 mV) & aux. (80 mV) inputs. Line output 0-1 V. Has switch for either low-noise or standard tape; two heads (record/play and erase). 7½" × 15¾" W × 12¾" D. $249.95

OTARI

MX-5050-2SH Tape Deck

Two-speed (15 & 7½ ips); two-channel, four-head (two-track erase, record and playback,

four-track playback); three motors (hysteresis synchronous); will handle up to 10½" reels; pushbutton, remote controllable transport with full logic circuitry and motion sensing; edit & cue facilities; built-in splicing block on head cover; response 35-20,000 Hz, ±2 dB; wow & flutter 0.05% peak weighted (both at 15 ips); S/N 68 dB; output level 0 VU into 600 ohms unbalanced line; features front-adjustable bias and two-speed equalization; built-in test oscillator; standard reference level calibrate switch; VU meter adjust; "SEL/REP" for recording two discrete but time-synchronized tracks with facilities for overdubbing & mix-down; has separate mike/line level controls; source/tape monitor switch; stereo headphone jack; four-digit resettable tape counter; mahogany case with carrying handles. 17" W × 19" H × 7⅜" D $1450.00

MX-5050-4SH. Same except 4-track, 2-channel with two-track reproduce head; S/N 63 dB. $1420.00

MX-5050-2SH-2. Same except with d.c. servo capstan with ±10% variable speed . . $1650.00

PIONEER

RT-1011L Stereo Tape Deck

Four-track, two-speed (7½ & 3¾ ips), three-motor, three-head stereo deck; 4/8 pole hysteresis synchronous motor; solenoid-operated direct-changeable function buttons; mechanically lockable function buttons for automatic recording facility; wow & flutter 0.07% W rms; S/N 55 dB; dist. 1%; response 40-20,000 Hz ±3 dB; crosstalk 50 dB; has full complement of inputs & outputs; will handle up to 10½" reels. 16⅞" W × 16⅞" H × 8⅞" D. . . $599.95

RT-1050 Stereo Tape Deck

Two-track, two-speed (15 & 7½ ips), three-motor, three-head stereo deck. Has 4/8 pole, two-speed hysteresis synchronous motor (cap-

stan drive) and 6-pole inner-rotor induction motor (reel drive). Response 30-22,000 Hz ±3 dB at 15 ips; 40-20,000 Hz ±3 dB at 7½ ips; wow & flutter 0.04% W rms at 15 ips; (S + N)/N 57 dB; stereo channel separation 53 dB at 1000 Hz; 125 kHz bias frequency. Features 3-step bias selector; 4-step EQ selector; dual-scale level meters; recording peak indicator; lockable electronic controls (including pause); two pairs of line inputs; full complement of inputs and outputs. 120-V, 60-Hz operation. 18⅛" W × 17⅞" H × 9⅝" D . . . $699.95

RADIO SHACK

999B Stereo Tape Deck

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3 heads. Has two VU meters and level controls. Provisions for professional sound-on-sound recordings. Tape/source monitor. Response 40-20,000 Hz at 7½ ips; wow & flutter 0.2% rms at 7½ ips. Overall size 16" × 13¼" × 7⅜" $259.95

REVOX

A700 Stereo Tape Recorder

Three-motor, three-speed (15, 7½, 3¾ ips) recorder. Features computer-type digital control logic with memory circuits; quartz-crystal speed-control reference; frequency and phase servo system for capstan speed control; two tape-tension sensors governing servo-controlled reel motors. Has logic-controlled tape tension which is automatically maintained even with mixed reel sizes; electronic tape-motion sensor; minutes and seconds readout on tape counter. Plug-in head assembly (¼ or ½ track available); three heads with fourth control head (optional). Fail-safe auto stop logic to eliminate possibility of tape breakage; electronic pause control operating on all functions; instant repeat play control; continuous unattended record or play function; solid-state switching of audio circuits. Features built-in four-input mixer; switched selection of 12 input sources including four balanced hi/lo mike inputs; built-in magnetic phono preamp; master record-level slide fader; stereo echo; five independent stereo outputs; standard zero-level line outputs and level & tone-controlled outputs; VU meters

with instantaneous over-modulation indicators; variable speed (+ or − 7 halftones with remote-control accessory); variable speed (2.5 to 21.5 ips with external oscillator); input or off-tape metering $1800.00

A77 MkIV 1102 Tape Deck

Two-speed (3¾ & 7½ ips or 7½ & 15 ips), 2-track, 3-motor, 3-head deck. Will handle up to

10½" reels. Response 30-20,000 Hz ±2.5 dB at 7½ ips. Wow & flutter 0.08% peak at 7½ ips. (S + N)/N 61 dB at 7½ ips. Has a servo braking system, VU meters, automatic shut-off, relay and solenoid operation, full remote control, and off-the-tape monitoring. Options include plug-in power amplifiers, a suitcase version with built-in speakers, metal cage for rack or custom mounting. 16⅜" H × 14 3/16" W × 7⅛" D $959.00

Model A77 MkIV 1104. A 4-track version of Model 1102. Same options available.. $959.00

A77 MkIV Dolby B Deck. Same as 1102 or 1104 but with Dolby B noise-reduction system. Has separate compressors and expanders for each channel. (S + N)/N 70 dB (ASA A curve weighted) at 7½ ips, 2-track $1172.00

SONY from SUPERSCOPE

TC-270 Stereo Tape Recorder

Economy design featuring quarter-track stereo/mono play & record, three speeds (7½, 3¾

& 1⅞ ips), straight-line record & playback level controls, two VU meters, automatic end-of-tape shutoff, and sound-on-sound. 5 W/ch continuous power. Response 30-18,000 Hz ±3 dB at 7½ ips. (S + N)/N 50 dB; wow & flutter 0.12% at 7½ ips. Sensitivity: aux. 0.06 V; low-imp. mike −72 dB (can be used as phono input with optional RK-66 adapter). Has line output 0.43 V at 0 VU; two lid speakers. 8 ohms. 20¼" W × 10¼" H × 15¼" D. Comes with carrying case. $399.95

TC-280 Stereo Tape Recorder Deck

Economy quarter-track stereo/mono design featuring three speeds (7½, 3¾ & 1⅞ ips), tape select switch, sound-with-sound, dual VU record meters, pause control. May be operated vertically or horizontally. Response 40-18,000 Hz ±3 dB at 7½ ips with regular tape (40-21,000 Hz ±3 dB with SLH-180 tape). (S + N)/N 52 dB with standard tape (55 dB with SLH-180 tape). Sensitivity: aux. 0.06V; mike (low-imp) −72 dB (mike input can be used as mag. phono input with RK-66 optional adapter). Line output 0.775 V at 0 VU. Wow & flutter 0.10% at 7½ ips. 15¾" W × 7⅜" H × 14⅛" D. Comes with walnut base..... $279.95

TC-353-D Stereo Tape Deck

Features three speeds (7½, 3¾, 1⅞ ips) and three heads. Has line & mike mixing, pause control, automatic shutoff, VU meters. Sound-on-sound with optional Sony MX-6S mixer. 15⅜" W × 7⅞" H × 13⅜" D..... $349.95

TC-377 Stereo Recorder Deck

Features 3-speed (1⅞, 3¾ & 7½ ips), 3-head, 4-track design. Response 30-20,000 Hz ±3 dB at 7½ ips. (S +N)/N 52 dB (standard tape) 55 dB (SLH-180 tape). Has aux. (0.06 V sensitivity) & mike (−72 dB sensitivity) inputs & line output (0.775 V). Bias frequency 160 kHz. Wow & flutter 0.09% at 7½ ips. Has two VU meters, one induction motor. Features mike-line record level mixing controls, tape select switch for Sony standard or low-noise, high-output tape. Has pause control and an automatic total mechanism shut-off. Reversible walnut base for vertical or horizontal operation. Sound-on-sound capability with the MX-6S mixer. 16½" W × 8⅜" H × 15½" D $399.95

TC-458 Stereo Tape Deck

Two-speed (7½ & 3¾ ips); automatic-reverse stereo deck with ferrite & ferrite roto bi-lateral

heads; response 30-20,000 Hz ±3 dB at 7½ ips (standard tape), 30-25,000 Hz ±3 dB (SLH-180 tape). (S + N)/N 53 dB (standard), 56 dB (SLH-180 tape). Wow & flutter 0.06% rms (NAB) weighted; four heads (2 erase, 1 record, 1 playback); induction a.c. servo motor; two illuminated VU meters. Includes tape-tension regulators, tape path adjuster, built-in reel locks, 4-digit tape counter; closed-loop dual-capstan tape drive. Can be adapted for sound-on-sound, echo. 120-V, 60-Hz operation. 15 13/16" W × 16 3/16" H × 7 15/16" D $499.95

TC-558 Stereo Tape Deck

Three-motor automatic reverse stereo deck with six heads (ferrite erase, ferrite and ferrite record & playback); features "Symphase" recording for taping 4-ch sound from any SQ or FM matrix source; two speed (7½ & 3¾ ips); will handle 7" reels; response 30-20,000 Hz ±3 dB (standard tape), 30-25,000 Hz ±3 dB (SLH-180 tape); S/N 53 dB (standard), 56 dB (SLH-180) all at 7½ ips; has two line, two mike, headphone, and phono inputs; two VU meters; two line & one phono outputs. 17 9/16" W × 6 7/16" H × 13⅛" D $769.95

TC-756 Stereo Tape Deck

Two-speed (15 & 7½ ips) stereo deck; will handle up to 10½" reels; frequency response 30-15,000 Hz at 7½ ips. 30-22,000 Hz at 15 ips, both ±3 dB with standard tape; 30-25,000 Hz at 7½ ips, 30-30,000 Hz at 15 ips, both ±3 dB with SLH-180 tape; S/N 56 dB (standard tape), 59 dB (SLH-180); features 4-digit tape counter; illuminated pause control with lock; reel-size selector switch; record timer lock; illuminated left & right record buttons; record & bias equalization selector switches; illuminated VU meters; stereo headphone monitor jack; ferrite and ferrite heads; three motors; logic-controlled transport functions. Comes with 10½" reel adapters, two stereo patchcords, 10½" plastic reel, and head cleaning ribbon. 17⅛" W × 17¾" H × 8¾" D... $899.95

TC-570 Stereo Tape Recorder

Three-head stereo tape system with integral speaker systems; three speeds (7½, 3¾, 1⅞ ips); will handle up to 7" reels; response 30-20 000 Hz ±3 dB (standard tape), 30-25,000 Hz ±3 dB (SLH-180 tape), both at 7½ ips; features 4-digit tape counter; illuminated VU meters; provides full complement of inputs and outputs; comes with two F-25 mikes, two RK-74 patchcords, head-cleaning ribbon, empty 7" reel. 20 3/16" W × 15⅜" H × 10 3/16" D; weight 41 pounds, 4 ounces..... $499.95

TC-755 Stereo Tape Deck

Two-speed (7½ & 3¾ ips), 3-head, 3-motor deck with 10½" reel capacity. Response 30-20,000 Hz ±3 dB (standard) and 30-25,000 Hz ±3 dB (SLH-180 tape); wow & flutter 0.05%. Provides mechanical memory capability with timer, bias select switch, ferrite heads, tape path adjustment, twin illuminated VU meters, 4-digit tape counter, and built-in reel locks. (S + N)/N 53 dB (standard), 56 dB (SLH-180 tape). 120-V, 60-Hz operation. 17⅛" W × 17¾" H × 8½" D $699.95

TC-645 Stereo Tape Deck

Three-motor, three-head stereo deck with ferrite & ferrite heads; 7½ & 3¾ ips; will handle up to 7" reels; response 30-20,000 Hz ±3 dB (standard tape), 30-25,000 Hz (SLH-180 tape), both at 7½ ips; features 4-digit tape counter; illuminated VU meters; full complement of inputs and outputs; wow & flutter 0.07% at 7½ ips, 0.11% at 3¾ ips; comes with two RK-74 stereo patchcords, 7" plastic reel. 14⅞" W × 14⅜" H × 8⅞" D..... $549.95

TC-758 Stereo Tape Deck

Three-motor, automatic-reverse stereo tape deck; 7½ & 3¾ ips speeds; will handle up to

10½" reels; response 30-20,000 Hz ±3 dB (standard tape), 30-25,000 Hz ±3 dB (SLH-180 tape), both at 7½ ips; features 4-digit counter; illuminated pause control with lock; illuminated VU meters; full complement of inputs & outputs; F & F heads; walnut base. 17¾" W × 17⅛" H × 8¾" D..... $999.95

TANDBERG

Series 11 Tape Recorder

Portable (15 V, ten 1½-V cells), mono design. Three speeds (7½, 3¾, 1⅞ ips), and has three heads. Will handle up to 7" reels. Has automatic level-input controls, mike & line mixing, and built-in speaker. Response 40-16,000 Hz ±2 dB at 7½ ips, wow 0.1% at 7½ ips, (S + N)/N 58 dB unweighted. 13" W × 10" D × 4".

Model 11-1. Full-track $995.00

5 Open-Reel Tape Machines

Model 11-2. Two-track $995.00
A.c. power supply $99.50

Series 15 Tape Recorder

Mono design with built-in 4" × 7" speaker. Three speeds (7½, 3¾, 1⅞ ips). Response 40- 16,000 Hz ±2 dB at 7½ ips, wow 0.1% at 7½ ips, (S + N)/N at max. record level 55 dB. 5 W/ch continuous output with both channels driven. Has 0.75 V preamp outputs, low-Z mike & high-and low-level inputs. 13⅜" W × 11⅞" D × 6¾".
Model 1541. Four-track $400.00
Model 1541F With foot remote control $500.00

Model 1521. Two-track $385.00
Model 1521F. With foot remote control $485.00

9200XD Dolbyized Stereo Deck

Three-speed (7½, 3¾ & 1⅞ ips), Dolbyized deck; Max. wow 0.06% W rms at 7½ ips; response 25-24,000 Hz ±3 dB, 30-22,000 Hz ±2 dB at 7½ ips; crosstalk 50 dB stereo at 1000 Hz; max. tape dist. at 0 dB record level 2%.

Features one-hand tape threading; peak-reading dB meters; linear-motion input and output level controls; crossfield heads; (S + N)/N 73 dB at 7½ ips. $1049.00
9100X. Same as 9200XD but without the Dolby circuit $899.00

Series 10XD Stereo Tape Deck

Three-speed (15, 7½, 3¾ ips), three-motor deck with Dolby noise-reduction system; will handle up to 10½" reels; 4/2 track; response 30-25,000 Hz ±2 dB, 25-27,000 Hz ±3 dB (both at 15 ips); speed tolerance ±0.3%; wow 0.04% max at 15 ips (weighted); crosstalk attenuation 50 dB in stereo at 1000 Hz; has full complement of inputs, outputs, controls; peak reading meters; crossfield heads; mike & line mixing facilities; logic circuit with memory; 45 cm × 43.5 cm × 18.5 cm. Comes with 10½" empty reel, NAB adapters, input-output connection cord. Remote control, pitch control kit, and rack mounting kit available as optional extras. $1299.00

3500X Stereo Tape Deck

Three-speed (7½, 3¾ & 1⅞ ips); 4-head stereo deck; features company's noise-reduction system; crossfield; slide potentiometers; peak-reading level meters; sound-on-sound and echo facilities; A-B tests for recording; mixing for mono; photoelectric stop; front-panel output for stereo headphones. $549.90

TEAC

A-2300SD Dolbyized Stereo Deck

Two-speed (7½ & 3¾ ips) ¼-track, two-channel deck. Features push-button transport control with logic circuitry; dual VU meters; separate bias/equalization switches; record/pause lights; total remote-control capability; Dolby noise-reduction circuitry and lights. Has three motors. Response 40-24,000 Hz at 7½ ips; wow & flutter 0.08% at 7½ ips. S/N 74 dB (WTD at 3% THD, with Dolby). 17¹⁵⁄₁₆" × 15⁷⁄₁₆" × 8½" D. $739.50
A-2300S. Same except without Dolby circuitry; S/N 65 dB (WTD at 3% THD). $549.50

A-3300S Stereo Tape Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel deck. Will handle up to 10½" reels; offers remote-control capability; push-button transport control with logic circuitry; dual level bias oscillator for low-noise recording; d.c.-coupled equalization network. Features dual VU meters; pause control with indicator light; separate mike/line level controls; tape/source monitor switch; stereo headphone jacks; 4-digit resettable tape counter. Response 40-24,000 Hz at 7½ ips; 40-16,000 Hz at 3¾ ips; wow & flutter 0.06% at 7½ ips; S/N 65 dB (WTD at 3% THD). 17¹⁵⁄₁₆" W × 17⁹⁄₁₆" H × 8⁹⁄₁₆" D. $699.50
A-3300S-2T. Same except ½-track-two-channel with 15 or 7½ ips speeds. Response 30-26,000 Hz at 15 ips; 30-24,000 Hz at 7½ ips; wow & flutter 0.04% at 15 ips; S/N 67 dB (WTD at 3% THD). $749.50

A-4300 Auto-Reverse Stereo Deck

Two speed (7½ & 3¾ ips), ¼-track, two-channel three-motor, four-head stereo deck with automatic reverse. Features push-button transport control, pause control with indicator light, dual VU meters; separate bias/equalization switches; separate mike/line inputs; separate mike/line level controls. Will handle up to 7" reels. Includes memory counter for automatic repeat and memory marker level guides; total remote-control capability. Response 40-24,000 Hz; wow & flutter 0.06% both at 7½ ips. S/N 65 dB (WTD at 3% THD). 17⁹⁄₁₆" × 19¼" × 8½" $699.50

5300 Stereo Tape Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel deck. Will handle 7" reels. Features direct-capstan drive servo-controlled motor; d.c. reel motors; automatic reverse; push-button transport control. Has separate bias & equalization switches; dual-scale VU meters; remote control for all functions including record & pause; memory marker level guides. Response 40-24,000 Hz; wow & flutter 0.08%, both at 7½ ips. S/N 65 dB (WTD at 3% THD). $769.50

5500 Auto-Reverse Stereo Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel deck with automatic-reverse play. Direct-capstan drive servo-controlled motor, dual-process Dolby noise-reduction system, permitting simultaneous Dolbyized recording with decoded tape monitoring; Dolby FM/Copy function; MPX filter switch; Dolby calibration oscillator; source/tape monitor switch. The 4-head machine with separate playback, reverse playback, record, and erase also has a "punch-in" feature which permits change from play to record mode without going through a stop; a four-digit resettable tape counter; memory marker level guides. Response 40-24,000 Hz; wow & flutter 0.08%, both at 7½ ips. S/N 74 dB (WTD at 3% THD, with Dolby). $899.50

4070G Bi-Directional Stereo Deck

Two-speed (7½ & 3¾ ips), ¼-track, 3-motor stereo design; bi-directional record/playback. Will handle up to 7" reel. Response 30-20,000 Hz ±3 dB, wow & flutter 0.06% at 7½ ips, S/N 65 dB (WTD at 3% THD). Has braking, VU meters, automatic reverse and shutoff, pause control, bias adjustment, counter, separate bias & equalizer switches and monitoring facilities. 18" H × 17⅞" W × 9⁹⁄₁₆" D. $729.50

A-6100 Stereo Tape Deck

Two-speed (15 & 7½ ips), two-track, two-channel stereo with four heads (erase, record, playback, 4-track playback); 3 motors. Will handle 10½" & 7" reels. Features cue button & flip-up head cover for easy editing; auto stop counter; mike attenuation control; LED peak level indicators. Response 30-26,000 Hz at 15 ips; wow & flutter 0.04% at 15 ips; S/N 67 dB (WTD at 3% THD). 17⅜" W × 20½" H × 8¼" D. $1049.50

A-6300 Auto-Reverse Stereo Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel stereo with four heads (erase, record, play-

back, reverse playback), three motors. Will handle 10½" & 7" reels. Features mike/line mixing, automatic repeat by memory counter, total remote-control capability. Response 40-24,000 Hz; wow & flutter 0.06% both at 7½ ips; S/N 65 dB (WTD at 3% THD)... $1099.50

A-7300 Stereo Tape Deck
Two-speed (7½ & 3¾ ips), ¼-track, two-channel deck. Features direct-drive d.c. cap-

stan/servo control motor; two a.c. reel motors; built-in mixer to blend up to 4 mikes or lines; separate master input level control for all mike/line inputs; separate output level control. Has two sets of output jacks; dual VU meters; 3-position bias/equalization switches; pitch control; cue facility; push-button transport control; logic circuitry. Response 40-24,000 Hz; wow & flutter 0.05%, both at 7½ ips. S/N 65 dB (WTD at 3% THD)..... $1399.50
A-7300-2T. Same except ½-track, two-channel with 15 & 7½ ips operation; edit button; minutes/seconds counter. Response 30-26,000 Hz; wow & flutter 0.04%, both at 15 ips. S/N 67 dB (WTD at 3% THD)..... $1449.50

TECHNICS BY PANASONIC

RS-1030US 2/4 Track Tape Deck
Two-speeds (15 & 7½ ips). Response 20-26,000 Hz at 15 ips (30-22,000 Hz ±3 dB); 20-23,000 Hz at 7½ ips (30-20,000 Hz ±3 dB). Two-track record/play, four-track (stereo) playback. Wow & flutter 0.12% W rms at 7½ ips. (S + N)/N 55 dB (2-track). Accepts 10" or smaller reels. Four heads including three HPF ultra-longlife types. Low-noise/normal tape selector. Three motors, one dual-speed hysteresis synchronous for capstan drive. Tape tension selector, optional remote. Features automatic stop, tape pause, and 4-digit counter..... $999.95

TELEX

Lab Series 2001 Tape Deck
Two-speed (7½, 3¾ ips), 4-track, 3-head, 2-motor stereo design. Will handle up to 8¼" reels. Response 45-18,000 Hz ±2 dB, wow & flutter 0.18% at 7½ ips, (S + N)/N 52 dB. Has VU meters, automatic shutoff, pause control, counter, solenoid operation, and monitoring facilities. 14½" × 19⅛" × 8" D..... $725.00
2002W. Similar to 2001 except half-track, 3-motor design; solid-state preamps; walnut base..... $725.00

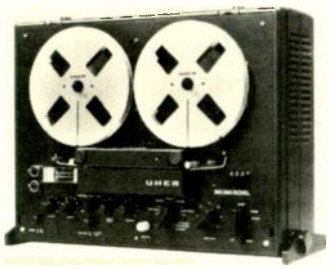
TOSHIBA

PT-862D Stereo Tape Deck
Three-head system for either tape or source monitoring, echo recording; mechanical automatic shut-off; tape selector switch, recording bias control; sound-on-sound; 4-digit tape counter; three speeds (7½ , 3¾, 1⅞ ips); will handle up to 7" reels; 4-track, 2-channel stereo record & playback; universal power supply, 50-60 Hz; inputs: mike, line input, DIN; outputs: line-output, headphone, DIN; 4-pole condenser motor; controls: tape selector, speed change, power switch, volume control, mode selector; response 20-25,000 Hz; wow & flutter 0.09% W r.m.s.; crosstalk 60 dB; channel separation 55 dB; (S + N)/N 56 dB. 15⁹⁄₁₆" W × 12¼" H × 7⅜" D..... $309.95

UHER

4000 Report IC Recorder
Four-speed (7½, 3¾, 1⅞, ¹⁵⁄₁₆ ips), two-track mono recorder; can be powered by "C" cells, rechargeable battery, power pack, 12-V car battery (also power line with accessory unit); 5" max. reel dia.; frequency range 35-20,000 Hz; wow & flutter +0.20% (DIN), ±0.15% (rms); S/N (rms A curve) 64 dB, all at 7½ ips. Has 3-digit counter with reset button; direct tape monitoring with earphones or speaker; electronic start and stop with remote switch, manual, or foot operation. Inputs: (mike) 0.12 mV, 40 mV max. for mikes with 200-ohm source impedance; (radio) 2.4 mV, 700 mV max; (phono) 45 mV, 20 V max., input impedance 2 meg..... $541.75
4200. Same as Model 4000 except stereo version; S/N 56 dB (weighted DIN), 64 dB (weighted rms A curve); 0.80 W/ch; two recording level meters $673.25
4400. Same as Model 4200 except four-track; S/N 54 dB (weighted DIN), 62 dB (weighted rms A curve)..... $610.00
An extensive line of accessories is available for use with all three models.

Royal SG-560 Tape Recorder
Four-track stereo (or optional 2-track stereo with plug-in head assembly modules), four-



speed (7½, 3¾, 1⅞, ¹⁵⁄₁₆ ips); response 20-22,000 Hz; wow & flutter ±0.02%; S/N (rms A curve) 68 dB, all at 7½ ips. Features reverberation and Concert-Hall effects; sound-on-sound; sound-with-sound; two integrated stereo input mixing facilities; integrated "Dia-Pilot" for slide and film projector synchronization. With tape drive system off, electronic section serves as stereo amplifier with 10 W/ch continuous power output. 7" max. reel; operates from 110-130, 220-240 V, 50-60 Hz. Will operate in horizontal or vertical position. 4-digit tape counter..... $972.75

Universal 5000 Tape Recorder
Three speed (3¾, 1⅞, ¹⁵⁄₁₆ ips), two-track mono; 5" reel dia.; frequency range 40-16,000 Hz; wow & flutter (rms) ±0.15%; S/N (rms A curve) 60 dB, all at 3¾ ips. Has four-digit counter; loudspeaker or earphone monitoring; VU meter; remote control for recording, playback, start, stop, rewind. Operates from 110-125-150-220-240 V, 50 Hz (can be modified for 60 Hz)..... $574.75
An extensive line of accessories is available for use with this model.

For 4-Channel Components . . . See SECTION 9

When you've created an extraordinary tape you've done only half the job.

You have probably heard about our new Ferri-Chrome double coated tape, the one that can handle high frequencies just as well as lows with maximum dynamic range for both.

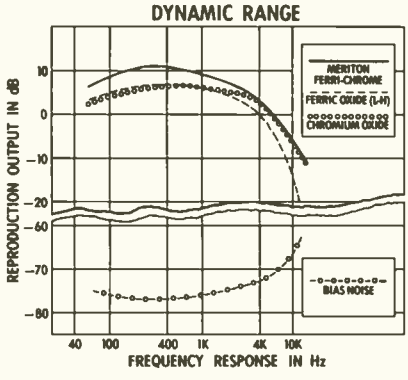

FERRIC OXIDE


CHROMIUM OXIDE

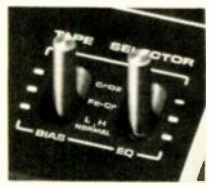

MERITON FERRI-CHROME

What makes our Ferri-Chrome Tape so special? Well, in essence, it's the best of both worlds. You see, with chromium oxide tape you get the high frequencies, but you sacrifice dynamic range at the low frequencies. And with ferric oxide tape it's just the reverse. So either way you sacrifice half the music. Our Meriton Ferri-Chrome Tape is a combination of both: a layer of ferric oxide with a thin, mirror-polished surface of chromium oxide on top.

You can get an idea of the way it reproduces sound from this chart. The top line is Meriton's Ferri-Chrome Tape. As you can see, it performs as well for high frequencies as it does for lows. Note its wide dynamic range as well as its low noise characteristics. At all frequencies its dynamic range is far superior to plain ferric oxide (L-H) tape, and it is better than chrome oxide at low and middle frequencies. So Ferri-Chrome will give any tape deck better performance.



But how can you hear Ferri-Chrome at its very best? Well, that's where our HD-540 comes in. It's a professional-quality cassette deck with a Dolby* noise reduction system and everything else a first-class deck should have: a ferrite head, a precision Servo motor, full automatic shutoff, a cue and review button, hinged dust cover and the works. But the feature to notice in particular is a set of switches in the corner. It's a tape bias and equalization selector, not just for normal and chrome oxide tape, but with a special bias for Ferri-Chrome Tape, too. With this special 3-position bias selector you can expect optimum performance from any tape you play. And of course when it's our Ferri-Chrome Tape you will get an extraordinary performance.



So with Meriton Ferri-Chrome Tape you can expect 62 minutes of outstanding music. And with the HD-540 deck you'll be able to do it justice.

*Dolby is a trademark of Dolby Laboratories, Inc.

meriton® ferri-chrome

Trust your ears.

Meriton Electronics Inc. 35 Oxford Drive, Moonachie, N.J. 07074 / 1611 Anderson Avenue, Compton, Calif. 90220

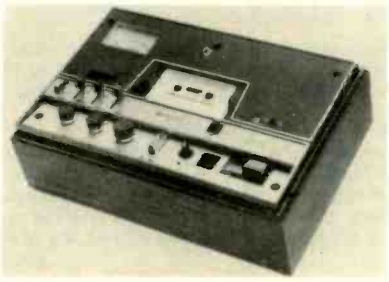
CIRCLE NO. 33 ON READER SERVICE CARD

6 CASSETTE TAPE MACHINES

ADVENT

201 Dolbyized Cassette Deck

Play/record stereo design. Response 35-14,500 Hz at ±2 dB. THD less than 1½% with chromi-



um-dioxide tape; wow & flutter less than 0.15%; (S + N)/N 54 dB (Dolby off). Has VU meter, counter, automatic shutoff, pause control, and line inputs. 4⅞" H × 13¾" W × 9¼" D. Oiled-walnut cabinet $340.00

AKAI

GXC-75D Auto-Reverse Deck

Four-track, two-channel system; response 33-16,000 Hz (with chromium-dioxide tape), 30-14,000 Hz ±3 dB (low-noise tape); wow & flutter 0.08% Wrms; distortion 1.0% (1000 Hz, 0 VU). (S + N)/N 50 dB; 58 dB (with Dolby). Three

heads (one GX record/playback, two erase); hysteresis synchronous outer-rotor motor; two VU meters. Has full complement of controls. 18.1" W × 5.8" H × 11.9" D $449.95

GXC-325D Stereo Cassette Deck

Features Double Dolby process circuitry; three-head function; closed-loop double capstan; a.c. servo control; separate record & playback heads; ADR (automatic distortion reduction) system; memory rewind; includes line/mike mixing; peak-level indicator; one-touch tape selector; limiter recording circuit; full automatic stop; two VU meters; two mike input jacks; headphone output jack; response 30-15,000 Hz (low-noise), 30-16,000 Hz (chrome), and 30-19,000 (FeCr) tape all at ±3 dB; 17.4" W × 5.6" H × 11.9" D. $475.00

GXC-710D Stereo Cassette Deck

Features glass & single crystal head; Dolby noise-reduction circuitry; direct-function change controls; ADR; memory rewind; tape selector switch; peak-level lamp; tape illumination and tape-run indicator lamp; multiplex filter switch; full release automatic stop; line-output and pause controls; two VU meters; vertical enclosure. $395.00

GXC-310D Stereo Cassette Deck

Features glass & single crystal head; Dolby noise-reduction circuitry; closed-loop dual capstan drive system; direct-function change controls; ADR; memory rewind; tape select switch; peak level lamp; tape run and pause indicator lamps; over-level suppressor switch; line output and pause controls..... $375.00

GXC-510D Stereo Cassette Deck

Vertical-type deck with vertical head block; features glass & crystal record/playback head; full

direct-function change control; ADR; Dolby noise-reduction system; response 30-16,000 Hz (CrO_2) and 30-14,000 Hz (low-noise) both ±3 dB; full complement of controls; 16.4" W × 10.1" H × 5.2" D. $349.95

GXC-39D Stereo Cassette Deck

Features Dolby noise-reduction circuitry; memory rewind; limiter circuit; peak-level indicator lamp; glass & crystal ferrite head; tape selector; pause control; full-release auto stop; direct-function change; slide-type recording volume control; response 30-14,000 Hz (low-noise), 30-16,000 Hz (chrome), 30-17,000 Hz (FeCr) all at ±3 dB; 17.3" × 4.6" × 9". $249.95

CS-34D Stereo Cassette Deck

Features Dolby noise-reduction circuitry; limiter circuit; full-release auto stop; tape selector; pause control; 3-digit tape counter; response 40-13,000 Hz (low-noise), 40-15,000 Hz (chrome) both at ±3 dB; 14.9" W × 4.3" H × 8.9" D. $199.95

CONCORD

CD-1000 Stereo Cassette Deck

Plays/records 4-track, 2-channel stereo; two heads (erase and record/playback); will handle regular, low-noise, and chromium-dioxide tapes (via selector switch); Dolby noise-reduction system; response 30-13,000 Hz (30-16,000 Hz, CrO_2 tape); S/N 50 dB, 58 dB (with Dolby); solenoid-assisted piano-key switching; automatic tape shutoff; memory re-wind counter; two VU meters; 5⅞" H × 15¾" W × 12⅝" D $319.95

CTR

Model 1 Cassette Recorder Deck

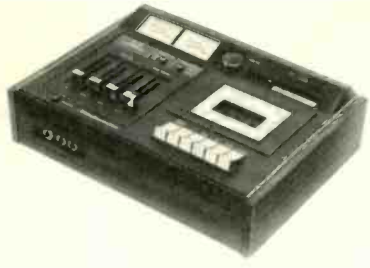
Front-loading cassette deck; response 35-17,000 Hz (ferri-chrome or chrome tapes), 35-

15,000 Hz (standard tape); S/N 60 dB at 4000 Hz (Dolby in); 50 dB (Dolby off); wow & flutter 0.07% weighted rms; features automatic shut-off in both record & playback modes; bi-peripheral cassette drive system; 3-position bias & equalization switches; Dolby FM listening capability, plus Dolby recording & playback; multiplex filter; memory cassette rewind counter; automatic reset with cassette ejection; automatic rewind & play; advance end-of-tape warning light; electronic solenoid operation; two-position meter switch (rms or peak-reading). 23½" L × 7¼" W × 8" D $599.95

DOKORDER

MK-50 Dolbyized Cassette Deck

Features molybdenum record/play head; response 30-18,000 Hz (with CrO_2) tape; Dolby



noise-reduction system; S/N 60 dB (with Dolby); wow & flutter 0.10% rms; has cue & review switch; tape-scan indicator; 3-digit tape counter; separate left/right channel slide level controls; two VU meters; separate left/right mike inputs; line-in terminals; headphone jacks. 4" H × 16" W × 11¾" D $199.95

DUAL

Autoreverse Cassette Deck

Features automatic reverse, continuous play-

6 Cassette Tape Machines

back, and bi-directional recording. Dolbyized, with test oscillator. Continuous-Pole/synchronous motor with double-capstan drive system. Slide-type controls; ballistically damped VU meters; automatic selector for ferrous and chromium-dioxide tapes; lighted indicators for all functions; ALC. Features complete automatic shut-off; two mike inputs. Response 20-16,500 Hz ±3 dB (to 17,000 Hz with CrO_2 tape); 20-14,000 Hz ±1.5 dB (to 15,500 Hz with CrO_2 tape); wow & flutter 0.07% W rms . . . $450.00

FISHER

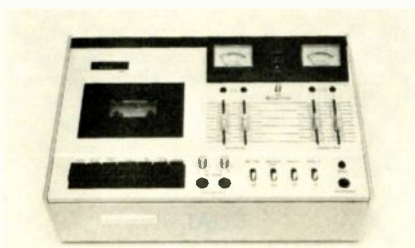
CR5010 Dolbyized Cassette Deck
Features three heads; separate record-level controls; illuminated VU meters; built-in Dolby circuitry; tape selector switch; 3-digit counter; automatic stop; source/tape monitor; headphone jack; wow & flutter 0.3%; S/N 48 dB (Dolby on); response 50-12,000 Hz (chromium-dioxide tape). $229.95

CR5030 Dolbyized Cassette Deck
Features three ferrite heads; built-in Dolby circuitry; automatic stop; dual-direction mem-

ory counter; separate slide input & output level controls; 3-position tape selector; audible/visible end-of-tape alarm; peak limiter; dual illuminated VU meters; dual d.c. motors; tape/source monitor; Dolby, record & memory indicator lights; wow & flutter 0.08%; S/N 56 dB (Dolby on); response 30-16,000 Hz (chromium-dioxide tape). $449.95

HARMAN/KARDON

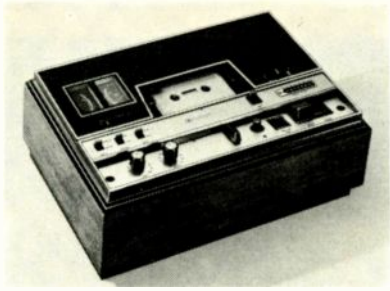
HK2000 Dolbyized Cassette Deck
Stereo cassette recorder deck with built-in Dolby noise-reduction circuit. Has front-panel bias switch for standard, low-noise, and chromium-dioxide tapes. Features memory relay, peak-reading VU meters, sliding controls for playback & record level, and mike/line mixing. Response 30-17,000 Hz (CrO_2); wow & flutter 0.07% (weighted); speed variation 1%. Hard



Permalloy head; peak-reading VU meters with LED overload indicator. 15⅜" W × 5⅜" H × 10¼" D $399.95

HEATH

Dolbyized Stereo Cassette Deck
Combines a pre-assembled tape transport, a Dolby noise-reduction (B type) system, and necessary preamps to record or play stereo cassette tapes. Has built-in test circuit to ad-



just Dolby system; a bias & equalizing switch for chromium-dioxide or standard tapes; VU meters; and mike inputs; response 40-14,000 Hz ±3 dB (CrO_2 tape); hum & noise −58 dB (with Dolby); wow & flutter 0.25% rms; dist. 0.2% (electronics only). Walnut-stained veneer base.
Kit (mail order) $269.95

AD-110 Cassette Deck
Play/record stereo design. Response 30-12,000 Hz ±3 dB, 0.25% distortion, wow & flutter less than 0.25%, (S + N)/N 45 dB. Has VU meters, eject button, pause control, mike & line inputs, and adjustable bias. 11" H × 13⅝" W × 3⅛" D. Walnut-stained veneer end panels.
Kit (mail order). $154.95

HITACHI

D-2330 Stereo Cassette Deck
Four-track, two-channel deck; Permalloy recording & playback heads, ferrite erase head; electrically controlled motor; response 40-14,000 Hz (CrO_2) 40-12,000 Hz (standard); crosstalk 60 dB; S/N 58 dB (Dolby on), 50 dB (Dolby off); wow & flutter 0.18% W rms; distortion 3.0% (1 kHz, 0 VU); output voltage 0.5 min. 13¼" × 3¾" × 8⅞". $179.95

D-2360 Stereo Cassette Deck
Four-track, two-channel deck; all ferrite recording & playback heads, ferrite erase head; electrically controlled motor; response 30-16,000 Hz (CrO_2), 30-14,000 Hz (standard); crosstalk 60 dB; S/N 58 dB (Dolby on), 50 dB (Dolby off); wow & flutter 0.13% W rms; distortion 2.0% (1 kHz, 0 VU); output voltage 0.5 min. 15⅜" × 3¾" × 9½". $219.95

D-3500 Stereo Cassette Deck
Four-track, two-channel deck; R&P ferrite recording & playback heads, ferrite erase head; 4-pole hysteresis synchronous motor; response 20-20,000 Hz (CrO_2), 20-15,000 Hz (standard); crosstalk 60 dB; S/N 63 dB (Dolby on), 55 dB (Dolby off); wow & flutter 0.05% W rms; distortion 2.0% (1 kHz, 0 VU); output voltage (variable) more than 0.5 V. 17½" × 5¾" × 11½". $419.95

JVC

CD-1656 Cassette Deck
Stereo record/play. Response 50-14,000 Hz ±3 dB (CrO_2), 50-12,000 Hz (standard tape); wow & flutter 0.22% rms; S/N 50 dB from peak level; built-in noise-reduction system (ANRS); features auto-stop mechanism; tape selector switch; two input mike & two line jacks; two line & headphone outputs; DIN jack. 4¾" H × 15⅛" W × 9 13/16" D. $229.95

CD-1669-2 Solenoid Cassette Deck
Response 30-19,000 Hz ±3 dB. (S + N)/N −60 dB; wow & flutter 0.13% rms. Ferrite record/play heads. Features both equalizer and tape bias switches; built-in automatic noise-reduction system; memory counter; dual motor drive mechanism; calibrated step recording-level and playback controls; solenoid logic controls; remote control; automatic adjustable ANRS. 5 9/16" × 16½ W × 12 1/16" D. . . . $499.95

CD-1667-2 Cassette Deck
Stereo record/play design. Response 30-16,000 Hz ±3 dB with chromium-dioxide tape (30-13,000 Hz with standard tape). (S + N)/N −50 dB; wow & flutter 0.15% rms; bias record & erase 95 kHz. Has record/play and erase heads. Inputs: mike (0.7 mV) & line (80 mV). Line output 0 to 1 V. Features two VU meters and bias switch for chromium-dioxide and standard tape. Features ANRS (automatic noise-reduction system). 15" × 4⅜" × 10½" D $299.95

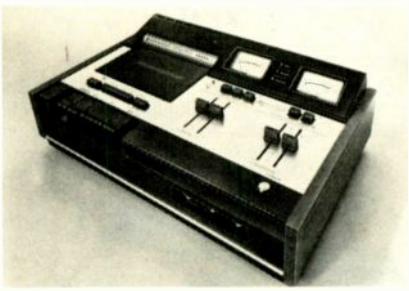
CD-1950 Stereo Cassette Deck
Front-loading unit; features ANRS noise-reduction circuitry; automatic stop; tape select

switch; d.c. electronic governor motor; cronios-ferrite double-gap head; response 50-12,500 Hz; wow & flutter 0.15% $299.95

CD-1665 Cassette Deck
Economy stereo record/play design. Response 40-13,000 Hz ±3 dB. (S + N)/N −50 dB; wow & flutter 0.15% rms. Has record/play and erase heads. Inputs: mike (0.7 mV) & line (80 mV). Line output 0 to 0.6 V. 4½" × 11⅛" W × 9⅜" D $99.95

KENWOOD

KX-710 Cassette Deck with Dolby
Stereo cassette deck with Dolby noise-reduction circuit; d.c. servo motor plus high-mass



flywheel for speed accuracy and low wow & flutter; two heat-compressed ferrite heads (record/play & erase); response 30-16,000 Hz (with CrO_2) tape; S/N with Dolby 58 dB, without 50 dB, both with chromium-dioxide tape; has resettable automatic memory rewind system used with 3-digit tape location counter; automatic shut-off; automatic tape selector for optimizing equalization; cueing system; linear slide controls; piano-key controls; tape-running indicator; peak level indicators; two mike & line inputs; two line & stereo headphone outputs. 5 1/16" W × 16 3/16" H × 10 1/16" D. $249.95

KX-910 Cassette Deck with Dolby
Stereo cassette deck with Dolby noise-reduction circuit; hysteresis-synchronous motor for speed accuracy and low wow & flutter; two heat-compressed ferrite heads (record/play & erase); response 30-16,000 Hz, S/N with Dolby 58 dB, without 50 dB, all with CrO_2 tape; same features and controls as KX-710. 5 1/16" W × 16 3/16" H × 10 1/16" D. $299.95

KX-620 Front-Load Cassette Deck
Precision drive system with electronically controlled d.c. servo motor; critical-tolerance capstan and triangular capstan shaft support reduce wow & flutter to 0.09%; auto stop disengages capstan drive, turns off motor; Dolby noise-reduction circuit provides S/N 61 dB (CrO_2); two-way bias switch; three-way equal-

ization switch to accommodate all tape types; 10 dB recording headroom above 0 VU. 16 15/16" W × 5 1/2" H × 11 13/16" D $219.95

LAFAYETTE

RK-725 Record/Playback Deck

Deck featuring a low-impedance stereo amplifier for stereo headphone listening. Response 50-13,000 Hz; (S + N)/N 45 dB; channel separation 30 dB. Input sensitivity: mike 1 mV; aux. 100 mV. Wow & flutter 0.25% rms. Has standard/chromium-dioxide level control; illuminated VU record-level meters; 3-digit tape counter with reset button; front panel left- and right-channel mike and input jacks; six push-button tape functions including pause. Walnut wood case, brushed aluminum front panel. 12 7/8" × 9 1/16" × 3 5/16" $109.95

RK-D750 Dolbyized Cassette Deck

Plays/records 4-track stereo & 2-track mono; response 50-13,000 Hz; S/N 55 dB (with Dolby), 45 dB (without Dolby); wow & flutter 0.25% rms; features front-panel left and right channel mike input jacks; 3-digit tape counter with reset button; standard/CrO_2 bias level control; tilt-up record-level meters; built-in amplifier for headphone monitoring; 12 7/8" × 3 5/16" × 9 1/16" $159.95

RK-715 Record/Playback Deck

Designed for recording from stereo consoles, phonos, and tape recorders; includes record and output-level controls; LED level indicator; cables. Cannot be used with microphones. Response 60-10,000 Hz; S/N 40 dB. 5 3/8" × 3 1/8" × 8 5/8" $69.95

MERITON

HD-540 Dolbyized Cassette Deck

Records/plays stereo; features Dolby noise-reduction system; response 30-16,000 Hz (chro-

mium-dioxide or ferri-chrome tape); built-in ferrite heads; tape bias/equalization control for all types of tape; servo motor control; automatic shut-off; left/right record level controls; review/cue button; two VU meters; 3-digit tape counter; pushbutton controls. Walnut veneer side panels, tinted dust cover. 15 15/16" W × 4 1/8" H × 10 1/4" D $259.95

HD-500 Stereo Cassette Deck

Plays/records stereo; features tape selector for standard/chromium-dioxide tapes; response 30-15,000 Hz (CrO_2), 30-12,000 Hz (standard); illuminated VU meters; pause control; limiter switch; pushbutton keyboard controls. Walnut veneer hardwood cabinet with brushed aluminum. 14" W × 3 1/2" H × 9 5/8" D. $129.95

NAKAMICHI

1000 3-Head Cassette Deck

Stereo record/play deck has response of 35-20,000 Hz ±3 dB (CrO_2) tape. Wow & flutter less than 0.10% (weighted peak); (S + N)/N 60 dB (Dolby in); THD 2% at 1 kHz, 0 dB. Features three heads (erase, record, playback); record-head azimuth alignment beacon; Dolby noise-reduction circuit + DNL; closed-loop driven double capstans with staggered flywheels; two d.c. driving motors; two peak level meters; instantaneous spill-proof device; automatic shut-off, memory rewind, and automatic rewind;

variable pitch control, 3-point sound pickup for live recording; peak limiter; optional remote control. Inputs: mike 0.5 mV, 600 ohms; blend mike 0.5 mV, 600 ohms; line 100 mV, 100,000 ohms. Outputs: line 1.2 V (max.) variable; headphones 3 mW, 0 dB. 11 11/16" H × 20 11/16" W × 8 9/16" D. $1295.00

700 3-Head Cassette Deck

Same as the Model 1000 except does not have automatic rewind or DNL. 10 11/16" H × 20 1/2" W × 5 1/8" D. $849.00

500 2-Head Cassette Deck

Four-track, 2-channel stereo model response 40-17,000 Hz ±3 dB; wow & flutter 0.13%

WTD peak; S/N 58 dB (CrO_2 tape with Dolby); THD 2% at 1000 Hz, 0 dB; inputs: mike & blend mike 600 ohm, 0.2 mV; line 150,000 ohm 70 mV; outputs: line 1.0 V (max.) variable; headphones 8 ohm 1 mW, 0 dB; features focused-gap head with crystal Permalloy core; full-range 45-dB peak-reading meters; Dolby noise reduction system; d.c. servomotor drive; automatic shut-off & memory rewind; 3-point sound pickup for live recording; peak limiter; 3-position tape selector; variable output level control. 15" W × 4 1/2" H × 10" D $399.00

550. Similar to Model 500 except S/N 60 dB (CrO_2 tape with Dolby); outputs: line 580 mV; headphones 300 mW (1 kHz at 0 dB); three-way power supply (117 V a.c., 12 V battery, car jack); tape end alarm with preset timer; 12 1/4" W × 3 1/2" H × 13 3/4" D; 11 1/4 pounds without battery (battery life 15 hours continuous use). $499.00

Remote Control Box

Electronic touch control (duplicating control system on the 1000 & 700). Controls all tape motion, including record, within 15 ft. . $49.00

NEAL

103 Cassette Deck

Features modified Wollensak transport; wow &

flutter 0.09%; S/N 63 dB (chrome), 61 dB (ferric) with Dolby on; 55 dB (chrome), 53 dB (ferric) with Dolby off; frequency response 35-15,000 Hz +1, −3 dB (chrome tape); features "Varitape" to adjust bias to match any tape; solid-state logic switching; true peak-reading meters; three-input stereo mixing; low-noise mike inputs; built-in calibration oscillator; chrome switching to correct bias and record/playback equalization; super Permalloy head; black panels with Afromosia wood sides; sloped front panel. 14" W × 5" H × 9 1/2" D. $698.50

102 MkII. Same as Model 103 but does not include "Varitape" feature, calibration oscillator, or mixing facilities. $598.50

PIONEER

CT-4141A Dolbyized Cassette Deck

Stereo design featuring d.c. brushless motor. 85 kHz bias & a.c. erase. Bias change for standard & chromium-dioxide tape. Response 30-12,500 Hz with standard tape (30-15,000 Hz with chromium-dioxide tape). (S + N)/N 58 dB with Dolby. Wow & flutter 0.13%. Inputs: line 50 mV; mike 0.5 mV. Line output 0.775 V. 120 V, 60 Hz operation, 15 5/8" W × 3 3/4" H × 9 1/2" D $239.95

CT-3131A Cassette Deck

Stereo record/playback design featuring switch for standard or chromium-dioxide tape; automatic stop; a level memory marker; dual record-level meters; tape running pilot; and skip button. Wow & flutter 0.13%; (S + N)/N −48 dB for standard tape (50 dB for chromium-dioxide tape). Response 30-12,500 Hz for standard tape (30-15,000 Hz for chromium-dioxide tape). Sensitivity: line input 50 mV; mike 0.5 mV; line output 0.775 V. 120V, 60 Hz operation. 15 5/8" × 3 3/4" × 9 1/2" D $179.95

CT-F7171 Dolbyized Cassette Deck

Stereo record/playback deck featuring front-access; a.c. bias recording system; a.c. push-pull erase; ferrite record/playback head; electronically controlled d.c. motor; wow & flutter 0.10% W rms; response (standard tape) 30-13,000 Hz (40-12,000 Hz ±3 dB); chromium-dioxide tape 30-16,000 Hz (40-13,000 Hz ±3 dB); S/N 48 dB (Dolby out), 58 dB (Dolby in); features tape selector with switchable bias & equalizer; full-auto stop mechanism; "skip" button for monitoring; recording LED peak indicators; recording limiter; memory rewind switch; cassette bed illumination light & switch; two pairs of input & output terminals; independent recording & playback level controls. Wood cabinet. 16 15/16" W × 5 7/16" H × 12 1/4" D. $369.95

CT-5151 Dolbyized Cassette Deck

Dolbyized cassette deck with independent bias and equalization circuit selection for regular, low-noise, or chromium-dioxide tapes. Features solid ferrite heads; twin VU meters; LED peak indicator (calibrated to light when level exceeds reference level by +4 dB); switchable level limiter; electronically controlled d.c. motor; electromagnetic automatic stop circuit; tape-motion pilot light; skip button for locating desired program material; three-digit tape counter and tape memory rewind button for preci-

6 Cassette Tape Machines

sion cueing. Response 30-16,000 Hz (CrO_2); 30-13,000 Hz (standard) tape; (S+N)/N 58 (with Dolby), 48 dB (without); wow & flutter 0.12% Wrms; bias frequency 85 kHz. 120-V, 60-Hz operation. 15⅝" W × 3¾" H × 9½" D $269.95

CT-F6161 Dolbyized Cassette Deck

Front-access stereo cassette deck featuring angled illuminated tape compartment for direct visual confirmation of tape travel; built-in Dolby noise-reduction circuit; independent Bias/EQ tape selector circuit; two heads (record/playback & erase); electronically controlled d.c. motor; wow & flutter 0.12% Wrms; response 30-13,000 Hz (standard) and 30-16,000 Hz (chromium-dioxide); S/N 48 dB (Dolby off), 58 dB (Dolby on) with standard & LH tapes; has full complement of controls, inputs, and outputs; features Skip button which advances tape at twice normal speed for fast tape positioning; two VU meters; comes with two stereo cords and one head-cleaning kit. 17¹³/₃₂" W × 5⁷/₁₆" H × 13" D..... $299.95

CT-F2121 Dolbyized Cassette Deck

Front-loading cassette deck; Permalloy record/playback head, ferrite erase head; electronically controlled d.c. motor; frequency response 30-13,000 Hz (standard, LH tapes), 30-16,000 Hz (chromium-dioxide tapes); wow & flutter 0.12% W rms; S/N 58 dB (Dolby on), 48 dB (Dolby off); full complement inputs & outputs; controls: Dolby on/off; tape selector with selectable bias & equalization; full automatic stop in all modes; comes with stereo connecting cords, head cleaning kit, operating instructions. Overall size: 13¾" W × 5⅝" H × 11⅛" D..... $199.95

CT-F9191 Dolbyized Cassette Deck

Front-loading cassette deck; ferrite record/playback and erase heads; electronically con-

trolled d.c. motor plus d.c. torque motor for fast-forward & rewind drive; response 25-16,000 Hz (standard, LH tapes), 20-17,000 Hz (chromium-dioxide tapes); wow & flutter 0.07% W rms; S/N 62 dB (Dolby on), 52 dB (Dolby off); features Dolby on/off with indicator; MPX filter on/off; tape selector; mixing control for mic & line input; tape counter with rewind memory switch; recording limiter; wide-scale level meter; recording peak-level indicator; level memory marker for inputs & outputs; comes with stereo connecting cords, head cleaning kit, operating instructions. 17⅞" W × 7⅞" H × 12⅜" D..... $449.95

RADIO SHACK

SCT-10 Stereo Cassette Deck

Pushbutton control of all functions including on/off, pause & rewind, stop/eject; hysteresis synchronous motor; response (with "Supertape") 20-10,000 Hz ±2 dB; wow & flutter 0.25% rms; S/N 48 dB; features dual lighted VU meters; left & right channel record-level controls; 3-digit instant reset counter; stereo headphone jack; walnut-grained vinyl veneer end panels with brushed aluminum trim. 4 1/16" H × 14⅞" W × 8¾" D..... $99.95

SCT-8 Stereo Cassette Deck

Pushbutton control of rewind, fast-forward, pause, stop, eject; mixing capability; sliding record-level controls; instant-reset digital tape counter; output level control; record indicator light; stereo headphone jack; automatic stop; response (chromium-dioxide tape) 40-13,000 Hz ±2 dB; wow & flutter 0.2%; S/N −51 dB; crosstalk −55 dB; walnut-veneer end panels with brushed aluminum trim. 4 1/16" H × 14⅞" W × 8¾" D..... $139.95

SCT-9 Dolbyized Cassette Deck

Pushbutton control; Dolby noise-reduction circuitry; bias switch (chromium-dioxide or standard tapes); automatic memory counter; illuminated function indicators; illuminated dual VU meters; separate left & right record-level controls; adjustable output level control; mike, aux. & headphone jacks; digital counter; pause control; response 30-15,000 Hz ±2 dB, wow & flutter 0.28%; S/N −54 dB; crosstalk −55 dB; oiled-walnut veneer end panels with brushed aluminum trim. 4³/₁₆" H × 14⁷/₁₆" W × 9⁹/₁₆" D..... $199.95

SANKYO

STD-1310 Stereo Cassette Deck

Features dynamic-noise-reduction (DNL) system; automatic shut-off; twin VU meters; manual chrome tape switch; index counter; fast-forward & rewind..... $139.95

STD-1410 Dolbyized Cassette Deck

Features Dolby noise-reduction circuitry; total automatic shut-off; twin VU meters; manual chrome tape switch; index counter; pause switch; fast-forward & rewind..... $169.95

STD-1510 Dolbyized Cassette Deck

Features Dolby noise-reduction circuitry; full-range bias control which adjusts automatically for different tape types; full automatic stop; twin VU meters; two heads; index counter; pause switch; fast-forward & rewind. 15" W × 3¼" H × 10" D..... $199.95

SANSUI

SC-636 Cassette Recorder Deck

Stereo design with built-in Dolby circuits; provisions for chromium-dioxide tape; MC ferrite

heads; constant and peak-reading VU meters, three mike inputs. Response 30-13,000 Hz. (regular tape); 30-16,000 Hz (CrO_2); (S + N)/N 50 dB, Dolby out, but with chromium-dioxide tape. 16 1/16" W × 4 1/16" H × 11⅝" D... $279.95

SHARP

RT-3500 Dolbyized Cassette Deck

Frequency response 45-13,000 Hz (regular tape); 45-15,000 Hz (chromium-dioxide); S/N

52 dB (Dolby off); 58 dB (Dolby on); d.c. servo motor; digital peak-level indicator; APFS (auto program find system); illuminated VU meters; full automatic stop mechanism; mechanical pause control for tape editing; cassette chamber illumination. 16⅞" W × 4½" H × 10½" D $259.95

RT-2500 Dolbyized Cassette Deck

Frequency response 45-12,000 Hz (regular tape); 45-14,000 Hz (chromium-dioxide); S/N 52 dB (Dolby off); 58 dB (Dolby on); d.c. servo motor; LED peak-level indicator; full automatic stop operation; mechanical pause control for tape editing; illuminated VU meters & cassette chamber. 16⅞" W × 4½" H × 10½" D $199.95

RT-2000 Dolbyized Cassette Deck

Frequency response 60-8000 Hz (regular tape); 60-10,000 Hz (chromium-dioxide); S/N 50 dB (Dolby off); 55 dB (Dolby on); d.c. servo motor; LED peak-level indicator; automatic stop; mechanical pause control for tape editing; illuminated VU meters. 16" W × 4⅜" H × 10⅛" D $179.95

SONAB

C500 Dolbyized Cassette Deck

Features servo-controlled d.c. motor; two hard Permalloy heads; Dolby noise-reduction circuitry; tape selector for standard and chromium-dioxide tapes; two peak-reading record-level meters; mixing facilities left/right channels; memory rewind; built-in headphone amplifier; response 30-15,000 Hz (standard); 30-16,000 Hz (chromium-dioxide) tapes; wow & flutter 0.13% (weighted); S/N 51 dB (Dolby out); 58 dB (Dolby in) with standard tape; 53 dB

(Dolby out); 60 dB (Dolby in) with chrome tape; Black enclosure. 15" W × 4" H × 10" D..... $399.00

SONY from SUPERSCOPE

TC-131SD Dolbyized Cassette Deck

Includes Dolby circuitry; has special tape select switch for chromium-dioxide or standard tapes; ferrite and ferrite head; built-in peak limiter. Has straightline record level controls, illuminated VU meters, automatic total mechanism shut-off (TMS); locking fast-forward and rewind; pause control with lock; 3-digit tape counter; record indicator pilot lamps; stereo headphone jack; non-magnetizing record head. Response 40-15,000 Hz, wow & flutter 0.22% (S + N)/N 48 dB. Overall size 15⁹/₁₆" W × 3¾" H × 9 1/16" D. Walnut base..... $269.95

TC-177SD Stereo Cassette Deck

Features three ferrite heads; Dolby noise-reduction system; automatic total mechanism shut-off; response 20-17,000 Hz (standard tape); 20-20,000 Hz (CrO_2 and FeCr tape); has illuminated VU meters; peak-level indicator; 400-Hz calibration tone switch; push-button operation. Walnut base. 17⅛" W × 6⅛" H × 12⁹⁄₁₆" D. $749.95

TC-161SD Dolbyized Cassette Deck

Features dual bias for standard or chromium-dioxide tape. Response 20-18,000 Hz with chromium-dioxide tape. (S + N)/N 54 dB at 1 kHz & 59 dB at 5 kHz. Wow & flutter 0.1%. Bias frequency 85 kHz. Has dual VU meters, illuminated cassette compartment, memory-type counter, headphone level switch. Has mike & line inputs (0.06 V sensitivity) and line output (0.775 V). Walnut base 15¾" W × 5" H × 10⅞" D. $299.95

TC-121A Stereo Cassette Deck

Records/plays. Response 40-13,000 Hz; wow & flutter 0.22% (S + N)/N 45. Has low-imp. mike input; 560,000 ohm imp. aux. input. Output: phono 100,000 ohms. Level 0.775 V. Includes stereo headphone monitor jack, record level indicator, pause control, and automatic shut-off. 13" W × 3⅞" H × 8¹⁵⁄₁₆" D $129.95

TC-129 Stereo Cassette Deck

Records/plays. Response 40-14,000 Hz; wow & flutter 0.22%; (S + N)/N 45. Has low-imp. mike input; 560,000 ohm imp. aux. input. Output: phono 100,000 ohms imp. Level 0.775 V. Features straight-line record level controls; tape select switch; dual illuminated VU meter; three-digit tape counter; push-button operation; pause control with lock. Has stereo headphone jack; built-in dust cover; automatic shut-off; non-magnetizing record head. Walnut base. 13⅜" W × 4" H × 9¼" D $149.95

TC-203SD Dolbyized Cassette Deck

Front-load stereo cassette deck; Dolby noise-reduction circuit; F & F head; three separate tape select switches; uniphase recording for recording 4-channel sound from SQ or FM matrix sources for playback through decoder 4-channel amplifier; total mechanism shutoff; response 20-15,000 Hz (standard), 20-17,000 Hz (FeCr and CrO_2) tapes; has 3-digit tape counter; illuminated VU meters; peak level indicator; full complement of inputs & outputs; comes with two RK-74 patchcords, head-cleaning tips. 17³⁄₁₆" W × 6⅛" H × 12⅝" D. $399.95

SUPERSCOPE

CR-1000 Cassette Recorder/AM-FM

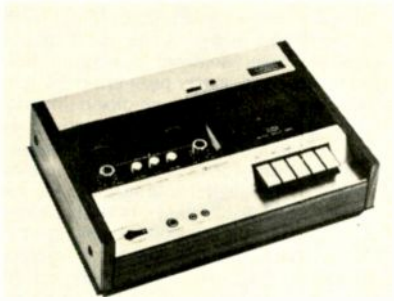
Lightweight cassette recorder with AM-FM radio; 120-V a.c. operation; response 63-10,000 Hz; S/N 50 dB (playback), 47 dB (record/play); 4" PM speaker; built-in electret condenser mike; full complement of inputs & outputs; supplied with metal carrying handle; 13" W × 8½" H × 3¾" D; 7 lbs, 5 ounces. $109.95

CD-301A Stereo Cassette Deck

Record/play deck. Response 40-10,000 Hz (standard tape); 40-14,000 Hz (chromium-dioxide tape); (S + N)/N −48 dB standard/−51 dB CrO_2 tapes. Features two slanted VU meters; limiter switch to limit maximum recording level; illuminated function indicators; headphone monitor jack; left and right mike inputs and record-level controls; record mode light; 3-digit tape counter; interlocked piano-key type controls; locking pause control. Comes with walnut base and two audio patchcords. Overall size 12½" W × 3¼" H × 8⅞" D $139.95

CD-302A Stereo Cassette Deck

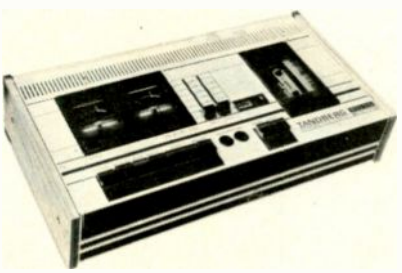
Similar to CD-301A except includes the Dolby noise reduction system. (S + N)/N −48 dB; Dolby in −60 dB; CrO_2 −51 dB. Has the same controls and features as the Model CD-301A plus pause button. $189.95



TANDBERG

TCD-310 Cassette Recorder Deck

Features Dolby noise-reduction system; three motors; two peak-reading record meters; chromium-dioxide/low-noise, high-output tape switch; automatic endstop. Wow & flutter 0.15% (Wrms). Response 50-12,000 Hz ±2 dB. Has mike (0.1 mV), radio (5 mV), and line (40 mV) inputs. Output 0.775 V. Wall mountable. Walnut cabinet. 19" × 4¼" × 9⅛" D. . . $499.00



TEAC

A-360S Dolbyized Stereo Deck

Features Dolby noise reduction system; wow & flutter 0.07%. Has 400-Hz Dolby calibration tone generator; MPX filter switch; 8 external Dolby calibration controls; separate 3-position bias and equalization switches; memory rewind counter; total automatic shut-off in record and play mode; dual VU meters. Response 30-16,000 Hz (30-15,000 Hz ±3 dB with CrO_2 tape). S/N 60 dB (Dolby in); 50 dB (without Dolby). Overall size 17¾" W × 4¾" H × 10¼" D. $389.50

A-400 Dolbyized Stereo Deck

Features Dolby noise-reduction system; twin rotary lever transport-control system; separate bias/equalization switches; LED peak indicator; response 30-16,000 Hz (CrO_2 tape), S/N 60 dB (WTD with Dolby); wow & flutter 0.08%. $329.50

A-160 Dolbyized Cassette Deck

Features Dolby noise-reduction system; high-density "Permaflux" heads; separate bias and equalization switches; straight-line level controls (two record, two output); two VU meters; tape-run indicator light; and 3-digit resettable tape counter. Has left and right low-imp. mike jacks; stereo headphone jack; pause control; two heads. Response 30-10,000 Hz with standard tape (30-13,000 Hz with chromium-dioxide tape); wow & flutter 0.15% S/N 58 dB (with Dolby). 16½" W × 4¾" H × 10⅛" D $259.50

A-170 Dolbyized Cassette Deck

Features Dolby noise-reduction system; separate bias & equalization switches; straight-line level controls; automatic shut-off; response 30-16,000 Hz (CrO_2 tape); wow & flutter 0.09% (WTD with Dolby). $239.50

A-450 Dolbyized Stereo Cassette Deck

Features Dolby-B type noise-reduction system. Has switchable controls for bias and equalization for various tape types; mike/line inputs (mixable); two separate erase and record/playback heads. S/N 60 dB (with Dolby); wow & flutter 0.07%. Response 30-11,000 Hz with standard tape (30-15,000 Hz with low-noise tape; 30-16,000 Hz with chromium-dioxide tape). Inputs: mike 0.25 mV; line 0.1 V. Output: 0.3 V. 7" H × 17½" W × 10⅝" $479.50

TECHNICS BY PANASONIC

RS-279US Cassette Recorder Deck

Dolbyized stereo design with standard and chromium-dioxide tape selection and HPF ultra-longlife heads. Three-head system permits off-tape monitoring. Wow & flutter 0.1%. (S +N)/N 60 dB (with Dolby), 50 dB (without). Response 20-17,000 Hz (chromium-dioxide tape), 20-15,000 Hz (standard tape). Has two motors including electronically controlled direct drive for capstan, optional remote control, memory rewind, pause control, electronic autostop. Mike/line input selection. 5⅜" H × 16⅝" W × 13½" D. $499.95

RS-263AUS Cassette Recorder Deck

Dolbyized stereo design with standard tape & chromium-dioxide selection. Wow & flutter 0.2%. Response 30-13,000 Hz (standard tape); 30-14,000 Hz (chromium-dioxide). (S + N)/N 45

The best ears in the business have judged our recorders.

Like to hear their verdict?

Model 8080 8-Track

Model 4766 Cassette Deck

"It (the Model 4766 Cassette Deck) is in every way typical of the finest cassette-deck performance—which is to say, very fine indeed. . . . It will probably do as many things as any cassette machine we know of. Furthermore, it does them about as well as the current state of the cassette art allows, and at a very down-to-earth price."

STEREO REVIEW, Aug. 1975

". . . Wollensak is showing the way with innovations and improvements in these machines . . . the Model 8080 (8-Track) has a frequency response which extends to over 16kHz and exhibits an excellent signal-to-noise ratio and low distortion . . . how does the 8080 compare with a similarly-priced cassette machine? In terms of the basic performance parameters . . . there isn't much to choose between the two formats at this price level."

AUDIO, Aug. 1975

Those are excerpts from recent reviews of Wollensak's 4766 Cassette and 8080 8-Track recorders. The experts have tested, analyzed, charted and listened to our decks. Now it's your turn. Because, as far as we're concerned, there's only one, true measure of our equipment—your ears.

There *is* a difference. It takes a sensitive, sophisticated ear to hear it, but that's the ear we're designing for at Wollensak.

We invite you to audition these recorders at your dealers. Compare price and performance with anything else on his shelves. And, if you still can't hear the difference, don't buy ours. While you're there, though, ask him for reprints of the entire reviews we've quoted here. Or, if you prefer, write 3M Company, Box 33050, Wollensak Dept. 200, St. Paul, Minnesota 55101.

3M COMPANY

Wollensak by 3M. Not for Tin Ears.

CIRCLE NO. 51 ON READER SERVICE CARD

7 8-TRACK TAPE MACHINES

AKAI

GXR-82D 8-Track Record/Play Deck

Response 40-17,000 Hz ±3 dB; (S+N)/N 47 dB; record/play & erase heads; wow & flutter

0.25% rms. Features pause switch; automatic stop and continuous playback; fast-forward; automatic and manual program selection; VU meters; headphone monitoring jack; DIN jack; line input and output jacks. 13.6" × 5.3" × 10.5" $249.95

BSR McDONALD

TD-8S 8-Track Playback Deck

Deck includes a 2-stage stereo preamp, 0.75 V

output. Comes with cabinet and connecting cables. 7⅜" W × 10½" × 3¾" 59.95

CHANNEL MASTER

HD6075 8-Track Record/Play Deck

Features pushbutton automatic stop; pushbutton control of fast-forward & pause; separate right/left record-level controls; right/left illuminated record meters; automatic track changing; manual track selector; blackout lights for auto stop, recording, track indicator; inputs for right/left mike & aux.; outputs for right/left channel & stereo headphone. Comes with pair of mikes & patchcord. Veneer cabinet with outer veneer of wood-grained vinyl. 22" W × 4¾" H × 9½" D $120.00

CTR

Model 3 8-Track Recorder

Frequency response 30-15,000 Hz with "Scotch" Classic tape; 30-12,000 Hz (standard tape); S/N 60 dB (Dolby on), 50 dB (Dolby off); wow & flutter 0.1% weighted rms; features front loading; rapid fast-forward; 8-track automatic cueing; automatic safety shut-off in both record & play modes; two-position bias &

equalization switch (Classic & standard); Dolby FM broadcast listening capability plus Dolby recording & playback; multiplex filter; digital minute/second counter for convenient timing; peak limiter switch. 22¼" L × 7¼" W × 6" D $399.95

GLENBURN

SP-10 8-Track Stereo Playback Deck

Solid-state, 3-stage preamplifier; straight-line head positioning system for precise track selection; heavy-duty four-pole synchronous motor; channel indicator light; positive automatic or manual channel selection; comes complete with connecting cables. Walnut-grain case. $59.95

HITACHI

D-135 Record/Play Deck

Two-channel stereo system; response 40-12,000 Hz; crosstalk 50 dB; wow & flutter

0.15% W rms; S/N 55 dB; features automatic cueing; automatic stop at program start point; automatic repeat; level control; headphone jack; pushbutton control of program, fast-forward, repeat, record, automatic stop, on/off, and pause. 14½" × 4¾" × 10". $159.95

D-128 Cartridge Player Deck

Two-channel stereo deck; response 50-10,000 Hz; output level 150 mV/ch; S/N 38 dB; crosstalk 30 dB; wow & flutter 0.3%; features manual program selector; program indicator light; automatic return to first program after fourth program ends; genuine walnut cabinet. 8½" × 4⅛" × 10⅜" $49.95

JVC

ED-1103 8-Track Tape Deck

Playback stereo design. Response 30-15,000 Hz; (S+N)/N −45 dB; wow & flutter 0.2% rms. Output 0.8 V. 3⅝" × 6¾" W × 9⅝" D .. $49.95

ED-1240 8-Track Tape Deck

Record/play stereo design. Response 30-15,000 Hz (40-12,000 Hz ±3 dB); (S+N)/N 50 dB from peak level; wow & flutter 0.2% rms; crosstalk 50 dB & 40 dB channel separation, both at

1 kHz. Features automatic eject control, two VU meters, four front-mounted tape controls. 120-V, 60-Hz operation. 4¼" H × 13½" W × 9⅛" D $169.95

ED-1245 8-Track Play/Record Deck

Features three-in-one head; automatic or manual cartridge eject; fast-forward; two VU meters; two record-level controls; electronic governor d.c. motor; automatic noise-reduction system (ANRS) on both record & playback; response 40-12,000 Hz ±3 dB; wow & flutter 0.2% rms; S/N 60 dB; has 2 mike & 2 line input jacks; two line & headphone output jacks; DIN jack. 4⁵⁄₁₆" H × 15¹³⁄₁₆" W × 9⅜" D $249.95

LAFAYETTE

RK-885 8-Track Record/Playback Deck

Record/play deck designed to be used with any stereo receiver or amplifier with tape in/out jacks. Has mike input jacks for "live" stereo recording with optional microphones; dual VU meters; recording volume controls; mode switch; record indicator light; illuminated channel indicator lights. Comes with connecting cables. 13" W × 5⅝" H × 8⅝" D $119.95

RKD-985 8-Track Deck with Dolby

Features Dolby-B noise-reduction system in stereo record/playback; Autostop switch to stop unit during playback or record mode at end of each program; mode switch for continuous operation or automatically stopping unit; S/N 55 dB (Dolby in), 45 dB (Dolby out); response 30-11,000 Hz; wow & flutter 0.25% rms; bias frequency 60 kHz; input sensitivity: mike 1 mV, aux. 100 mV; channel separation 30 dB. $199.95

RK-990 8-Track Record/Play Deck

Features stop/eject after any program (1-4) or at end of cartridge; sound-with-sound; concen-

tric mike & aux. volume controls; record level meters for each channel; d.c.-type governor-controlled motor; response 30-12,000 Hz; bias & erase frequency 60 kHz; output level 1 V max.; input sensitivity: mike 1 μV, aux. 100 μV;

7 8-Track Tape Machines

channel separation 45 dB at 400 Hz; S/N 45 dB; Walnut side panels. 12" W × 3¾" H × 9⅛"D. $179.95

MERITON

HD-830 8-Track Play/Record Deck
Response 40-13,000 Hz; wow & flutter 0.15% Wrms (playback), 0.25% Wrms (record/play-

back); S/N 45 dB; features pause control switch; two illuminated VU meters; eject button; program selector switch; vertical-slide record level controls for left/right channels; automatic shut-off or continuous play switch; fast-forward; stereo headphone & mike jacks. Walnut cabinet with brushed chrome face. 14¼" W × 5⅜" H × 9⅜" D. $139.95

HD-800 8-Track Playback Deck
Designed to be used with any stereo system; features program selector button; repeat button; response 30-12,000 Hz; wow & flutter 0.17% Wrms; channel indicator lights. Walnut veneer cabinet with brushed chrome face. 10⅝" W × 5⅜" H × 8¾" D. $49.95

RADIO SHACK

TR-882 Record/Play Deck
Features dual VU meters; level controls; push-button fast-forward, pause, and record interlock; program select button; response 50-10,000 Hz; wow & flutter 0.2%; front-panel mike input for live recording. Walnut-finish wood-grain case. 3⅞" × 13¼" × 8⅜" ... $99.95

TR-801 Record/Play Deck
Features digital timer; push-button control of continuous play, program repeat, auto-stop,

push-button eject, program change, fast-forward, and pause; response 50-12,000 Hz; wow & flutter 0.2%; front-panel mike input for live recording. Walnut wood cabinet. 4¾" × 16½" × 10". $149.95

TR-700 Record/Play Deck
Record/play deck with automatic stop; output-level adjust; front-panel mike input jacks; record-indicator light; program-change button; walnut-grained vinyl veneer cabinet. 4½" H × 8½" W × 13¼" D $79.95

SHARP

RT-820 8-Track Record/Play Deck
Frequency response 50-10,000 Hz; S/N 45 dB; auto-eject push-button; pause control; automatic/manual program changeover; separate record VU meters; slide-rule recording-level controls. 15¾" W × 4½" H × 9⅛" D. .. $149.95
RT-821. Similar to RT-820 but includes APSS (auto program search system); time display tape counter $169.95

SONY from SUPERSCOPE

TC-208 8-Track Playback Deck
Response 50-10,000 Hz; wow & flutter 0.25% rms weighted. Features program select and re-

peat buttons, fast-forward button, program indicating light, automatic track switching. 120-V, 60-Hz operation. 8¾" × 4¹⁄₁₆" H × 9½" D $89.95

TC-228 8-Track Recorder Deck
Stereo design. Response 30-13,000 Hz; (S + N)/N 45 dB. Bias frequency 95 kHz. Wow & flutter 0.17%. Has two VU meters, one d.c.-type motor. Aux. (70 mV sensitivity) & mike (—70 dB sensitivity) inputs & line output (0.5 V sensitivity). Features automatic total mechanism shut-off. Walnut case. 14⅜" × 4¾" × 8¾" D. ... $199.95

SUPERSCOPE

TD-28 8-Track Player Deck
Has built-in automatic tape program selector which plays all four programs; illuminated pro-

gram indicators. Features a program selector push switch for selecting specific programs and a fast-forward for bypassing unwanted material; repeat switch for continuous replay. Response 50-10,000 Hz; (S + N)/N —48 dB; 117-V, 60 Hz operation. Walnut wood-grained cabinet with white gold-anodized faceplate. 7¼" W × 4⅞" H × 9¾" D $74.95

SYLVANIA

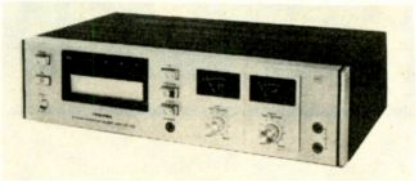
ET3752W 8-Track Play/Record Deck
Features two VU meters; automatic and manual eject/shut off; two mike and one headphone jack; pause control; individual record/playback level controls; record safety interlock; frequency response 30-21,000 Hz (playback), 50-10,000 Hz (record/playback); wow & flutter 0.3% rms; S/N 40 dB; channel separation 40 dB. Walnut-grained vinyl cabinet. 4⅜" H × 15¾" W × 8½" D $179.95

TELEX

48-H 8-Track Changer
Four program modes for manual or automatic selection of twelve 8-track stereo cartridges for up to 16 hours of non-repetitive music; response 40-12,000 Hz; stereo power amp and preamp outputs; supplied with dust cover. 18¼" × 9" H × 16¼" D. $319.95
48-D. Same as 48-D but without power amplifier. $269.95

TOSHIBA

PE-1150 8-Track Stereo Deck
Plays/records 2-ch stereo cartridges; automatic play operation; records from phono, radio, or



mike; response 100-10,000 Hz; S/N 40 dB; wow & flutter 0.3% rms; headphone & mike jacks; two VU meters; rotary-type controls operate left and right recording-level channels; full complement of controls; walnut veneer cabinet; 15¾" W × 4¼" H × 10¾" D. $149.95

WOLLENSAK

8056 8-Track Recorder Deck
Features two-position tape selector switch (standard or Scotch "Classic"); response 30-

12,000 Hz (standard), 30-15,000 Hz (Classic); automatic recording level circuit; individual manual recording level controls for each mike input; digital time counter calibrated in minutes and seconds; special cueing system; features fast-forward mode; repeat switch for replay of one or all four pairs of tracks; switchable automatic cartridge ejection; pause switch; walnut shelf-style cabinet. $269.95

8075 8-Track Recorder Deck
Features record/play of 8-track Dolbyized cartridges as well as cartridges using the new

3M ferric-oxide tape. Has minutes/seconds timer for precise timing of recordings; fast-forward mode 3½ times actual speed; special cueing system. Response 30-15,000 Hz ±3 dB with Scotch special high-performance tape (30-12,000 Hz with standard tape). (S + N)/N 60 dB at 4000 Hz and above (Dolby system on). Sensitivity: mike 0.25 mV; aux. 80 mV. 19¾" × 5" × 10¼" $399.95

For 4-Channel Components. . . See SECTION 9

8 STEREO COMPACTS

JULIETTE

C950-135 Cassette/Receiver/Phono
Combines a stereo cassette recorder/player, an AM-FM stereo receiver, full-size record changer,

a pair of air-suspension speaker systems, and two dynamic mikes. Features automatic system shut-off; illuminated slide-rule tuning dial; lighted station indicator; tuning VU meter; stereo indicator light; left/right recording VU level control meters; record interlock push-button; mixing for sound-on-sound; digital tape footage counter; left/right mike inputs; stereo headphone jack; built-in tape storage compartment. Comes with 45 rpm adapter, 10-ft speaker cords. Control center: 9¾" H × 21¾" W × 15" D; speakers: 22" H × 12½" W × 9" D. $375.00

C648-135. Similar to C950 except has 8-track cartridge recorder/player instead of cassette unit; automatic/manual tape program change; tape channel indicators. $350.00

MERITON

HR-108 AM-FM Stereo/8-Track Player
Combines AM-FM stereo receiver, 8-track tape player, and pair of speaker systems; FM sensitivity 4 μV for 30 dB quieting; S/N 60 dB; HD 1.0% stereo; response 20-15,000 Hz ±6 dB at 1 W; features back-lighted tuning dial; aux. tape input and output jacks; phono input for ceramic cartridges; automatic/manual track switching of cartridges; built-in loudness compensator; 6½" full-range speaker in each simulated walnut-veneer cabinet (15 7/16" H × 10¾" W × 5¼" D); control center simulated walnut-veneer cabinet. 5½" H × 18⅞" W × 13" D $159.95

HF-1008 AM-FM/8-Track/Phono
Combines AM-FM stereo receiver, 8-track tape player, 3-speed BSR manual/automatic turntable, and pair of speakers. $199.95

PANASONIC

RS-828S 8-Track/Stereo Receiver
AM-FM stereo receiver with built-in twin-slot 8-track player/recorder; will record from original sources and pre-recorded tapes in lower slot, playback in upper slot; features auto-start and auto-stop; Quadruplex II circuitry for enhanced sound of stereo discs and tapes; mike mixing in playback mode with optional microphones; two 6½" air-suspension speaker systems; continuous tone, balance, and volume controls; tuning/VU meter; 3-pos. monitor sw.; Wood cabinets. $329.95

SE-2280. Similar to RS-828S except with built-in automatic record changer. $229.95

SE-3280. Similar to RS-828S except with built-in automatic record changer; speaker systems each with 6½" woofer and 2½" tweeter. $299.95

RS-817AS. Similar to RS-828S with two-channel 8-track recorder. $199.95

RE-8145 8-Track/Stereo Receiver
AM-FM stereo receiver with built-in 8-track player; lighted program indicator; "Stereo Eye;" separate bass, treble, balance & volume controls; fixed a.f.c. on FM; FM & AM linear scale; comes with two 6½" air-suspension speaker systems. $169.95

RE-8125 8-Track/Stereo Receiver
AM-FM stereo receiver with built-in stereo 8-track recorder; Quadruplex II circuitry for 4-ch enhancement of stereo sources; level meter for recording; auto-stop in record mode; automatic record-level control; locking fast-forward; comes with two 6½" air-suspension speaker systems. $199.95

RE-8175 8-Track/Radio/Phono
AM-FM stereo receiver with built-in 8-track player and record changer; anti-skating and cueing lever; comes with two 6½" air-suspension speaker systems; hinged dust cover. $199.95

SE-3180. Similar to RE-8175 except 8-track recorder/player; automatic stop in record mode. $249.95

RE-8015 Cassette/Radio/Phono
AM-FM stereo receiver with built-in record changer and cassette player/recorder; automatic stop in play & record modes; automatic record-level control; 3-digit tape counter; comes with two 6½" air-suspension speaker systems; detachable microphone; dust cover. $249.95

SE 1250. Similar to RE-8015 but includes Quadruplex II circuit for derived 4-ch enhancement of stereo source material; two two-way air-suspension speaker systems; cassette storage compartment; pre-recorded cassette. $299.95

SE-2250. Same as SE-1250 except tape selector switch; fast-forward & pause control. $349.95

SANYO

DXT5220 8-Track/Phono/Receiver
Combines 8-track record/play deck, AM-FM stereo receiver, 3-speed automatic record changer, and pair of matched two-way acoustic-suspension speaker systems; features built-in 4-channel speaker matrix circuit for future use; back-lighted receiver tuning dial; FM-stereo indicator; deck has fast-forward; pause control; peak-reading record-level indicator; lighted channel indicators; phono has low-mass tubular tonearm; automatic tonearm lock; adjustable stylus pressure gauge; dust cover. Speaker size 17 5/16" H × 11 7/16" W × 7 3/16" D. $199.95

GTX4505. Similar to DXT5220 but with cassette record/play deck instead of 8-track cartridge unit $199.95

GXT4512 Cassette/Phono/Receiver
Combines AM-FM stereo receiver; stereo cassette record/play deck; 3-speed automatic record changer; pair of matched acoustic-suspension speaker systems; features built-in 4-channel speaker matrix circuitry for future use; cassette unit has pushbutton fast-forward and rewind; record interlock; calibrated VU meter; separate recording amplifiers; phono has anti-skate mechanism, adjustable tracking force; cueing control; ceramic cartridge with diamond stylus. Speaker size 19½" H × 12" W × 8" D $249.95

GXT4514. Similar to GXT4512 except includes Garrard automatic changer with 4-pole induction motor; ceramic cartridge with diamond stylus; dust cover; three-way speaker systems. Speaker size 21½" H × 13½" W × 10½" D $299.95

DXT5250 Compact Stereo System
Combines 8-track cartridge record/play deck; stereo cassette record/play deck; AM-FM stereo receiver; Garrard automatic record changer with diamond stylus cartridge & dust cover; pair of three-way acoustic-suspension speaker systems. Speaker size 21½" H × 13½" W × 10½" D $399.95

SHARP

SR-113 8-Track Player/Receiver
Combines AM-FM stereo receiver with 8-track tape player and two speaker systems; features program selector & channel indicator light for 8-track play; rotary mode selector for tape-aux./phono/AM-FM; full range of input/output terminals for phono, tape/aux., tape & speaker out; front-panel stereo headphone jack; slide volume, balance, tone controls; illuminated slide-rule tuning dial; FM stereo indicator. Control center 18⅞" W × 4¼" H × 10¼" D; pair of air-suspension speakers with full-range 6½" transducer 10⅛" W × 16¾" H × 5⅞" D $129.95

SG-114A. Similar to SR-113 but includes full-size BSR turntable with ceramic stereo cartridge/diamond stylus; each speaker enclosure houses 8" woofer & 2⅜" tweeter; control center 18⅞" W × 4 3/16" H × 14⅛" D $179.95

SC-153 Cassette Recorder/Receiver
Combines AM-FM stereo receiver, cassette tape recorder, and two speaker systems; features 3-digit tape counter with push-button reset; mechanical automatic tape shut-off; a.l.c.; pause control for tape editing & monitoring; push-button control of record, play, fast-forward, rewind, eject, and pause; comes with pair of air-suspension speakers each with 8" woofer & 2⅜" tweeter; pair of microphones; cassette tape; simulated walnut-grained vinyl on wood product material. Control center: 18⅞" W × 5¼" H × 11 9/16" D; speakers: 12" W × 20" H × 8" D $229.95

8 Stereo Compacts

SG-165. Similar to SC-153 except with full-size three-speed automatic turntable; ceramic stereo cartridge with flipover diamond stylus; control center: 24⅞" W × 4¾" H × 14⁹⁄₁₆" D. Speaker systems optional extra. $279.95

SR-162 AM-FM Stereo/8-Track
Combines an AM-FM stereo receiver with 8-track tape player; push-button cartridge program selector; push-button function selector switch; full complement of input/output terminals; lighted FM stereo indicator; cartridge program indicator light. 18¼" W × 4½" H × 9⅛" D. $139.95

SG-164. Similar to SR-162 but includes full-size, three-speed record changer; stereo cartridge with flipover diamond stylus; 18¼" W × 4¼" H × 14¾" D. $189.95

SR-172 AM-FM Stereo/8-Track
Combines AM-FM stereo receiver with 8-track tape player; features built in APSS (auto

program search system) locates music cue on cartridge; full range of input/output terminals; lighted FM stereo indicator and tuning meter. 18¼" W × 4½" H × 9⅛" D. $149.95

SG-174. Similar to SR-172 except includes full-size, three-speed record changer with ceramic stereo cartridge, flipover diamond stylus. 18¼" W × 4½" H × 14¾" D. $199.95

SR-166 8-Track Record/Play/Receiver
Combines AM-FM stereo receiver with 8-track recorder/player; separate illuminated record-level meters; function selector switch; auto/manual switchover; automatic cartridge eject. 18¼" W × 4½" H × 12⅜" D. $249.95

SG-167. Similar to SR-166 except includes full-size, three-speed record changer with magnetic stereo cartridge and diamond stylus. 18½" W × 4½" H × 14¾" D. $299.95

SONY

HP-810/SS-810 Record Player/Receiver
Combines AM-FM stereo receiver with 3-speed Dual 1211 auto/manual turntable; features

built-in pitch control; viscous-damped tonearm lift lever; anti-skating compensation; built-in pressure gauge; Sony magnetic cartridge with diamond stylus; automatic mono/stereo switch; loudness compensation control; continuous bass & treble controls; tape monitor switch; comes with pair of two-way speaker systems each with 8" woofer, 3" tweeter (22½" H × 13" W × 8½" D); 8-ohm imp.; FM ribbon antenna; 45 rpm manual adapter; manual/automatic spindle; dust cover. $440.00

HP-161 Record Player/Receiver
Combines AM-FM stereo receiver with 3-speed BSR automatic/manual changer; ceramic cartridge with diamond stylus; FET front-end; automatic mono/stereo switching; separate slide-type bass, treble, volume, and balance controls; tape monitor switch; built-in a.f.c.; comes with a pair of two-way speaker systems each with 6½" woofer, 2" tweeter, (4⁵⁄₁₆" H × 9¼" W × 5⅛" D); 8-ohm imp.; FM ribbon antenna; 45 rpm manual adapter; manual/automatic spindle; dust cover. $200.00

SYLVANIA

CST5736W Phono/8-Track/Receiver
Combines a Garrard automatic turntable with Pickering magnetic cartridge, viscous-damped cue/pause control, and anti-skating device; an AM-FM stereo receiver; an 8-track stereo tape player; and a pair of sealed air-suspension speaker systems (18¾" × 12" × 9" D) each with 10" woofer and a 3" tweeter. Has built-in Phase Q4 matrix to synthesize regular two-channel stereo program material. 12½ W rms/ch into 8 ohms (45-20,000 Hz) at 1% THD. FM sensitivity 2.5 μV for 30 dB quieting; capture ratio 5.5 dB. Walnut cabinets with dust cover. Control center 9¼" H × 23½" W × 15¾" D. $399.95

CST5735W Phono/8-Track/Receiver
Features full-size BSR automatic turntable, AM-FM stereo receiver, 8-track play/record deck, pair of air-suspension speaker systems; has built-in Phase Q4 matrix; front-panel headphone jack; cut/boost bass & treble controls; 5 W rms/ch into 8 ohms (60-20,000 Hz) at 1% THD. FM sensitivity 4 μV; S/N 60 dB. Walnut-grained vinyl. Control center 9⅞" H × 25⅜" W × 15⅝" D; speakers 16¼" H × 10¾" W × 6¾" D $329.95

CS5720W. Same as 5735W except 8-track tape player; control center 9⅞" H × 18" W × 16⅜" D; speakers 15⅜" H × 9¾" W × 7¼" D. . . $229.95

MS3728W Phono/Receiver
18 W rms/ch into 8 ohms with both channels driven; includes AM-FM stereo receiver, Dual 1214 automatic turntable with Shure M93E magnetic cartridge, pair of sealed air-suspension speaker systems; FM sensitivity 1.9 μV; S/N 60 dB; capture ratio 1.5 dB; frequency response 17-35,000 Hz; power bandwidth 17-30,000 Hz; features front-panel headphone jack; AM-FM signal-strength meter. Walnut veneer cabinets. Speakers 18¾" H × 12" W × 9" D. Control center 9½" H × 12" W × 18½" D. $399.95

ACS39W Phono/Receiver
30 W/ch into 8 ohms (20-20,000 Hz); frequency response 7-70,000 Hz; FM sensitivity 1.8 μV; S/N 67 dB; features BSR 510 automatic changer with Shure M75-6S magnetic cartridge/diamond stylus, base & dust cover; pair of air-suspension speakers with 10" woofer, 3" mid-range, and 2½" tweeter in each unit. Walnut-grained vinyl enclosures. Receiver 6" H × 17¾" W × 15" D; turntable 7⅛" 17¾" × 14¼"; speakers 22⅞" × 14⅝" × 11⅜". $499.95

TELEX

TXC 1101 AM-FM Stereo/8-Track
Combines an AM-FM stereo receiver, an 8-track tape player, with pair of air-suspension speaker systems. Receiver has FM stereo beacon, a.f.c., blackout dial with slide-rule indicator; selector switch for phono, tape, aux., multiplex, FM and AM; frequency response 20-20,000 Hz; dist. 2% at rated output; manual track selection for tape player; slide controls for loudness, balance, bass & treble. Each speaker contains 8" woofer & 3" tweeter (18" H × 10" W × 6¾" D). Control center 4¼" H × 22⅛" W × 11½" D. $189.95

TXC 1100. Same except includes 4-speed automatic Garrard record changer; tinted hinged dust cover. 4¼" H × 22⅛" W × 14⁹⁄₁₆" D. $239.95

ZENITH

F594W Phono/8-Track/Receiver
Combines AM-FM stereo receiver, built-in record changer, built-in 8-track player/recorder and a pair of Allegro 3000 speaker systems; cartridge unit features sequential program selector, fast-forward, record, pause, and slide level controls; slide mode switch; record-level meter for each channel; 4 illuminated program indicator lights; 3-speed automatic changer handles 7", 10" & 12" discs; each speaker has 10" woofer & 3½" horn tweeter, LC crossover network; response 40-15,000 Hz; 16 ohms; control unit 10⅛" H × 25½" W × 15¼" D; speakers 22¾" H × 14¼" W × 8¾" D. $419.95

F685W 8-Track/Receiver
Combines an AM-FM stereo receiver with built-in 8-track player/recorder and pair of Allegro 1000 speaker systems; cartridge unit includes sequential program selector, record, fast-forward, pause, and slide recording-level controls; 4 illuminated program indicator lights; record-level meter for each channel; each speaker has 6½" woofer & 3½" horn tweeter, LC crossover network; comes complete with two mikes, two stands, one blank 40-minute cartridge; control unit: 5" H × 24¾" W × 10¾" D; speakers 16½" H × 10½" W × 7½" D. $269.95

AN IMPORTANT WORD FOR OUR READERS

The prices listed in this Directory are those supplied by manufacturers and/or distributors. But, as is the case with most prices these days, they are subject to change depending on foreign exchange rates, the current value of the dollar, and the availability of raw materials and components. Prices may also vary depending on the part of the U.S. in which you live. Listed prices often reflect costs in the manufacturer's geographical area.

9 4-CHANNEL EQUIPMENT

THERE has been an impressive improvement in available four-channel hardware and a steady, if less impressive, improvement in record quality and quantity.

"Quadraphony" is an extension of stereo, with an ability to reproduce four more-or-less discrete channels of program information through four speakers, usually placed near the corners of a rectangular listening room.

There are two completely different views on the basic approach to four-channel sound. The "surround-sound" technique literally surrounds the listener with performers, which can be an exciting, if not realistic, listening experience. Another school of thought holds that the proper function of quadraphonics is to add the ambience of the concert hall to the reproduced sound. Ambience four-channel places the performers in their usual positions across the front of the room, with rear speakers carrying the fainter "hall" sounds and reverberation. With suitably engineered recordings, startlingly realistic effects are possible.

Irrespective of recording techniques involved, a four-channel system requires the same basic hardware and speaker configuration. There are two basic types of four-channel systems: matrix and discrete. Most four-channel records and (at this time) all four-channel broadcasts use a matrix technique. Here, the four channels are combined to form two stereo channels that can be played with a conventional phono cartridge and even reproduced as a normal stereo program through two speakers. A matrix decoder in the playback system separates the stereo signal into four program channels, which are separately amplified and reproduced by two pairs of speakers located front and rear.

Matrix systems are inherently incapable of providing fully separated, or "discrete," reproduction. Special "logic" control circuits have been devised for the two principal matrix systems (SQ and QS), which under optimum conditions give them much of the character of a true discrete four-channel system. Inexpensive four-channel receivers and decoders, which usually lack logic enhancement, are likely to have a vague or ambiguous directionality, but nevertheless represent a worthwhile improvement over two-channel stereo. All matrix systems are capable of enhancing stereo programs by synthesizing the rear channels from the out-of-phase content of a two-channel program.

Discrete four-channel programs are available on tape, in the open-reel and 8-track cartridge formats. The number of open-reel four-channel tapes is limited and four-channel tape decks are expensive, but there is a considerable library of four-channel, 8-track cartridges and a number of reasonably priced players for home and automobile use.

There is also a "discrete" four-channel disc system, developed by JVC of Japan, known as the CD-4 system. CD-4 records are marketed in this country by RCA and several smaller companies. They must be played with a special phono cartridge whose frequency response extends to 50,000 Hz instead of the usual 20,000 Hz audio limit, and a special demodulator is used to extract four virtually discrete channels from the recorded program. Like matrixed records, CD-4 discs can be played in stereo with no loss of program content.

A basic four-channel system requires a record player (equipped with a CD-4 cartridge if that capability is needed), a matrix decoder or CD-4 demodulator (or both), a four-channel amplifier, and four speakers, preferably identical (or at least with similar mid- and high-frequency performance). It is possible to convert an existing stereo system to four channel, using the original amplifier for the rear channels. However, it is much more convenient to use a four-channel receiver, whose functions are internal and controlled by front-panel switches. Many four-channel receivers have matrix decoders for both SQ and QS systems, plus a CD-4 demodulator (or a jack to accommodate one). The more expensive models, in addition to more powerful amplifiers and more sensitive FM tuners, have logic circuits to improve the performance of their matrix decoders.

BGW

4X250 Four-Channel Amplifier
200 W/ch with four channels driven into 8

ohms at 0.2% THD; frequency response 2-75,000 Hz +0, −3 dB; 20-20,000 Hz +0, −0.2 dB; noise & hum 110 dB below rated output into 8 ohms; input sensitivity 2 V ±2% for 40 V out (200 W, 8 ohms); voltage gain 26 dB; damping factor 500; electronic power limiters; plug-in circuit modules. 19" rack mount × 7" H × 17" D $1499.00

BOSE

4401 Four-Channel Preamplifier
Provides complete 4-channel and matrix capability. Features four independent channels of

preamplification; low-noise phono preamp circuitry; modular PC board construction; tape recording flexibility; provision for external equalizers; compatibility with all types of program sources, modes, and equipment. 6" H × 18" W × 13⅛" D $599.00
SQ matrix decoder with full logic $74.95
Cabinet $34.95

DYNACO

QSA-300 4-Ch Power Amplifier
75 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.25% both channels driven, with FTC pre-conditioning; circuitry d.c.-coupled after input; fully complementary output stage. MC-3 output meter accessory kit available. Supplied with walnut veneer end panels. 18½" × 15½" × 8"D.
Kit $399.00

QSA-300M/A. Assembled, supplied with four illuminated output meters. $649.00

HEATH

AA-2010 Four-Channel Amplifier
Will operate in mono, stereo, discrete 4-channel, or matrixed 4-channel with its built-in "universal" decoder. 35 W/ch min. rms into 8 ohms at 0.25% THD from 20-20,000 Hz. Can be used

9 4-Channel Amplifiers

to power two separate stereo systems or two 4-channel systems. Back-lighted front panel contains four calibrated VU meters with a meter-range switch covering three ranges: 0 VU at 35 W, 3.5 W, or 350 mW. Meters are used to balance output.
Kit $389.95
Pecan-stained veneer case $26.95

AA-2005A Four-Channel Amplifier

15 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz; frequency response 7-50,000 Hz ±1 dB at 1W, 5-70,000 Hz ±3 dB, IM 0.5% with 15 W output, 0.25% at 1 W output. Has built-in decoder optimized for SQ system but capable of handling all matrixed 4-channel material. Front-panel controls include pushbuttons for speaker, program source (tuner, aux., phono, tape), and mode selection; four audio-level controls plus master gain, and two headphone jacks. 4⅞" H × 19¾" W × 10" D. Walnut-stained veneer end panels.
Kit $139.95

HITACHI

IMA-40 Integrated Rear Amplifier

Converts 2-channel stereo system into 4-channel (discrete, SQ, RM). 13 W/ch rms; 5.5 W/ch rms at 25-35,000 Hz and 1% THD, 8 ohms. Features joystick 4-channel balance control, speaker switch, and tape monitors for 2- and 4 channels. $199.95

JVC

4VN-770 4-Channel Integrated Amp

16 W/ch dynamic power at 8 ohms (25 W/ch at 4 ohms); 12½ W/ch continuous power at 8 ohms with all four channels driven and at 0.5% THD. 100 W/ch dynamic power at 4 ohms with 2-channel power bridging (BTL). Power bandwidth 10-30,000 Hz. Input sensitivity: mag. phono 2.5 mV; aux. & tape monitor 75 mV. Features jacks for 4-channel headphones, built-in 4-channel decoder and synthesizer & optional remote control $279.95

4VN-990 4-Channel Integrated Amp

66 W/ch dynamic power at 8 ohms (70 W/ch at 4 ohms); 35 W/ch continuous power at 8 ohms (38 W/ch at 4 ohms) with all four channels driven & at 0.5% THD. 155 W/ch dynamic power at 8 ohms with 2-channel power bridging (BTL). Power bandwidth 10-30,000 Hz. Input sensitivity: mag. phono #1 & #2 2.5 mV; aux. & tape monitor 150 mV. Features 5-position tone control network for front and rear channel centering on 40/250/1000/5000/15,000 Hz. Can reproduce all four-channel discrete program material. Has built-in 4-channel decoder and synthesizer for reproducing 4 channels from regular 2-channel program material. Jack for optional remote control. 16⅝" × 5⅜" × 15⅜" $599.95

VN-5101 4-Channel Add-On Amp

Basically a 2-channel amplifier with 4-channel inputs to be used with your present stereo system. 34 W/ch dynamic power into 8 ohms (50 W/ch at 4 ohms); 22 W/ch continuous power into 8 ohms (24 W/ch into 4 ohms) with both channels driven and at 0.5% THD. Power bandwidth 30-30,000 Hz. Features 5-position tone-control network centering on 40/250/1000/5000/15,000 Hz. Has built-in synthesizer to produce 4-channels from regular 2-channel program material. Has jack for optional remote control. 10⅜" × 5⅞" × 14" D $129.95

LAFAYETTE

LA-84 4-Channel Amplifier

Features full-logic wave-matching plus variblend SQ decoder and complete circuitry to play all other 4-channel matrix and stereo sources; provision for optional built-in CD-4 discrete demodulator (can be installed later, if desired); direct-coupled output circuitry; separate 2- and 4-channel tape monitoring; power output 20 W rms/ch into 8 ohms at 0.5% THD (20-20,000 Hz) with all channels driven; power bandwidth 10-35,000 Hz; input sensitivity: mag. phono 0.6 mV (hi), 1.8 mV (med), 4 mV (lo), aux. #1 & #2 250 mV, 2- & 4-ch tape play 500 mV; hum & noise: aux. −75 dB, phono −60 dB, tape play -80 dB, tuner -75 dB; channel separation 65 dB. 15½" W × 4½" H × 12¾" D. $349.95
CD-4 Demodulator package. $69.95

MARANTZ

4000 Preamp/Adapter

Designed to permit two-channel stereo systems to be converted to 4-ch operation with addition of pair of speakers. Serves as control center for volume, balance, mode, and features rear-channel tone controls. All existing preamp controls remain completely operable. Features Vari-Matrix, balance controls, low and high filters, four illuminated meters, and remote-control output $249.95

4070 4-Channel Integrated Amplifier

Complete four-channel control amp. Has circuits to synthesize 4-channel sound from 2-channel stereo records, all necessary balancing controls, input jack for optional SQ decoder, and remote-control. 15 W/ch continuous power with all channels operating, 35 W/ch continuous power (2 channels) into 8 ohms (40-20,000 Hz) at 0.9% THD. Input sensitivity: 1.8 mV; aux. 180 mV. Features main/remote speaker switch; 4-channel headphone jacks. 14¼" × 4¾" × 12" D Gold anodized front panel. $299.95

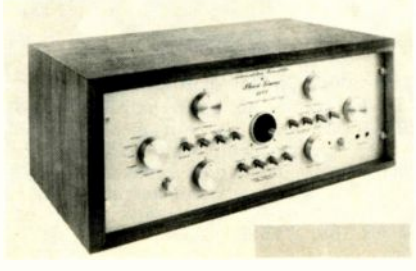
4140 4-Channel Integrated Amplifier

Has complete 2- or 4-channel capability. 25 W/ch continuous power into 8 ohms and at 0.3% THD with all four channels driven (70 W/ch for 2-channel operation, 20-20,000 Hz at 0.3% THD). Input sensitivity: mag. phono 1.8 mV; aux. 180 mV. Has inputs for 4-channel discrete programs, and circuits for synthesizing 4-channel sound from 2-channel stereo records or tapes. Has input jacks for optional SQ decoder & remote-control; four lighted level meters; tape monitor for two tape decks. 15⅜" × 5¾" × 14½" D $549.95

PHASE LINEAR

4000 Preamplifier

Features built-in SQ system with differential logic for enhanced 4-channel separation. Joystick-controlled 4-channel balance. Response 20-20,000 Hz ±1 dB (phono & high-level). Gain: phono 65 dB; high level 15 dB. Hum & noise: 72 dB below full output. 6 dB octave boost below 50 Hz, shelving +3 dB at 20,000 and +6 dB at 20 Hz. Downward expansion begins at −35 dB with ultimate limit −41 dB. Unlimiter window 35 dB wide, upper and lower thresholds simultaneously variable by means of front-panel unlimit threshold control. Has two monitor switches permitting any input source to be recorded on either of two tape machines, play back selection of either machine, or copy of tape machine 1 to 2 while listening to third source. Switched outlets will handle up to 25 amps. 19" W × 7" H × 10" D $599.00
Walnut cabinet $37.00



PIONEER

QM-800A 4-Channel Power Amp

Features 42½ W/ch (170 W total) dynamic power at 8 ohms (60 W/ch into 4 ohms); 30 W/ch continuous power into 8 ohms with all four channels driven & at 0.5% HD (36 W/ch into 4 ohms). Power bandwidth 5-50,000 Hz at 8 ohms & 0.5% HD. (S + N)/N 90 dB. Response 8-60,000 Hz ±0.5 dB. Input sensitivity: 500 mV at 50 kohms, 1 V at 80 kohms, and 2 V at 105 kohms. Has four level meters, universal power supply, speaker switch. Amp could be used as four separate channels, or as a 2-channel, 2-way multiamp system with an electronic crossover network $349.95

QC-800A 4-Channel Preamp

Has built-in SQ decoder and regular matrix decoder for synthesizing 4-channel reproduction from 2-channel discs or tapes. Design gives choice of three different 4-channel effects in addition to 4-channel discrete. Input sensitivity: phono #1 & #2 2.5 mV; tuner, aux. #1 & #2, tape monitor #1 & #2 150 mV. Recording output #1 & #2 150 mV. Has low and high filters, (S + N)/N (phono) 80 dB. Output voltage 2.5 V (4 V max.). Features tape-to-tape duplication and universal power supply. 17" × 5½" × 13¼" D. $279.95

QA-800A 4-Channel Integrated Amp

Features 36 W/ch (144 W total) dynamic power into 8 ohms (51 W/ch into 4 ohms); 20 W/ch continuous sine wave into 8 ohms with all four channels operating & at 0.5% HD (24 W/ch into 4 ohms). Power bandwidth 15-50,000 Hz at 8 ohms & 0.5% HD. Response 8-70,000 Hz ±1 dB. Input sensitivity: mag. phono #1 & #2 2.5 mV; tuner, aux. #1 & #2, tape monitor #1 & #2 200 mV. Tape output #1 & #2 200 mV. Has SQ and regular matrix decoder built-in and will provide for four-channel discrete tapes or discs. Universal power supply. 17" × 5½" × 13¼" D. $399.95

TOSHIBA

SB-404S 4-Ch. Integrated Amp

15 W/ch continuous power (60 W total) into 8 ohms and at 0.5% HD with each channel driven separately (26 W/ch for 2-channel stereo). 17 W/ch dynamic power (68 W total). HD 0.4% at rated output (0.1% at 2 W/ch). Response 10-55,000 Hz ±1.5 dB; power bandwidth 10-30,000 Hz at 0.8% HD. Sensitivity: mag. phono 1 & 2 3 mV; condenser phono 30 mV; tuner 150 mV; aux. 1 & 2 150 mV; tape 500 mV. Has RM (Regular Matrix) and SQ decoders. Has universal line inputs. Overall size 15¾" × 4½" × 11" $299.95

9 4-Channel Receivers

AKAI

AS-1070 Four-Channel Receiver

25 W/ch (50 W/ch, stereo) minimum rms at 8

ohms imp. 20-20,000 Hz at 0.3% THD; IHF FM sensitivity 1.8 μV; 70 dB FM selectivity; 1.0 dB capture ratio; features built-in CD-4 discrete, SQ full-logic, and regular matrix facilities for full 4-ch operation; 4-channel balance control; variable FM muting; two imputs for tape, one each input for phono and aux.; two stereo headphone outputs (front/rear); tape dubbing capability; multiple-speaker selection; two a.c. convenience outlets. $695.00

AS-1080DB Four-Channel Receiver
40 W/ch (80 W/ch, stereo) minimum rms at 8 ohms imp. 20-20,000 Hz at 0.2% THD; IHF FM sensitivity 1.8 μV; 80 dB FM selectivity; 1.0 dB capture ratio; Dolby noise-reduction circuit for 4- and 2-ch operation; features built-in CD-4, SQ full-logic, and regular matrix facilities for full 4-ch operation; 4-channel balance control; variable FM muting; two inputs for tape, one each for phono and aux.; two stereo headphone outputs (front/rear); tape dubbing capability; multiple-speaker selection; two a.c. convenience outlets. $895.00

FISHER

Studio Standard 634 Receiver
34 W rms/ch into 8 ohms with all channels driven; THD at rated power 0.5%; power band-

width 20-20,000 Hz; frequency response 20-50,000 Hz ±2 dB at 1W; S/N 65 dB (phono); FM sensitivity 1.8 μV (IHF); capture ratio 1.2 dB; THD stereo 0.4% at 100% mod., 1000 Hz; stereo separation 38 dB (1000 Hz); alternate channel selectivity 60 dB; features tuning meter; built-in CD-4 demodulator; built-in full-logic SQ; SQ phase logic for localization of performers; four VU meters; strapped power; mid-range tone control; joystick balance control. 23⅛" W × 15⅞" D × 7¼" H $799.95
534. Same as 634 except 24 W rms/ch; does not have mid-range tone control or the four VU meters. $699.95

Studio Standard 434 Receiver
15 W rms/ch into 8 ohms with all channels driven; THD at rated power 0.8%; power bandwidth 30-20,000 Hz; response 20-50,000 Hz ±2 dB at 1 W; S/N 65 dB (phono); FM sensitivity 1.8 μV (IHF); capture ratio 1.2 dB; frequency response 20-20,000 Hz; THD 0.4% stereo, 100% mod., 1000 Hz; stereo separation 38 dB (1000 Hz); features tuning indicator; two meters; built-in CD-4 demodulator; full-logic SQ circuit. 20¾" W × 12⅜" D × 7" H .. $599.95
334. Same as 434 except 10 W rms/ch; power bandwidth 48-20,000 Hz; FM sensitivity 2.0 μV (IHF); THD stereo 0.6%; stereo separation 35 dB; alternate channel selectivity 55 dB; has tuning indicator; two meters; built-in CD-4 demodulator; SQ blend circuit..... $499.95
234. Same as 334 except has one meter and does not have CD-4 demodulator circuit; SQ matrix circuit. 19⅝" W × 12¼" D × 7" H..... ..... $349.95

HEATH

AR-2020 Four-Channel Receiver
15 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz. Will handle all matrix encoded sources. Frequency response 7-50,000 Hz ±1 dB. IM 0.5% at rated power, 8-ohm load. (S + N)/N −60 dB at rated output. Has master volume, individual output level, front & back bass and treble controls; power, speaker, source (4 positions), and mode (4 positions) switches. Outputs: 4 speaker; headphones (1 pr. each front & back); one tape feed; 4-channel tape. Tuner section 2 μV (IHF) FM sensitivity, capture ratio 2 dB, HD 0.5%, channel separation at midband 35 dB min., antenna inputs 300 and 75 ohms. Features modular circuit-board construction, phase-locked loop multiplex demodulator. Has 2-ch. mag. phono & aux. inputs; 4-ch. tape & aux. inputs. 4¾" H × 19¾" W × 14" D. Walnut-stained veneer end panels included.
Kit $269.95

HITACHI

SMR-7240 4/2-Channel Receiver
AM-FM stereo receiver; 2.2 μV sensitivity; HD 0.8% stereo; capture ratio 1.2 dB (IHF); S/N 64 dB; stereo separation 36 dB (1 kHz); image rejection 55 dB; 10 W/ch into 8 ohms 20-20,000 Hz, at 1% THD with all four channels driven; HD 1% at rated output (1 kHz); response 10-30,000 Hz ±3 dB; two sets of tape deck inputs; twin tuning meters; FM stereo indicator; 4-ch indicator; 4-ch balancer; mode indicator (stereo, SQ, RM, discrete 4-ch); speaker selector switch; 4-ch headphone jacks; mike mixing volume control; two tape monitor switches; FM muting switch. 19¼" W × 5⅜" H × 15⅜" D $439.95

JULIETTE

C802-82 Four-Channel System
Combines a 4-channel AM-FM stereo receiver, 8-track cartridge player, built-in SQ circuit for FM broadcasts and 4-channel records, and four speaker systems; plus dual-programming to permit two simultaneous and independent stereo programs; features illuminated vernier tuning dial; omnidirectional single-lever joystick for speaker balance; rotary 4-ch mode switch; master volume; separate front & rear tone controls; 8-track pilot light; stereo indicator lamp; automatic and manual push-button program changers; headphone output jacks; four aux. inputs; four speaker jacks. Speakers 16¼" H × 10½" W × 6¼" D. Control center 5¼" H × 20" W × 12½" D..... $299.95
C930-82. Same as C802-82 except includes a built-in automatic BSR changer with dust cover. Control center 9¾" H × 20" W × 6¼" D. $379.95

JVC

4VR-5404 4-Channel AM-FM Receiver
5 W/ch into 8 ohms at 1000 Hz; power bandwidth 20-30,000 Hz. Capture ratio 2 dB; FM sensitivity 2.2 μV. Can be used for discrete 4-channel reproduction and built-in matrix decoder for E-V, QS, RM, and SQ. 4 ch/2-ch tape monitoring, built-in joystick master balance control (PPC). 5⅜" × 19" × 13⅜" .$229.95
4VR-5406. Basically same as 4VR-5404 in design and styling except has built-in CD-4 discrete 4-channel record demodulator. Features automatic 4-ch/2-ch switching 5⅜" × 19" × 13⅜" D $299.95

4VR-5436 4-Channel AM-FM Receiver
Equipped with built-in CD-4 demodulator and features an FM Det. Out jack on the rear panel for connection of a demodulator for 4-ch FM broadcasting (when authorized). Also has one matrix decoder for SQ records and another to handle other encoded material. 14 W/ch continuous rms power at 8 ohms with all four channels driven (20-20,000 Hz); 17 W/ch rms power at 1 kHz into 8 ohms. Frequency response 20-30,000 Hz ±1 dB; IHF power bandwidth 20-20,000 Hz. FM sensitivity 2.0 μV; selectivity 65 dB; FM capture ratio 2 dB; FM image rejection 55 dB; FM stereo separation 35 dB. Has two VU meters; bass/treble control; speaker selector switch; 2 auxiliary inputs; high/low cut filters. Walnut case; blackout dial..... $569.95

4VR-5446 4-Channel AM-FM Receiver
Has same circuit options as 4VR-5436 except 21 W/ch continuous rms into 8 ohms with all four channels driven (26 W/ch rms power at 1 kHz). IHF power bandwidth 20-30,000 Hz. Has source indicator lights and a 7-position speaker selector switch..... $679.95

4VR-5456 4-Channel AM-FM Receiver
Has same circuit options as 4VR-5436 except 43 W/ch continuous rms into 8 ohms with all four channels driven (48 W/ch rms power at 1 kHz). IHF power bandwidth 5-45,000 Hz. FM sensitivity 1.8 μV; FM capture ratio 1.5 dB; image rejection 90 dB; FM stereo separation 38 dB. Has 7-position speaker switch.... $799.95

KENWOOD

KR-9940 4-Channel Receiver
50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; has built-in circuitry for all 4-chan-

nel formats including SQ decoder with wave matching and variable blend logic. CD-4 demodulator, and RM decoder; "Tape-Through" circuit for dubbing through unit's dual 4-channel tape system while receiver is used to play any other program source; impedance 4 to 16 ohms; FM sensitivity (IHF) 1.8 μV; S/N 65 dB (1 mV input); capture ratio 3 dB; selectivity (IHF) 50 dB; stereo separation 40 dB at 1000 Hz, 20 dB at 10,000 Hz; HD stereo 0.8% (400 Hz, 100% modulation); image rejection 60 dB; has full complement of inputs & outputs, filters, and tone controls. 21 1/16" W × 6⅛" H × 14¼" D $974.95

KR-8840 4-Channel Receiver
40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; built-in circuitry for all 4-channel formats; "Tape-Through" circuit; impedance 4 to 16 ohms; FM tuner sensitivity (IHF) 1.9 μV; S/N 63 dB (1 mV input); capture ratio 3 dB; selectivity (IHF) 50 dB; stereo separation 40 dB at 1000 Hz, 20 dB at 10,000 Hz); HD 0.8% stereo (400 Hz, 100% modulation); image rejection 60 dB; has full complement of inputs & outputs, filters and tone controls. 21 1/16" W × 6⅛" H × 14¼" D $699.95

LAFAYETTE

LR-5000 AM-FM 4-Channel Receiver
37 W rms/ch into 8 ohms at 0.5% THD (20-20,000 Hz) with all channels driven; features full-logic wave-matching plus vari-blend SQ decoder and other decoder circuitry to play back SQ, RM, and other 4-ch & stereo sources; CD-4 optional discrete 4-ch demodulator built in (or can be installed later); power bandwidth 10-40,000 Hz; input sensitivity: 0.6 mV (hi), 1.8 mV (med), 4 mV (lo), aux. #1 & #2 250 mV, tape play 500 mV; S/N high-level −75 dB, low-level −60 dB; FM (IHF) sensitivity 1.65 μV; capture ratio 1.5 dB; stereo separation 40 dB; has self-resetting power overload circuit. 21" W × 5½" H × 15" D..... $599.95
CD-4 Demodulator package..... $69.95

LR-3000 AM-FM 4-Channel Receiver
Features full-logic wave-matching plus vari-

9 4-Channel Receivers

blend SQ decoder and other 4-ch decoder circuitry to play SQ, RM, and all 4-ch sources; optional CD-4 demodulator built-in (or can be installed later); 15 W rms/ch into 8 ohms at 0.8% THD (20-20,000 Hz) with all channels driven; power bandwidth 10-35,000 Hz; input sensitivity: mag. phono 0.6 mV (hi), 1.8 mV (med.), 1.4 mV (lo), aux. #1 & #2 250 mV, tape play 500 mV; FM (IHF) sensitivity 2.2 μV; capture ratio 2.5 dB; stereo separation 35 dB. 17½" W × 4⅞" H × 14" D. $449.95
CD-4 Demodulator package. $69.95

MARANTZ

4400 4-Ch AM-FM Receiver
50 W/ch continuous power into 8 ohms with all four channels driven (20-20,000 Hz); THD & IM 0.15%; frequency response 20-20,000 Hz ±0.25 dB; power bandwidth 7-70,000 Hz (IHF); FM sensitivity 1.8 μV; THD 0.3% stereo; selectivity 75 dB; capture ratio 1.5 dB; stereo separation 42 dB at 1000 Hz; spurious rejection 95 dB; image rejection 90 dB; features Dolby noise-reduction circuit; built-in oscilloscope; facilities for separating tuner/preamp section from main amplifiers for connection of amps, electronic crossovers, and/or equalizers; decoder pocket for connecting optional SQ decoder or 4-channel matrix decoder; Vari-Matrix for synthesizing 4-ch sound; has full complement of inputs, outputs, controls, and filters. $1250.00
Optional walnut cabinet available.

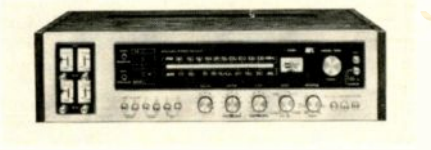
4300 4-Ch AM-FM Receiver
40 W/ch continuous power at 8 ohms with all channels driven; 0.15% THD & IM 20-20,000 Hz. Features Dolby B circuit for simultaneous recording and playback with any tape machine and decoding of Dolby-encoded FM broadcasts. Has phase lock loop multiplex decoder and an FM Quadradial output jack. Separate tuner-preamp section permits use with additional external power amps. Has Vari-Matrix for stereo program enhancement. 4-ch ready for addition of SQ decoder and CD-4 demodulator. FM sensitivity 1.9 μV (IHF); THD 0.3% stereo; capture ratio 1.5 dB; spurious rejection 90 dB. Amp response 20-20,000 ±0.25 dB (high-level input); power bandwidth 7-70,000 Hz. . $899.95
4270. Similar to Model 4300 but 25 W/ch; 0.3% THD & IM. Response 20-20,000 Hz ±0.5 dB; power bandwidth 8-60,000 Hz $699.95
4240. Similar to Model 4300 but 17 W/ch; 0.5% THD & IM. Response 20-20,000 Hz ±1.0 dB; power bandwidth 10-60,000 Hz. $599.95

4230 4-Ch AM-FM Receiver
12 W/ch continuous power into 8 ohms with all channels driven; THD & IM 0.5% FM sensitivity (IHF) 2.8 μV. Response 20-20,000 Hz ±1 dB; power bandwidth 15-50,000 Hz. Features Dolby noise reduction circuit, 4-ch balance controls, remote-control outlet, provisions for two tape recorders, provision for connecting decoders and demodulators. $499.95

MX

1620 4/2 Ch. AM-FM Receiver
12 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; stereo bridged power (1000 Hz) 30 W rms/ch; frequency response 20-25,000 Hz ±2 dB (Aux.); IM 0.8%; FM sensitivity (IHF) 1.8 μV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB (1000 Hz), 35 dB (10,000 Hz); HD 0.2%; image rejection 97 dB; spurious rejection 94 dB; features SQ matrix decoder; regular matrix decoder; four VU meters with independent level controls for each channel; special speaker matrix for "surround-sound" effect; full complement of controls; auto/off switch for use with automatic turntable turns off system. 6" H × 22¾" W × 15" D $499.95

1630 4/2 Ch. AM-FM Receiver
25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; stereo bridged power (1000 Hz)



60 W rms/ch; IM 0.8%; frequency response 20-25,000 Hz ±2 dB (Aux.); FM sensitivity (IHF) 1.8 μV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB (1000 Hz), 35 dB (10,000 Hz); HD 0.2%; image rejection 97 dB; spurious rejection 94 dB; features SQ & regular matrix decoders; four VU meters with independent level controls for each channel; clutched bass & treble controls for front & back; full complement of controls, inputs, outputs, and switches. 6" H × 22¾" W × 15" D. Veneer cabinet with grained walnut finish. $599.95
1661. Same as 1630 except 25 W rms/ch; full-logic SQ; CD-4 demodulator. $699.95
1671. Same as 1661 except 50 W rms/ch; Dolby noise-reduction circuit. $799.95

ONKYO

TS-500 Automatic 4-Ch Receiver
Built in logic and analog computer circuitry for automatic sensing of 4-channel signal being

transmitted; automatic routing to CD-4 demodulator or matrix decoders; automatic mode selector permits any mix of 4-channel or stereo discs or tapes; 20 W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD; frequency response 20-30,000 Hz ±1 dB; FM sensitivity 1.8 μV (IHF); selectivity 65 dB; capture ratio 2 dB; image rejection 70 dB; S/N 70 dB; stereo separation 40 dB at 400 Hz; frequency response 20-15,000 Hz ±1.5 dB; features dual-purpose tuning meter; tape monitoring & dubbing facilities; full complement of inputs & outputs; switches; filters; and controls. Walnut-grained vinyl cabinet. $749.95

PILOT

365 4-Channel AM-FM Receiver
15 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD. (4 channel mode); response 20-20,000 Hz ±1 dB. Input sensitivity: mag. phono 2.5 to 4.5 mV; aux. 250 mV; tape output 250 mV. FM sensitivity 2.2 μV for 30 dB (S + N)/N; capture ratio 2.0 dB. Has same 5-position switch as the Model 366 4-channel receiver and center-channel tuning meter. Walnut veneer wood cabinet. 18½" × 7" H × 17½" D. . $439 90

366 4-Channel AM-FM Receiver
30 W rms/ch into 8 ohms with all four channels driven & at 0.5% THD (20-20,000 Hz); response 15-25,000 Hz ±1 dB. Input sensitivity: mag. phono 2.5 to 4.5 mV; aux. 250 mV; mike 1 mV; tape output 250 mV. FM sensitivity 1.8 μV for 30 dB (S + N)/N; capture ratio 1.5 dB. Features main/remote 4-channel speaker switch, mike mixing, tape monitor, "Pilotone" for balancing speakers. Has 5-position mode switch for discrete, CBS "SQ", Matrix-4 decoder, stereo (double power), and mono operation. With walnut veneer cabinet. 18½" × 7" W × 17½" D. $579.90

PIONEER

QX-747 4-Ch. Stereo Receiver
Continuous power output 20 W × 4 into 8 ohms with all four channels driven and from 20-20,000 Hz. Includes CD-4, regular matrix, and SQ decoders. Power bandwidth (IHF, 4-ch. driven) 7-40,000 Hz at 0.5% HD. Response (aux.) 10-25,000 Hz ±1 dB. FM usable (IHF) sensitivity 1.9 μV; capture ratio 1 dB; selectivity 60 dB. HD 0.2% mono, 0.4% stereo. . . $649.95

QX-949 4-Ch. Stereo Receiver
Includes built-in CD-4 demodulator and decoders for regular matrix and SQ sources. Continuous power output 40 W × 4 into 8 ohms with 4-ch. driven from 20-20,000 Hz. Power bandwidth (IHF, 4-ch. driven) 7-40,000 Hz at 0.3% HD. Response (aux.) 10-25,000 Hz ±1 dB. FM usable (IHF) sensitivity 1.8 μV; capture ratio 1 dB; selectivity 80 dB. HD mono 0.2%; stereo 0.4%. Features include 4-channel level indicator; outputs for four pairs of speaker systems; output for three tape decks for tape-to-tape duplication. Will also handle two turntables and an additional aux. source. $749.95

ROTEL

RX-254 4-Channel AM-FM Receiver
Can be used as a 2- or 4-ch receiver. 10 W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD (4 ch); 18 W rms/ch (2 ch); and 0.5% THD. Power bandwidth 30-30,000 Hz. FM sensitivity 4 μV for 30 dB quieting; capture ratio 8 dB. Will play 4-channel discrete sources, 4-channel SQ matrixed discs or tapes, and will synthesize regular 2-channel stereo sources. Has 4-channel headphone jack. 17¼" × 5" × 12½" D. Walnut cabinet $479.95

SANSUI

The company has three different AM-FM 2- and 4-channel receivers, including decoder, synthesizer, amplifier, control centers. Each can decode all compatibly matrixed 4-channel recordings and broadcasts, synthesize 2 rear channels of ambient signals from conventional 2-channel recording to 4 channels. Will also play discrete 4-channel tapes.

QRX-6001 4-Ch Receiver
25 W rms/ch into 8 ohms with all channels driven (20-20,000 Hz); THD & IM dist. 0.5%; power bandwidth (IHF) 10-35,000 Hz; FM sensitivity 2 μV (IHF); capture ratio 1.5 dB; S/N 70 dB; stereo separation 40 dB at 1000 Hz; features IC "Vario-Matrix" for 20 dB separation in SQ and QS modes and built-in CD-4 demodulator; has independent front/back tone control; L-R independent balance control; F-B balance control; loudness control for all channels; four-channel headphone jack; center-tuning and signal-strength meters; full complement of inputs & outputs. $759.95
QRX-7001. Similar to QRX-6001 except 35 W

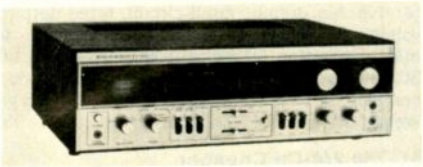
rms/ch; THD & IM dist. 0.4%; FM sensitivity 1.9 μV. $879.95

QRX-5001 4-Channel Receiver
17 W rms/ch with all channels driven into 8

ohms (30-20,000 Hz) at 0.5% THD; power bandwidth 30-20,000 Hz; FM sensitivity (IHF) 2.5 μV; selectivity 60 dB; capture ratio (IHF) 2.5 dB; stereo separation 40 dB (1000 Hz); frequency response 30-15,000 Hz +0.5 dB, −3.0 dB; Vario-Matrix decoder for QS and SQ and CD-4 demodulator for CD-4 or Quadradisc records; 4-channel tape inputs & outputs; 4-channel headphone jacks; metal cabinet with wood-grained finish. 18 15/16" W × 5 3/8" H × 12 7/8" D $599.95

SHERWOOD

S-7244 4-Ch AM-FM Receiver
20 W rms/ch into 8 ohms with four channels driven (20-20,000 Hz) at 0.6% THD; two-channel (BTL) mode 50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.6% THD; IM dist. 0.6%



into 8 ohms at rated output (0.25% at 10 W); FM tuner sensitivity 1.9 μV; S/N 66 dB; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; features zero-center tuning meter; flywheel-assisted tuning; FM muting; hum & noise 85 dB; phono hum & noise 75 dB; has full logic SQ circuitry; FM four-channel ready (aux. #2 input); wide-range bass & treble controls; high-frequency filter; front-panel tape dubbing and headphone jacks for 2- or 4-channel applications; case included. 18 3/4" W × 5 1/4" H × 15 1/4" D. $499.95
RQ-1. Remote "quadrance" volume control. $39.95

SYLVANIA

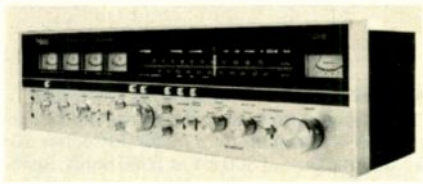
RQ4747 4-Channel Receiver
25 W/ch continuous power (four channels) into 8 ohms from 20-20,000 Hz at less than 0.5% THD. 60 W/ch continuous power in special stereo bridge mode. Includes an SQ matrix IC, two SQ positions for image placement control (standard SQ and SQ blend), plus CD-4 discrete phono demodulator. Has master volume plus three separate balance controls for front left-right, rear left-right, and front-to-rear. Features dual FM tuning meters for center tune and S/N ratio. Frequency response at tape input 20-30,000 Hz ±1.5 dB. Input sensitivity: phono 2.6 mV; tape & aux. 150 mV. Input imp.: phono 47,000 ohms; tape & aux. 50,000 ohms. Tape output level for rated aux. & phono input: 150 mV. (S + N)/N below rated output (20-20,000 Hz) at max. volume: phono 60 dB; tape & aux. 70 dB. FM sensitivity (IHF) 1.9 μV; capture ratio 1.5 dB; image rejection 60 dB. Walnut veneer cabinet with extruded aluminum control panel. 6 7/8" H × 21 1/4" W × 15" D $599.95

RQ4748 4-Channel Receiver
50 W/ch continuous power (four channels) into 8 ohms from 20-20,000 Hz. 125 W/ch continuous power in special stereo bridge mode. Master volume control plus individual level controls for all four channels. Special image orientation control permits 90, 180, and 270 degree rotation of four channel sound image (changes the channel each speaker produces without rewiring). Other specifications same as RQ4747. Walnut veneer cabinet with extruded aluminum control panel. 6 7/8" H × 21 1/4" W × 15" D $699.95

RQ4745 4-Channel Receiver
Similar to RQ4747 except 7 1/2 W rms/ch into 8 ohms with four channels driven (30-20,000 Hz) at 1% THD; FM sensitivity 2.3 μV; S/N 67 dB; single combined AM-FM tuning meter. 6" H × 17 3/4" W × 15" D $399.95
RQ4746. Similar to RQ4745 but 15 W/ch into 8 ohms with four channels driven (20-20,000 Hz) at 1% THD; AM and FM meters..... $479.95

TECHNICS BY PANASONIC

SA-8500X 4/2-Ch. AM-FM Receiver
Features built-in CD-4 demodulator for playback of discrete discs, plus 2-pos. matrix de-



coder; automatic separation and carrier-level adjust adapts cartridge characteristics automatically; BTL amplifier design for full output power in both 2-ch & 4-ch modes. Has four VU meters plus signal-strength meter; CD-4 hi-blend switch for noisy records; three 4-ch tape monitors. Accommodates two sets of 4-ch speakers or four sets in 2-ch mode; FM MPX output; all-stage direct-coupled OCL power amps; speaker protection circuit; low-noise phono preamp; click-stop tone controls; hi & lo filters. 26 W rms/ch into 8 ohms in 4-ch mode (20-20,000 Hz) at 0.5% THD; 80 W rms/ch into 8 ohms in 2-ch BTL mode; THD 0.5%; IM 0.7%; power bandwidth 5-40,000 Hz; S/N 90 dB (Aux.), 70 dB (phono). FM sensitivity 1.9 μV for 30 dB quieting; FM THD 0.4% stereo; separation 40 dB at 1000 Hz. Walnut cabinet included. 6 1/8" H × 21 3/8" W × 15 9/16" D. $739.95
SA-8100X. Similar to SA-8500X except 16 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD in 4-ch mode; 46 W rms/ch in BTL 2-ch mode. 6 3/32" H × 19 3/4" W × 15 9/16" D... $649.95

TOSHIBA

SA-304 4-Channel AM-FM Receiver
15 W/ch continuous power (60 W total) into 8 ohms at 0.8% HD and each channel driven separately (20 W/ch for 2-channel operation). Response 20-40,000 Hz ±2 dB. Power bandwidth 20-30,000 Hz at 0.8% HD. Sensitivity: mag. phono 3 mV; aux. 150 mV. FM sensitivity 2.5 μV for 30 dB quieting. Capture ratio 2.5 dB. Has built-in RM (Regular Matrix) and SQ 4-channel matrix decoder. Provisions for CD-4 discrete decoder. 15 3/4" × 4 1/2" × 11 3/8" $349.95

SA-504 4-Channel AM-FM Receiver
35 W/ch (140 W total) continuous power into 8 ohms & at 0.4% THD and with each channel driven separately (70 W/ch for 2-channel stereo). Response 20-40,000 Hz ±1 dB; power bandwidth 10-80,000 Hz. FM sensitivity 1.8 μV for 30 dB (S + N)/N; capture ratio 1.5 dB. Input sensitivity: mag. phono 2.5 mV; condenser phono 30 mV; aux. & tape 160 mV. Has built-in RM & SQ 4-channel matrix decoder, FM muting, signal-strength & center-of-channel tuning meters, and tape monitor. Can be used for 4-channel discrete playback..... $569.95

SA-514 CD-4 AM-FM Receiver
20 W rms/ch into 8 ohms with all channels driven at 0.8% HD (20-20,000 Hz); 45 W/ch in stereo mode; FM sensitivity 2 μV (IHF); S/N 65 dB; capture ratio 2 dB; selectivity +400 kHz −400 kHz 60 dB; HD 0.3%; input sensitivity mag. phono 2.5 mV; condenser phono 30 mV; aux. & tape 160 mV; features built-in CD-4 demodulator; RM and SQ decoder; FM muting; signal-strength & center-of-channel tuning meters; tape monitoring. 20" × 4 7/8" × 14" $749.95

9 4-Channel Cartridges & Record Players

ADC

Super-XLM MKII Cartridge
For both 4-channel & stereo use; Shibata-type stylus for discrete 4-channel discs; sensitivity 0.6 mV/cm/sec; tracking force range 3/4-1 1/2 g; frequency response 15-50,000 Hz ±2 dB; channel separation 28 dB..... $125.00

AUDIO-TECHNICA

AT15Sa Dual-Magnet Cartridge
Universal reference-standard cartridge for use on all types of LP discs (stereo, mono, matrixed, and discrete CD-4 four-channel). Frequency response 5-45,000 Hz; tracking force 1-2 g; comes with nude square-shank Shibata stylus mounted on low-mass tapered stylus tube; rigid die-cast body with stylus guard. Comes with individually run frequency response curves. Output 2.7 mV at 5 cm/sec; separation 25 dB min.; channel balance 1.5 dB; vertical tracking angle 20° $100.00

AT20SLa. Similar but hand-picked for maximum state-of-the-art performance. Frequency response 5-50,000 Hz; tracking force 1-2 g. Limited edition/reference standard.. $175.00
AT14SA. Similar to AT15Sa except does not include die-cast body or individually run frequency response curve..... $75.00
AT12S. Similar to AT14Sa except uses bonded square-shank Shibata stylus; frequency response 15-45,000 Hz; slip-on stylus guard $64.95
Models AT14Sa, AT15Sa, and AT20SLa have grain-oriented square-shank nude Shibata diamond stylus for precise tip orientation and longer stylus life.

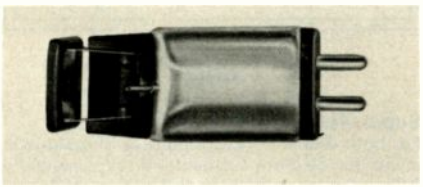
BANG & OLUFSEN

Beogram 4002 4-Ch. Turntable
Two-speed (33 & 45 rpm, electronic selection), belt-drnven turntable; slow-speed, 16-pole synchronous motor controlled by electronic circuit; wow & flutter ±0.025%; rumble 65 dB; anti-skat.ng control is parallel tracking, error-angle compensated; patented electro-pneumatic damping system lowers tonearm at precise, controlled speed. Turntable comes with the MMC6000 cartridge which will reproduce stereo, 4-channel matrix, and CD-4 records. Fine-speed adjustment greater than 6%. Pendulum and leaf-spring suspension has resonance of 4.5 Hz. 4" × 19 1/4" × 15"..... $700.00
MMC6000. Cartridge with Pramanik stylus (multiradial diamond) $100.00

9 4-Channel Cartridges & Record Players

EMPIRE

4000D/III Wide-Response Cartridge
Will play any 4-channel or stereo system; frequency response 5-50,000 Hz; output 3.0 mV/



ch; channel separation 35 dB (left to right), 25 dB (front to back); tracking force ¼ to 1¼ g; miniature nude diamond with 0.1-mil tracing radius. $149.95
4000D/II. Same except frequency response 5-45,000 Hz; tracking force ¾ to 1½ g. . $124.95
4000D/I. Same except frequency response 10-40,000 Hz; tracking force ¾ to 2 g. . . . $84.95

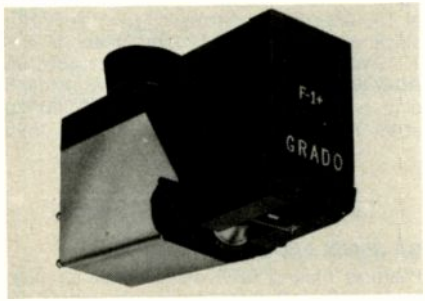
GLENBURN

2155 B/Q Automatic Turntable
Heavy-duty 4-pole motor; 11" turntable platter with protective mat; bi-directional viscous-damped cue and pause control; adjustable anti-skate control calibrated for conical and elliptical styli; calibrated stylus pressure control; interchangeable automatic and manual spindles; ball-race pivoted tonearm; record stabilizer arm with fingerlift. Comes with Audio-Technica's AT12S wide-response CD-4 cartridge; designed to perform in the CD-4 mode when used with high-performance CD-4 equipment. Has hinged dust cover and base and low-capacitance audio cords. $139.95

2195B/Q Automatic Turntable
Features umbrella spindle; gimballed counterbalanced tonearm; slide-in cartridge adapter; 4-pole synchronous motor; comes with simulated walnut-grain wood base; deluxe hinged dust cover; Audio Technica AT14S magnetic cartridge with Shibata diamond stylus; low-capacitance audio cables. $189.95

GRADO

F+ Series CD-4 Pickups
Available in three groups for varied applications. All series feature low electrical inductance and thus tonearm cable length is not critical for any length up to 15 feet; low mechanical tip mass permitting use of standard stylus shapes.
Professional. Designed for high output and stability under severe use; suitable for broadcast purposes. Frequency response 40 kHz and tracking capability 2-3 grams; for use with record changers and tonearms which will not track 1 gram.
FTR+ Spherical diamond stylus $9.95
FTE+ Elliptical diamond stylus $19.95
FCR+ Specially selected unit with spherical diamond stylus. $25.00
FCE+ Specially selected unit with elliptical diamond stylus. $35.00
Flux-Bridger. Uses entirely different generator system from Professional Series. Tip-mass reduction results in frequency response beyond 50 kHz and tracking force from 1-2 grams. For use in tonearms and changers with 2-gr tracking capability.
FTE+1 Elliptical diamond stylus . . . $13.00
FCE–1 Specially selected unit with elliptical diamond stylus $37.50
Super Flux-Bridger. Designed for use with highest quality equipment. Tracking force ¾-2 gr.
F3E+ Elliptical diamond stylus $49.50
F2+ Elliptical diamond stylus $60.00
F1+ Grado diamond stylus $75.00

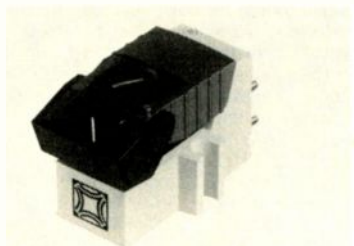


G1+ Grado diamond stylus $150.00

JVC

4VC-5244 4-Channel Record Changer
CD-4 design with built-in 4-channel demodulator. Has 4-pole outer rotor motor. Response 20-16,000 Hz. Output 300 mV at 5000 ohms. Semi-adjustable separation control. 7⅞" × 15¾" × 17¼" D. $199.95

4MD-20X 4-Channel Cartridge
CD-4 design to be used with the RCA/JVC 4-channel disc and Shibata stylus. Response 20-



60,000 Hz. Output 2 mV. Crosstalk 30 dB. Tracking force 1.5-2g. $79.95

MESA

Model IV Automatic Turntable
Two-speed (33 & 45 rpm) automatic turntable

for discrete four-channel (CD-4) applications; four-pole synchronous motor; adjustable counterweight; total wiring capacitance less than 100 pF; comes with Audio-Technica AT14S dual magnetic cartridge and Shibata nude stylus, low-capacitance audio cables, base, and dust cover. 17⅛" W × 8" H × 14½" D . . $139.95

MICRO/ACOUSTICS

QDC-1q CD4 Phono Cartridge
Features a self-energized IC transducer which puts out a linear signal from 5-50,000 Hz; stylus bar directly attached to transduction IC to eliminate losses inherent in flux-field coupling. Response 5-20,000 Hz ±2 dB; 20,000-50,000 Hz ±2 dB. Tracking force range 0.9-1½ g; channel separation 30 dB at 1 kHz, 20 dB at 10 kHz. Output voltage: 3 mV each channel at 5 cm/sec peak recorded velocity. 47,000 ohms recommended load. Comes with "Quadra-Point" stylus $120.00

MX

1236 4-Ch Automatic Turntable
Three-speed, four-channel automatic turntable with 4-pole synchronous motor; viscous damped cueing control; wow (DIN peak weighted) 0.15%; rumble (weighted) −58 dB; min. tracking force 1 gr (manual), 1½ gr (auto); comes with Audio Technica AT-125 cartridge, base & dust cover. 8¾" H × 16⅞" W × 14¼" D $199.95

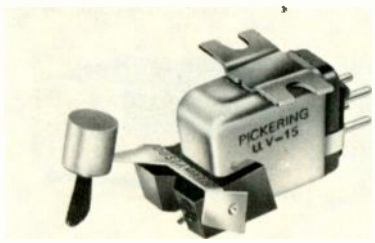
PANASONIC

EPC-450C-II CD-4 Cartridge
Wide-range, linear strain-gauge semiconductor cartridge; response 0-50,000 Hz; requires complementary demodulator with built-in bias supply; non-capacitive, non-inductive character matches preamp input circuit; rated output voltage 5 mV (50 mm/sec, 1 kHz, lateral, 4 mA); separation 20 dB at 1000 Hz; 15 dB at 30,000 Hz; imp. 1000 ohms pure resistance; compliance 10 × 10 $^{-6}$; tracking force 1.5-2.5 g. Weight 3.2 g. $64.95

SL-750 2/4-Ch Changer
Full-size 2-/4-channel record changer with built-in CD-4 demodulator, semiconductor cartridge with diamond stylus; features CD-4 IC chip, cueing and pause control; anti-skate adjustment; umbrella spindle; can be used with the company's "Series 44" products. Walnut finish. $169.95
SL-850. Similar to SL-750 but with pivoted tonearm with adjustable counterweight and detachable cartridge shell; viscous cueing and pause control. $199.95

PICKERING

UV-15/2400-Q Cartridge
For discrete 4-channel playback; tracking force with Dustamatic brush 3 g ±½ g (resulting tracking force 2 g ±½ g); frequency response 10-50,000 Hz (when terminated by 100k ohm



load and 100 pF); output 3.3 mV ±2 dB; channel separation 35 dB; inductance each channel 350 mH; resistance each channel 750 ohms; comes with "Quadrahedral" diamond stylus assembly. $125.00
UV-15/2000Q. Similar to 2400-Q except response 20-45,000 Hz; channel separation 30 dB. $69.90

XUV/4500Q Cartridge
For stereo, 4-channel matrix (SQ and QS), and discrete 4-channel playback at 1 gr (or less) tracking force; setting with brush: 2 −½ gr (resulting in tracking force 1 +½ gr); frequency response 10-50,000 Hz; output: 3.4 mV nominal (ref. 5.5 cm/sec recorded velocity); channel balance: 1½ dB maximum difference; 30 kHz 25 dB nominal; comes with "Quadrahedral" stylus with "Quadrahedron" tip $139.95

PIONEER

PC-Q1 4-Channel Cartridge
Induced-magnet stereo cartridge with parabolic diamond stylus for playing CD-4 records; frequency response 10-50,000 Hz; channel

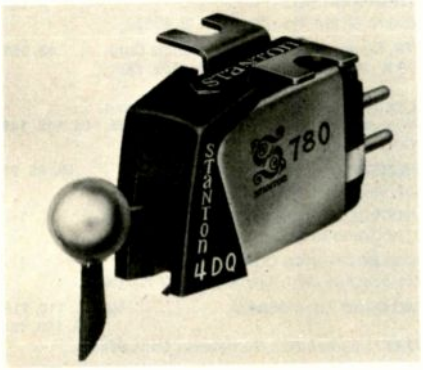
separation 25 dB (at 1 kHz), 20 dB (at 30 kHz); tracking force 1-2.1 gr $69.95

SANSUI

FR-3080 4-Ch/2-Ch Turntable
Electronic automatic/manual single-play turntable; two speeds (33 & 45 rpm); belt-drive; 4-pole synchronous motor for platter drive, 16-pole geared synchronous motor for automatic operation; wow & flutter 0.07% (W rms); S/N 45 dB; statically balanced S-shaped tubular tonearm with universal shell connector; dual-magnet cartridge with Shibata stylus; frequency response 10-50,000 Hz; optimum tracking force 2 gr; comes with 45 rpm spindle adapter; low-capacitance cords; removable dust cover with automatic hinges; stylus brush; overhang gauge; motor pulley for 50 or 60 Hz; solid walnut-grain cabinet. 17 9/16" W × 6 1/2" H × 14 1/16" D..... $199.95

STANTON

780/4DQ Four-Channel Cartridge
Designed to play the new discrete 4-channel records as well a standard stereo disc or 4-ch



matrix-derived compatible records. Response 10-50,000 Hz (when terminated in recommended load of 100 kohms and 100 pF). Tracking force 1-3 g; channel separation 35 dB. Output: 0.7 mV/cm/sec ±2 dB. Inductance & resistance (each channel): 350 mH; 750 ohms. Features new "Quadrahedral" stylus..... $125.00

9 4-Channel Tape Machines

AKAI

GX-630DSS 4-Channel Tape Deck
Four-channel or stereo record and playback; features four GX glass & single crystal heads; A-B monitoring in either mode; two-speed (7 1/2 & 3 3/4 ips); full-logic function controls; "Quadrasync" recording; mike/line mixing; left/right track selector; pitch control (±5%); tape select switch; line output control; auto-stop, pause control with lock; will handle up to 10 1/2" reels. $995.00

1730D-SS 4-Channel Tape Deck
Four-track, 4 & 2 channel play and record. Features automatic shutoff, pause control, and two speeds (7 1/2, 3 3/4 ips). Response 30-22,000 Hz ±3 dB, wow & flutter 0.12% rms, dist. 1.5%, all at 7 1/2 ips. Has mike (0.4 mV) and line (40 mV) inputs plus line (1.23 V) output. 16 1/2" × 18" × 9 1/2..... $479.95

CR-80D-SS 4-Ch. 8-Track Deck
Features 2- or 4-channel play/record. Response 30-16,000 Hz ±3 dB. Wow & flutter 0.25% rms; (S + N)/N 47 dB. Has four mike (0.5 mV) & line (50 mV) inputs; four record-level meters..... ..... $349.95

CROWN INTERNATIONAL

CX844 Tape Recorder
Three-speed (15, 7 1/2, 3 3/4 ips), 4-channel, 4-track, 3-motor design. Will handle up to 10 1/2" reels. Has 3 heads. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7 1/2 ips. Features braking, pause control, four VU meters, remote record, and automatic photocell shutoff $2995.00

SX744 Tape Recorder
Two-speed (7 1/2 & 3 3/4 ips), 4-track, 4-channel, 3-motor design. Will handle up to 10 1/2" reels. Has 3 heads. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7 1/2 ips. Features braking, pause control, four VU meters, and automatic shut-off $1995.00

DOKORDER

7140 2/4 Ch Stereo Tape Deck
Provides complete 4-channel record & playback facilities. Has three motors (synchronous capstan and eddy-current induction reel), mechanical speed change; solenoid operation. Tape speeds 7 1/2 & 3 3/4 ips; wow & flutter ± 0.08% max. at 7 1/2 ips. Will handle 5" & 7" reels; operates horizontally or vertically. Has three separate heads; full tape/source monitoring; NAB equalization. Response 30-22,000 (±3 dB 40-20,000 Hz) at 7 1/2 ips; (S + N)/N 55 dB at 7 1/2 ips; crosstalk 55 dB at 1000 Hz; stereo channel separation 45 dB at 1000 Hz. Includes Multi-Sync function which permits recording separate tracks individually and re-recording of any individual track in perfect sync with other three tracks. Built-in sound-on-sound, sound-with-sound, and echo circuitry. Includes four VU meters, quick-change heads, turntable height adjustments, automatic end-of-reel shut-off, and easy-threading operation. 16 7/8" W × 17 3/4" H × 6 3/4" D..... $629.95

1140 Four-Channel Tape Deck
A miniature recording studio with complete 2- and 4-channel recording and playback facilities, Multi-Sync function and full logic control, tape transport, and 15 & 7 1/2 ips speeds. Features separate playback controls to balance 4-channel output for listening or mix-down dubbing; four illuminated VU meters; separate tape/source monitoring switches for each channel; 4-channel mike and line mixing. Multi-Sync feature permits recording of separate tracks and instruments individually and re-recording any individual track at any time in perfect sync with the other three tracks. Response 25-26,000 Hz (30-23,000 Hz ±3 dB) at 15 ips; 25-24,000 Hz (30-20,000 Hz ±3 dB) at 7 1/2 ips; S/N 60 dB; crosstalk 58 dB; wow & flutter 0.04% at 15 ips, 0.06% at 7 1/2 ips. 17 3/4" W × 15 1/4" D × 20" H..... $1199.95

8140 4-Channel Deck
Provides full discrete 4-channel recording & playback facilities; "Multi-Sync" permits any track to be recorded or re-recorded in perfect sync with others; solenoid-controlled tape transport; three motors (hysteresis synchronous capstan and two eddy current induction); response 20-25,000 Hz at 7 1/2 ips; S/N 58 dB; crosstalk 60 dB; stereo channel separation 55 dB at 1 kHz; three heads (record, play, erase); full tape/source monitoring for all four channels; four VU meters; 4-ch/2-ch output controls; electronic echo, sound-on-sound, and sound-with-sound facilities..... $749.95

HEATH

AC-1122 4-Ch Receiver/8-Track Player

Directory Of Manufacturers

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LAMB LABORATORIES, INC. 166
155 Michael Dr., Syosset, N.Y. 11791

LANIER, BQ Sonics 132
Route 2, Box 386A, Gainsville, Fla. 32601

LECSON, Audiophile Imports 38
10 E. Erie St., Chicago, Ill. 60611

LENCO, Uher of America Inc. 68
621 S. Hindry Ave., Inglewood, Calif. 90301

LESLIE, Electro Music, CBS Musical Instruments 132
56 W. Del Mar Blvd., Pasadena, Calif. 91105

LINN SONDEK, Audiophile Systems 68
851 W. 44th, Indianapolis, Ind. 46208

LISSEN CORPORATION 132
Box 1311, Kent, Washington 98031

LSS, Linear Sound Systems 132
5400 Folsom Blvd., Sacramento, Calif. 95819

LUXMAN, Lux Audio of America Ltd. 38, 45, 70
1185 Avenue of the Americas, New York, N.Y. 10036

MAGITRAN CO., THE, Div. of ERA Acoustics Corp. 132
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MAGNEPLANAR, Magnepan, Inc. 134
P.O. Box 8642, White Bear Lake, Minn. 55110

MAGNESONICS SALES 166
Box 127, Northridge, Calif. 91324

MALLORY DISTRIBUTOR PRODUCTS CO. 160
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MARANTZ CO., INC., Subs. Superscope Inc. 38, 46, 54, 102, 104, 112, 134, 147
8460 San Fernando Rd., Sun Valley, Calif. 91352

MARTIN, Eastman Sound Mfg. Co., Inc. 134
295 & Harmony Rd., Mickleton, N.J. 08056

MAXELL CORP. OF AMERICA 160
130 W. Commercial Ave., Moonachie, N.J. 07074

MAXIMUS, Audimax International Corp. 134
1530 W. El Segundo Blvd., Gardena, Calif. 90249

MEMOREX CORPORATION 160
San Tomas at Central Expressway, Santa Clara, Calif.

MERITON ELECTRONICS, INC. 91, 98, 99, 154, 161
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MESA ELECTRONICS, LTD. 70, 106
1449 E. Algonquin Rd., Mt. Prospect, Ill. 60056

METROSOUND, RNS Marketing, Inc. 166
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MICRO/ACOUSTICS CORP. 76, 106, 134
8 Westchester Plaza, Elmsford, N.Y. 10523

MICROTOWER, Epicure Products, Inc. 136
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MITSUBISHI, Melco Sales, Inc. 136
3030 E. Victoria St., Compton, Calif. 90221

MODULAR SOUND SYSTEMS, INC. 39, 136
2202 River Hills Dr., Burnsville, Minn. 55337

MURA CORP. 111, 147, 166
50 S. Service Rd., Jericho, N.Y. 11753

MX, The Magnavox Company 54, 70, 104, 106, 112, 136
1700 Magnavox Way, Fort Wayne, Ind. 46804

NAKAMICHI RESEARCH (U.S.A.), INC. 91, 136, 147, 154, 161, 166
220 Westbury Ave., Carle Place, N.Y. 11514

NEAL, Audiophile Systems 91
851 W. 44th St., Indianapolis, Ind. 46208

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NIKKO ELECTRONIC CORPORATION OF AMERICA 39, 46, 55
16270 Raymer St., Van Nuys, Calif. 91406

NORTRONICS CO., INC. 166
8101 10th Ave. N., Minneapolis, Minn. 55427

NT-T, Peerless Audio Manufacturing 136
40 Jytek Dr., Ledminister, Mass. 01453

NUCLEAR PRODUCTS CO. 166
Box 1178, El Monte, Calif. 91734

OHM ACOUSTICS CORP. 136
241 Taaffe Place, Brooklyn, N.Y. 11205

ONKYO, Mitsubishi International Corp. 39, 46, 55, 104, 138
25-19 43rd Ave., Long Island City, N.Y. 11101

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9 E. 38th St., New York, N.Y. 10016

OTARI CORPORATION 84, 109
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PANASONIC, Matsushita Electric Corp. of America 99, 106, 109, 166
One Panasonic Way, Secaucus, N.J. 07094

PE, Impro Industries, Inc. 70
120 Hartford Ave., Mt. Vernon, N.Y. 10553

PHASE CONCEPT, Johnson Industries, Inc. 138
3501 C St. N.E., Auburn, Wash. 98002

PHASE LINEAR CORP. 39, 102
P.O. Box 1335, Lynnwood, Wash. 98036

PHILIPS AUDIO VIDEO SYSTEMS CORP. 40, 70, 138
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PICKERING & CO., INC. 76, 106, 147, 166
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PILOT RADIO SALES 40, 46, 55, 104
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PIONEER, U.S. Pioneer Electronics Corp. 40, 46, 55, 71, 84, 91, 102, 104, 106, 109, 111, 138, 147, 154, 167
178 Commerce Rd., Carlstadt, N.J. 07072

PM, Martex Corporation 40, 138
519 S. Austin, Seattle, Wash. 98108

PML, Hervic Electronics, Inc. 154
1508 Cotner Ave., Los Angeles, Calif. 90025

POLK AUDIO 139
4900 Wetheredsville Rd., Baltimore, Md. 21207

QUAD, Acoustical Manufacturing Co. Ltd. 40, 46, 139
Huntingdon PE 18 7DB, England

RABCO, Harman/Kardon 72
55 Ames Court, Plainview, N.Y. 11803

RADFORD AUDIO LTD., Audionics, Inc. 41
8600 N.E. Sandy Blvd., Portland, Ore. 97220

RADIO SHACK, Div. of Tandy Corp. 46, 56, 72, 84, 92, 98, 111, 139, 148, 155
2615 W. 7th St., Fort Worth, Tex. 76107

RECTILINEAR RESEARCH CORP. 139
107 Bruckner Blvd., Bronx, N.Y. 10454

REVOX CORP. 41, 47, 84, 155
155 Michael Dr., Syosset, N.Y. 11791

RICHARD ALLAN RADIO LTD. 139
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ROBINS INDUSTRIES CORP. 167
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ROMEX, Intercontinental Marketing Ltd. 139
2280 Grand Ave., Baldwin, N.Y. 11510

ROTEL OF AMERICA, INC. 41, 47, 56, 104
2642 Central Park Ave., Yonkers, N.Y. 10710

ROYAL SOUND COMPANY, INC. 140, 148
409 N. Main St., Freeport, N.Y. 11520

RPM INDUSTRIES 167
6334 Arizona Place, Los Angeles, Calif. 90045

RTR INDUSTRIES, INC. 140
8116 Deering Ave., Canoga Park, Calif. 91304

RUSSOUND/FMP, INC. 167
Foot of Canal St., North Berwick, Me. 03906

SAE, Scientific Audio Electronics, Inc. 41, 47, 140, 167
P.O. Box 60271 Terminal Annex, Los Angeles, Calif.

SANKO SEIKI (AMERICA) INC. 92
149 Fifth Ave., New York, N.Y. 10010

SANSUI ELECTRONICS CORP. 42, 47, 56, 72, 92, 104, 107, 111, 112, 140, 148
55-11 Queens Blvd., Woodside, N.Y. 11377

SANYO ELECTRIC INC. 99
1200 W. Walnut St., Compton, Calif. 90220

SCOTCH, Magnetic Products Div., 3M Co. 161
3M Center, St. Paul, Minn. 55101

SCOTT, H.H., INC. 42, 47, 56, 140
111 Powder Mill Rd., Maynard, Mass. 01754

SCULPTURED SOUND 141
1503 E. Jackson, Phoenix, Ariz. 85034

SENNHEISER ELECTRONIC CORP. 148, 155
10 W. 37th St., New York, N.Y. 10018

SEQUERRA CO., INC., THE 47
143-11 Archer Ave., Jamaica, N.Y. 11435

SHARP ELECTRONICS CORPORATION 92, 98, 99, 109
10 Keystone Place, Paramus, N.J. 07652

SHERRON AUDIO SYSTEMS, LTD. 141
72 Yale St., Roslyn Heights, N.Y. 11577

SHERWOOD ELECTRONIC LABORATORIES, INC. 42, 47, 58, 105
4300 N. California Ave., Chicago, Ill. 60618

SHURE BROTHERS, INC. 78, 155, 167
222 Hartrey Ave., Evanston, Ill. 60204

SONAB ELECTRONICS CORP. 58, 92, 141
1185 Chess Dr., Foster City, Calif. 94404

SONOSPHERE, Neosonic Corp. of America 141
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8150 Vineland Ave., Sun Valley, Calif. 91352

SOUND CELL, INC. 141
7528 Clairemont Mesa Blvd., San Diego, Calif. 92111

SOUNDCRAFT, Columbia Magnetics, CBS, Inc. 162
51 W. 52nd St., New York, N.Y. 10019

SOUNDCRAFTSMEN 167
1721 Newport Circle, Santa Ana, Calif. 92707

SP, Grafyx Speaker Systems 141
P.O. Box 52, Prospect Heights, Ill. 60070

SPENDOR, Audiophile Imports 141
10 E. Erie St., Chicago, Ill. 60611

STANTON MAGNETICS, INC. 72, 78, 107, 111, 148
Terminal Dr., Plainview, N.Y. 11803

STARK DESIGNS COMPANY 141
12111 Branford St., Sun Valley, Calif. 91352

STAX American Audioport Inc. 149
909 University, Columbia, Mo. 65201

SUPEREX ELECTRONICS CORP. 112, 149
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SUPERSCOPE INC. 43, 48, 58, 93, 98, 109
8150 Vineland Ave., Sun Valley, Calif. 91352

SWITCHCRAFT INC. 168
5555 N. Elston Ave., Chicago, Ill. 60630

SWTP, Southwest Technical Products Corp. 43, 168
219 W. Rhapsody, San Antonio, Tex. 78216

SYLVANIA INCORPORATED, Entertainment Products Group 58, 98, 100, 105, 109, 142, 149
700 Ellicott St., Batavia, N.Y. 14020

TANDBERG OF AMERICA INC. 59, 85, 93
Labriola Court, Armonk, N.Y. 10504

TANNOY (AMERICA) LTD. 142
1756 Ocean Ave., Bohemia, N.Y. 11716

TDK ELECTRONICS CORP. 162
755 Eastgate Blvd., Garden City, N.Y. 11530

TEAC CORP. OF AMERICA 86, 93, 110, 113, 149, 156, 168
7733 Telegraph Rd., Montebello, Calif. 90640

TECHNICS BY PANASONIC, Matsushita Electric Corp. of America 43, 59, 72, 87, 93, 105, 110, 112, 113, 142, 149, 156
One Panasonic Way, Secaucus, N.J 07094

TELEPHONICS, Div. of ISC 112, 149
770 Park Ave., Huntington, N.Y. 11743

TELEX COMMUNICATIONS DIV. 87, 98, 100, 149
9600 Aldrich Ave. S., Minneapolis, Minn. 55420

TEMPEST, ESS, Inc. 142
9613 Oates Dr., Sacramento, Calif. 95827

THORENS, Elpa Marketing Industries, Inc. 73
Thorens Bldg., New Hyde Park, N.Y. 11040

TOSHIBA AMERICA, INC. 43, 48, 73, 78, 87, 94, 98, 102, 105, 110, 112, 113, 149
280 Park Ave., New York, N.Y. 10017

TRACKER-USA 168
P.O. Box 178, Renton, Wash. 98055

TRUSONIC 142
1100 E. Franklin St., Huntington, Ind. 46750

TURNER DIVISION, Conrac Corp. 156
909 17th St. N.E., Cedar Rapids, Ia. 52402

UHER OF AMERICA INC. 87, 94, 168
621 S. Hindry Ave., Inglewood, Calif. 90301

ULTRALINEAR, Solar Audio Products Inc. 142
3228 E. 50th St., Los Angeles, Calif. 90058

UTAH ELECTRONICS, Div. of Utah-American Corp. 143
1124 E. Franklin St., Huntington, Ind. 46750

V-M CORPORATION 73
P.O. Box 1247, Benton Harbor, Mich. 49022

WATTS, C.E., Elpa Marketing Industries, Inc. 168
Thorens Bldg., New Hyde Park, N.Y. 10040

WIN LABORATORIES 73
1301 Norman Firestone Rd., Goleta, Calif. 93017

WOLLENSAK, 3M Co. 95, 98, 110, 143
3M Center, St. Paul, Minn. 55101

YAMAHA INTERNATIONAL CORP. 43, 48, 59, 73, 95, 144, 149
6600 Orangethorpe Ave., Buena Park, Calif. 90602

ZENITH RADIO CORPORATION 100, 110, 112, 113, 144
1900 N. Austin Ave., Chicago, Ill. 60639

ZEROSTAT, American Audioport Inc. 168
909 University, Columbia, Mo. 65201

9 4-Channel Tape Machines

Combines 4-channel AM-FM receiver and factory assembled and aligned 8-track player which accepts stereo and 4-channel cartridges; built-in SQ decoder; ceramic phono & aux. inputs; 4-ch headphone jacks; front/rear bass & treble controls; FM sensitivity 5 μV; selectivity 60 dB; stereo separation 35 dB; direct-coupled amplifier with 4.5 W rms min/ch output into 8 ohms at 1.0% THD 50-15,000 Hz; walnut-grain vinyl-clad metal and plastic case. 22" W × 4" H × 15" D. Kit $239.95
AT-1124. Same circuitry and features as AC-1122 but without AM-FM tuner; inputs for ceramic phono & aux. tape or tuner. 17" W × 4" H × 15" D. Kit $169.95

HITACHI

SP-2980 4-Ch Receiver/8-Track

AM-FM stereo receiver combined with 8-track cartridge player and four speakers (rear speakers wireless); has four amps for discrete 4-ch tape reproduction; built-in SQ/regular matrix decoder; normal/reverse switch (front-rear programs); rear function switch for stereo (using 4 speakers), SQ and regular matrix, Aux., and tape. Tuner 20⅞" × 5 3/16" × 12 1/16" D; speakers 12 1/16" W × 20 7/16" H × 6⅝" D..... $449.95

JVC

4RD-1406 4-Channel Tape Deck

Will play/record 2- and 4-channel reel-to-reel tape. Two speeds (3¾ & 7½ ips). Response 30-

18,000 Hz ±3 dB at 7½ ips with low-noise tape. (S + N)/N −52 dB; wow & flutter 0.1% at 7½ ips. 57 kHz bias & erase. Has two heads (record/play & erase), mike (0.5 mV) & line (80 mV) inputs, and line output (0-1.2 V). Features low-noise or standard tape switch.... $379.95

OTARI

MX-5050-QXH Tape Deck

Three-head, four-track, four-channel version of the company's MX-5050-2SH tape deck; S/N 65 dB; 17" W × 23¼" H × 7⅜" D..... $2050.00
MX-5050-QXH-S. Same except with d.c. servo capstan with ±10% variable speed.. $2250.00

PANASONIC

RS-862S 8-Track Recorder/Radio

Four-channel, 8-track player which will record in 2-channel. Has AM-FM stereo radio, four built-in amplifiers, two VU meters. With optional mike can be used for sound with sound. Features automatic stop, fast-forward, a stereo broadcast indicator light, continuous tone control, two headphone jacks, and a 4-channel MPX jack. Comes with four matching 2-way speakers with latticework grilles..... $369.95

PIONEER

RT-1020L Stereo Tape Deck

Three-motor, 3-head stereo tape deck with 4-channel reproduction capability. Has 4/8 pole two-speed hysteresis synchronous motor (capstan drive) and 6-pole inner-rotor induction motor (reel drive). Operates at 7½ & 3¾ ips. Wow & flutter less than 0.08% (W rms) at 7½ ips. (S + N)/N 55 dB; dist. less than 1%. Response 40-20,000 Hz ±3 dB at 7½ ips. Crosstalk 60 dB, stereo channel separation 50 dB both at 1000 Hz. Inputs: mike 0.25 to 80 mV; line 50 mV to 25 V; DIN 15 mV. Outputs:line 316 mV; DIN 316 mV; headphone 40 mV (4 to 16 ohms). Features 3-position bias selector, 2-position equalizer selector, lockable pause lever, 4-digit tape counter, independent left/right tape monitor switches, 4-ch./2-ch. playback mode selector, independent right/left recording mode selectors, 4-ch front, rear monitor mode selector, independent mike & line recording level controls, output level controls. Will accept up to 10½" reels. 17 5/16" W × 17" H × 8⅞" D..... $649.95
RT-1020H. Same as RT-1020L except 15 & 7½" ips; response 30-22,000 Hz ±3 dB at 15 ips; wow & flutter 0.04% W rms at 15 ips. 120-V, 60-Hz operation $649.95

SHARP

RT-840 4-Ch/2-Ch 8-Track Deck

Automatic 4-ch/2-ch switchover; each/all auto-eject push-button; time-display tape counter;

pause control; automatic or manual program changeover; 4-ch mode selector push-button; 2-ch recording/2-ch/4-ch play; recording VU meters; slide-rule record-level controls; frequency response 50-10,000 Hz; S/N 45 dB; 15¾" W × 4½" H × 9⅛" D..... $199.95

SONY from SUPERSCOPE

TC-277-4 Quadradial Tape Deck

Reel-to-reel, 3-speed (7½, 3¾, 1⅞ ips), 4-channel, in-line design. Response 50-16,000 Hz ±3 dB at 7½ ips; S/N 52 dB; wow & flutter 0.12% at 7½ ips. Has two heads (4-channel erase & record/play), four inputs, and four line

outputs (1/ch). Input sensitivity 0.06 V. 15¾" W × 7¾" D × 15½" H..... $469.95

TC-258 Quadradial 8-Track Deck

Playback of 4/2 channel 8-track cartridges. Features program select button; repeat button for same program; fast-forward; program indicating lamps; 4 ch/2 ch indicating lamp; automatic 2 ch/4 ch switching. Response 40-12,000 Hz; wow & flutter 0.25%. 8¾" W × 4 1/16" H × 9 9/16" D.

120-V, 60-Hz operation $119.95

TC-388-4 Quadradial Tape Deck

Open reel, 2-speed (7½ & 3¾ ips) 2- and 4-channel recorder. Response 20-25,000 Hz (standard tape) and 20-25,000 Hz ±3 dB (SLH-180 tape) at 7½ ips. (S + N)/N 52 dB standard tape; 55 dB SLH-180 tape. Has four auxiliary inputs; impedance 100,000 ohms; four mike inputs; sensitivity −72 dB. Three heads (erase, record, playback); four VU meters. Wow & flutter 0.09% at 7½ ips (rms (NAB) weighted). Features pan pot on-off switch; mike attenuator (−20 dB); built-in reel locks; line output level control. 16 7/16" W × 19¾" H × 8⅞" D.. $679.95

TC-788-4 Quadradial Tape Deck

Records/plays 4 channel; 15 & 7½ ips; will handle up to 10½" reels; 30-22,000 Hz ±3 dB (standard tape), 30-28,000 Hz ±3 dB (SLH-180 tape), both at 15 ips; features 4-digit tape counter; four illuminated VU meters; illuminated pause control with lock; pan pots with on-off switch; full complement of inputs & outputs; comes with two RAD-10 reel hub adapters, 10½" empty reel, four RK-74 audio cables, head-cleaning ribbon; walnut base. 17⅜" W × 22" H × 8¾" D..... $1399.95

SUPERSCOPE

TD-48 4/2 Ch Cartridge Player

Has automatic 2- and 4-channel switching that sets tape player for correct operation; illuminated 4-channel indicator; built-in automatic program selector; illuminated program indi-

cators; fast-forward, repeat, and program selector push switches; walnut wood-grained cabinet. Response 50-10,000 Hz; (S + N)/N −48 dB. 7⅛" × 4⅞" H × 9¾" D..... $99.95

SYLVANIA

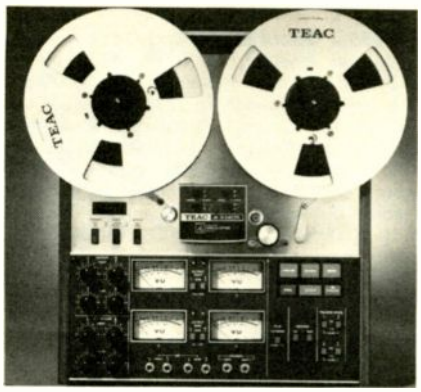
CQ3733 4 Ch 8-Track/AM-FM Stereo

Features built-in 8-track four-channel player; AM-FM stereo receiver; built-in BSR automatic turntable with ceramic cartridge & diamond stylus; four full-range 6" speakers in sealed air-suspension enclosures; front-panel stereo or 4-channel headphone jacks; cut/boost bass & treble controls; provision for accommodation of CD-4 discrete phono demodulator; individual slide control for each channel; control unit 10½" H × 22½" W × 15¼" D; speakers 13⅜" H × 8⅜" W × 5½" D..... $369.95
CQ3739. Similar to CQ3733 but with Garrard 6-300 automatic turntable; Pickering V15 magnetic cartridge; cue/pause control; anti-skate control; tape monitor function switch; four speakers with 6" woofer & 2½" tweeter (16¼" H × 10¾" W × 6¾" D); control center 10½" H × 25¾" W × 15" D..... $499.95

9 4-Channel Tape Machines

TEAC

A-3340S 4-Channel Tape Deck
Multi-channel, three-motor, three-head stereo tape deck with 15 & 7½ ips speeds. Features



"Simul-Sync" which allows recording four discrete but fully synchronized channels on each track of a 4-track tape; permits synchronized overdubbing, professional mix-down and special effect tapes. Up to eight inputs (four mike, four line) can be recorded simultaneously. Push-button transport control with logic circuitry. Has 4/8 pole dual-speed hysteresis synchronous motor and two eddy-current induction reel motors. Unit includes separate bias level and EQ switches; cue control; total remote-control capability; four expanded-scale VU meters; 2-ch/4-ch play switch; front & rear stereo headphone jacks; pause control with indicator light; Quik-Lok reel holders. Response 35-22,000 Hz at 15 ips; 35-20,000 Hz at 7½ ips; wow & flutter 0.04% at 15 ips, 0.06% at 7½ ips. S/N 65 dB (WTD at 3% THD). 17⁵⁄₁₆" W × 20½" H × 8¾" D. $1199.50
A-2340. Same as A-3340S except 7" reels; 7½ & 3¾ ips; response 40-18,000 Hz at 7½ ips; wow & flutter 0.08% at 7½ ips; S/N 63 dB (WTD at 3% THD). 17⁵⁄₁₆" W × 18¾" H × 8¾" D. $779.50

2340R 4-Channel Tape Deck
Four-channel, three-motor, three-head deck which includes 2-ch play with automatic reverse. Has front-panel bias switch; 8 source mixing ability (4 line, 4 mike); four separate VU meters; tape/source monitor switches; mike inputs; mike/line level controls; output level controls. Records 7½ or 3¾ ips; will accept up to 7" reels; wow & flutter 0.08% at 7½ ips; response 40-18,000 Hz at 7½ ips. S/N 63 dB (WTD at 3% THD). 17⁵⁄₁₆" W × 18¾" H × 8¾" D. $899.50

TECHNICS BY PANASONIC

RS-858US 4-Channel 8-Track Deck
Will record/play all 2- or 4-channel cartridge programs. Has four separate input level con-

trols, four VU meters, mike & line inputs plus pause control and noise-suppressor switch. Response 30-12,000 Hz; wow & flutter 0.2%. 8¼" × 21⅛" × 11¼". $329.95

TOSHIBA

PT-884 2- and 4-Channel Tape Deck
Reel-to-reel type; 4 ch. record/playback. Three

speeds (1⅞, 3¾ & 7½ ips), 3 heads. Response 30-20,000 Hz ±3 dB with low-noise tape. (S + N)/N 50 dB. Wow & flutter 0.09% at 7½ ips. Has regular & low-noise tape switch. 15¾" × 17½" H × 8¾"D. $499.95

PT-114 2/4 Ch. Cartridge Deck
Plays all 8-track 4-channel and 2-channel stereo tape cartridges; S/N 45 dB; wow & flutter 0.2% rms; output 0.2 V; features four line output jacks; lighted program indicator with separate lighted 4-ch mode indicator; push-button program selector; walnut veneer cabinet. 9⁷⁄₁₆" × 4" × 10¹⁄₁₆". $99.95

WOLLENSAK

8080 4-Ch Player/2-Ch Recorder
Will record & play stereo and play 4-channel tapes; features Dolby noise-reduction circuit which operates on both play & record and FM broadcasts; tape selector switch for standard

or company's Classic cartridge tapes; digital minute & second counter for timing recordings; fast-forward; end-of-tape shut-off; response 30-15,000 Hz (Classic tape), 30-12,000 Hz (standard); S/N 60 dB (Dolby in), 50 dB (Dolby out); wow & flutter 0.1% rms (weighted). 19¾" L × 10¼" W × 5" D. $399.95

ZENITH

F712 8-Track/Receiver
Combines an AM-FM stereo receiver with built-in 2-/4-channel 8-track tape player and four Allegro 1000 speaker systems; features separate bass & treble controls; loudness and balance controls; speaker system has 6½" woofer & treble horn; LC crossover network; response 60-15,000 Hz; 8 ohm imp.; grained-walnut enclosure (16½" H × 10½" W × 7½" D). Control center 5¼" H × 25¼" W × 15½" D. $359.95

F736 Phono/8-Track/Receiver
Combines an AM-FM stereo receiver with built-in 2-/4-channel 8-track tape player, matrix 4-ch record player, and four Allegro 1000 speaker systems; same features as F712 plus record player with low-mass tonearm; cueing control; 0.7 mil × 3.0 mil stylus. Control center 9½" H × 25¼" W × 15½" D. $419.95

9 4-Channel Headphones

BEYER/DYNAMIC

DT-204 4-Channel Headphones
Frequency range 20-20,000 Hz; impedance 4 × 200 ohms (4-channel), 2 × 100 ohms (stereo); independent volume controls for each front channel built into right earcup; 4-ch./stereo slide switch on right earcup; two jack plugs color-coded for front & rear channels; 10-ft detachable cable. Weight 14 ounces. $120.00

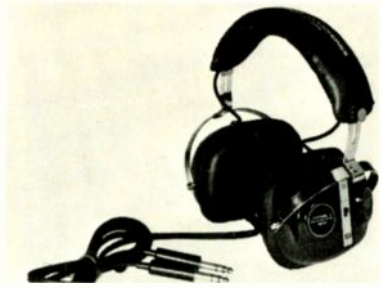
HEAR-MUFFS

PM-4C "Promuff"
Four-channel version of PM-2C. Features stereo audio monitor with audio energizer for direct connection to speaker output terminals on audio amplifier; 4" dynamic audio driving elements; vinyl cover with fabric insert for audio-frequency transparency; 10-ft coiled cord, plus 25-ft extension cord; frequency response 20-20,000 Hz; THD unmeasurable at 95 dB SPL $74.95

QM-5000 "Superquads"
Four-channel version of HM-4000. Response 30-18,000 Hz; THD unmeasurable at 95 dB SPL $59.95

JVC

5944 4-Channel Headphones



2- or 4-channel design. Response 20-20,000 Hz. HD 0.5% at 1 mV. Has a built-in phase changeover switch $49.95

KOSS

4-Channel Quadrafones
Both versions are designed to be used for either 2- or 4-channel operation. Each earpiece has dual 1½" dynamic drivers. These are connected in parallel for regular 2-channel stereo use. 3.2 to 600 ohm operation. Dist. 0.5% at 109 dB SPL. Capacity 5 V continuous with provision for 14 dB transient peaks. Has balance control on each earpiece. 22 ounces.
K/6LCQ. Response 20-17,000 Hz. Has foam-

filled vinyl ear cushions for ambient noise isola-

tion averaging 18 dB. $49.95
PRO/5Q. Response 20-20,000 Hz. Has Pneumalite earcushions for 40 dB ambient noise isolation $75.00

K2+2 4-Channel Headphones
Dynamic type. Features four separate drive elements (2 in each phone) for 4-channel reproduction, arranged in conventional 4-channel format. Has switch for conventional stereo operation. Frequency response 10-20,000 Hz. Sensitivity −87 dB ±3 dB SPL from each cup with 1 V continuous signal at 1000 Hz. Impedance 300 ohms each driver. For use with 3.2 to 600 ohm source impedances. Power input 5 V continuous maximum per phone. 10-ft. coiled cord. 26 ounces. Pneumalite earcushions. Comes with carrying case. $90.00

Phase/2+2 Quadraphone
Incorporates one Decilite driver element and one high-velocity dynamic element in each

earcup; response 20-20,000 Hz; programmer permits 127 personal listening perspectives in 4-channel sound without adjusting amp controls; features comparator switch for normal 4-channel mode vs Phase/2 + 2 mode; soft acoustical sponge ear cushions; vinyl-covered headband with pivoting self-adjusting yokes. $145.00

LAFAYETTE

F-4400 4-Channel Headphones
Four separate 2¼" speakers, each in its own acoustically isolated chamber, deliver 4-channel sound from 4-channel amplifiers and receivers. Exclusive, patented baffle plate increases front-to-rear separation. Has 4-channel/2-channel switch. Built-in circuitry derives 4 channels from 2-channel sources. Frequency response 20-20,000 Hz. Impedance 4-16 ohms. Foam-filled vinyl leatherette earpieces and adjustable headband. With 9½-ft cable, connectors. $44.95

F-400 4-Channel Headphones
Open-acoustic type; lightweight foam ear cushions; adjustable headband; four wide-range 2" transducers with polyester film diaphragms; response 20-20,000 Hz; 8 ohms; 6½-ft cord; two ¼" phone plugs. $29.95

MURA

QP-280N "Quadset" Headset
Has 4-channel/stereo switch; 10-ft coiled cord with dual plugs marked for easy identification. Response 20-20,000 Hz. Power rating 0.2 W; impedance 8-16 ohms. Custom leather-type padding on earcups and headband ... $24.95

QP-300N Deluxe "Quadset"
Features two woofers and two tweeters in each earcup for a total of eight dynamic speakers. Electronic crossover network. Impedance 8-16 ohms. Frequency response 20-20,000 Hz ±5 dB. Maximum allowable input 500 mW. Comes with 6-ft cable, plugs marked for easy identification, and zipper carrying case. $49.95

PIONEER

SE-Q404 2/4 Ch Headphones
Features four matched driver elements; sensitivity 105 dB/0.3 V (4-ch, each channel), 111 dB/0.3 V (2-ch, each channel); frequency range 20-20,000 Hz; max. input power 500 mW/ch; has volume controls; 2/4 ch selector switch; adjustable headband; 8 ohms; matching imp. 4 to 16 ohms. $69.95

RADIO SHACK

Nova-44 4-Channel Headphones
Quadraphonic/stereophonic dynamic design. Each earcup has separate speakers for two channels. Dual plugs provided for stereo or 4-channel use. Ported earcups. Frequency range 20-20,000 Hz; 8 ohms. 15-ft cord $44.95

SANSUI

QH-44 4-/2-Ch Headphones
Features four ¾" high-velocity speakers (one front/one back each housing); matches 4-25 ohm amplifier impedances; 25 ohms nominal imp.; frequency response range 20-20,000 Hz; maximum input power 100 mW; sensitivity 98 dB at 1000 Hz; acoustical foam urethane earpads; adjustable headband; 8.2-ft cord; weight 15.2 ounces (headphones only). $69.95

SCINTREX

HQ4 4-Channel Headphones
Has four separate drivers which will deliver sound from any discrete or matrixed four-channel source. Has quad/stereo switch for maximum utilization of the four drivers in the 2-ch stereo mode. Response 20-20,000 Hz. Impedance 4-300 ohms. Sensitivity 100 dB SPL 1.1 mW. Max. input 14 mW; max. output 110 dB. HD at 1 kHz 0.7%. Ambient noise isolation 40 dB. Has liquid-filled ear cushions 14-ft coiled cord with dual jacks. Black with chrome-plated headband. 24 ounces $69.95

XQ-4 4-Channel Headphones
Features dual-driver cavity assembly with four separate acoustic-suspension drivers; response 15-20,000 Hz (20-15,000 Hz ±4 dB); HD 0.6% at 110 dB SPL 1000 Hz; impedance 4-1000 ohms; sensitivity 4.0 mW (95 dB SPL), 13.0 mW (100 dB SPL); max. input power (loaded) 45 mW; max. acoustical output (loaded) 110 dB; liquid earseals; padded head cushion; comes with 14-ft coiled cord with dual jacks; 19 ounces. $79.95

STANTON

Dynaphase Sixty-Five Four C
Has two speakers in each earpiece for 20-20,000 Hz response. Equipped with two plugs

(blue for front, black for rear); earpieces marked "L" and "R" for accurate listening orientation. Sensitivity: 100 dB SPL (at 0.1 V input at 1 kHz each channel). Maximum power input 1.25 V rms continuous with provision for 10 dB SPL transient peaks. Dist. ½% at 110 dB SPL. Input imp. (at 1 kHz) 15 ohms ±20%. Vinyl-covered foam ear cushions; adjustable headband. 11-ft coiled cord with four-channel/stereo switch, front & rear plugs. 19 ounces. $69.95

9 4-Channel Headphones

SUPEREX

QT-4 "Quad-Tette" Headphones
Has four identical reproducers (two to an earcup) with frequency response of 25-17,000 Hz. 15-ft. cord. Ivory/Cordovan $50.00

QT-4B "Quad-Tette" Headphones
Has four identical reproducers (two to an earpiece) with frequency response of 20-18,000

Hz. 15-ft. cord and 2-4 ch. sw $65.00

TECHNICS BY PANASONIC

EAH-420 4-Channel Headphones
Dynamic type using six drivers; each earpiece has center-mounted 3" woofer with two iso-

lated front-back 1¾" tweeters; high efficiency; independent tone & volume controls on each earpiece; 4-ch/2-ch selector switch; input imp. 4-16 ohms; response 20-20,000 Hz; max. input 1000 mW; sensitivity (1 mW, 200 Hz) = 104 dB; 9.1-ft cord. 23.8 ounces..... $79.95

TELEPHONICS

TEL-101F "Fixler Effect" Phones
Patented design involving specially designed drivers positioned in front of and behind ear for

realistic spatial distribution of sound; two dynamic drivers per phone; response 20-20,000 Hz; sensitivity 100 dB SPL at 1000 Hz for 1 mW; dist. 0.2% max; features "Quadrablend" control to adjust ambience; open-cell foam ear cushions. 23 ounces..... $59.95

TEL-101A "Quadramate"
Designed to be used with the TEL-101F to create 4-ch effect from 2-ch program sources; max. power 1 W; input impedance compatible with all hi-fi system phone jacks; no power required; has focus and perspective controls; 6-ft cord..... $26.95

TOSHIBA

HR-40 2-Ch/4-Ch Headphones
Features 4-channel/2-channel changeover system with two plugs (front & rear). Dynamic driver 3" × 4". Frequency range 20-20,000 Hz; rated input power 1 mW/ch; imp. 4-16 ohms. Comes with 6.6-ft. cord. Total weight 27½ ounces $54.95

ZENITH

839-35 2/4 Ch Headphones
Has 2-ch or 4-ch compatible slide switch; separate volume controls on each earpiece; frequency response 20-20,000 Hz; 8 ohms imp.; 10-ft coiled cord. Weight 11 ounces.... $75.00
839-34. Same as 839-35 except frequency response 20-19,500 Hz. Weight 17 ounces..... $59.95

839-44 2/4 Ch Headphones
Has 2-ch or 4-ch compatible switch, 2-4 channel mode selector switch; volume/balance control; response 20-19,000 Hz; 8 ohms; 10-ft coiled cord. Weight 16 ounces..... $49.95

9 4-Channel Decoders & Miscellaneous

AUDIONICS

106C High-Definition SQ Decoder
Features discrete 4-channel and stereo inputs, tape monitor, duplicated DIN and RCA inputs and outputs. Close-tolerance phase-shift network, 20-18,000 Hz ±10 degrees (typically 6 degrees). Response 5-100,000 Hz ±1 dB. THD 0.025% S/N −80 dB with only 250 mV signal in. Low-impedance output for placement up to 100 feet from control amplifiers. Switchable blend for up-date for full logic. Wired and tested. $99.95
106B. Same as 106C except less case and trim panel. For special installation. Wired & tested. $74.95
Trim Panel & knobs $8.95

DYNACO

Quadaptor
The simplest type decoder for recovering 4-channel information from 2 channels. Does not require two additional power amplifier channels. Provides level adjust for rear speakers. Unit connects between speakers and power-amp outputs. Is a passive device. 4½" × 4½" × 6¾" D. Kit..... $22.50
Assembled..... $29.95

ELECTRO-VOICE

EVX-44 Universal 4-Channel Decoder
Automatically provides correct decoding of all types of matrixed 4-channel program material. Provides optional front-to-rear separation enhancement. Connects into hi-fi system between preamp & power amp or through tape jacks. Has inputs for 2- and 4-channel tape sources. (S + N)/N 70 dB below ¼ V. Gain is unity. Maxi-

mum input 4 V rms. Response 20-20,000 Hz ±1 dB. 2¾" × 8" × 7" D..... $99.95

JVC

4DD-5 4-Channel Demodulator
Designed to be used with the CD-4 four-channel system. Can be added to any existing 2-channel turntable & 4-channel reproducing system. Input 1.5 mV at 100,000 ohms impedance. Output 300 mV at 5000 ohms impedance. Response 20-16,000 Hz. Separation semi-adjustable. 3⅛" × 6⅞" × 11½"..... $129.95

LAFAYETTE

LA-524 4-Channel Decoder/Amplifier
Designed to convert regular 2-channel stereo systems into discrete and SQ matrix 4-channel stereo systems. Features built-in SQ decoding circuit for playback of Columbia and other SQ-decoded discs; firm's 4-channel matrixing circuit for regular 2-channel stereo program sources. Requires separate 2-channel amp & speakers. Features master front-and rear-volume control. Has fused speaker outputs, 6½ W rms/ch into 8 ohms at 1% THD (50-20,000 Hz) both channels driven..... $49.95

QD-4 4-Channel Adapter
Synthesizes 4-channel sound from regular 2-channel stereo records, tapes. Does not require an additional stereo amplifier. Has 4-position function switch, rear level control, phono jacks. 5¾" W × 4⁹⁄₁₆" C × 2⅞" H..... $14.95

MARANTZ

SQA-2B Full-Logic Decoder
Full-logic SQ decoder featuring wave-matching and variable blend; separation of up to 20 dB; designed to fit into special under-chassis slot of company's Quadradial receivers.... $79.95

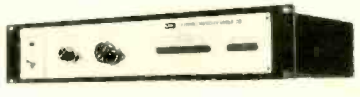
CD-400 Demodulator
Designed to be used with any 4-channel receiver; phase-lock loop for the 30 kHz carrier signal; built-in noise reduction circuits for each channel; has rear-channel calibration controls & CD-4 calibration disc; features auxiliary set of 4-channel inputs; front-panel Aux. push switch..... $139.95

MX

1405 CD-4 Demodulator
Features automatic/manual switching between CD-4 and stereo; 4-channel CD-4 indicator light; frequency response 20-15,000 Hz; rated input: 2 mV (high sensitivity), 4 mV (low); rated output level 200 mV; input imp. 100,000 ohms, output 5000 ohms. 3¾" H × 9¼" W × 11½" D..... $129.95

SANSUI

QSD-1 4-Ch Decoder/Synthesizer
Features three separate QS "Vario-Matrix" decoders; 20 dB separation between adjacent channels, 30 dB across diagonally opposite channels; QS synthesizer for deriving 4-chan-



nel sound from stereo records, tapes, and FM stereo signals; frequency response 20-30,000 Hz; dist. 0.1% (1000 Hz). 19" W (rack mount) × 3½" H × 12" D. $349.95

SONY

SQD2010 4-Channel Decoder

Features SQ decoder with front/back and waveform comparator logic circuits; regular matrix

decoder; four calibrated VU meters; tape monitor switch for 2- and 4-channel tape recorders; extra inputs and controls for discrete 4-channel tape player or demodulator or other high-level discrete sources; provides 4-channel effect even when playing stereo programs. 5⅞" H × 15¾" W × 12⅞" D. $250.00

TEAC

AN-300 Dolby Noise Reduction Unit

Has four separate Dolby-B type noise-reducing systems within a single housing. Features four VU meters. With channels operated in pairs the unit affords simultaneous decoded stereo monitoring or full 4-channel Dolby encoding. Has a standard 400-Hz recording calibration tone on all four channels and a 420-Hz pulse circuit for easy identification of the calibration tone. Increased (S + N)/N of 10 dB at 10,000 Hz (5 dB at 1000 Hz). Sensitivity: tape and line 0.1 V. Outputs: record and monitor 0.3 V. Has multiplex filter. Response 20-20,000 Hz ±1.5 dB. 6¾" H × 16⅛" W × 10⅛". $399.50

AX-300 Multi-Channel Mike/Line Mixer

Has a preamplifier and features inputs for six low-impedance microphones (four circuits mike/line switchable and two circuits mike only). Has a six in and four out format. Noise level is −62 dB (−72 dB line); mike (600 ohms unbalanced) input 0.1 V max.; line output 0.3 V (7 V max.). 6⅛" × 16⅛" W × 10⅜" D. . . $429.50

Model 2 Audio Mixer

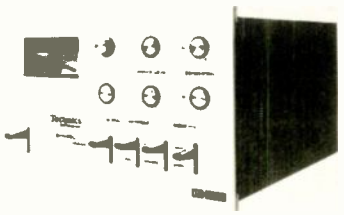
Features six input, six mike, or six line sources (or any combination of mike/line inputs), four

outputs; level controls for each input channel; master output level control; cue out jack on each input channel; accessory send/receive patch points on each output bus for reverb units, graphic equalizers, limiters, compressors, noise-reduction units, other signal processing equipment; four aux. outputs in parallel with four line outputs; selectable high-cut filters at 5 kHz or 10 kHz; low-cut filters at 100 Hz or 200 Hz; color-coded push-push channel assignment buttons with pan on each channel. 3¼" H × 13¼" W × 10¼" D. . $299.50

TECHNICS BY PANASONIC

SE-405H CD-4 4-Ch. Demodulator

Low-distortion, high separation demodulator



for playback of CD-4 discrete 4-channel recordings. Includes 4-channel semiconductor cartridge for mounting in any standard tonearm and will also play 2-channel and all other discs. Phono cartridge response d.c. to 50,000 Hz. Demodulator audio response 20-16,000 Hz. Built-in equalizer/preamps. Inputs: phono #1 (semiconductor cartridge) 3 mV; phono #2 (magnetic cartridges) 1.5 mV. Input impedances: phono #1 4700 ohms, phono #2 100,000 ohms. Output 300 mV. Has 3-position mode selector including 4-Chan. Auto for demodulating CD-4 records or automatically switching to 2-channel stereo, depending on record being played; 4-Chan. Aux.; Conventional Stereo. Indicator automatically lights to indicate playing and demodulation of CD-4 record. Separation adjustment. 3¾" H × 8¹⁄₁₆" W × 13" D. $159.95

SH-400 CD-4 4-Ch. Demodulator

Low-distortion, high-separation demodulator for playback of CD-4 discrete 4-ch records; uses dual-in-line IC's; includes built-in meter for precise adjustments; high-speed muting circuit for noise suppression due to surface flaws; carrier crosstalk cancellation circuit for minimizing IM dist.; high/blend switch for reducing noise on worn discs; frequency response 20-16,000 Hz; input imp. 100,000 ohms magnetic, 2200 ohms semiconductor; input sensitivity 2 mV magnetic, 3 mV semiconductor; output level/imp. 200 mV/300 ohms; S/N 60 dB; separation 55 dB (left/right), 30 dB (front/rear). $169.95

SH-3433 4-Channel Audio Scope

3-inch screen to view all 4-channel signal levels & phase relationships. Connects either at speaker terminals or outputs of any preamp. $279.95

TOSHIBA

SC-410 4-Channel Adapter

Designed as a 2-channel stereo system with 15 W/ch rms continuous power for use with any conventional 2-channel stereo system to provide 4-channel sound reproduction. Can be used with both discrete or matrix inputs. Has matrix decoding circuits similar to Dynaco system. Will extract out-of-phase material from a 2-channel program source or any 4-channel encoded material. Features four choices of multi-channel listening: "Concert Hall," "Studio," "Surround," and "Stage;" apparently derived from variations in mixing and high-frequency roll-off $169.95

ZENITH

E9029 4-Channel Adapter

When used with stereo receiver permits 4-ch matrixed records, 4-ch tapes & 4-ch FM stereo broadcasts to be played; requires two additional speakers. Grained-walnut enclosure. 4¹⁄₂" H × 14" W × 9⅛" D. $89.95

The best way to listen to a speaker is with your eyes open.

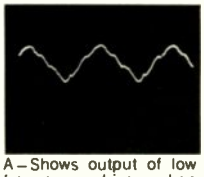
All speakers are not alike.

Even speakers that appear similar can sound very different.

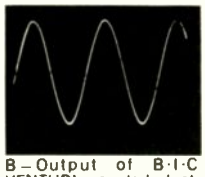
For example, when you compare a B·I·C VENTURI™ speaker system with others, you'll be astonished at how much more sound it delivers...even from a modest amplifier.

Behind the speaker grille you'll see the Venturi name over a cabinet slot that looks like a bass reflex "port" but isn't. "Bass reflex" speakers, whether they use slots, holes, or shelves, merely resonate an enclosure to a single frequency, achieving bass emphasis only at that one point.

The opening you see on a B·I·C VENTURI cabinet is the terminus of the Venturi path inside the enclosure (U.S. Pat. 3892288). It works as an acoustic transformer to produce bass energy as much as 140 times greater than would otherwise be achievable from a woofer alone in the same size cabinet.



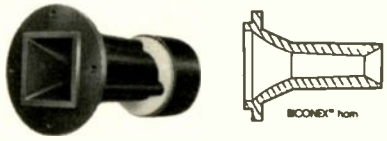
A—Shows output of low frequency driver when driven at a freq. of 22 Hz. Sound pressure reading. 90 dB. Note poor wave form



B—Output of B·I·C VENTURI coupled duct. (under the same conditions as Fig. A) Sound pressure reading 111.5 dB (140 times more output than Fig. A) Note non-distorted appearance.

Oscilloscope photos reveal that a B·I·C VENTURI speaker actually eliminates harmonic distortion from reproduced tones, literally purifying the sound and resulting in clean, tight and extended reproduction. That you can hear!

Notice the square-shaped mouth of the exclusive BICONEX™ midrange horn (pat. pend.). This unit is exceptionally efficient. It has remarkably smooth, uncolored response because of its unique conical/exponential flare. It is made of an inert substance to avoid "ringing" and spurious resonances. But, equally important, it provides wide-angle dispersal of sound in both horizontal and vertical planes, making speaker positioning non-critical. There is a super tweeter that operates in only the last octave for accurate musical timbre.



Even the control panel on the front of the baffle board contains a surprise. It controls an exclusive built-in device (pat. pend.) which compensates for the normal loss in hearing of bass and treble tones, (figure C) at various listening levels. Regardless of amplifier loudness settings, you hear all the music, all the time. This is accomplished automatically with the switch in the "on" position, or, you can adjust tonal balance manually for the type of music you play or the kind of sound you prefer.

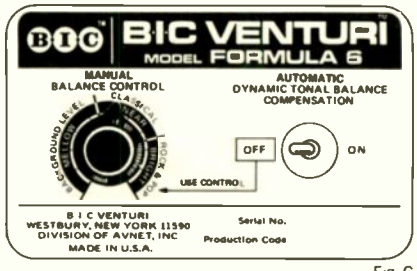


Fig. C

There's really much more to B·I·C VENTURI speakers such as how they compare with other design types in performance, and the way they function in a high fidelity system.

If you want to read some interesting and informative literature, ask your franchised B·I·C VENTURI dealer for a copy of our new 20-page consumer guide to loudspeaker performance, or write to us: B·I·C VENTURI Westbury, N.Y. 11590.

Div. of Avnet, Inc.

B·I·C VENTURI™

10 SPEAKER SYSTEMS

THE loudspeaker is probably the most important part of a high-fidelity system because its characteristics are imposed on every reproduced sound and the electro-mechanical speaker is inherently the least "perfect" audio component.

Most hi-fi speaker systems use dynamic drivers in a two-way or three-way configuration. A large cone "woofer" radiates the low frequencies and a crossover network channels the higher frequencies to a smaller "tweeter" which has more suitable frequency response and disperson characteristics. In a three-way system, the first crossover is from the woofer to a mid-range driver and at a higher frequency, there is a second crossover to the tweeter.

For many years, the most popular speaker systems have been compact types, often called "bookshelf" speakers although many are too large and heavy to be installed on a bookshelf. Acoustic-suspension systems (fully sealed enclosures) have a deeper bass response (all else being equal), but are relatively inefficient and require considerable amplifier power for reasonably loud listening levels. Recently there have been signs of a trend back to ported enclosures, which are more efficient, yet can be designed to deliver a very adequate bass output.

There has been a simultaneous trend toward larger, floor-standing speaker systems. Most of these can generate a much higher sound level than is possible with compact systems, without requiring excessive amplifier power. Despite the numerous variations in detail among speakers, almost all of them operate on the same principles. Their individual sound qualities reflect the philosophies of their designers.

Unlike amplifiers and tuners, loudspeaker performance specifications are poorly defined and there is almost no industry-wide standardization of test methods. This situation is aggravated by the difficulty—if not impossibility—of devising objective measurements that correlate reliably with subjective sound quality and manage to convey some sense of the sound of the speaker. It is simply not possible to compare the listening qualities of two speakers by examining manufacturers' published specifications and ratings. For this reason, it is imperative that speaker selection be based on your own listening judgment, aided by the test reviews in audio publications.

There are a few types of speakers whose design differs materially from the majority. Large horn-loaded speakers have been available for years, but their high efficiency and low distortion must be balanced against their considerable cost and physical size. Electrostatic speakers can be made to have nearly ideal characteristics at middle and high frequencies, but full-range electrostatic speakers are large, expensive, and difficult to coordinate with room decor. Some unusual tweeter designs exhibit excellent properties, but as other designers have shown, there are many ways to achieve a desired end in loudspeaker performance.

A speaker should really be judged in its entirety, rather than by its bass or treble performance alone. Furthermore, if possible, it should be heard in your own home before a final decision is reached. A given speaker can sound completely different in varied acoustic environments. This may account for some of the conflicting opinions expresssd by different people about the same speaker. Be sure, too, that your amplifier has sufficient power to drive the speaker of your choice.

ABRAXAS

4 Three-Way Speaker System

Three-way, four-speaker system with one 12" rubber-surround woofer, one 5" rubber-impregnated mid-range, two 3" hemispherical dome tweeters; response 32-20,000 Hz ±4 dB; minimum recommended amp power 15 W rms/ch; impedance 8 ohms; dispersion 10 dB down at 45° off-axis at 10,000 Hz; crossovers 800 & 3500 Hz with 12 dB/octave slope. 24" H × 14" W × 12" D $225.00

6. Similar to Model 4 except seven speakers, three 12", 12" mid-range, three 3"; response 30-21,000 Hz; min. input power 25 W rms; max. 250 W rms $675.00

5 Four-Way Speaker System

Four-way, four-speaker air-suspension system with 12" woofer, 12" & 6" mid-range, one 3" tweeter; response 32-21,000 Hz; min. input power 10 W rms; max. 100 W rms; crossovers 900, 4000, and 10,000 Hz $325.00

9. Similar to Model 5 except has two 10" woofers; max. input power 200 W rms $575.00

7 Four-Way Speaker System

Four-way, five-speaker transmission-line system with 12" woofer, 12" mid-range, and three 3" tweeters; response 20-22,000 Hz; min. input power 25 W rms; max. 150 W rms; crossovers 700, 3500, and 10,000 Hz $675.00

10. Same as Model 7 except one 10" woofer, 12" mid-range, 6" mid-range, 3" tweeter; response 22-22,000 Hz; max. input power 125 W rms $575.00

ACOUSTIC RESEARCH

AR-2ax 3-Way System

Sealed acoustic-suspension 3-way bookshelf system with 10" woofer; 3½" mid-range, and ¾" dome-type tweeter. Response 43-20,000 Hz ±3 dB (in test chamber); crossovers at 1400 and 5000 Hz. Has mid-range and tweeter level controls, 8 ohms impedance, 25 watts rms driving power recommended. 13½" H × 24" W × 11½" D. Walnut-veneered finish $165.00

AR-3a 3-Way System

Sealed acoustic-suspension 3-way bookshelf system with 12" woofer, 1½" mid-range, and ¾" dome-type tweeter. Response 38-20,000 Hz ±2½ dB (in test chamber); crossovers 575 and 5000 Hz. Has mid-range and tweeter level controls, 4 ohms impedance. 25 watts rms driving power recommended. 14" H × 25" W × 11⅜" D. Walnut-veneered finish $295.00

AR-5 3-Way System

Sealed acoustic-suspension 3-way bookshelf system with 10" woofer, 1½" mid-range, and ¾" dome-type tweeter. Response 45-20,000 Hz ±2½ dB (specialized test conditions); 650 and 5000 Hz crossovers. Has mid-range and tweeter level controls, 8 ohms impedance, less than 4% HD at 60 Hz at 15 W. 25 watts rms driving power recommended. 13½" H × 24" W × 11½" D. Walnut-veneered construction $215.00

AR-6 2-Way System

Sealed acoustic-suspension 2-way bookshelf system with 8" woofer and 1¼" cone-type tweeter; 1800 Hz crossover. Has tweeter level control switch, 8 ohms impedance. 20 watts rms driving power recommended. 12" H × 19½" W × 7" D. Walnut-veneered construction $99.00

AR-7 2-Way System

Has 8" acoustic-suspension woofer & 1¼" wide-dispersion tweeter. Average free-air resonance of woofer 25 Hz; 68 Hz in enclosure. 15 W/ch continuous rms minimum recommended amplifier power. 2000 Hz crossover. 8 ohms impedance. Has 2-position high-frequency level adjust switch. 9¾" × 15¾" × 6¼" D. Walnut-grained vinyl finish $75.00

AR-LST Transducer

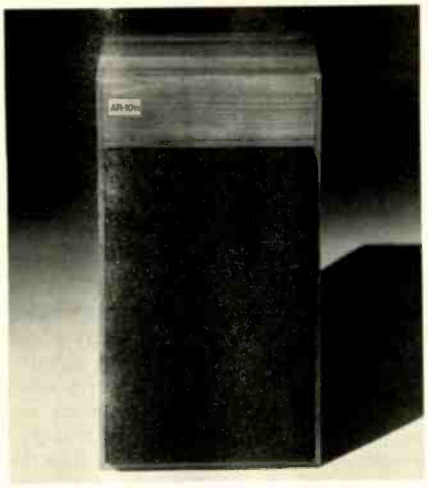
Has flat profile from 30-20,000 Hz ±2 dB, Features 12" acoustic-suspension woofer, four 1½" mid-range hemispherical radiators, and four ¾" hemispherical tweeters. Drivers are the same as in AR-3a. Crossovers at 525 and 5000 Hz. Has 6-position switch for six accurately repeatable spectral energy profiles. 8-ohm impedance. Power handling ability (with FNM 2 fuse) 180 watts for 10 sec., 23 watts long-term average. 27⅛" × 20" × 9¾" $600.00

AR Advanced Development Div.

AR-10π

Three-way system incorporating a 12" acoustic-suspension woofer, 1½" dome hemispherical mid-range, and ¾" soft-dome hemispherical tweeter. Crossovers 525 and 5000 Hz. Response 30-22,000 Hz, +1.5, −2 dB. Front-panel controls behind hinged door are: 3-position

10 Speaker Systems



switches, "woofer environmental control" for proper spectral balance of speaker in corner (π), center of wall (2π), or middle of room (4π); mid-range output level, 0 dB, −3 dB, −6 dB; high-range output level 0 dB, −3 dB, −6 dB; imp. 8-16 ohms depending on position of WEC and mid- & high-range switches; Min. recommended power 25 W/ch. Power handling capability 150 W/ch with not more than 10% clipping. Cabinet finished all sides. 13 15/16" W × 25" H × 10 3/4" D. Walnut solids and veneer cabinet $395.00

AR-11. Identical to AR-10 except for woofer environmental control function and its associated crossover components, hinged door, and finished back. Mid-range & high-range control switches on back panel; imp. 4 ohms. Walnut veneer constructed enclosure $295.00

AR-MST/1

Two-way system with 8" acoustic-suspension woofer, three 1 1/4" cone-dome direct radiator mid- and high-frequency drivers in computer modeled array, for flat response in frontal hemisphere without interference effects; crossovers 1600 & 5000 Hz; 3-position switch for repeatable mid- and high-range output levels (+3 dB, 0, −3 dB); impedance 8 ohms; min. recommended power 25 W/ch; power handling 150 W/ch with not more than 10% clipping. 14 3/16" H × 21" W × 7 3/4" D. Walnut solids and veneer cabinet ..... (pair) $159.00

ADC

XT-10 Loudspeaker System

Two-way system with 10" high-compliance low-frequency driver and two 2 1/2" cone tweeters. Response 37-20,000 Hz ±3 dB. Impedance 8 ohms. Contour control permits anechoically flat response or down 3 dB at 10,000 Hz. Sealed oiled-walnut cabinet. 23 3/4" × 13" W × 11 3/4" D. $115.00

XT-9 Loudspeaker System

Sealed enclosure; 10" high-compliance woofer & 2 1/2" viscous-impregnated cone tweeter; response 45-20,000 Hz ±3 dB; 8 ohms imp. Walnut-grained cabinet. 23 3/4" H × 13" W × 11 3/4" D. $89.00

XT-6 Speaker System

Designed for small rooms or 4-channel installations; has 6" woofer & 2 1/2" viscous-impregnated cone tweeter; response 42-20,000 Hz ±3 dB; 6 ohms imp. Walnut-grained, air-tight cabinet. 12 7/8" H × 8 1/2" W × 8 1/8" D. $64.95

303AX 2-Way System

Sealed enclosure, 2-way bookshelf system with 10" woofer and 2 1/2" wide-dispersion tweeter. Response 37-20,000 Hz ±3 dB (average living room); 1500 Hz crossover frequency; 3 dB change mid-range and tweeter level controls. 8 ohms impedance. Requires 10 watts driving power. Walnut-grained vinyl air-tight cabinet. 23 3/4" H × 13" W × 11 3/4" D. $100.00

New Milford I Speaker System

Two-way acoustic-suspension system; 10" long-excursion woofer, 2 1/2" viscous-impregnated cone tweeter; 1500 Hz crossover; response 45-20,000 Hz ±3 dB; contour control half-power 3 dB rolloff for high frequencies; min. recommended power 5 W rms; simulated walnut-grained non-resonant wood products cabinet; acoustically transparent grille. 22 1/2" H × 13" H × 11" D $99.95

New Milford II Speaker System

Three-way acoustic-suspension system; 10" long-excursion woofer, 2 1/2" viscous-impregnated cone mid-range, 2" dome tweeter; response 45-20,000 Hz ±3 dB; crossovers 1100 & 5000 Hz; contour control half-power 3 dB rolloff for mid-range & high frequencies; min. recommended power 10 W rms; non-resonant wood product enclosure finished in oiled-walnut solids and veneers; acoustically transparent grille. 22 1/2" H × 13" W × 11" D $199.95

New Milford III Speaker System

Three-way acoustic-suspension system; 12" long-excursion woofer, 1 3/4" dome mid-range, 3/4" dome tweeter; response 37-20,000 Hz ±3 dB; crossovers 500 & 5000 Hz; rotary selector switch to adjust mid-range and/or high end; min. recommended power 10 W rms; non-resonant wood products enclosure finished in oiled-walnut solids and veneers; acoustically transparent grille. 25" H × 12 3/8" W × 11 1/2" D $299.95

ADS

L-400 Two-Way Speaker System

Efficient acoustic-suspension design; response 30-25,000 Hz (DIN); minimum recommended amplifier power 10 W rms; crossover 1500 Hz; 4 ohm imp.; has 1" soft-dome tweeter, 7" long-excursion, high-compliance woofer; efficiency: 85 dB SPL at 2 W rms input at 10 feet; selected natural walnut finish; removable black grille. 17 3/4" H × 10" W × 8 1/2" D $96.00

L-500 Two-Way Speaker System

Efficient acoustic-suspension design; response 25-25,000 Hz (DIN); minimum recommended amplifier power 10 W rms; crossover 1500 Hz 12 dB/octave; 4 ohm imp.; has 1" soft-dome tweeter, 8" long-excursion, high-compliance woofer; efficiency: 87 dB for 2 W input at 10 feet; selected natural walnut finish; removable black grille; 20" H × 11 1/2" W × 9 3/4" D.. $129.95

L-700. Same as L-500 except has two 7" long-excursion, high-compliance woofers; 21 5/8" H × 12 1/4" W × 10 1/2" D. $169.95

L-710 Three-Way Speaker System

Efficient acoustic-suspension design; response 25-25,000 Hz (DIN); minimum recommended amplifier power 15 W rms; crossovers 550 & 4000 Hz at 12 dB/octave; 4 ohms imp.; 1" soft-dome tweeter, 2" soft-dome mid-range, two 7" long-excursion, high-compliance woofers; efficiency: 87 dB SPL at 2 W input at 10 feet; selected natural walnut finish; removable black grille. 21 5/8" H × 12 1/4" W × 10 1/2" D $245.00

L-810 Three-Way Speaker System

Efficient acoustic-suspension design; response 20-25,000 Hz (DIN); minimum recommended amplifier power 15 W; crossover 550 & 4000 Hz at 12 dB/octave; 4 ohm imp.; 1" soft-dome tweeter, 2" soft-dome mid-range, two 8" long-excursion, high-compliance woofers; efficiency: 88 dB SPL at 2 W input at 10 feet; selected natural walnut finish; removable black grille; 25 1/2" H × 14 1/8" W × 11 3/4" D. $329.00

2000 Bi-amplified Speaker System

Mobile, hi-fi speaker system for car, boat, or on-location recording applications; consists of two speaker systems, power supply/amplifier unit, connecting cables, and mounting hardware; stereo system has two 1" soft-dome tweeters (imp. 4 ohms), two 4" long-excursion, high-compliance woofers (3.3 ohms); power amp.: min. sine-wave power output into load at 0.2% THD at 14.5 V d.c. supply voltage, 2 × 60 W at 500 Hz (woofers), 2 × 20 W at 10,000 Hz (tweeters); response 50-25,000 Hz (DIN 45,000); opto-electronic limiters; electronic short-circuit protection; power supply: d.c.-d.c. switching converter operating at 25 kHz; components enclosed in black metal cabinets; perforated anodized aluminum speaker grilles. Speaker cabinets: 7" H × 4 1/2" W × 4" D, power supply/amplifier: 3 3/8" H × 9 1/4" W × 11" D. ... $495.00

Braun LV-1020 Tri-amplified Spkr/Amp

Consists of three integral power amps with active electronic crossovers; three sealed acoustic chambers housing 1" soft-dome tweeter, 2" soft-dome mid-range, and 12" long-excursion, high-compliance woofer; active crossovers at 400 & 3000 Hz at 12 dB/octave; power amps: woofer 55 W rms at 40 Hz (40 W); mid-range 30 W rms at 1000 Hz (20 W); tweeter 14 W rms at 15,000 Hz (15 W) all at 0.1% dist.; S/N 90 dB; 110 dB max. SPL at 3 feet. Selected natural walnut finish, perforated anodized aluminum grille. 29 1/8" H × 15" W × 11 3/4" D. $779.00

LF-700. Optional speaker stand. Permits mounting of ADS L-810 or Braun LV-1020 ... $37.50

ADVENT

Advent Loudspeaker

Sealed enclosure, 2-way bookshelf system with 10" woofer & 2" impregnated-paper-cone tweeter. Response 20-15,000 Hz ±5 dB; 1000 Hz crossover. Has tweeter control. 8 ohms impedance. Requires 20 W (rms) driving power. 14 1/4" H × 25 5/8" W × 11 1/2" D. Walnut $132.00
Same but vinyl enclosure $114.00

Smaller Advent Speaker System

Sealed enclosure, 2-way bookshelf system. Response 20-15,000 Hz ±5 dB. 4 ohms impedance. Requires 15 W (rms) driving power. 11 1/2" H × 20" W × 9 1/4" D. Vinyl-clad walnut .. $89.00

Advent/2 Speaker System

Sealed enclosure, 2-way bookshelf system. 8

ohms impedance. Requires 20 W (rms) driving power. 11 1/2" × 19" × 7 1/4" D. White $74.00

AKAI

S-123 Three-Way Speaker System

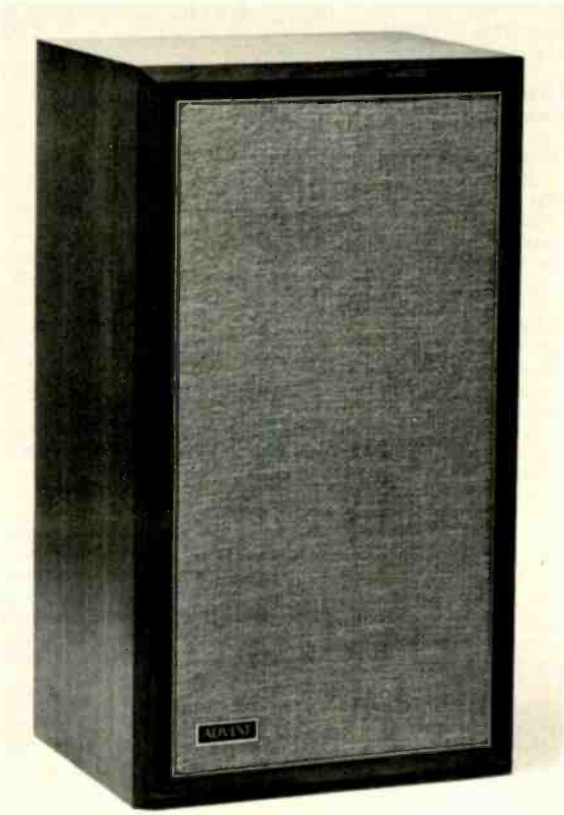
Three-way system with 12" rolled-edge woofer, 4 1/2" mid-range, and 1 3/4" tweeter; response 35-

(You Can Spend Two or Three or Four Times Its Price And Not Do Better.)

The Advent Loudspeaker.

For the past two years, magazine surveys have been finding that the Advent Loudspeaker is this country's best-selling speaker.

Since it isn't heavily advertised (we spend less than one per cent of our sales income on national advertising for all our products), and



since it's sold through a very limited number of stores, there's every reason to believe that it sells because it has something exceptional to offer.

Here are the reasons we believe people buy it:

- It's designed to compete in every audible respect with the most expensive speakers available, at a fraction – often a very small fraction – of their cost.
- Its useful frequency range is as wide as any speaker's, and its bass response is approached by very few.
- Its sound is exceptionally clear, detailed, and accurate.
- It has a carefully chosen octave-to-octave musical balance that's satisfying not just with the best recordings or one kind of musical material, but with the whole range of music and the many ways of recording it.
- It sounds consistently the same from speaker to speaker off the production line.

We realize it may be hard to believe that a speaker that costs only $114 to $141 (depending on cabinet finish and how far we've shipped it across the country) is as good a speaker in every respect as you're ever likely to want.

But we believe that it is. And we have hundreds of letters (both about it and its brother, the Smaller Advent) from satisfied customers who consistently say it does *at least* everything we represent it to do.

Close listening* to the Advent Loudspeaker (preferably on a good variety of material, so you can verify that its sound on one kind of music or recording isn't at the expense of another) will tell you why so many people buy it and go out of their way to tell us how happy they are with it.

In the meantime, we'll be happy to send you comprehensive information (including its reviews) on why and how it does what it does.

Thank you.

Advent Corporation, 195 Albany Street, Cambridge, Massachusetts 02139.

*If you're doing some A-B'ing of speakers in a showroom, they should be compared at equal volume levels for meaningful evaluation, and should be placed close to each other so that the effects of room placement are roughly the same. And you should compare no more than two different speakers at a time.

10 Speaker Systems

20,000 Hz ±5 dB/dB SPL; crossovers 1500 & 4000 Hz; high-freq. & mid-range level controls; 8 ohms imp.; will handle 50 W continuous; wood-grain vinyl cover; Polycoustic removable foam grille; 14¾" W × 26¾" H × 10¼" D. $189.95

S-122 Two-Way Speaker System

Two-way system with 12" rolled-edge woofer and 1¾" tweeter; response 40-20,000 Hz ±5 dB/dB SPL; crossover 2000 Hz; high-freq. level control; 8 ohms imp.; will handle 40 W continuous; wood-grain vinyl cabinet with removable foam grille; 14¾" W × 26¾" H × 10¼" D. $129.95

S-102 Two-Way Speaker System

Two-way system with 10" rolled-edge woofer and 1¾" tweeter; response 45-20,000 Hz ±5 dB/dB SPL; crossover 2000 Hz; high-freq. level control; 8 ohms imp.; will handle 35 W continuous; wood-grain vinyl cabinet with removable foam grille; 13⅛" W × 24" H × 9¾" D. $89.95

S-82 Two-Way Speaker System

Two-way system with 8" rolled-edge woofer and 3" tweeter; response 60-17,000 Hz ±5 dB/dB SPL; crossover 4000 Hz; 8 ohms imp.; will handle 15 W continuous; wood-grain vinyl cabinet with double-knit grille cloth; 11" W × 19" H × 6¾" D. $75.00

ALLISON

Model One Speaker System

Stabilized radiation loading design with two 10" woofers, two 3½" convex mid-range units, and two 1" tweeters; crossovers at 350 & 3750 Hz; LC half-section crossover network, air-core chokes and nonpolarized computer-grade capacitors. Features three-position control switch for selection of system acoustic power response (flat to concert-hall balance slope); 8 ohms impedance; efficiency 0.7% when placed at floor-wall intersection; minimum amplifier power 30 watts/ch for 100 dB SPL; acoustic power output ½ acoustic watt minimum over full frequency range, with 70 watts input; system resonance 45 Hz nominal. Sealed enclosure 40" H × 19" W × 10¾" front-to-back; internal volume 2550 cubic inches. Oiled walnut $360.00

Model Two. Same as Model One except has two 8" woofers, two 3½" convex mid-range, and two 1" convex tweeters; system resonance 52 Hz nominal. Sealed enclosure 36" H × 16" W × 9⅜" front-to-back; internal volume 1775 cubic inches. Oiled walnut. $295.00

ALTEC

873A Barcelona Speaker System

Sealed, floor-standing system with 15" bass driver with compression driver mounted to 511B sectoral horn; 500 Hz crossover (N501-8A network with 30904 attenuator/equalizer); frequency response 30-20,000 Hz; sensitivity: 92.5 dB SPL (at 4 ft, 1 W input, referenced to 8 ohms); dispersion 60 degrees at −6 dB vertical; 90 degrees horizontal; max. power 60 W; operational power range 20 to 300 W; long-term max. acoustic output 110.5 dB SPL at 60 W; hand-rubbed oiled-walnut finish; three-piece removable walnut-grained fretwork grille. 29⅞" H × 38½" W × 25" D. $699.00

878B Santiago. Similar to 873A except crossover 800 Hz; frequency response 35-20,000 Hz; hand-rubbed oiled-walnut finish with composition slate top; sculptured black foam grille mounted on removable panel. 30⅛" H × 25⅝" W × 18½" D. $499.00

879A Santana Speaker System

Sealed, floor-standing system with 15" bass/mid-range driver and 4" cone driver; crossover 3500 Hz; sensitivity: 95 dB SPL; frequency response 40-20,000 Hz; dispersion 75 degrees horizontal and vertical at −6 dB; max. power 45 W; operational power range 12 to 150 W; long-term max. acoustic output 112 dB SPL at 45 W; hand-rubbed oiled-walnut finish with composition slate top; acoustically transparent black woven fabric grille on removable panel. 23¾" H × 20" W × 17" D. $269.00

846B Valencia Speaker System

Vented, floor-standing system with 15" bass driver with compression driver mounted on 811B sectoral horn; crossover 800 Hz; frequency response 40-20,000 Hz; sensitivity; 97.5 dB SPL; dispersion 60 degrees vertical, 90 degrees horizontal at −6 dB; max. power 50 W; operational power range 10 to 250 W; hand-rubbed oiled-walnut finish; sculptured black foam grille mounted on removable panel. 29⅝" H × 26½" W × 20¼" D. $449.00

Stonehenge I Speaker System

Two-way floor-standing system with 12" bass driver and 5" cone tweeter; crossover 1800 Hz; frequency response 50-20,000 Hz; dispersion: 100 degrees vertical, 120 degrees horizontal at −6 dB; max. power 45 W; operational power range 15 to 150 W; hand-rubbed oiled afromosian teak cabinet; brown fabric grille. 37½" H × 16" W × 14¾" D. $299.00

Stonehenge II Speaker System

Three-way floor-standing system with 12" bass driver, 5½" cone mid-range, and 5" cone tweeter; crossovers 500 & 5000 Hz; frequency response 35-20,000 Hz; dispersion: 130 degrees vertical, & horizontal at −6 dB; max. power 50 W; operational power range 20 to 250 W; hand-rubbed oiled-oak cabinet; brown knit fabric grille on removable frame. 37½" H × 16" W × 14¾" D. $359.00

Stonehenge III Speaker System

Two-way floor-standing system with 15" bass driver with coaxially mounted sectoral horn and compression driver; 1500 Hz crossover; response 50-20,000 Hz; dispersion: 60 degrees vertical, 70 degrees horizontal at −6 dB; max. power 65 W; operational power range 10 to 350 W; hand-rubbed oiled-walnut cabinet; brown foam grille in removable panel. 46" H × 18¾" W 17¼" D. $595.00

Model One Speaker System

Two-way system with 8" bass driver & 4" cone tweeter; crossover 3000 Hz; response 50-20,000 Hz; max. power 30 W; operational power range 12 to 75 W; hand-rubbed oiled-oak veneer cabinet; brown knit fabric grille on removable frame. 21" H × 11½" W × 10⅜" D. $89.00

Model Two. Similar to Model One but with 10" bass driver; 1500 Hz crossover; max. power 35 W; operational power range 10 to 100 W; black knit grille. 24" H × 12½" W × 11½" D. . $119.00

Model Five. Similar to Model Two except 12" bass driver and two 4" cone tweeters; response 45-20,000 Hz; max. power 45 W; operational power range 12 to 150 W; hand-rubbed oiled-walnut veneer cabinet; 25½" H × 14½" W × 12" D. $169.00

Model Seven Speaker System

Three-way system with 12" bass driver, 6½" cone mid-range & 4" cone tweeter; crossovers 850 & 8000 Hz; response 45-20,000 Hz; max. power 50 W; operational power range 15 to 200 W; hand-rubbed oiled-walnut veneer cabinet; removable foam grille in choice of black, brown, blue, or burnt orange. 25" H × 16" W × 14⅛" D $219.00

Model Nine. Similar to Model Seven but with 5" cone tweeter; crossovers 800 & 7000 Hz; response 40-20,000 Hz; max. power 60 W; operational power range 12 to 250 W; hand-rubbed oiled-oak veneer cabinet; same grille choices. 26½" H × 17½" W × 15" D. . . $289.00

AUDIOANALYST

A-76X Two-Way Speaker System

Acoustic-suspension design with 10" woofer, 1¾" cone tweeter. Response 44-18,000 Hz ±3 dB; crossover 1800 Hz. Recommended amp. power 10 W min.; 100 W max. without fusing on normal music and speech. Impedance 8 ohms. Sealed walnut vinyl enclosure. Removable black grille cloth. 21" H × 12¼" W × 11⅛" D. $107.00

A-100X Three-Way Bookshelf System

Has 10" high-compliance woofer, 3" cone mid-range, 2" wide-dispersion tweeter. Response 40-20,000 Hz ±3 dB. Dispersion 160 degrees. Max. power input 100 W. Impedance 8 ohms. Crossovers (LC) 1500 & 7500 Hz. Has mid-range and tweeter level switches. Walnut vinyl cabinet with removable black grille cloth. 24⅜" H × 13¾" × 12" D $147.00

A-200X Four-Way Speaker System

Floor-standing system with 12" high-compliance woofer, 5" mid-range in separate sub-chamber, 3" tweeter, two 2" wide-dispersion angle-mounted super-tweeters. Response 38-20,000 Hz ±3 dB; system resonance 46 Hz ±1 Hz. Crossovers (LC) 800, 2000 & 7500 Hz. Maximum power input 100 W; impedance 8 ohms; dispersion 180 degrees. Has mid-range and tweeter level switches. Oiled walnut. 27" H × 15" W × 12¾" D. Has black grille cloth $259.00

AUDIONICS

TL30-B Speaker System

Two-way design with KEF B200 woofer; which operates crossover network 6 dB/octave to two 1½" radiators. Level control provides for h.f. balance. Woofer is mounted in 6-ft true transmission line which is damped with fluffed Dacron. Response 45-16,000 Hz ±3 dB; power handling 100 watts music power; 20 watts per channel minimum power input. 8 ohms; 39" × 11½" × 11½" Rosewood with dark grille $199.00

M32. Similar to TL-30-B but compact enclosure 21" × 12" × 10" D; furniture-grade natural walnut veneers. $150.00

M33 Speaker System

Three-way system with KEF speaker components and phase-corrected crossover designed to compensate for time delay and diffraction effects; 18 dB/octave sections throughout; resistive slot loading in woofer section; power handling 100 W/ch music; 8 ohms; natural wood veneers and solids; sculptured knit black grille; 30" × 16" × 14½" D. $350.00

Floor stand (10" high) . . . . . $50.00 pr.

TLN200. Similar to M33; uses Radford woofer loaded in transmission-line enclosure; frequency response 32-20,000 Hz ±3½ dB; supplied in mirror-image pairs; 50" × 17" × 14" D. . . . . $600.00 ea.

AUDIO RESEARCH

Tympani Speaker Systems

A new principle, similar to an electrostatic, except driving force is magnetic instead of electrostatic. Has Mylar diaphragm; large area, bipolar radiation, 1" folding floor-screen design. Power handling 50 W rms, 200 W music; available in off-white or black finishes.

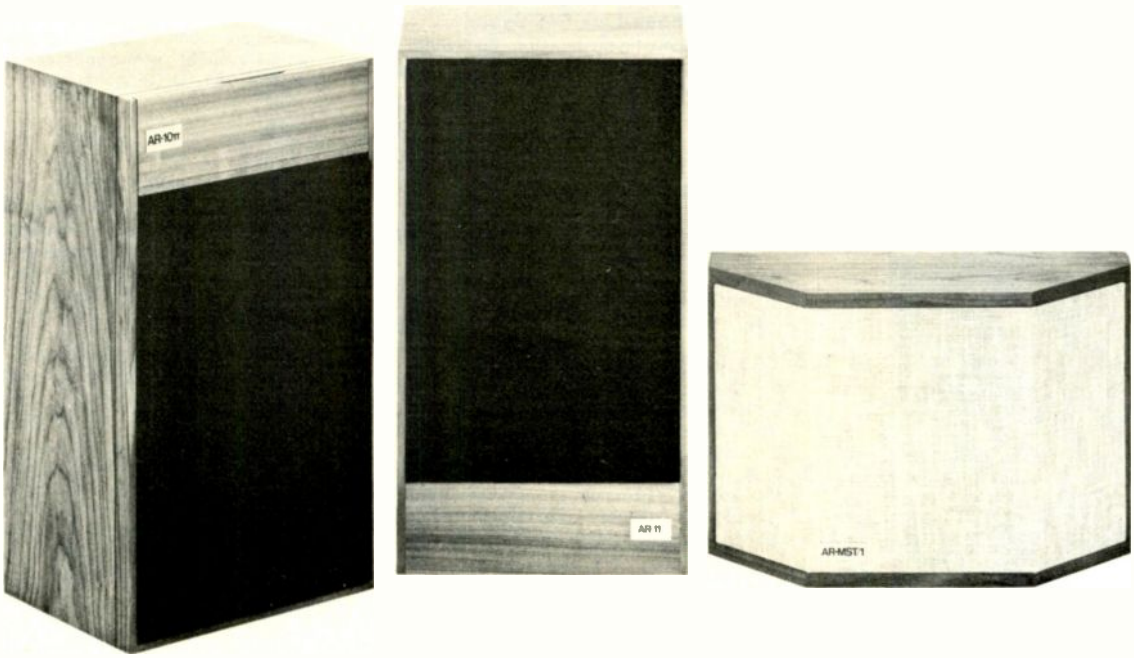
IC. Response 40-18,000 Hz ±3 dB; crossover 1325 Hz; imp. 8 ohms; . . . . . $1155.00 pr.

IIIA-77. Response 75-18,000 Hz ±3 dB; bi-amp required. . . . . $900.00 pr.

IV-TM. Response 60-18,000 Hz ±3 dB; tri-amp required; 16 ohms imp. . . . . $1175.00 pr.

WA. Response 35-30,000 Hz ±3 dB; 8 ohms imp. bi-amp required. $845.00

Introducing
A new family of loudspeakers from Acoustic Research



AR-10π
The AR-10π is the most accurate musical reproducer that Acoustic Research has ever made. It shares the characteristics of AR's previous speaker systems, smoothness of response, uniform dispersion, and low distortion. A significant additional feature of the AR-10π is its ability to deliver uniform flat energy response in most listening rooms.

Further, the designed-in performance of the AR-10π is preserved, whether the speaker is positioned against a wall, in a corner, or even in the middle of a room. Setting a single switch, called the 'Woofer Environmental Control', will ensure the correct level of bass energy for any of these positions. It is not possible to do this accurately with conventional loudspeaker designs or equalization techniques.

AR-11
The performance, drivers, and crossover of the AR-11 are identical to those of the AR-10π, except that the AR-11 does not incorporate a Woofer Environmental Control and the associated crossover components.

The AR-11 is designed for optimum performance when placed against a wall, as in the conventional bookshelf position, or slightly away from two adjoining room surfaces.

Both the AR-10π and the AR-11 use a 12 inch acoustic suspension woofer, a 1½ inch dome midrange, and a newly designed ¾ inch dome highrange.

AR-MST/1
The AR Miniature Studio Transducer offers at moderate cost the flat energy response of AR's other new speaker systems, together with the high power-handling capability required in many professional applications. Along with the AR-MST/1's small size, light weight, and shallow depth, these characteristics make the speaker especially appropriate for the monitoring of remote-location recordings as well as the accurate reproduction of music in the home, even at relatively high sound levels.

Guarantee
The workmanship and performance of all AR speaker systems are guaranteed for five years.

A complete description of the new family of AR speakers is available free. Mail us the coupon today.

Acoustic Research
10 American Drive
Norwood
Massachusetts 02062
Telephone 617 769 4200

AR
Acoustic Research
A TELEDYNE COMPANY

☐ Please send me a complete description of the AR-10π, AR-11, and AR-MST/1 speaker systems.

☐ Please send me the AR demonstration record 'The Sound of Musical Instruments' (check for $5 enclosed)

Name

Address

SR76

CIRCLE NO. 1 ON READER SERVICE CARD

10 Speaker Systems

AURATONE

5C "Super-Sound-Cube" Monitor
Ultra-compact, full-range speaker system with high-compliance 4½" heavy-duty driver; response 50-15,000 Hz; 8 ohms impedance; power handling 3 to 30 watts (10 watts rms). Has two-screw binding strip. 6½" × 6½" × 5¾" D. Walnut wood-grained vinyl; finished four sides & back; black foam grille with bronze-tone molding. ..... (pair) $39.95

AVID

105 Three-Way Speaker System
Floor-standing air-suspension system with 12" high-compliance woofer, basketless mid-range

with 3" cone, 1" dome tweeter, two side-firing 1⅜" auxiliary tweeters; crossovers at 500 Hz, 4000 Hz, 9000 Hz. Will handle 200 W program power; 25 W min. recommended. 8 ohm imp. Frequency response 30-18,000 Hz ±2 dB. Separate 3-position mid-range & high-frequency level switches; fuse-overload protection. Brown grille cloth; top optional in black high-pressure laminate or walnut; walnut sides. 26¼" H × 20⅛" W × 15" D. 5-year transferable warranty. $300.00

103 Three-Way Speaker System
Uses matched high-compliance 10" woofer, 4½" air-suspension cone mid-range, and a 1" dome tweeter; crossovers at 500 & 3500 Hz. Will handle 150 W; 20 W min. amplifier power. 8 ohms imp. Frequency range 35-18,000 Hz ±5 dB. Has 5-pos. mid-range and high-frequency level switch and fuse overload protection. Features changeable grille cloths in eight decorator colors. 25" H × 15" W × 9⅝" D. A 1¾" high floor stand is included. 5-yr transferable warranty $165.00

102 Two Way Speaker System
Two-way air-suspension speaker system with 10" high-compliance woofer and 1" dome tweeter; crossover 2200 Hz. Response 35-18,000 Hz ±5 dB. Will handle 100 W; 15 W min. amplifier power. 8 ohms imp. Has 3-pos. high-frequency level switch and fuse overload protection. 5-yr transferable warranty. Features changeable grille cloths in eight decorator colors. 25" H × 15" W × 9⅝" D. $130.00

100 Two-Way Speaker System
Air-suspension system with 8" high-compliance woofer and 1¾" wide-distribution cone tweeter; crossover 2500 Hz. Will handle 75 W; 15 W min. amplifier power. 8 ohms imp. Response 40-18,000 Hz ±5 dB. Has 3-pos. high-frequency control. Features changeable grille cloths in eight decorator colors. 21" × 12¾" W × 8½ D. 5-yr transferable warranty $88.00

60 Two-Way Speaker System
Two-way bass-reflex speaker system with 2½" wide-dispersion tweeter and high-compliance 9" × 6" elliptical woofer. Will handle 35 watts; 5 W minimum amplifier power. 8 ohms impedance. Response 60-17,000 Hz ±5 dB. 5-yr transferable warranty. Floating grille available in either brown or off-white. Brackets for wall mounting included. 8⅜" W × 27⅝" H × 8⁹⁄₁₆" D (pair). $125.00

BANG & OLUFSEN

Beovox Phase-Link S45 System
Two-way acoustic-suspension bookshelf system with 8" woofer, 3½" phase-link unit, and 1" dome tweeter. Response 38-20,000 Hz; 4-8 ohm imp.; 45 W continuous load; 75 W dynamic max. input power. 10¼" W × 18⅞" H × 7¹¹⁄₁₆" D $135.00

Beovox Phase-Link S60 System
Three-way acoustic-suspension bookshelf system with 10" woofer, 5" phase-link unit, 2" mid-range, and 1" dome tweeter. Response 36-20,000 Hz; 4-8 ohm imp.; 60 W continuous load; 100 W dynamic max. input power. 12⁹⁄₁₆" W × 23¼" H × 7¼" D $195.00

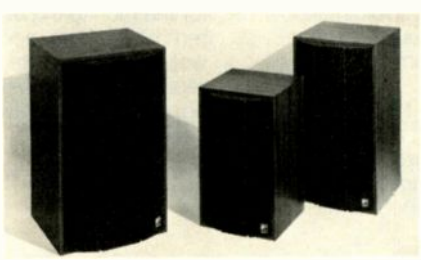
Beovox Phase-Link M70 System
Three-way acoustic-suspension floor-standing system with 10" woofer, 5" phase-link unit, 2½" mid-range, and 1" dome tweeter. Response 27-20,000 Hz; 4-8 ohm imp.; 70 W continuous load; 120 W dynamic max. input power. 13¾" W × 25⅝" H × 11⁷⁄₁₆" D $295.00
All speaker cabinets available in teak, rosewood, or light oak finish and white lacquer.

BEVERIDGE

Cylindrical Sound System
Consists of integral direct-coupled amplifier, full-range electrostatic transducer, lens, and enclosure; sound output aperture is vertical line source; energy radiates from 6-ft high slot; sound pressure is uniform horizontally over 180 degrees at all frequencies; input: 1 V-47,000 ohms; response 40-15,000 Hz ±2 dB. Oiled walnut cabinet; 6½-ft. H × 2-ft W × 11" side D, 16" center D. ..... (pair) $4000.00

B•I•C VENTURI

Formula 2 Speaker System
Utilizes Venturi principle (operation as an acoustic transformer in bass range) with 8"



heavy-duty woofer, Biconex horn/compression driver mid-range, and dome super tweeter. Max. rms amplifier power 75 W/ch. Response 30-23,000 Hz. Has a continuously variable tonal-balance control and an automatic dynamic tonal balance control with defeat switch. Dispersion 120° × 120°. Has removable reticulated foam grille available in black, brown, burnt orange, or blue. 19¾" × 12" × 11½" D $119.50

Formula 4 Speaker System
Same design as Formula 2 but with 10" woofer; response 25-23,000 Hz; and 100 W/ch max. rms amplifier power. 25" × 13¼" × 13" D. Same grille options $159.00
VB-4. Optional base $10.00

Formula 6 Speaker System
Same design as Formula 2 but with 12" woofer; 5" lower mid-range; two upper mid-range; and two super tweeters. Response 20-23,000 Hz. 125 W/ch max. rms amplifier power Dispersion 180° × 120°. Same grille options. 26¼" × 15¾" × 14¾" D $295.00
VB-6. Optional base $12.00

Formula 1 Speaker System
Two-way system; response 35-18,000 Hz; 8 ohms. High efficiency for use with low-power amps or receivers; will handle up to 50 W rms/ch. Features heavy-duty 8" woofer and Biconex horn/ compression driver for mid and treble frequencies. Zero-loss reticulated foam grilles available in brown, black, burnt orange, or blue. 16½" × 10⅞" × 10" D $74.95

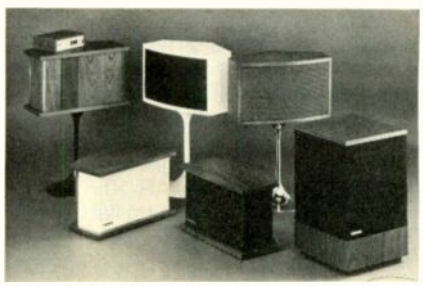
BML

Tracer I Speaker System
Two-way bookshelf system with 8" woofer and 6" piezoelectric tweeter; dual-phase coupling instead of crossover; frequency response 43-23,000 Hz +3 dB; nominal imp. 5 ohms; will handle 10-100 W; 2 A fuse. 22" H × 12" W × 10" D $112.00

Tracer II Speaker System
Three-way bookshelf/floor-standing system with 7⅛" ABR, 7⅛" woofer, two horn-loaded solid-state tweeters; mechanical crossovers 1000 & 2000 Hz; nominal imp. 4 ohms, compatible with all 4-8 ohm outputs; 10 W min. power input; response 28-22,000 Hz +5 dB, −3 dB (94 dB SPL on-axis); dist. 2% at all frequencies (50 W input); walnut-vinyl laminate; double-knit grille. 24½" H × 14¼" W × 9" D. Optional floor base available. $149.95

BOSE

501 Series II Speaker System
Special Direct/Reflecting speakers with one woofer providing direct sound and two tweeters



reflecting sound from rear wall. 20 W rms minimum recommended power; 100 W rms maximum power. 4 ohms impedance; walnut enclosure. 24" H × 14½" W × 14½" D ... $168.00

901 Series II Speaker System
Special Direct/Reflecting speakers with nine full-range speakers per enclosure to provide 11% direct and 89% reflected sound from wall behind speakers; solid-state active equalizer provides greater degree of adaptability to a wider range of home environments. 8 ohms impedance; walnut cabinet. 12¾" H × 20½" W × 27⅞" D. Pair including equalizer ... $598.00

301 Two-Way Speaker System
Ported, asymmetrical design utilizing wall reflections; 8" high-efficiency woofer in ported enclosure; 3" tweeter; dual-frequency crossover network with woofer transition 3000 Hz; tweeter transition 1200 Hz (one inductor, two resistors, one Mylar film capacitor); imp. 8 ohms; 10 W rms min. into 8 ohms; will handle up to 60 W rms; fire-retardant polyurethane foam grille; enclosure 17" W × 10½" H × 9½" D.

May be operated vertically or horizontally. Supplied in mirror-image pairs only. $96.00 ea.

BOZAK

Sonora B-201A Speaker System
Two-way bookshelf system with 8" aluminum-cone bass/mid-range driver and 2" high-frequency unit. Response 45-20,000 Hz; crossover 1800 Hz at 6 dB/octave. 8 ohms impedance. Will handle 60 watts program. 11¾" W × 20¼" × 10" D. Sculptured foam grille. $99.50

Tempo B-301FD Speaker System
Floor-standing unit on pedestal base; three-way bookshelf speaker with 12" high-compliance bass driver, 4½" mid-range, 2" tweeter. Response 40-20,000 Hz; crossovers 1200 & 3600 Hz at 6 dB/octave. 8 ohms impedance. Will handle 50 watts program. 14½" W × 24¾"H × 11½" D. Sculptured foam grille $189.50

Rhapsody B-401 Speaker System
Three-way compact speaker system with 12" high-compliance bass driver, 6½" mid-range unit, two 2" high-frequency drivers. Response 40-20,000 Hz; crossovers 800 & 2600 Hz at 6 dB/octave; 8 ohms impedance. Will handle 60 watts program. 18" W × 25⅝" H × 13¼" D $269.50
B-402. Same except with fabric grille . $274.50

MonitorC B-407 Speaker System
Has four 8" aluminum-cone bass/mid-range drivers and eight 2" treble units mounted in a sector-of-sphere configuration. Response 30-20,000 Hz; crossover 2000 Hz at 6 dB/octave. 8 ohms impedance. Will handle 150 watts program. 18½" × 40¼" H × 15" D $497.50

Symphony No. 1 B-4000A Modern
Infinite-baffle, 3-way floor-standing system with two 12" woofers, 6½" mid-range, and eight 2" tweeters in vertical line array. Response 35-20,000 Hz; crossovers 400 & 2500 Hz at 6 dB/octave. 8 ohms impedance; will handle 100 watts program. Walnut enclosure. 26¼" W × 44½" H × 15⅝" D $632.50
B-4000A. Same except Classic styling $722.50
B-4000A. Same except Moorish styling $742.50
B-4005. Same as B-4000A except low-boy enclosure; 36" W × 27⅝" H × 20" D $647.50
B-4005. Same as B-4005 Century except Moorish styling $757.50

B-310B Concert Grand Contemporary
Has four B-199B bass speakers; pair of B-209B mid-range; and eight tweeters in vertical column for uniform dispersion; response 28-20,000 Hz; 8-ohm imp.; will handle 150 W max., 60 W min. input power. Matte walnut enclosure. 36" W × 52" H × 19" D $1110.50
B410. Same except Classic cabinet . $1138.50
B-410. Same except Moorish styling . $1193.50

B-1000 Bard Outdoor Speaker
All-weather speaker with B-800 wide-range driver with anodized-aluminum cone; 8 ohm imp.; has jack and plug connector $99.50

CELESTION

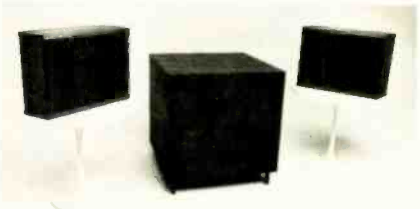
Ditton 66 Studio Monitor
Three-way system with 12" ultra-linear bass driver, 12" auxiliary bass radiator (ABR), pressure-type dome mid-range, and pressure-type tweeter. Response level 25-30,000 Hz (over-all 16-40,000 Hz); crossovers 500 & 5000 Hz. 80 W maximum power. Impedance 4-8 ohms. Walnut cabinet. 40" × 15" × 11½" $469.50

Ditton 25 Speaker System
Has 12" bass driver plus 12" ABR, two treble speakers, and one super tweeter. Response 25-30,000 Hz. 60 W maximum power handling capacity. Impedance 4-8 ohms. Walnut cabinet. 32" × 14" × 11" $319.50

Ditton 44 Monitor Speaker
Three-way system with 12" bass driver, mid-range, and super tweeter. Response 30-30,000 Hz. crossovers 500 & 5000 Hz. 44 W maximum power handling capacity. Impedance 4-8 ohms. Walnut cabinet. 30" × 14½" × 10" $269.50

CERWIN-VEGA

320 Modular Speaker System
Separated bass system for placement flexibility combined with separately housed mid-



treble speakers; designed to be used with standard 2 or 4-channel amplifiers.
320MT. Has special 12" mid-bass speaker, HF-91 mid-range/high-frequency horn driver assembly, two dhorm tweeters; frequency range 125-25,000 Hz; crossovers 125, 1500 & 4000 Hz; direct-radiating with side reflecting upper mid-range; 100 W rms max. power input; 8 ohms. Oiled walnut. 14½" H × 6" D × 18" W (back), 16¾" W (front) $375.00
3200. Same as 320MT but uses a 300 W ultra-compliant 18" woofer $475.00
320B. Omnidirectional cubical commode with 15" woofer; frequency range 25-250 Hz; crossover 125 Hz (250 Hz optional); 150 W rms max. power input; bottom-radiating. Oiled walnut. 25" H × 20" W × 25" D $325.00

24 Two-Way Speaker System
Direct-radiating, two-way system with 12" woofer & 2½" dhorm tweeter; crossover 2500 Hz; frequency range 30-25,000 Hz; dyanmic range 65 dB in 40 dB noise field; dispersion 100 degrees; impedance 4-8 ohms; 40 W rms max. power input, 80 W peak. Oiled walnut. 25" H × 14½" W × 12" D $129.50
26. Same as Model 24 except max. power input 60 W rms, 120 W peak. $149.50

211 Two-Way Speaker System
Two-way, front-radiating system with 12" woofer & 2½" dhorm tweeter; frequency range 25-25,000 Hz; crossover 2500 Hz; dispersion 100 degrees; dynamic range 72 dB in 40 dB ambient noise field; max. power input 100 W rms, 200 W peak. Oiled walnut. 26" H × 15" W × 15½" D. $189.50
211R. Same as Model 211 except direct radiating with controllable upper mid reflection; HF-91 horn driver assembly; crossovers 1500 & 3000 Hz. $289.50

217(R) Three-Way Speaker System
Floor-standing, direct radiating unit with controllable upper and mid reflection; frequency range 25-25,000 Hz; 15" woofer, HF-91 horn driver assembly, 2½" dhorm tweeter; crossovers at 1500 & 3000 Hz; dispersion 100 degrees; imp. 4-8 ohms; dynamic range 78 dB in 40 dB noise field. Oiled walnut. 27½" H × 20" W × 17" D. $395.00

C/M LABORATORIES

CM15 Speaker System
Three-way system with Servosound motional feedback control; has 15" woofer, 6" mid-range, two phenolic-ring tweeters; crossover 12 dB/octave at 450 & 5000 Hz; imp. 4 ohms nominal;

10 Speaker Systems

power handling capacity 200 W (music power); response 20-20,000 Hz ±2.5 dB; dual walnut-veneer cabinet. 32" H × 17" W × 17" D. $500.00
Optional accessory for connection to other than C/M amplifier or receiver. $25.00

CONCORD

CS-10 Bookshelf Speaker System

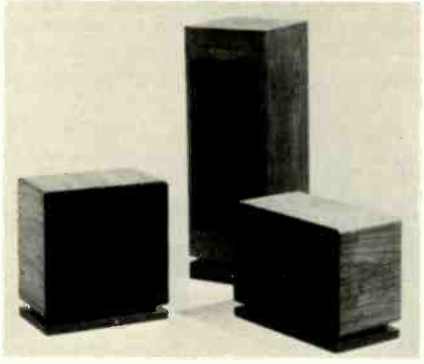
Two-way bookshelf system with 8" woofer & 3½" wide-dispersion mid-range/tweeter; crossover 3500 Hz; frequency range 50-18,000 Hz; 8 ohms impedance; power capacity (rms) 40 watts, minimum power 10 watts. Features air-suspension woofer for low distortion combined with specially vented enclosure for high efficiency; acoustic "transformer" cabinet design for high-velocity acoustic energy at the vent slot to permit accurate control of system characteristics. Has sculptured foam grille. 23¼" H × 12⅝" W × 11⅝" D $89.95

CS-20. Similar to Model CS-10 except has two 8" woofers; frequency range 40-18,000 Hz; power capacity (rms) 80 watts. Has mid-range and treble switches, each with two positions. 24⅞" H × 13½" W × 11⅝" D $119.95

CONTRARA

Model R Speaker System

Two-way system with 8" bass reproducer with butyl-rubber surround and 1" domed tweeter;



response 50-24,000 Hz; crossover 1750 Hz in 12 dB/octave segments; power handling 50 W continuous program into 8 ohms; enclosure has radiused corners in oiled walnut and walnut veneer; stretched black fabric grille. 12" H × 18" W × 9½" D $125.00

Model S. Same specifications as Model R but square enclosure for bookshelf or floor use (with complementary base). 15" H × 15" W × 9½" D $125.00

Model P Speaker System

Two-way system with dual 8" woofers and 1" domed tweeter; response 38-24,000 Hz; crossover 1750 Hz in 12 dB/octave segments; power handling 75 W continuous program into 8 ohms; comes on floor-standing pedestal which revolves 360 degrees; oiled walnut and walnut veneer enclosure; textured black nylon grille. 33" H × 11½" W × 11½" D $225.00

CREATIVE

11 Bookshelf Speaker System

Acoustic suspension, wide-range bookshelf speaker system. Response 50-17,000 Hz. Will handle 20 W continuous power. 8 ohms. 10" × 7" × 7". Sold in pairs ..... $34.95 ea.

22 Two-Way Speaker System

Two-way system with 6" woofer & 3" tweeter. Response 45-18,000 Hz; Crossover 4000 Hz. Will handle 20 W continuous power. 8 ohms. 15" × 8" × 7". Sold in pairs ..... $49.95 ea.

66 Two-Way Speaker System

Two-way system with 8" woofer & 2½" tweeter. Response 40-18,000 Hz; crossover 4000 Hz. Will handle 25 W continuous power. 8 ohms. 18" × 11" × 9". Sold in pairs ..... $69.95 ea.

77 Three-Way Speaker System

Three-way system with 10" woofer, 4" mid-range, and 2½" tweeter. Response 35-19,000 Hz; crossover 4000 & 8000 Hz. Will handle 30 W continuous power. 8 ohms 22" × 12¾" × 9½". $99.95

88 Three-Way Speaker System

Three-way system with 12" woofer, 6" mid-range, and 2½" tweeter. Response 30-20,000 Hz; crossovers 1000 & 4000 Hz. Will handle 40 W continuous power. 8 ohms. 23¾" × 14¾" × 12¼" $149.95

921 Four-Way Speaker System

Four-way system with 12" woofer, 7" compression horn mid-range, 3" and 2½" tweeters. Response 30-20,000 Hz; crossovers 2000, 4000 & 10,000 Hz. Will handle 40 W continuous power. Has lower mid-range and brilliance trim controls. 26" × 15¾" × 12¾". ... $169.95

Autograph 99 4-Way System

Four-way floor-standing system with 15" woofer, 5" mid-range, 3" upper mid-range, and 1" dome tweeter. Response 30-20,000 Hz; special computer-grade modular network with crossovers at 700, 3000 & 8000 Hz. Will handle 55 W continuous power. 8 ohms. Has mid-range & brilliance trim controls. 25½" × 20¼" × 17" $249.95
Genuine Italian marble or smoked glass top $29.95

Autograph 100 Lab-Type Monitor

Three-way system with 12" woofer, 5" mid-range, and 1" dome tweeter. Response 30-20,000 Hz. Will handle 50 W continuous power. Crossover 700 & 3000 Hz. 8 ohms impedance. 23¾" × 14¾" × 14¾" $179.95

89 Tower Speaker System

Wide-range, 4-speaker (two 5¼", two 3") system. Response 40-20,000 Hz; will handle 40 W rms continuous power; 8 ohms; 4000 Hz crossover; oiled-walnut enclosure with black decorator top & pedestal. 9" × 9" × 34⅞" H .. $159.95

CROWN INTERNATIONAL

ES-212 Electrostatic Speaker System

Two-enclosure electrostatic system; floor-standing with 12 electrostatic elements; two

10" dynamic woofers; 375 Hz crossover; 4 ohms nominal impedance; 75 W max. continuous sine-wave power or 600 W music power capacity; response 22-30,000 Hz; features fast-acting solid-state protective circuit plus thermal breakers; satin-rubbed walnut finish with black decorator grille cloth. 42" H × 26" W × 16" D $600.00

DAHLQUIST

DQ-10 Five-Way Speaker System

"Phased Array" moving-coil speaker system with 10" woofer in a sealed air-suspension enclosure, a 5" mid-bass driver; 2" soft-dome mid-range, ¾" dome tweeter; and piezoelectric ceramic super tweeter; crossovers 400, 1000, 6000 & 12,000 Hz. Nominal impedance 8 ohms. Response 35-27,000 Hz. Recommended power input 60-150 W. Features low-diffraction, time-delay correction; continuously variable treble-slope control for boost or cut. Grille cloth is black with solid walnut trim. 30½ W × 31½" H × 9" D $395.00

DQ-6 Three-Way Speaker System

"Superbookshelf"-size system with 12" woofer, 5" mid-range, and 1¾" tweeter; features patented low-diffraction technique; 500 Hz & 3500 Hz crossover; response 35-20,000 Hz; imp. 8 ohms (min. 6 ohms); recommended power 30-100 W. Oiled American walnut finish; black grille cloth. 28¾" H × 14¼" W × 12" D $225.00

DESIGN ACOUSTICS

D-12 Speaker System

A dodecahedron (12 sided) omnidirectional enclosure with 10" woofer, an enclosed heavily damped 5" mid-range driver, and nine high-frequency radiators. Enclosure volume is 2¾ cubic feet and is tuned with a tube to produce a Helmholtz resonance of 27 Hz. Crossovers at 800 Hz & 1500 Hz. Can be used with amplifiers up to 100 W/ch rms (25 W/ch rms should be minimum). Response 20-15,000 Hz ±2 dB. 8 ohms impedance. 30" H with pedestal. Lacquered walnut finish, walnut stem, black steel legs, and black grille cloth $399.00
With chrome base instead of walnut & steel $425.00

D-6 Speaker System

Three-way system with five 2½" cone tweeters, a 5" mid-range driver, and 10" high-compliance woofer. Response 30-15,000 Hz ±2 dB. Vertical and horizontal dispersion 180 degrees. Crossovers 800 and 2000 Hz. Switch control of high, low, and mid-frequency levels. 20 W/ch minimum driving power. 8 ohms imp. 24¼" × 16½" × 13¾". Walnut veneer cabinet with black grille. Grille cloth also available in azure, cocoa and crimson. $279.00

D-4 Speaker System

Wide-dispersion, three-way column system with three cone tweeters, 5" mid-range, 10" high-compliance woofer; crossovers at 800 & 2000 Hz. Response 40-15,000 Hz ±3 dB; fundamental resonance 43 Hz. Recommended amp power 25-75 W/ch. 38" H × 9½" D × 17½" W (rear) × 9" W (front). $199.00

D-2 Speaker System

Two-way system with 10" long-throw woofer and 1" dome tweeter; response 40-18,000 Hz ±3.5 dB; crossover 1500 Hz; recommended amplifier power 20-50 W/ch; imp. 8 ohms; oiled-walnut veneer finish. 35" H × 12½" W × 12¼" D $150.00

DYNACO

A-25 Speaker System

2-way bookshelf system with critically damped port 10" woofer and 1½" soft-dome tweeter. 1500 Hz crossover. Has 5-position tweeter level control, 8 ohms impedance. 60 W maximum music input. Features aperiodic enclosure design. Comes with wall-mounting brackets. 11½" H × 20" W × 10" D. Oiled-walnut finish. . $92.50

A-25VW. Same as A-25 except vinyl-covered, walnut-grained wooden enclosure $84.00

A-25XL Speaker System

2-way bookshelf system with a new type woofer with ferrite magnet structure and aluminum voice coil, 1" non-rigid hemispheric tweeter; 1500 Hz crossover; aperiodic design of cabinet uses highly damped vent with controlled acoustical resistance. 50 W (DIN) power handling capacity; recommended amplifier power 15 W or more. Oiled walnut cabinet, beige linen grille cloth. 11½" × 20" × 10" D. $109.00

A-40XL Speaker System

Sealed, dual-chamber, two-way bookshelf system with 10" woofer, 1" soft-dome tweeter; 8 ohm imp.; three-position tweeter-level control; 1200 Hz crossover; power handling 50 W (DIN); recommended amp. power 15 W or more; oiled-walnut veneer cabinet; beige linen grille cloth. 22½" × 13½" × 10" $149.00

A-50 Speaker System

Sealed, dual chamber aperiodic 2-way floor-standing system with two 10" woofers and 1½" dome tweeter. 1000 Hz crossover. Has 5-position tweeter level control, 8 ohms impedance. 25 W recommended driving power; 75 W maximum music input. Features dual spectrum damping. 28" H × 21½" W × 10" D. Oiled walnut finish $189.00

A-10VW Speaker System

2-way miniature bookshelf enclosure with critically damped port and 6½" woofer and 1½" dome tweeter. 2500 Hz crossover. 8 ohms impedance. 15 W recommended driving power. Up to 50 W music input. Features aperiodic design. Comes with wall-mounting brackets. 8½" × 15" × 8" D. Sold in pairs only .....$110.00 pr.

A-35 Speaker System

Sealed, dual-chamber 2-way bookshelf system with 10" woofer and 1½" soft-dome tweeter. 1200 Hz crossover. 8 ohms impedance. 20 W recommended driving power. Up to 60 W maximum music input. Features aperiodic design. 22½" × 12½" × 10" D. Comes with wall-mounting brackets $129.00

ELECTROSTATIC

ER-139 Two-Way Speaker System

A 360-degree radiating system using eight electrostatic mid/high tweeters in horizontally circular array mounted on downward-directed 10" dynamic woofer; response 30-30,000 Hz; flat 38-20,000 Hz; crossover 2000 Hz; 20 W min. rms power per channel, 100 W max.; 8 ohms impedance; self-energizing. Walnut vinyl finish with optional polyacoustic grille fitting over speaker array upon cabinet. 28" H × 16" W × 16" D $139.90
With grille $159.90
ER-139 Three-Way. Same as ER-139 except has 3½" cone mid-range covering frequencies from 800-3000 Hz. $199.95

ER-88 Speaker System

Dipole/acoustic-suspension system with eight "constant Q" electrostatic elements in open-air baffle housing with direct-radiating woofer in separate sealed enclosure; 8" woofer crosses over at 1200 Hz; response 40-20,000 Hz; 8 ohm imp.; mid/high frequency level switch; power input: 15 W min., 65 W max.; dispersion of mid/high frequencies 360 degrees; placement of separate units provides phase-compensation capability. Vinyl with sculptured foam grille. $139.90
ER-108. Same as ER-88 except 10" woofer; response 32-20,000 Hz; power handling 20 W min., 100 W max. $189.90

ELECTRO-VOICE

Sentry IA Speaker System

Bass-reflex 2-way wall-mounting system with 12" woofer and diffraction horn mid-range/tweeter. Response 30-20,000 Hz. 16 ohms impedance. 37" H × 21¾" W × 17" D. Walnut finish $220.50
Sentry IIA. Same except floor model 32" H × 20" W × 13" D $220.50

Sentry III Professional Speaker System

3-way direct-radiator vented design with fourth-order Butterworth tuning. Has 15" woofer & mid-range/high-frequency horn array; 600 & 3500 Hz crossovers. Response 40-18,000 Hz; capacity 50 W. Has device that interrupts power to tweeter when power surges occur. Walnut cabinet with dark grille. 28½" × 20½" × 34½" H $650.00
SEQ. Optional equalizer for Sentry III which extends response to 28 Hz. $60.00

Interface: A Speaker System

Vented system with 6" bass driver and 10" dia. piston for low frequencies, 2" dia. primary tweeter operating down to 1500 Hz, and second tweeter operating above 7000 Hz; overall

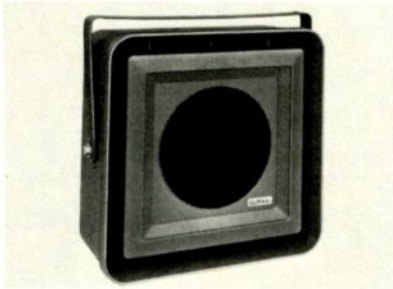
response 32-18,000 Hz ±3 dB, below 40 Hz, down 3 dB at tuning point of 32 Hz (sixth-order Butterworth); includes equalizer which adds mild boost of 6 dB at 35 Hz; below usable range of system equalizer rolls off electrical

10 Speaker Systems

input to amplifier; equalizer designed to be connected to tape monitor jacks on most components or used between preamp & power amps; has two channels of equalization for use in stereo system. Highly efficient total systems provide 89 dB SPL at 1 meter with 1 W input; THD 1% at 32 Hz with full-power input. Sold as pair of speakers with equalizer..... $450.00
Interface B: Similar to Interface: A except overall response 36-18,000 Hz ±3 dB; 92 dB SPL. 14" × 23" × 9¼" D. Sold as pair of speakers including equalizer..... $325.00

EVS-16B Speaker System
Three-way acoustic-suspension system with response 30-20,000 Hz; crossovers at 700 & 3000 Hz; 8 ohms imp.; can handle 70 W peak; has 12" woofer, 5" mid-range, shallow-profile 2" tweeter; continuously variable level control for tweeter. Walnut-grain vinyl cabinet. 14½" × 25" × 13¾" D..... $159.95
EVS-15B. Three-way system with 10" woofer, 5" mid-range & 2" tweeter; response 40-20,000 Hz; 13½" × 24" × 11¾" D..... $139.95
EVS-14B. Two-way system with 10" woofer & 2" tweeter; response 40-18,000 Hz; crossover 1500 Hz..... $119.95
EVS-13B. Two-way system with 8" woofer & 2" tweeter; response 50-18,000 Hz; 1500 Hz crossover; 10" × 19" × 8½"..... $79.95

Musicaster 1A All-Weather Speaker
Two-way system with 12" wide-range driver & dual-cone driver assembly for high frequencies;



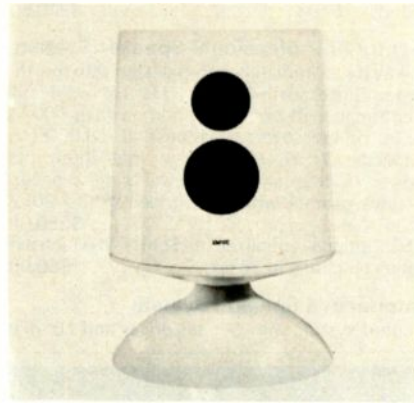
4000 Hz crossover; response 80-10,000 Hz; power handling 60 W peak; 8 ohms imp.; 120-degree dispersion; compression-molded glass-filled polyester enclosure; water-proof & fungus-proof, 21½" H × 21½" W × 8½" D..... $109.50
Musicaster IIA: Same as 1A except has high-frequency driver & horn tweeter; response 80-16,000 Hz; crossovers 4000 & 5000 Hz..... $138.00
Prices are suggested "net." Slightly higher in Western States.

EMPIRE

Grenadier 7500M/II Speaker System
Infinite-baffle, 3-way floor-standing system with 15" woofer, direct-radiator mid-range, and direct-radiator domed tweeter. Response 25-20,000 Hz. Has tweeter level control, 8 ohms impedance. 100 W dynamic maximum input power. 26¾" H × 20" diameter. Walnut finish with imported marble top or walnut-finish top..... $249.95

Grenadier 6000M/III Speaker System
Reflex-type, 3-way floor-standing system with 12" woofer (facing down), a direct-radiator mid-range, and direct-radiator ultrasonic tweeter. Response 30-20,000 Hz. Has tweeter level control, 8 ohms impedance, 75 W dynamic maximum input power. 24⅜" H × 18" diameter. Walnut finish with imported marble top or walnut-finish top..... $149.95

Jupiter 6500II Indoor/Outdoor Speaker
Three-way reflex system with 12" woofer, mid-range radiator, and ultrasonic tweeter. Response 30-20,000 Hz. Has tweeter-level con-



trol. Gloss white finish..... $159.95
Yellow, bittersweet, or Flemish blue... $169.95

9000GT Speaker System
Three-way system with 15" super-compliance woofer, direct-radiator domed mid-range, and ultrasonic domed tweeter with 160-degree acoustic lens; frequency response 15-25,000 Hz; continuous power rating 25 W rms 5000-20,000 Hz, 75 W rms 20-450 Hz, 50 W rms 450-5000 Hz; total power handling capacity 150 W rms; 8 ohms imp.; 30" H × 18" diameter. Walnut veneer cabinet with choice of smoked glass or walnut veneer top..... $329.95

EPI

60 Speaker System
Two-way system with 6" woofer & 1" air-spring tweeter; crossover at 1800 Hz; response 50-18,000 Hz ±3 dB; 8 ohms; recommended rms power input 10-35 W. 17" × 9" × 7" .. $69.95

90 Speaker System
Two-way system with 8" woofer & 1" air-spring tweeter; crossover 1800 Hz; response 45-18,000 Hz ±3 dB; 8 ohms; recommended rms power input 12-50 W. 21" × 11" × 9". $89.95

100 2-Way Speaker System
Sealed, 2-way bookshelf system with 8" woofer & 1" tweeter. Response 45-18,000 Hz ±3 dB; 1800 Hz crossover. 8 ohms impedance. Can handle 10-75 W rms/ch. 21" H × 11" W × 9" D..... $99.95

110 Speaker System
Two-way system with 8" woofer & 1" air-spring tweeter; crossover 1800 Hz; response 35-18,000 Hz ±3 dB; 8 ohms ; recommended rms power input 15-60 W. 24" × 14" × 10". $119.95

180 Speaker System
Double-module system with two 8" woofers & 1" tweeters; response 30-19,000 Hz ±3 dB; recommended rms power input 32-125 W. 25" × 16" × 12"..... $190.95

EPICURE

400 Plus System
Omnidirectional design. Is a slim column (14" on a side × 36" high) with speaker modules radiating from all four sides equally. Contains four 6" woofers, four air-spring tweeters. Response 28-19,500 Hz ±3 dB. Can handle 25 250 W rms/ch. 8 ohms impedance.... $399.00

1000 The Tower System
Omnidirectional design with four full-sized woofer-tweeter modules. Response 20-22,000 Hz ±3 dB. Can handle 20-300 W rms/ch. Tower is 6½ feet tall. 8 ohms impedance. On special order only..... $1000.00

EQUASOUND

II Speaker System
Has 12" woofer, 4" mid-range, three 1" dome tweeters; Mylar capacitor and air-core inductor crossover network; response 30-20,000 Hz; 8 ohms impedance; 25 W rms/ch min. amplifier power, 100 W rms/ch maximum. Fiber-filled transmission-line. 42" H × 14½" W × 14½" D. Walnut/black..... $349.00 ea.

I Speaker System
Bass-reflex; three-way system with 12" woofer, 4" mid-range, 1" dome tweeter; 8 ohms imp.; min. amp. power 25 W rms/ch; max. 100 W rms/ch; response 35-20,000 Hz; crossovers 800 Hz & 4000 Hz; internal equalization for mid-range & high-frequency drivers. 32" H × 16" W × 12" D..... $249.00 ea.
III Speaker System. Similar to Model I except 10" woofer; 20 W rms/ch min., 80 W rms/ch max. amp. power; response 40-20,000 Hz. 32" H × 14" W × 12" D..... $199.00 ea.

ESS

amt 1 Speaker System
Incorporates the ESS Heil air-motion transformer which "squeezes" air instead of pushing it, creating a five times velocity increase over a "pushing" planar surface, resulting in greater, more accurate, and near-massless transfer of energy to the air. A two-way floor standing system with frequencies above 700 Hz reproduced by the Heil unit and a 10" woofer handling the lower frequencies. Response 45-24,000 Hz ±2 dB. Power requirement 20 W rms minimum per channel; power handling 350 W musical peaks without distortion. 4 ohms imp. Hand-rubbed oiled walnut finish. 31" H × 14¼" W × 14¼" D..... $349.00

amt 1 Tower Speaker System
Uses same woofer and air-motion transformer as the amt 1 but provides additional octave of resonance-free bass response through 6-ft quarter-wave transmission line; response 45-20,000 Hz, usable 28-24,000 Hz; dist. 1% at 90 dB out to any frequency between 50-20,000 Hz; square-wave rise time 15 μsec; power required 20 W rms minimum; can handle up to 400 W musical peaks; 4 ohms min. input impedance. Hand-rubbed oiled walnut cabinet. 43⅝" H × 14 13/16" W × 17½" D..... $399.00

amt 3 Rock Monitor Speaker
Three-way, four-driver system; deep bass frequencies produced by two 10" long-throw woofers mounted in resistive reflex enclosure; a 6" long-throw driver, mounted in internal terminated line handles upper bass/lower mid-range frequencies; upper mid-range/treble reproduced by Heil air-motion transformer; response essentially flat 45-20,000 Hz, usable 30-24,000 Hz; other specifications same as amt 1. Hand-rubbed oiled walnut cabinet. 39¼" H × 15⅝" W × 15 13/16" D..... $469.00

amt 4 Compact Speaker System
Two-way floor-standing system with 10" air-suspension woofer and Heil air-motion transformer for upper range; response essentially flat from 50-20,000 Hz, usable 40-22,000 Hz; dist. 1% at 90 dB at any frequency between 70-18,000 Hz; 20 watts rms minimum power required; will handle up to 350 watts musical peaks; 4 ohms minimum input impedance. Hand-rubbed oiled-walnut cabinet. 27" H × 15⅝" W × 12½" D..... $269.00

amt 6 Professional Speaker System
Two-way floor-standing system with two 12" woofers in damped infinite baffle, four Heil air-motion transformers for high frequencies; response 35-24,000 Hz; crossover 800 Hz; 50 W rms min. power required; handles 1000 W musical peaks; circuit-breaker protected; 6 ohms min. imp.; 3-pos. brightness switch

integral with passive crossover; hand-rubbed, oiled-walnut veneer cabinet. 47¾" H × 24½" W × 18½" D..... $695.00

Evaluator Speaker System
Bookshelf studio monitor system featuring Heil air-motion transformer designed to handle high power; 75 W continuous power, 200 W music peaks; circuit-breaker protected; response 30-25,000 Hz; crossover 1000 Hz; efficiency: 1 W input produces 80 dB SPL at 15 feet; features dual high-frequency attenuator with 3 dB down point at 16,000 & 12,000 Hz (defeatable); continuously variable attenuation from 1000 Hz to beyond audibility; studio black vinyl or oiled-walnut cabinets; gray grille cloth; 24" H × 14" W × 13⁹⁄₁₆" D..... $328.00

FAIRFAX

"Wall of Sound I" System
Features an "integrated cyclone" labyrinth system with six separate sound chambers. Has total of 12 speakers in 4-way system: six heavy-duty 8" bass drivers, two 5" mid-range, two 3½" mid-high, and two ultra-high dome tweeters. Response 20-20,000 Hz. 6.5 ohms imp. Will handle up to 100 W input; min. power 20 W. Oiled-walnut veneer cabinet. 52" H × 30" W × 6½" D $429.95

FX-400 Speaker System
Four-speaker, 3-way ducted port design. Has two 10" high-compliance woofers, 4" mid-range tweeter, 4" ultra-high-frequency tweeter; LC crossover network 12 dB/octave, 2000 & 9000 Hz. Response 20-20,000 Hz. 8 ohms. Has continuously variable tweeter and mid-range control. Minimum power required 15 W rms, maximum 80 W rms. Reinforced 1" high-density board cabinet with oiled-walnut veneer finish, acoustically transparent foam grille. 28" H × 14" D × 28" W..... $289.95

FX-350 Speaker System
Three-speaker, 2-way ducted port design. Has 10" high-compliance woofer, 4" mid-range, 4" high-frequency tweeter; LC crossover network at 2000 Hz. Response 20-20,000 Hz. 8 ohms. Minimum power required 14 W rms, maximum 60 W rms. Column tower of 1" high-density board with oiled-walnut veneer finish; foam grille. 36" H × 14" W × 12" D..... $199.95

FTA-3 3-Way Speaker System
Folded horn, bookshelf design with 10" woofer, 5" mid-range, and ultra-high-frequency dome tweeter. Continuously variable control for mid-range and highs. Response 24-20,000 Hz. 50 W input; 10 W min. power. 8 ohms imp. Oiled-walnut veneer cabinet. 24" H × 14" W × 12" D. $169.95

FX-300 2-Way Speaker System
Ducted-port design with heavy-duty 10" bass driver and special 3" wide-dispersion tweeter. Continuously variable control for mid-range and highs. Response 24-20,000 Hz. 40 W input; 10 W min. power. 8 ohms imp. 22" H × 14" W × 10¾" D. Oiled-walnut veneer cabinet.. $129.95

FX-100B 2-Way Speaker System
Ducted-port design with heavy-duty 8" bass driver and special 3" tweeter. Continuously variable control for mid-range and highs. Response 32-20,000 Hz. 30 W input; 8 W min. power. 8 ohms imp. Oiled-walnut veneer cabinet. 22" H × 12" W × 10" D..... $109.95

F-2A 2-Way Speaker System
Ducted-port design with 8" bass driver and 3" tweeter. Continuously variable control for mid-range and highs. Response 35-20,000 Hz. 25 W input; 8 W min. power. 8 ohms. Oiled-walnut veneer cabinet. 18" H × 12" W × 9" D... $69.95

FISHER

ST420 Studio Standard Speaker
Two-way system with 8" woofer & 3" flare-dome

10 Speaker Systems

tweeter; response 49-20,000 Hz ±4 dB; front-mounted h.f. contour control; recommended amp. power: min. 12 W rms, max. 75 W rms. 5/8" high-density particle board cabinet with walnut vinyl veneer; dark brown sculptured acoustic foam grille. 12 1/4" H × 21" W × 9" D. $79.95

ST430. Similar to ST420 except with 10" woofer; response 47-20,000 Hz; min. power 12 W rms, max. 100 W rms. 14 1/4" H × 23 3/4" W × 10" D. $99.95

ST450. Similar to ST430 except three-way system; 6" flare-dome mid-range; response 45-20,000 Hz; min. power 15 W rms, max. 125 W rms. 14 7/8" H × 25 1/4" W × 12" D. $139.95

ST470. Similar to ST450 but with 6.5" flare-dome mid-range; min. power 20 W rms, max. 200 W rms. $199.95

FORUM

HE153 Three-Way System

Three-way acoustic-suspension system with 15" woofer, 6" mid-range, 3" phenolic ring radiator; 8 ohm imp.; 2 W min. amplifier power; will handle 60 W rms continuous; frequency response 20-20,000 Hz; crossovers 1500 & 8000 Hz; sensitivity 94 dB/W/M; walnut-grained vinyl finish on wood products. 27 1/2" H × 19" W × 12" D $159.95

HE123. Similar to HE153 except has 12" woofer; handles 45 W rms continuous; response 25-20,000 Hz. $129.95

HE102 Two-Way System

Two-way acoustic-suspension system with 10" woofer, 3" phenolic ring radiator; 8 ohm imp.; 2 W min. amplifier power; will handle 30 W rms continuous; frequency response 30-20,000 Hz; crossover 2000 Hz; sensitivity 93.5 dB/W/M; walnut-grained vinyl finish on wood products. 24" H × 14" W × 10 5/8" D $89.95

HE82. Similar to HE102 except 8" woofer; handles 15 W rms continuous; crossover 2500 Hz; response 45-20,000 Hz. 22" H × 12 9/16" W × 8 3/16" D $69.95

SP312X Three-Way System

Three-way acoustic-suspension system with 12" woofer, 6" mid-range, 3" tweeter; 8 ohm imp.; 2 W min. amplifier power; will handle 40 W rms continuous; frequency response 25-20,000 Hz; crossovers 1500 & 8000 Hz; sensitivity 90 dB/W/M; walnut-grained vinyl finish on wood products. 24" × 14" W × 12" D $109.95

SP312 Three-Way System

Three-way acoustic-suspension system with 12" woofer, 3 1/2" mid-range, 2" tweeter; 2 W min. amplifier power; 8 ohm imp.; will handle 30 W rms continuous; response 28-19,500 Hz; crossovers 2000 & 8000 Hz; sensitivity 90 dB/W/M; walnut-grained vinyl finish on wood products. 24" H × 14" W × 10 5/8" D $79.95

SP310. Similar to SP312 except 10" woofer; handles 25 W rms continuous; response 35-19,500 Hz; crossovers 2500 & 8000 Hz; 22" H × 12 9/16" W × 8 3/16" D. $69.95

SP210 Two-Way System

Two-way acoustic-suspension system with 10" woofer, 3 1/2" tweeter; 8 ohm imp.; 2 W min. amplifier power; will handle 18 W rms continuous; response 35-18,500 Hz; 3000 Hz crossover; walnut-grained vinyl finish on wood products. 22" H × 12 9/16" W × 8 3/16" D ... $59.95

SP28. Similar to SP210 except 8" woofer, 2" tweeter; will handle 10 W rms continuous; response 80-17,500 Hz; crossover 10,000 Hz. 17 1/8" H × 11 5/16" W × 8 3/16" D $39.95

SP16 Speaker System

Bass-reflex system with 6" full-range speaker; will handle 8 W rms continuous; response 90-15,000 Hz; 8 ohm imp. 14" H × 9" W × 6 1/2" D $29.95

FRANKMANN

Integrated Stereo Speaker System

Integrated three-way system; eight 12" bass drivers, eight 8" treble drivers, eight overtone horn drivers; bass drivers mounted in single common bass enclosure; four 8" treble and four overtone horn drivers mounted in each of two satellite enclosures; frequency response 20-18,000 Hz ±4 dB; 10 W rms min. power requirement; will handle 200 W rms; efficiency: 98 dB with 1 W input (pink noise 1 meter from source); imp. 8 ohms; crossovers 200 & 5000 Hz with 12 dB/octave cut-off; angularly mounted bass drivers; horizontal distribution axis of each satellite at 10-degree angle toward common bass enclosure; contemporary or classical style cabinets in walnut, oak, or birch wood; Early American, unstained walnut, or Mediterranean finishes: bass unit 52 1/4" W × 31" H × 25 1/4" D; satellite 10" W × 43 1/4" H × 6 5/8" D. $1995.00

Unfinished birch without cabinet for custom installation $1495.00

FRAZIER

F4-4 Super Midget System

Bookshelf system; 4" wide-excursion speaker; power handling capacity 10 W continuous rms; 8 ohm imp.; oiled-walnut veneer over particle board; brown fabric grille. 15 3/4" × 6 3/4" × 9 1/2" $50.00

F8-4SH-A Super Monte Carlo

Heavy-duty 8" f.f. driver; direct-coupled piezoelectric superhorn; 20 W continuous rms power handling; 8 ohm imp.; 4000 Hz crossover; walnut veneer over particle board; brown fabric grille. 19" × 10 1/2" × 12" $100.00

F-10-HA Mark IV-A System

10" woofer; high-frequency compression horn; 2000 Hz crossover; 30 W continuous rms; 8 ohm imp.; variable high-frequency compensator on front panel; oiled-walnut veneer over particle board; acoustically transparent, removable sculptured foam grille (available in brown, black, or burnt orange). 24" × 14" × 12" $150.00

F10W-37H-A Concerto System

10" woofer, high-frequency compression horn; 2000 Hz & 4000 Hz crossovers; 30 W continuous rms; 8 ohm imp.; variable high-frequency compensator on front panel; oiled-walnut veneer over particle board; acoustically transparent, removable sculptured foam grille (available in brown, black, or burnt orange). 21 1/2" × 16" × 16" $235.00

F12-2-5T Mark V System

Three-way system with 12" woofer; two 4" mid-range; compression-horn tweeter; 800 Hz & 3000 Hz crossovers; 8 ohm imp.; 30 W continuous rms; variable high-frequency and mid-range compensators on front panel; acoustically transparent, removable sculptured foam grille (available in brown, black, or burnt orange), oiled-walnut veneer over particle board. 25 3/4" × 14" × 12" $270.00

F12-2-H Seven System

Three-way system with 12" woofer, two 4" full-range mid-range, two compression horns; 500 Hz & 3000 Hz crossovers; 30 W continuous rms; 8 ohm imp.; variable mid-range and high-frequency compensators on front panel; acoustically transparent, removable sculptured foam grille (available in brown, black, or burnt orange); oiled-walnut veneer on particle board. 29" × 18" × 16" $350.00

F12-8-WHA Mark VI-A

Four-way system with 12" woofer, 8" mid-range, compression horn, and piezoelectric super horn; crossovers 600 Hz, 3000 Hz & 4000 Hz; 30 W continuous rms; 8 ohm imp.; variable high-frequency and mid-range compensators on front panel; oiled-walnut veneer on particle board; brown fabric grille with gold inlay design. 29 1/4" × 25 3/4" × 16" $450.00

F333-1037 Dixielander

Dual exponential horn system consisting of folded low-frequency horn and straight exponential high-frequency horn. 10" woofer. Utility grey finish. 22 3/4" × 26 1/2" × 15 3/4" $310.00

GALE

GS401A Three-Way Speaker System

Three-way, four-speaker bookshelf system with two 8" woofers mounted in damped sealed enclosure and acoustically coupled, 4" sealed mid-range, 3/4" dome tweeter; response (in anechoic chamber) 70-20,000 Hz ±3 dB; (in average room) 35-25,000 Hz ±5 dB; crossovers 475 & 5000 Hz; imp. 4-8 ohms; min. power requirements, 40 W recommended; power handling 300 W; has balance controls for mid-range & tweeter; enclosure acoustically inert at high power levels; three-layer, high-density chipboard with six internal struts; matte black and chrome finish. 13" × 23 3/4" × 10 3/4" D $385.00

GS401B. Same except hand-rubbed walnut-veneer finish $385.00

HARMAN/KARDON

HK20 2-Way Speaker System

Sealed, 2-way bookshelf system with 8" woofer & 3" tweeter. Response 50-15,000 Hz; 2000 Hz crossover. Has tweeter control. 8 ohms impedance. 17 1/2" H × 11 1/4" W × 8 1/4" D. Walnut. $60.00

HK40 Series B Speaker

Two-way system with 10" woofer & separately housed tweeter; response 40-17,000 Hz; RLC crossover 3000 Hz; adjustable tweeter level control; 8 ohm. imp. 22 7/8" H × 13 5/8" W × 10 1/2" D $100.00

HARTLEY

Concertmaster Jr. Speaker System

Infinite baffle, 2-way floor-standing system with 10" woofer and 1" dome tweeter; 2500 & 5000 Hz crossovers. 8 ohms impedance. 30 W maximum input. Size with kickbase 30" H × 25" W × 14" D. Walnut veneer $350.00

Holton Jr. Speaker System

Same basic design as Concertmaster Jr. except measures 30" H × 15" W × 13" D. $285.00

Concertmaster III Speaker System

Open back (SoundSorber), 4-way floor-standing system with 18" woofer, 10" mid-range, 7" tweeter, and 1" dome tweeter. Response 15-25,000 Hz; 300 and 3000 Hz crossover frequencies. 8 ohms impedance. 33 1/2" H × 29" W × 16" D. Walnut veneer $885.00

Concertmaster IV. Same except Mediterranean styling. Walnut veneer $910.00

Concertmaster VI Speaker System

Doublet (SoundSorber), 4-way floor-standing speaker system with 24" woofer, 10" mid-range, 7" tweeter, 1" super tweeter. Response 16-25,000 Hz; crossovers 200, 3000 & 7000 Hz. Impedance 6-8 ohms. 40" H × 29" W × 18" D. $965.00

Model V. Same but in Modern hand-rubbed walnut veneer enclosure. $940.00

Zodiac 75 Speaker System

Infinite baffle, 2-way bookshelf or floor-standing system with 10" woofer with treated cone crossing at 2000 Hz and 1" dome tweeter. Re-

sponse 30-25,000 Hz. 8 ohms impedance. For use with amplifiers of 10-50 W. 30" × 15" W × 12" D. Oiled walnut veneer $136.00

Zodiac 1 Speaker System
Same specifications as the Zodiac 75 except response 40-25,000 Hz. 21¾" H × 14⅜" W × 8¾" D. $97.00

Holton A Speaker System
Infinite baffle, 2-way system with 10" woofer and 1" dome tweeter. 2000 & 5000 Hz crossovers. 8 ohms impedance. 30 W maximum input power. 34" H × 24" W × 13" D. Oiled walnut veneer $335.00

Zodiac 300 Speaker System
Infinite baffle, 2-way floor model with two 10" woofers crossing at 2000 Hz into 1" dome tweeter. Response 30-25,000 Hz. 4 ohms impedance; for use with 10 W min. amplifiers. 25½" H × 23½" W × 11½" D. Walnut veneer .. $225.00

HEATH

AS-101 2-Way Speaker System
Bass-reflex, 2-way floor-standing system with 15" woofer and Sectoral horn mid-range/tweeter. Response 30-20,000 Hz; 800 Hz crossover. Has horn-level control, 8 ohms impedance. 50 watts (rms) maximum input power. 29⅜" H × 27¾" W × 19⅞" D.
Kit $339.95

AS-103A 3-Way Speaker System
Sealed-enclosure, 3-way bookshelf system with AR drivers: 12" woofer, 1½" mid-range, and dome-type ¾" tweeter. Response 30-20,000 Hz ±5.0 dB; 575 and 5000 Hz crossovers. Has mid-range and tweeter controls, 4 ohms impedance. 25 watts (rms) driving power. Similar to AR-3a.
Kit $199.95

AS-104 3-Way Speaker System
Infinite-baffle, 3-way speaker system with 10" woofer, 4½" mid-range, 3½" tweeter. Response 30-18,000 Hz. 10-100 watts maximum input power. 8 ohms. Walnut veneer cabinet. 24" W × 13½" H × 11½" D.
Kit $109.95

AS-105 2-Way Speaker System
Infinite-baffle, 2-way speaker system with 10" woofer, 3½" tweeter. Response 30-18,000 Hz. 10-100 watts maximum input power. 8 ohms. 24" W × 13½" H × 11½" D.
AS-105W Kit. Walnut $89.95

AS-106 2-Way Speaker System
Full-range speaker; will handle any 4 to 20 W amplifier; response 70-16,000 Hz; sealed acoustic-suspension infinite-baffle cabinet with fiber glass sound-damping material. Walnut veneer cabinet measures 12" H × 7" W × 6" D.
Kit $26.95

AS-48 2-Way Speaker System
Features custom-designed JBL speakers, 14" woofer & 2" direct radiator; 8 ohms impedance; crossover 2000 Hz (unaffected by 3-position high-frequency level control); damped reflex, tuned-port cabinet of oak veneer and furniture-grade hardwoods. Will handle up to 50 watts; response 40-20,000 Hz. 14" H × 23½" W × 12" D.
Kit $249.95

AS-1042 2-Way Speaker System
Has high-compliance 8" woofer & 3½" cone/dome tweeter; response 40-18,000 Hz; crossover 1500 Hz; system resonance 65 Hz. Rear-panel control tailors high frequencies to listening room. 10 W minimum driving power; can handle up to 50 W; 8 ohms nominal impedance. Walnut-toned vinyl cabinet. 19" H × 10" W × 8¼" D.
Kit $47.95

AS-1039 2-Way Speaker System
Ultra-efficient system designed for use with low-power amplifiers; can be driven by as little as 5 W, will handle up to 25 W. 8 ohms nominal impedance. Has exponential horn tweeter and 8" woofer in vented bass-reflex enclosure. Level-control knob for tweeter on rear panel. Response 70-15,000 Hz; crossover 3500 Hz. Walnut-toned vinyl-clad cabinet. 21½" H × 12" W × 10½ D.
Kit $57.95

AS-1140 Speaker System
Efficient speaker system designed for use with Heathkit AT-1124, AC-1120, AC-1122, and AC-1118 or other equipment with 2-10 watt/ch output; 8 ohms imp.; 4½" driver; response 70-16,000 Hz (10-10,000 Hz ±5 dB). Simulated walnut-grain vinyl-clad enclosure. 7" W × 12" H × 6" D.
Kit ..... $37.95 pr.

HED

V-8 Two-Way Speaker System
Two-way system with 8" woofer and dome-type tweeter; crossover 2800 Hz; 8 ohms; max. power input 30 W rms; 120 degree dispersion. Vinyl-finished cabinet. 21" H × 11" W × 10" D.
..... $79.50
V-10. Same as V-8 but with 10" woofer; crossover at 2500 Hz; power input 40 W rms. 25" H × 14" W × 10" D. $99.50
V-12. Same as V-8 but with 12" woofer; crossover at 2300 Hz; power input 25 W rms. 25" H × 14½" W × 12" D. $119.50

HEGEMAN

H-1AW Loudspeaker System
Two-way coaxially mounted system with 8" full-range high-compliance driver and 2" dome super-tweeter. Floor-standing, closed-back baffle enclosure. Response 30-20,000 Hz ±2.5 dB; 5000 Hz crossover. Will handle up to 25 W rms continuous; 20 W amp. power recommended. 8 ohms imp. 11" × 8¾" × 26". Walnut with black grille. ..... $378.00 pr.
H-1AV. Same except Corinthian walnut vinyl.
..... $318.00 pr.

H-2W Speaker System
Similar to H-1AW but with 10" full-range high-compliance driver and 2" super-tweeter. Response 25-25,000 Hz ±2.5 dB; 3500 Hz crossover. Will handle 30 W rms continuous; 80 W integrated program material. 8 ohms imp. Walnut with black grille. 14" × 12" × 34". .....
..... $756.00 pr.

HB-80W Speaker System
Closed-box baffle bookshelf system with 8" woofer & 2" cone tweeter; crossover 4500 Hz; response 40-40,000 Hz ±2.5 dB; will handle 20 W rms continuous; 8 ohm imp. American walnut with black or brown foam grille. 17¼" × 11⅛" × 8" D. ..... $174.00 pr.
HB-80V. Same except Corinthian walnut vinyl.
..... $144.00 pr.
HB-100W. Similar to HB-80W except 10" woofer; crossover 3000 Hz; response 50-40,000 Hz ±2.5 dB; will handle 25 W rms continuous. 22⅞" × 12⅞" × 10⅜" D. ..... $240.00 pr.
HB-100V. Same as HB-100W except Corinthian walnut vinyl. ..... $204.00 pr.
HB-120W. Similar to HB-80W except 12" driver & two 2" cone tweeters; response 40-40,000 Hz ±2.5 dB; crossover 2500 Hz; will handle 30 W rms continuous; 25" × 14¼" × 11¼" D.
..... $312.00 pr.
HB-120V. Same except Corinthian walnut vinyl.
..... $270.00 pr.

HWS Sub-Woofer
Floor-standing, closed-box baffle; 12" woofer (12 Hz resonance); frequency response 8-200 Hz; external crossover 50-100 Hz; will handle 120 W integrated program material; 8 ohms; walnut wood finish. 40" × 18" × 16" D. $600.00

10 Speaker Systems

HITACHI

HS-320 Speaker System
Damped bass-reflex two-way design with 8" woofer & horn-type tweeter. Capacity 20 W. Response 40-20,000 Hz. Wood cabinet with walnut vinyl. $119.95

HS-350 2-Way Speaker System
Damped bass-reflex design with the L-201 woofer and horn tweeter with acoustic lens. Response 40-20,000 Hz. Has tweeter-level control & walnut cabinet. $239.95

HS-420 3-Way Speaker System
Damped bass-reflex design with 10" woofer, 5" mid-range, and horn tweeter. Response 40-20,000 Hz. Wood cabinet with walnut vinyl $169.95

IMF

Smaller Monitor Speaker System
Dual-transmission-line enclosure system. Four-way floor-standing design with plastic laminate oval woofer, damped 5" mid-range, dome-type tweeter, and super-tweeter; has "impulse control." Impedance 8 ohms. Requires 30 W (dynamic) driving power. Walnut Formica. 38" H × 16" W × 18" D. $750.00

Studio Mk IIIB Speaker System
Dual transmission-line enclosure system. Four-way floor-standing design with 8" woofer, 5" damped mid-range, and dome-type tweeter. Response 20-40,000 Hz ±1.5 dB; crossovers at 375, 3500 & 13,000 Hz, Has "Perspective" controls. Requires 25 W (dynamic) driving power. Teak or walnut. 35½" × 15" × 14" $450.00

"Super-Compact" Loudspeaker
Bookshelf speaker with 8" bass driver with roll surround, 5" mid-range, and domed tweeter; crossovers 375 & 3000 Hz; frequency range 30-20,000 Hz. Efficiency (measured via pink noise 1 meter on-axis) 44 W produces 100 dB; nominal impedance 8 ohms; driving power required 20-50 watts. Transmission-line loading for the mid-band; bass loading by means of resistive tunnel. Supplied in "mirror image" pairs. 18" × 11" × 11¾" W ..... $210.00 ea.

Model R Speaker System
Free-standing design (accessory stand available); three-way system with plastic laminate oval woofer, 5" damped mid-range, extended-range plastic-dome tweeter; bass loading by means of line tunnel; mid-range mounted in separate damped transmission line. Has "impulse control" on rear; built-in fuse; power required 25-50 W. Walnut finish. Supplied in "mirror image" pairs. 28" × 16" × 14¾" ..... $330.00 ea.

INFINITY

1001A Speaker System
Terminated-line, 2-way loudspeaker system with woofer and two tweeters (one in rear of enclosure to provide "ambience"). Response 30-21,000 Hz ±4.5 dB; 1300 Hz crossover. 6 ohms impedance. Requires 20 W rms power input. 26" × 18" × 12" D. Walnut $139.00

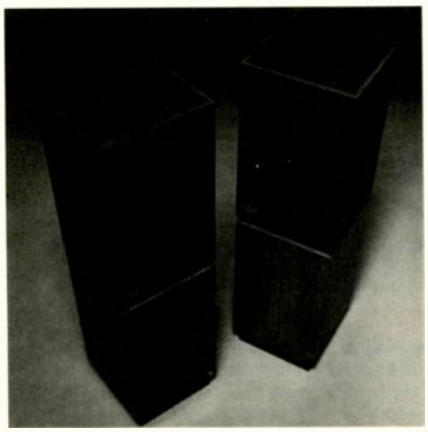
Servo-Statik 1A Speaker System
Three-enclosure system. Floor-standing with 18" woofer in a decorator-styled cube with feedback sensor, electronic crossover, and 150 W rms d.c. servo amplifier; each screen contains electrostatic mid-range modules and tweeter modules with their own built-in power supplies. Frequency response 10-30,000 Hz ±2 dB; electronic crossovers at 70 & 2000 Hz; output 7 V rms into mid-range & tweeter amps; 6 dB/octave rate; dist. 0.01% at 6 V rms; features bass & tweeter level controls (mid range preset); nominal imp. 16 ohms (mid-range), 8 ohms (tweeter); Brazilian rosewood veneer on top, sides, and back of bass cube and sides of screens; black acoustically transparent front grilles. Bass cube 19" H × 22" × 22"; screens 59½" H × 35½" W × 8" D $4000.00

POS II Speaker System
Two-way design 24" × 13" × 12" with a 10" woofer and closely coupled 2" tweeter. Features transmission-line loading and a frequency-boost network for the tweeter. Response 45-19,000 Hz ±4 dB; 1500 Hz crossover. 6 ohms. 15 W rms/ch minimum amplifier input. $98.00

Monitor II Speaker System
Four-way system with four different drive systems; a 12" woofer housed in a 2½-cu ft tapered-transmission line enclosure; a specially designed 1½" dome mid-range; 1" dome mid-tweeter; and a wave transmission line tweeter. Response 26-28,000 Hz ±4 dB; crossovers 450, 5000, 10,000 Hz. Nominal impedance 8 ohms. Max. amp. power 250 W/ch continuous; minimum amp power 45 W rms/ch. Oiled-walnut veneer enclosure; black grille cloth; two tops (one black cloth, one walnut veneer) interchangeable. 41½" H × 15" W × 13" D. $449.00

2000II Speaker System
Four-way floor-standing system with 12" woofer, 4" mid-range, 1" dome mid-tweeter, and wave-transmission line tweeter. Crossovers 800, 4000, 10,000 Hz; 20 W rms power handling min.; 200 W rms continuous max.; same enclosure as Monitor II. 27¾" W × 20" W × 14" D. Walnut cabinet $329.00

W-T-L Column Speaker
Dual-driver, staggered-resonance transmission line system; has two 8" woofers, two 2" mid-



range/tweeters, and wave-transmission-line tweeter. High efficiency; crossovers at 500 Hz mechanical, 2000 & 8000 Hz; response 35-28,000 Hz ±4 dB $249.00

INNOTECH

Model R-11 Three-Way System
Three-way system with 10" woofer, 5" cone mid-range, hemispherical dome tweeter; bass driver is loaded via passive-resistance technique; mid-range & tweeter each housed in isolated chamber; response 35-22,000 Hz ±3 dB; 500 & 5000 Hz LC crossovers; ¾" walnut veneer on wood products. 24" H × 14" W × 12" D. $250.00

Model D-22 Three-Way System
Multi-driver system with 5" plastic piston woofer (operates from 30-1000 Hz) in modified transmission line; upper mid-range/lower treble hemispherical dome driver, super tweeter (7000-25,000 Hz); LC crossover; response 30-25,000 Hz (30-100 Hz ±4 dB, 100-25,000 Hz ±2.5 dB); ¾" walnut veneer on wood products. 36" H × 12" W × 6" D $375.00

Model T-44 Three-Way System
Three-driver system with 8" piston woofer (operates to below 25 Hz), 5" plastic driver (400 Hz-4000 Hz), both loaded in transmission lines, high-frequency driver (4000-30,000 Hz); response 25-30,000 Hz (25-100 Hz ±3.5 dB, 100-30,000 Hz ±2 dB); cabinet designed to cancel all negative rear-radiation effects; ¾" walnut veneer on wood products. 38" H × 18" W × 15" D $450.00

Model T-88. Similar to T-44 except 11½" × 8¼" oval woofer, super tweeter (extends response to 35,000 Hz); essentially flat response to 20 Hz. $550.00

JANSZEN

130 High-Frequency Speaker System
Electrostatic array with four radiators for add-on to existing woofer system. Response 700-20,000 Hz ±3 dB; 700 Hz crossover. 8 ohms impedance. 100 W rms maximum input power. 7¼" H × 22" W × 13" D. Walnut $199.95

132 High-Frequency Array
Electrostatic array with two electrostatic elements for adding-on to existing woofer systems; response 1800-20,000 Hz ±3 dB; 1800 Hz crossover; 4 ohms impedance; 50 W rms maximum input power. Walnut $99.95

134. Same except four electrostatic elements and 100 W rms maximum input power. $149.00

134a. Same except oiled-walnut enclosure. $179.95

134hp. Same except response 800-20,000 Hz; 800 Hz crossover; 8 ohms impedance; 150 W rms maximum input power; oiled-walnut enclosure $199.95

138. Same except with eight electrostatic elements; response 800-20,000 Hz ±3 dB; 800 Hz crossover; 8 ohms; 300 W rms maximum input power; oiled-walnut $299.95

Z-410 Speaker System
Two-way acoustic-suspension design with 10" woofer & four electrostatic elements (64 sq. in). Response 35-20,000 Hz ±3 dB; 1800 Hz crossover. Capacity 75 W rms. 4 ohms impedance. Features vertical & horizontal dispersion. Walnut cabinet with various foam grilles. 13¼" × 24" × 11¾" D $199.95

Z-412A Speaker System
Two-way acoustic-suspension design with 12" woofer & four electrostatic elements (64 sq. in). Response 33-20,000 Hz ±3 dB; 1800 Hz crossover. Capacity 100 W rms. 4 ohms. Has vertical and horizontal dispersion. Oiled walnut cabinet with foam front. 27" × 14½" × 11¾" D $279.95

Z-412HP. High-power/high-performance version of Z-412A. Capacity 150 W rms. 900 Hz crossover $319.95

Z-824 Speaker System
Two-way acoustic-suspension design with two 12" HP woofers & eight electrostatic elements (128 sq. in). Response 32-20,000 Hz ±3 dB; crossover 800 Hz. Capacity 300 W rms. 8 ohms. Light or dark oak cabinet. 48" × 16" × 16" D $695.00

Z-210A Speaker System
Compact bookshelf speaker system. Two-way acoustic-suspension design with 10" woofer and two electrostatic elements (32 sq. in). Response 45-20,000 Hz ±3 dB; 1800 Hz crossover. Capacity 75 W rms. Impedance 6.9 ohms. Walnut cabinet with black foam front. 12.5" × 17.5" × 11" D $119.95

210ah Speaker System
Two-way acoustic-suspension design with 10" woofer and two electrostatic elements (32 sq. in.); response 35-20,000 Hz ±3 dB; 1800 Hz

crossover; capacity 50 W rms; 4 ohms impedance. Walnut cabinet with foam front. 13¼" × 24" × 11¾" D $149.95

ZVS-4 Speaker System
Electrostatic system with uniform spectral energy density; bi-radiation support of reverberent field; non-distructible electrostatic element; medium efficiency; high sound-pressure-level capability; covered with close-knit fabric (available in several colors). 14.5" W × 48" H × 14.5" D $395.00

JBL

L26 Decade 26 Speaker System
Ducted-port, 2-way bookshelf system with 10" low-frequency and 1.4" high-frequency drivers; 2000 Hz crossover with high-frequency level control behind grille; power capacity 35 W continuous program; recommended amp power 10-60 W rms/ch. Natural oak finish; stretch fabric grille available in orange, blue, or brown 13" H × 24" W × 13" D $156.00

L36 Decade 36 Speaker System
Ducted-port, 3-way bookshelf system with 10" low-frequency and 1.4" high-frequency drivers; crossovers at 1500 & 6000 Hz with mid-range and h.f. level controls behind grille; power capacity 50 W continuous program; recommended amp power 10-100 W rms/ch; 8 ohms impedance. Natural oak finish; stretch fabric grille available in orange, blue, or brown. 14" H × 24" W × 14" D $198.00

L100 Century Speaker System
Ducted-port, 3-way bookshelf system with 12" speaker, 5" mid-range, and 1.4" direct radiator; crossover at 1500 & 6000 Hz with mid-range and h.f. level controls behind grille; 8 ohms impedance; power capacity 50 W continuous program; recommended amp power 10-150 W rms/ch. Oiled walnut finish with foam grilles available in orange, blue, or brown. 14" H × 24" W × 14" D $318.00

L65 Jubal Speaker System
Ducted-port, 3-way floor-standing system with 12" bass, 5" mid-range, and 1.4" high-frequency components; crossovers 1000 & 6500 Hz with mid-range and h.f. level controls behind grille; power capacity 75 W continuous program; recommended amp power 10-150 W rms/ch; 8 ohms impedance. Oiled walnut finish with smoked glass top; stretch fabric grille available in blue, brown, or red. 24" H × 18" W × 13" D $426.00

S507 Olympus with S7R System
Ducted-port, 2-way floor-standing system with 15" speaker, 15" passive radiator, and high-frequency compression driver with horn/lens assembly; 500 Hz crossover with h.f. level control; 8 ohms impedance; power capacity 100 W continuous program; recommended amp power 10-150 W rms/ch. Oiled walnut finish. 33" H × 24" W × 21" D $837.00

S508 Olympus with S8R System
Ducted-port, 3-way floor-standing system with 15" speaker, 15" passive radiator, h.f. compression driver with horn/lens assembly, and ultra-high-frequency ring radiator; 500 & 7000 Hz crossovers with level controls for high and ultra-high components; 8 ohms impedance; power capacity 125 W continuous program; recommended amp power 10-150 W rms/ch. Oiled walnut finish. 27" H × 40" W × 20" D. $1098.00

Paragon Speaker System
Radial-refraction, dual 3-way floor-standing system with two 15" speakers, two mid-range compression drivers; and two ultra-high-frequency ring radiators; 500 & 7000 Hz crossovers with dual mid-range and ultra-high-frequency level controls; features special dispersion surface to recreate stereo image; 8 ohms impedance; power capacity 125 W continuous program; recommended amp power 10-150 W rms/ch. Oiled walnut finish. 36" H × 104" W × 24" D $3210.00

L166 Horizon Speaker System
Ducted-port, 3-way bookshelf system with 12" bass speaker, 5" mid-range, 1" hemispherical tweeter; 12 dB/octave crossovers at 100 & 6000 Hz with variable controls to adjust mid- and high-frequency output; 8 ohm imp.; power capacity 75 W continuous program; recommended amp power 10-150 W rms/ch; oiled-walnut finish; acoustically transparent "APP" grille. 24" L × 14" H × 13" D $375.00

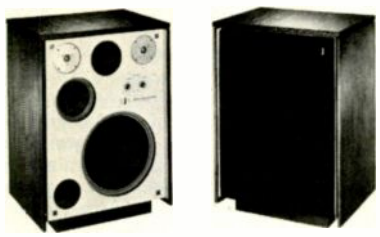
L120 Aquarius Q Speaker System
Ducted-port, 360-degree dispersion, 3-way free-standing system with 10" bass speaker, 5" mid-range, 1.4" direct-radiator; level controls for mid- and high-frequency drivers (located beneath smoked-glass top); 8 ohm imp.; power capacity 50 W continuous program; recommended amp power 10-100 W rms/ch; oiled-walnut or satin white finish; choice of 8 grille colors. 49" H × 12" W × 12" D ... $633.00

L200B Studio Master Speaker System
Ducted-port, two-way floor-standing system with 15" bass speaker, high-frequency compression driver with horn/lens assembly; 800 Hz crossover at 12- and 18 dB/octave; variable control to adjust h.f. output; 8 ohm imp.; power capacity 150 W continuous program; recommended amp power 10-150 W rms/ch; oiled-walnut finish with foam grille in grey, black, blue, or burgundy. 33" H × 24" W × 21" D $696.00

L300 Summit Speaker System
Audiophile version of professional studio monitor; ducted-port, 3-way floor-standing system; 15" bass driver; mid-range compression driver with horn/lens assembly, 077 ultra-high-frequency slot radiator; 12- and 18 dB/octave crossovers at 800 & 8500 Hz; 8 ohm imp.; power capacity 150 W continuous program; recommended amp power 10-150 W rms; oiled-walnut finish, smoked glass top, fabric grille in blue, black, brown or camel. 32" H × 23" W × 22" D $897.00

JENSEN

Model 15 Speaker System
Four-way, five-speaker system with 15" woofer, an 8" mid-range driver, a 5" rear-damped tweeter, and two Sonodome ultra-tweeters. Response 25-30,000 Hz. Power capacity 100 W; recommended minimum amp. power 10 W. Horizontal & vertical dispersion 170 degrees. THD 2% at 50 Hz, 1.2% at 100 Hz at 10 watts. Sensitivity: 1 W input produces 90 SPL at 6 feet. Has front-mounted balance controls for mid- and high frequencies plus bottom-mounted binding posts for concealed wiring. Finished on all four sides for use in any location. Simulated black slate top. 31" (including base) × 23" × 17" D $447.00



10 Speaker Systems

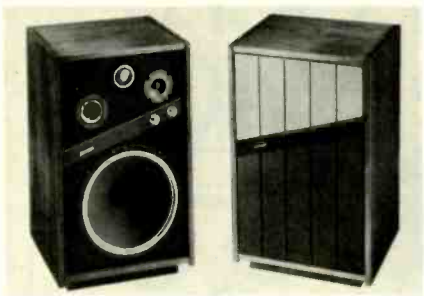
Model 21 Speaker System
Two-way system with 8" Flexair woofer & 2" cone tweeter; frequency range 35-20,000 Hz; crossover 4000 Hz; 8 ohms imp.; 160-degree dispersion; min. power 10 W; max. power 40 W; front-mounted tweeter control; push-type binding posts; wood-grained vinyl veneer on wood products. 18¼" H × 11" W × 8⅜" D $69.00

Model 22. Similar to Model 21 except with 10" woofer; frequency range 32-20,000 Hz; max. power 45 W. 22½" H × 12¼" W × 10¾" D $99.00

Model 23 Speaker System
Two-way system with 10" woofer & 1½" dome tweeter; frequency range 27-25,000 Hz; crossover 1000 Hz; 8 ohms imp.; 180-degree dispersion; min. power 10 W; max. power 60 W; front-mounted tweeter control; push-type binding posts; wood-grained vinyl veneer on wood products; removable two-tone double-knit acoustic grille; removable bronze-tinted translucent dust cover. 24" H × 13" W × 12" D .. $129.00

Model 24 Speaker System
Three-way system with 12" woofer, 3" mid-range, and 1½" dome tweeter; frequency range 25-25,000 Hz; crossovers 1000 & 5000 Hz; 8 ohms imp.; front-mounted mid-range & tweeter controls; push-type binding posts; removable two-tone double-knit acoustic grille; wood-grained vinyl veneer on wood products; max. power 75 W; min. power 10 W. 26" H × 15" W × 13" D $179.00

Model 25 Speaker System
Three-way system with 15" woofer, two 3" mid-range, and 1½" dome tweeter; frequency range



20-25,000 Hz; 8 ohms imp.; crossovers 1000 & 5000 Hz; 180-degree dispersion; front-panel mid-range & tweeter controls; removable two-tone double-knit acoustic grille; hardwood walnut veneer on wood products; max. power 90 W; min. power 10 W. 31" H (inc. base) × 18¾" W × 15¾" D $239.00

JOHNZER

KV-802 Two-Way Speaker System
Two-way system with 8" full-range woofer & hard-cone spherical tweeter; crossover 1500 Hz; frequency response 40-18,000 Hz; 8 ohm imp.; will handle 1-20 W rms. Walnut-finished vinyl cabinet. 23" × 13" × 10" D. $69.95

KV-1203. Similar but three-way system with 12" woofer, cone mid-range & spherical tweeter; crossovers 800 & 1500 Hz; response 35-19,000 Hz; will handle 1-30 W rms. 23½" × 15½" × 12" D. $99.95

KV-1503. Similar to KV-1203 except 15" woofer & spherical mid-range; response 25-19,000 Hz; will handle 1-40 W rms. 28" × 18" × 12" D. $119.95

W-802 Two-Way Speaker System
Two-way system with 8" woofer & hard-cone spherical tweeter; crossover 1500 Hz; frequency response 40-18,000 Hz; imp. 8 ohms; will handle 1-20 W rms. Oiled-walnut wood enclosure with acoustical cloth grille. 23" × 13" × 10" D. $89.95

W-1203. Similar but three-way system with 12" woofer, cone mid-range, spherical tweeter; frequency response 35-19,000 Hz; crossovers 800 & 1500 Hz; will handle 1-30 W rms. 23½" × 15" × 12" D. $119.95

W-1503. Similar to W-1203 except 15" woofer; frequency response 25-19,000 Hz; will handle 1-40 W rms. 28" × 18" × 12" D. $149.95

JVC

VS-5313 Speaker System
Omnidirectional, sealed spherical two-way floor-standing system with two 5" woofers and two 2" horn-type tweeters in each sphere. Response 60-20,000 Hz ±3 dB; 5000 Hz crossover. 8 ohms impedance. 80 W peak maximum input power. 13½" dia. Black metallic finish. $229.95

VS-5397 Two-Way Speaker System
Two-way acoustic-suspension system with 8" woofer & 2½" cone tweeter; response 40-20,000 Hz; 8 W rms/ch min. input power, 20 W rms max.; crossover 4000 Hz; imp. 8 ohms. Walnut enclosure. 18⅛" H × 10⅝" W × 9¼" D. ..... $99.95 pr.

SX-3 Speaker System
Wide-directional two-way speaker system with 10" woofer & 2" soft dome tweeter; response 35-20,000 Hz; 20 W rms/ch min. input power, 25 W rms max.; crossover 2000 Hz; 8 ohms. Walnut or spruce enclosure. 20½" H × 12⅜" W × 11⁷⁄₁₆" D $159.95

JVC-3. Similar to SX-3 but with grille .. $169.95

KENWOOD

Model 7 Four-Way Speaker System
Four-way system with 14" woofer (under 400 Hz), 4⅛" mid-range (400-4000 Hz), 1½" high-

frequency driver (4000-8000 Hz), ¾" super tweeter (8000-35,000 Hz); new diaphragm material strong enough to withstand 93-g accelerations; baffle board of beech lumber-core laminated with crosswise and lengthwise oak veneer; will handle 150 W; efficiency 94 dB; imp. 8 ohms; dist. 0.5% dispersion 30 degrees 0 dB, 60 degrees −3 dB. 18½" W × 37" H × 15" D $1350.00

LS-Series Speakers
Three high-efficiency speaker systems featuring the new Daphne diaphragm and lumber-core baffleboard construction.

LS-406. 10" woofer, 1" dome tweeter; response 48-20,000 Hz; imp. 8 ohms; SPL for less than 2% HD 103 dB; crossover 3500 Hz; 3-position controls. 15" W × 25¾" H × 12½" D ... $149.95

LS-405. 10" woofer, 1" dome tweeter; response 58-20,000 Hz; imp. 8 ohms; SPL 103 dB; crossover 3500 Hz. 12¾" W × 23¼" H × 11" D $119.95

LS-403. 8" woofer, 1¾" dome tweeter; response 65-20,000 Hz; imp. 8 ohms; SPL 101 dB; crossover 2000 Hz; 11¾" W × 17¾" H × 8⅞" D. $84.95

KLEIN & HUMMEL

OY Monitor Speaker
Imported from West Germany. It is a wall-mounted design with two built-in 30 W (rms) continuous sine wave (into 4 ohms) solid-state amplifiers. Response 40-16,000 Hz ±2 dB. Has three individual speakers: one woofer driven by one of the amplifiers with electronic crossover at 500 Hz and one mid-range cone-type and one horn-type speakers driven by the second amplifier. Acoustic crossover for mid- and high-frequency speakers at 6000 Hz. Has level control and low- and high-frequency equalizer circuits. Input impedance 4700 ohms balanced & floating. Walnut finish. 19" × 12" × 9" D ... $912.00

KLH

Five 3-Way Speaker System
Sealed, 3-way bookshelf system with 12" woofer, two 3" mid-range, and 1¾" tweeter; 2500 & 7000 Hz crossovers. Has mid-range and tweeter controls; 8 ohms impedance. 13¾" H × 26" W × 11½" D. Oiled walnut $225.00

Six 2-Way Speaker System
Sealed, 2-way bookshelf system with 12" woofer & 1¾" tweeter. Has tweeter control. 8 ohms impedance. 12⅝" H × 23¼" W × 11⅞" D. Walnut $149.95
Walnut vinyl. $129.95

Nine Speaker System
Electrostatic, floor-standing, full-range speaker system. 16 ohms impedance. Requires 40 W (IHF) driving power. 70" H × 23½" W × 2⅞" D. Mahogany or walnut. Should be used in pairs ..... Each $1495.00

Seventeen 2-Way Speaker System
Sealed, 2-way bookshelf system with 10" woofer & 1¾" tweeter. Has tweeter control. 11¾" H × 23¼" W × 8¼" D. $89.95

Thirty-Three Speaker System
Sealed, 2-way bookshelf system with 10" woofer & 1¾" tweeter. 8 ohms impedance. 13¾" H × 23⅜" W × 10⁵⁄₁₆" D. Oiled walnut.. $110.00

Thirty-Two Speaker System
Sealed, 2-way bookshelf system with 8" woofer & 1⅞" tweeter. 8 ohms impedance. 19⅜" H × 10⅞" W × 7³⁄₁₆" D. Oiled walnut. Sold in pairs only (2 per carton). ..... $125.00 pr.

Thirty-One Speaker System
Sealed 2-way bookshelf system with 8" woofer and 1⅞" tweeter. 8 ohms impedance. Walnut grain enclosure with foam grille. 11" × 8⁵⁄₁₆" W × 17½" D. Sold in pairs only (2 per carton) ..... $99.95 pr.

Thirty-Eight Speaker System
Sealed, 2-way bookshelf system with 10" woofer & 1⅞" tweeter. 8 ohms impedance. 21¼" H × 12⅛" W × 8½" D. Oiled walnut. Sold in pairs only (2 per carton). ..... $149.95 pr.

Twenty-Eight Speaker System
Sealed enclosure system containing three separate 2-way systems with three 10" woofers, & three 1½" tweeters. Radiates in three directions. 17" H × 26" W × 15" D. Oiled walnut. Pedestal mounting $299.95

Research Ten Line

CB-10 Two-Way Speaker System
Two-way system with 10" "Megaflux" woofer & 2½" cone tweeter; response 40-18,000 Hz ±4 dB; has high-frequency control switch;

min. power capacity 10 W rms/ch; max. 100 W rms/ch; 8 ohm imp.; phase-line crossover at 1700 Hz with 6 dB/octave slope. hand-rubbed oak veneer cabinet with vinyl baffle and back panel. 19½" H × 14¾" W × 7¼" D. . . . $110.00

CB-8. Same except 8" Megaflux woofer; response 47-18,000 Hz; min. power capacity 8 W rms/ch. 19½" H × 11" W × 7¼" D $85.00

CL-3 Three-Way Speaker System

Three-way system with 10" Megaflux woofer, 2½" cone tweeter; & 2" cone tweeter; response 35-20,000 Hz ±3½ dB; capacitor crossover at 1500 Hz, mechanical roll-off at 10,000 Hz; power capacity 20 W rms/ch min.; 100 W rms/ch max.; 8 ohm imp.; has high-frequency control switch; oiled-walnut cabinet with brown jersey grille cloth. 26⅞" H × 13⅞" W × 11 11/16" D $140.00

CL-4. Similar to CL-3 except has 4½" cone mid-range & 1" dome tweeter; mid-range and high-frequency controls; min. power 25 W rms/ch; 200 W rms/ch max. 26 13/16" H × 14¼" W × 12 13/16" D $189.00

KLIPSCH

Cornwall II Speaker System

Tuned ducted-port, 3-way floor-standing system with 15" woofer, horn-loaded mid-range, and horn-type tweeter. Response 38-17,000 Hz ±5 dB; crossovers 600 & 6000 Hz. 8 ohms impedance. Recommended maximum amp: 100 W average sine wave power, 35¾" H × 25½" W × 15½" D. Furniture finishes. $525.00

Heresy Speaker System

3-way floor-standing system with 12" woofer, horn-loaded mid-range, and horn-type tweeter. Response 50-17,000 Hz ±5 dB; crossovers 700 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 100 W average sine wave power. 21⅜" H × 15½" W × 13⅛" D. Furniture finishes. $297.00

Klipschorn Speaker System

Folded corner horn, 3-way floor-standing system with 15" woofer, horn-loaded mid-range, and horn-type tweeter. Response 35-17,000 Hz ±5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 100 W average sine wave. 52" H × 31¼" W × 28½" D. Furniture finishes. $1040.00

LaScala Speaker System

Folded horn, 3-way floor-standing system with 15" woofer, horn-loaded mid-range, and horn-type tweeter. Response 45-17,000 Hz ±5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 100 W average sine wave. 35¼" × 23¾" W × 24½" D. Raw or theater black finish $525.00

Belle Klipsch Speaker System

Folded horn, 3-way floor-standing system with 15" woofer, horn-loaded mid-range, horn-type tweeter. Response 45-17,000 Hz ±5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 100 W average sine wave. 35⅝" H × 30⅛" W × 18¾" D. Oiled walnut. $840.00

KOSS

Model One Electrostatic Speaker

Full-range electrostatic speaker; response 30-20,000 Hz (3 dB down points); bandpass configurations (3 dB down): low bass, 30-250 Hz; mid-range 250-1600 Hz; treble 1600-6000 Hz; tweeter 6000-20,000 Hz; min. amplifier power 75 W rms/ch, max. 300 W rms/ch; nominal imp. 4 ohms at any frequency from 10-50,000 Hz; max. recommended room size for 75 W rms/ch amplifiers 2500 cubic feet, 300 W rms/ch 5000 cubic feet; features push-pull constant-charge mode of operation; controlled leakage path from stator to diaphragm for reliable panel operation even with high-power amplifiers; 19 square feet of diaphragm for good coupling and output even at 32 Hz; auto-charge bias supply provides polarizing high voltage without a.c. cord; bandpass crossover design featuring self-crossover coupling transformer with 6 dB/octave slopes; controlled wide-angle dispersion at mid- and high frequencies; hand-rubbed, oiled-walnut veneer bonded to high-density particle board for top, sides, and base; chocolate brown acoustically transparent polyester knit grille cloth; acoustically open hardboard back panel. 49" H × 32" W × 10" D (bottom), 7½" D (top). $895.00

LAFAYETTE

Criterion 333 Two-Way Speaker System

Acoustic-suspension bookshelf system with 8"

10 Speaker Systems

woofer & 3" sealed-back tweeter. Response 40-18,000 Hz; 2000 Hz electrical crossover. Will handle 30 W. Finished all four sides; charcoal brown grille cloth. 18" W × 11" H × 10" D..... ..... $59.95

Criterion 555 Three-Way Speaker

Acoustic-suspension bookshelf system with 10" woofer, 5" mid-range, and 3" tweeter. Has high-frequency brilliance control. Response 32-19,500 Hz; LC crossovers 800 & 3000 Hz. Will handle 50 W. Walnut-vinyl cabinet finished all four sides; charcoal brown grille cloth. 21" H × 12" W × 10" D..... $89.95

Criterion 666 Three-Way Speaker

Acoustic-suspension bookshelf system with 10" woofer, 6" mid-range, and 2" direct-radiator super tweeter. Response 28-20,000 Hz; crossovers 800 & 5000 Hz. Has mid-range and brilliance controls. Will handle 60 W. Oiled-walnut enclosure with charcoal brown grille cloth. 22" H × 14½" W × 11" D $119.95

Criterion 777 Three-Way Speaker

Acoustic-suspension bookshelf system with 10" woofer, 6" sealed-back mid-range, and 2" direct-radiator super tweeter. Has mid-range and brilliance controls. Response 20-20,000 Hz; crossovers 800 & 4000 Hz. Will handle 80 W. Oiled-walnut enclosure with 3-dimensional foam grille. 23" H × 15" W × 12" D..... $139.95

Criterion 2001 Three-Way Speaker

High-efficiency system with 10" woofer (reinforced by three internal tuned ducts radiating through a base vent); 2" × 6" exponential mid-range, and wide-dispersion ring tweeter; response 30-18,000 Hz; crossovers 2000 & 4000 Hz; will handle 70 W rms; imp. 8 ohms; features front-panel high-frequency and compensation/equalization controls; protective fuse; walnut-vinyl finish on ⅜" high-density particle board; sculptured cafe brown polyester knit removable grille. 25" × 13½" × 13⅜"..... $99.95

Criterion 2002. Similar to 2001 except has 12" woofer and two ring tweeters; response 20-20,000 Hz; will handle 90 W rms. 26" × 16" × 15" $149.95

Criterion 2005 Speaker System

Features Heil air-motion transformer mid-range/tweeter and 10" low-frequency driver; frequency response 30-24,000 Hz; min. power required 15 W rms; will handle 300 W music peaks; square-wave risetime 15 μ sec at 5000 Hz; nominal imp. 8 ohms; circuit-breaker protected; features bass chamber; bass radiating vent; environmental equalizer control; oiled-walnut veneer with black woven grille cloth. 40" H × 13¼" W × 12½" D..... $199.95

Criterion L-2 Three-Way System

Acoustic-suspension system with 8" woofer, 3" sealed-back mid-range, 3" super tweeter; response 50-20,000 Hz; capacitor crossovers 6000 & 9000 Hz; handles 20 W rms program; 8 ohm imp.; walnut-finished vinyl cabinet on ½" solid base; removable formed front grille. 10⅜" × 16⅜" × 7⅜"..... $39.95

L-6. Similar to L-2 except 10" woofer, 5" mid-range, 2¼" super tweeter; response 30-20,000 Hz ±3 dB; RCL networks at 2200 & 6000 Hz for 6 dB/octave crossover; rear-panel mid- and high-frequency controls; ⅝" thick, fiberglass-filled enclosure; handles 30 W rms program. 13¼" × 22¾" × 10⅝" D..... $79.95

Criterion L-4 Three-Way System

Tuned-port speaker system with 8" woofer, 3" mid-range, 2¼" super tweeter; response 40-20,000 Hz; capacitor crossovers at 4500 & 9000 Hz; handles 25 W rms; 8 ohm imp.; ½" thick enclosure with walnut-finish vinyl covering; brown removable front grille. 10⅜" × 16⅜" × 7⅜" D..... $49.95

LANIER

Encore 1000 Speaker System

Three-way speaker system; 15" woofer, 5" mid-range, 2½" piezoelectric tweeter; crossovers 500 & 5000 Hz; frequency range 30-25,000 Hz; max. power input (peaks) 250 W, min. power requirement 3 W rms; 1 W sensitivity 102 dB (measured 1 meter on-axis); max. sound level 115 dB; dispersion 100 degrees; 8 ohms imp. 18" × 26" × 14" D..... $199.00

Maestro 3000 Speaker System

Four-way speaker system; 15" woofer, 10" mid-range; 3½" piezoelectric horn, 2½" piezoelectric tweeter; crossovers 250, 5000 & 9000 Hz; frequency range 20-44,000 Hz; max. power input (peaks) 500 W, min. power requirement 4 W rms; 1 W sensitivity 109 dB (measured 1 meter on-axis); max. sound level 122 dB; dispersion 180 degrees; 8 ohms imp. 28" × 19" × 22"..... ..... $299.00

Concerto 5000 Speaker System

Four-way speaker system; 15" woofer, 10" woofer, 10" mid-range. 2" × 6" high-efficiency horn tweeter, 3½" piezoelectric tweeter; crossovers 250, 5000 & 9000 Hz; frequency range 20-44,000 Hz; max. power input (peaks) 1000 W, min. power requirement 5 W rms; 1 W sensitivity 112 dB (measured 1 meter on-axis); max. sound level 130 dB; dispersion 100 degrees; 8 ohms imp. 25" × 36" × 21"..... $449.00

LESLIE

Plus 2 Model 450 Speaker System

Each cabinet includes a dome high-frequency radiator, two 6" × 9" mid-range, a 15" bass driver, crossover networks, and low-frequency dispersion unit. The system consists of two cabinets with one housing two power amps (one for each cabinet), and two full-frequency "space generators." Designed to augment two-channel stereo by being added to present system. Can also be used as two of four speakers for four-channel system. High-imp. input. The multi-dimensional response of system breaks up standing waves. Walnut. 33¼" H × 30" W × 20½" D. Sold in pairs only ..... $497.50 ea.

Plus 2 Model 470 Speaker System

Same as Plus 2 Model 450 except in contemporary cabinet. 33" H × 29½" W × 19⅝" Brown & gold grille cloth. Sold in pairs only..... ..... $497.50 ea.

Plus 2 Model 430 Speaker System

Same basic principle of operation as the Model 450 except two-way system with 12" bass speaker and high-frequency horn. 29⅜" H × 24⅞" W × 18½" D. Sold in pairs only..... ..... $347.50 ea.

Model 580 Four-Way Speaker System

Four-way, five-driver system that adjusts to geometry of listening area; 4th order Butterworth response with 15" driver in ducted-port enclosure; 8" & 3" mid-range and two 1" dome tweeters are mounted on adjustable dipole coupler; crossovers 250, 1500 & 5000 Hz; level switches on crossover network to adjust for listening room characteristics; 4 ohm imp.; walnut and chrome finish with black vinyl & grille cloth. 33" H × 20½" W × 29" D.. $473.00

Model 570. Same as Model 580 except housed in fine-furniture cabinet; walnut with black grille cloth. 33" H × 30" W × 20½" D.. $449.00

LISSEN

L-28 Two-Way Speaker System

Two-way infinite-baffle bookshelf system with 8" woofer & 3" non-reflecting direct-radiator; response 40-19,000 Hz ±4 dB; impedance 4-8 ohms; capacitance crossover at 1800 Hz; will handle 25 W rms; genuine walnut veneer cabinet. 10" W × 20" H × 9½" D..... $85.00

L-212 Two-Way Speaker System

Two-way infinite-baffle bookshelf system with 12" woofer & 3" non-reflecting direct radiator; response 30-18,000 Hz ±3 dB; imp. 4 or 8 ohms; capacitance crossover at 2000 Hz; will handle 30 W rms; genuine walnut veneer cabinet, hand-rubbed Danish oil finish. 15½" W × 23½" H × 11½" D..... $118.00

L-220 Two-Way Speaker System

Two-way infinite-baffle floor-standing system with two 8" woofers & 3" non-reflecting direct radiator; response 28-18,000 Hz; imp. 4 ohms; capacitance crossover at 1800 Hz; will handle 60 W rms; 16½" W × 31½" H × 13½" D..... ..... $190.00

L-320 Three-Way Speaker System

Three-way tuned-port bass-reflex system with 12" woofer, 4" × 10" exponential horn mid-range, and 3" × 7" exponential horn tweeter; response 25-17,500 Hz; 4 ohms imp.; two-section RCL crossovers at 1500 & 3000 Hz; tweeter control; will handle 75 W rms. 20" W × 27" H × 16" D..... $264.00

L-520 Three-Way Speaker System

Three-way tuned-port bass-reflex system with 15" woofer. 17" × 7" × 20" exponential horn mid-range, and 5¼" × 2" exponential horn tweeter; response 25-20,000 Hz; 4-ohm imp.; three-section RCL crossovers at 400 & 6000 Hz; will handle 80 W rms. 22" W × 41¼" H × 25" D..... ..... $515.00

LSS

300 Three-Way Speaker System

Three-way bookshelf system with 12" woofer, 5" narrow-band mid-range, and 2¼" tweeter; response 35-20,000 Hz ±3.5 dB; dist. 1.5% at 90 dB at any frequency from 80-20,000 Hz; power required 25 W rms min.; will handle 450 W musical peaks; fused against excessive current input; 4 ohm imp.; hand-rubbed oiled-walnut finish. 27" H × 16" W × 14" D.. $269.00

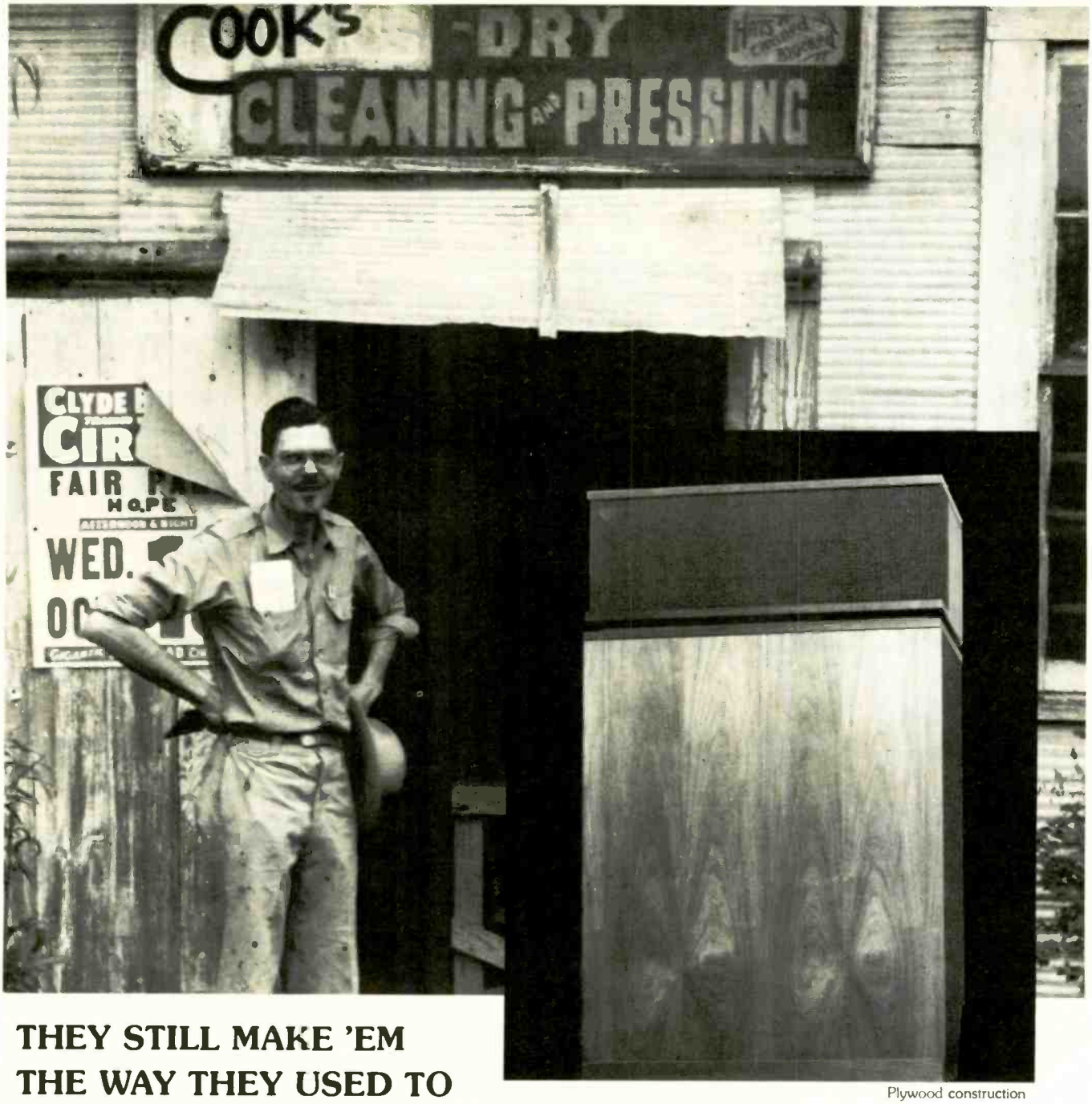
200 Two-Way Speaker System

Two-way bookshelf system with 12" woofer and 1" dome tweeter; crossover at 1500 Hz; response 35-18,000 Hz ±4 dB; dist. 1.5% at 90 dB at any frequency from 80-18,000 Hz; 20 W rms min. power required; will handle 200 W musical peaks; fused against excessive current input; 4 ohm imp.; hand-rubbed oiled-walnut finish. 27" H × 16" W × 14" D.. $189.00

MAGITRAN

DS-60 Sound Panel System

Features patented poly-planar multi-channel flat diaphragm reproducer (2" deep) providing response 40-20,000 Hz. Will handle 60 W max. music power; 28 W continuous rms power. 4-8 ohms imp. Each panel comes with floor-standing and wall-mounting hardware. 5 W min. amplifier power. Features replaceable snap-



Plywood construction

THEY STILL MAKE 'EM THE WAY THEY USED TO

Not in the same $10 a month shed where Klipsch started. Not with the same machinery. But KLIPSCHORN® loudspeakers, produced in the modern Klipsch plant, are still made from the same designs developed in the 1940's, utilizing the same basic principles of sound reproduction. The same quality of components has been maintained. And every loudspeaker is still individually tested under Paul Klipsch's supervision.

That's why a KLIPSCHORN purchased thirty years ago can be updated with a few minor revisions. That's why the KLIPSCHORN you buy today will still be the finest available loudspeaker thirty years from now.

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"What good is money if it can't buy music?" —John Dyer-Bennett, Puds Audio, Albany, Cal.

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10 Speaker Systems

on/snap-off grilles in 13 different decorative motifs. 29⅜" H × 23⅜" W × 2" D..... $89.95
DS-60P. Additional grilles..... $23.95

MAGNEPLANAR

MG-II Speaker System
Consists of a large area permanent magnetic field with thin-film diaphragm stretched over it; speaker is ⅛" thick; two-way full range; mid-range/bass radiating area 500 sq. in; tweeter radiation area 85 sq. in; response 50-18,000 Hz ±4 dB; will handle up to 200 W rms per channel on music or speech; recommended minimum power 15-25 W (background), 50-100 W (other); medium to low efficiency, 1.5 W rms at 1000 Hz will produce 85 dB SPL at 3 ft; impedance purely resistive, 6 ohms at any frequency; 6 dB/octave LC crossover at 2400 Hz; Walnut finished hardwood frame with panel covered in light-colored fabric front & back. 22" × 71" × 2" mounted on 22" × 14" black base. 40 lbs each speaker. Sold in matched pairs..... $625.00

MARANTZ

Imperial 4G Speaker System
Sealed-enclosure, 2-way bookshelf system with 8" woofer & 2" tweeter. Response 60-18,000 Hz; 2000 Hz crossover. 8 ohms impedance. 30 W (peak) maximum input power. 10¼" H × 18⅛" W × 7½" D. Walnut..... $59.95

HD-44 Speaker System
Three-way, sealed-enclosure bookshelf system with 8" woofer, 3" mid-range, and 3" tweeter; response 45-18,000 Hz ±3 dB; crossovers 2000 & 8000 Hz; 8-ohm imp.; power handling capacity 60 W integrated program material. 19" H × 11¼" W × 8½" D..... $89.95

HD-55 Speaker System
Three-way, sealed-enclosure bookshelf system with 8" woofer, 4½" mid-range, 1½" dome tweeter; response 40-20,000 Hz ±3 dB; crossovers 1200 & 4000 Hz; 8-ohm imp.; power handling capacity 100 W integrated program material. 23" H × 12" W × 9½" D..... $129.95

HD-66 Speaker System
Three-way, sealed or ported bookshelf system with 10" woofer, 4½" mid-range, 1½" dome tweeter; response 35-20,000 Hz ±3 dB; crossovers 1000 & 4000 Hz; 8-ohm imp.; power handling capacity 150 W integrated program material. 24¼" H × 14½" W × 11" D.. $179.95

Imperial 7 Speaker System
Three-way bookshelf system with 12" woofer, 3½" mid-range, 1¾" tweeter. Has 3-position HF level & 3-position mid-range level selector switches. Response 35-20,000 Hz ±5 dB. 30 W continuous power input; 100 W integrated program material; 8 ohms imp. 25½" H × 14¼" W × 11½" D..... $199.95

HD-77 Speaker System
Four-way bookshelf system with 12" woofer, 4½" mid-range, 1½" dome tweeter, 1" dome super tweeter; has mid-range tweeter/super tweeter controls; response 30-23,000 Hz ±3 dB; crossovers 500, 3000 & 8000 Hz; 8-ohm imp.; power handling capacity 250 W integrated program material. 25½" H × 14¼" × 12¾" D..... $259.95

Imperial 8 Speaker System
Three-way floor-standing system with 12" woofer, a rotatable air-coupled array consisting of three mid-range transducers & two tweeters. Response ±2 dB 40-18,000 Hz; ±5 dB 30-20,000 Hz. Will handle 75 W continuous power (125 W integrated); 8 ohms impedance. 27" H × 18¾" W × 14½" D..... $319.95
Imperial 9. Similar to Imperial 8 except has two 10" woofers, four mid-range, and two tweeters. Response ±1.5 dB 35-17,000 Hz; ±3 dB 30-18,000 Hz. Will handle 100 W continuous power (150 W integrated). 30½" H × 24" W × 18" D..... $499.95

HD-88 Speaker System
Four-way floor-standing system with 12" woofer, 4½" mid-range, 1½" dome tweeter, two 1" dome super tweeters; has controls for mid-range, tweeter, and super tweeters; response 25-25,000 Hz ±3 dB; 500, 3000 & 8000 Hz crossovers; 8-ohm imp.; power handling capacity 300 W integrated program material. 43¾" H × 15" W × 12" D..... $399.95

MARTIN

Crescendo Speaker System
3-way, sealed infinite baffle system with 12" woofer, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. Walnut formica finish. 14½" H × 25½" W × 12" D..... $219.00

Laboratory MK II Speaker System
3-way, sealed infinite baffle system with 10" woofer, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 35-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 50 watts (dynamic) maximum input power. Walnut formica finish. 12½" H × 21½" W × 10" D..... $149.00

Magnificat Speaker System
3-way, floor-standing sealed infinite baffle system with two 12" woofers, 6" mid-range, and four compression-horn tweeters. Response 28-20,000 Hz; mid-range and tweeter level controls. 4 ohms impedance; 80 watts (dynamic) maximum input power. Walnut formica finish. 37½" H × 18" W × 14¾" D..... $379.00

Exorcist Speaker System
3-way, floor-standing smaller version of the Magnificat; 15" woofer, 5" curvilinear mid-range, four compression horn tweeters; response 28-20,000 Hz; 8 ohms impedance; crossovers 350 & 5000 Hz at 12 dB/octave; will handle up to 80 W. 28" H × 18" W × 14" D..... $339.00

Micro-Max Speaker System
2-way, sealed enclosure system with 8" woofer and wide dispersion 3" tweeter. Has tweeter balance control. 8 ohms impedance. Walnut formica finish. 10¾" H × 18" W × 9¾" D..... $79.00

Krypton Four-Way System
Four-way infinite-baffle system with 12" pneumatic load woofer, 8" pneumatic load mid-bass, 5" closed-back mid-range, and two compression-horn tweeters; response 30-20,000 Hz; mid-range & tweeter level controls; 75 W max. input power; 8 ohms imp.; walnut Formica finish. 25½" H × 15" W × 12" D..... $299.00

Super Spectrum Speaker System
3-way, sealed infinite baffle system with two 8" woofers, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 4 ohms impedance; 60 watts (dynamic) maximum input power. Walnut formica finish. 12½" H × 21½" W × 10" D..... $209.00

840 Sound Tower Column System
3-way column, sealed enclosure system with four 8" woofers, two 4" mid-range, and four compression-horn tweeters. Response 28-20,000 Hz; mid-range and tweeter level controls. 100 watts (dynamic) maximum input power. Walnut formica finish. 52" H × 16¼" W × 7¾" D..... $399.00

MAXIMUS

150 Three-Way System
Three-way system with 15" woofer, 6" closed-back mid-range, 3" ultra tweeter; will handle up to 60 W rms continuous power; response 20-20,000 Hz; impedance 8 ohms; sculptured grille. 27½" H × 19" W × 12" D..... $199.95
120. Same as Model 150 except has 12" woofer and response 25-20,000 Hz..... $159.95

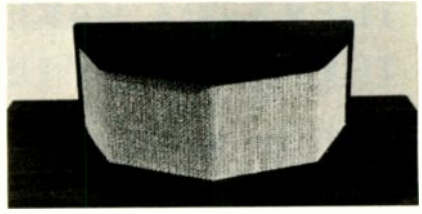
X100 Two-Way System
Two-way system with 10" woofer, 8" "Acoustic Woofer," 2" cone-radiator tweeter; response 35-20,000 Hz; will handle up to 50 W rms continuous; −3 dB low-frequency cut-off at 32 Hz with "Acoustic Woofer;" sculptured grille. 24" H × 14" W × 10⅜" D..... $129.95

100 Two-Way System
Two-way system with 10" acoustic-suspension woofer, 3" ultra tweeter; response 30-20,000 Hz; imp. 8 ohms; sculptured grille. 24" H × 14" W × 10⅜" D..... $114.95

80 Two-Way System
Two-way system with 8" long-throw woofer, 3" ultra tweeter; response 45-20,000 Hz; imp. 8 ohms; sculptured grille. 22" H × 12⁹⁄₁₆" W × 8³⁄₁₆" D..... $89.95

MICRO/ACOUSTICS

Microstatic Speaker System
One-way miniature closed system with four tweeters. Response 3500-18,000 Hz ±2 dB.



Dispersion 180 degrees. Has range selector and level control. 4 to 8 ohms impedance. 60 W maximum (rms) input power. For use with medium and low-efficiency systems to augment treble. 3¾" H × 9⅛" W × 5¼" D. Walnut. $58.50

FRM-1 Speaker System
A bookshelf system with an array of five high-frequency drivers radiating 180 degrees and in both vertical and horizontal planes plus an MW-28 woofer. Response 35-18,000 Hz. Grille cloths available in burnt orange, blue, black or brown. 25¾" × 15⅜" W × 12¾" D..... $165.00

FRM-2 Speaker System
Two-way floor-standing system; response 40-16,000 Hz ±4 dB; dispersion 160 degrees horizontal & vertical at 15,000 Hz; 10" acoustic-suspension woofer & three 1½" tweeters mounted in trihedron array; power required 10 W rms min., 60 W rms max.; impedance 8 ohms;

JUST HOW GOOD CAN A BOOKSHELF SPEAKER GET?

Please note who is asking that question.

Not one of the manufacturers who make only bookshelf speakers. Or only conventional speakers of whatever size.

They don't want you to find out, ever, that a bunch of moving-coil drivers connected through a crossover network isn't exactly the state of the art.

We, on the other hand, are willing to tell you here and now that our newest bookshelf system, the Ohm H, is decidedly not the state of the art.

That distinction, in our biased but widely shared opinion, belongs to the Ohm F and the Ohm G, our two floor-standing, single-driver designs based on the Walsh patent. They produce "coherent sound", which means an acoustic output in perfect phase with the input signal. They pass square waves virtually unaltered.

That's why we are in a position to explore the limitations of conventional speakers with some authority. And that's why it may interest you that we consider the Ohm H to be about as good as a bookshelf speaker can get.

Certainly as good as any under-$300 system is likely to be in the foreseeable future.

Although it's essentially a straightforward 3-way design, the Ohm H does have one exotic feature. It uses the same ultra-sophisticated principle of bass reinforcement as the much costlier Ohm G.

That 12-inch cone you see in the photograph doesn't belong to a woofer. It's an undriven, passive diaphragm used in lieu of a vent. The actual woofer is the 8-inch unit. At the system resonant frequency of 32 Hz only the passive radiator moves; the maximum excursion of the woofer is at 45 Hz. Above 64 Hz the contribution of the passive radiator tapers off rapidly.

This kind of bass-loading configuration is known as a fourth-order Butterworth filter and is characterized by perfectly flat output. The system is critically damped, the −3 dB point being the resonant frequency of 32 Hz. Efficiency is about twice that of the equivalent acoustic-suspension system.

The other two drivers have equally flat response. A 2-inch cone is crossed over to the 8-inch woofer at 1700 Hz and an extremely efficient, resonance-free 1-inch dome is brought in at 5000 Hz. The −3 dB point on the high end is at 18,000 Hz.

The series-type crossover network eliminates the typical phase problems that plague more traditional 3-way designs in the crossover region. (Our finickiness about phase errors should come as no surprise after our work on the Walsh speakers.)

Overall, we don't see how a 2-cubic-foot box with drivers on the front panel could be made any better than the Ohm H.

It's a third-best speaker any company could be proud of.

Ohm Acoustics Corp., 241 Taaffe Pl., Brooklyn, N.Y. 11205

Ohm

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10 Speaker Systems

high-frequency level control adjusts all three tweeters simultaneously; LRC crossover at 1700 Hz. Walnut vinyl with brown stretch knit grille cloth. 12¼" × 15⅜" W × 25¾" H. $129.00

FRM-3 Speaker System
Two-way floor-standing system; response 40-15,000 Hz ±3 dB; dispersion 140 degrees horizontal & vertical at 15,000 Hz; 8" acoustic-suspension woofer, 1½" hemispheric dome tweeter; power required 8 W min., 50 W max.; impedance 8 ohms; LRC crossover at 1700 Hz. Walnut vinyl with brown stretch knit grille cloth. 25¾" H × 15⅜" W × 10½" D. . . . $99.00

MICROTOWER

MT1 Speaker System
Spherical-sound design; suitable for front, rear, or four-channel use; has organ pipe low-frequency driver & two 4½" cone mid-range speakers; crossover 200 Hz; 8 ohms; 5 W min., 50 W max. power handling capacity: response 50-12,000 Hz ±3 dB. White or walnut finish. 32" H × 8½" × 8½" $69.95

MT2 Speaker System
Drivers are mounted on all sides for uniform response; uses two 1" wide-dispersion tweeters, two 4½" mid-range, and organ pipe for response below 200 Hz; crossovers 200 & 3000 Hz; 8 ohms; will handle from 15-70 W; tweeter control. Walnut finish. 34" × 8½" × 8½" $129.95

MT3 Speaker System
Features organ-pipe low-frequency driver; four 4½" mid-range & two linear air-spring tweeters; response 35-18,000 Hz ±3 dB; will handle 30-80 W rms. $199.95

MITSUBISHI

DS-303 Four-Way Speaker System
Four-way, acoustic air-suspension bookshelf

system; 12" woofer, 2½" dome mid-range, 1" dome tweeter, 5/8" dome super tweeter; response 30-35,000 Hz; crossovers: ferrite core inductors 600, 5000, 10,000 Hz; metalized polyester film capacitors above 10,000 Hz; imp. 6 ohms; output acoustic pressure 90 dB/W at 1 meter; will handle 100 W peak. 14¼" W × 24½" H × 13" D $580.00

DS-36BR Three-Way Speaker System
Three-way, hermetically sealed system; 12" woofer, 5" mid-range, 1" dome tweeter; response 30-20,000 Hz; crossovers 600 & 5000 Hz; imp. 8 ohms; output acoustic pressure 93 dB/W at 1 meter; will handle 60 W peak. 15¾" W × 26¾" H × 11⅝" D $300.00

DS-28B Three-Way Speaker System
Three-way, hermetically sealed system; 10" woofer, 4" cone mid-range, 1¼" dome tweeter; response 40-20,000 Hz; crossovers 800 & 5000 Hz; 8 ohms imp.; will handle 50 W peak; acoustic pressure level 91 dB/W at 1 meter. 13⅜" W × 23¼" H × 10⅝" D $200.00

DS-251 MKII Two-/Three-Way System
Switchable two- and three-way bookshelf system; 10" woofer, 2" cone tweeter, 1¼" cone super tweeter; response 40-20,000 Hz (2-way), 40-25,000 Hz (3-way); crossovers 2000 & 10,000 Hz; acoustic pressure level 91 dB/W at 1 meter; will handle 40 W peak; 8 ohm imp.; 12½" W × 20¾" H × 9½" D $170.00

MODULAR SOUND

"T" Omni Speaker Cube
Five-driver system featuring four 3" tweeters in 360-degree array, one 8" woofer/mid-range in infinite baffle enclosure; can be used as bookshelf speaker or combined with 8B omnidirectional bass cube to form a three-way system with 40-20,000 Hz ±3 dB response; crossover 500 & 3000 Hz. 12⅞" × 12⅞" × 12⅞". . $79.95

"8B" Slot-Loaded Bass Cube
Contains one 8" floor-loaded woofer with two mechanical crossovers; can be used as bass booster for any bookshelf speaker system; terminal strip connections for both amplifier input and speaker system output; used in conjunction with the "T" Omni it becomes three-way floor-standing system. Same dimensions & enclosure as the "T". $69.95

"F" Two-Way Speaker System
Tuned-port, two-way system with one 3" tweeter and 8" woofer; high efficiency; 23⅞" × 12⅞" × 11" D. $89.95

MX

2830 Speaker System
Three-way air-suspension system with 15" high-compliance woofer, 2" hemispherical dome, 2" phenolic ring cone tweeter; 8 ohms impedance; response 20-20,000 Hz; system resonance 43 Hz; crossovers 1500 & 4500 Hz; mid-range & tweeter level controls; power input 10 W rms min./100 W rms max. Oiled walnut veneer cabinet; removable foam grille. 29" × 20¼" × 14¼". . . . . $499.95 pr.
2820. Same features as 2830 except 12" woofer; response 25-20,000 Hz; system resonance 45 Hz; power input 10 W rms min./75 W rms max. 25¾" × 15¾" × 13¼". . . . . $399.95 pr.
2810. Same features as 2830 except 10" woofer; response 30-20,000 Hz; system resonance 47 Hz; power input 10 W rms min./50 W rms max. 23½" × 15¼" × 12½". . . . . $299.95 pr.

2760 Speaker System
Two-way air-suspension system with 10" woofer & 3½" cone tweeter; response 40-17,000 Hz; imp. 8 ohms; system resonance 55 Hz; crossover 2000 Hz; min. input power 10 W rms; max. 35 W rms; walnut vinyl enclosure; burnt orange formed grille. 21½" H × 12½" W × 12" D . . . . . $149.95 pr.
2770. Same as 2760 except 12" woofer; max. input power 50 W rms. 23" × 14¾" × 12" D . . . . . $199.95 pr.

NAKAMICHI

Reference Monitor Speaker
Two-way monitoring system with 12" woofer with double-edged cone, 2" cone tweeter; mechanical crossover 1500 Hz; phase inverter bass-reflex enclosure has rounded front vertical edges to reduce diffraction; response 40-16,000 Hz ±5 dB on axis; sensitivity: 96 dB

SPL (1 W input) at 1 meter; power rating 60 W max.; 8 ohm imp.; cabinet finished in mahogany. 34⅝" H × 25⁹⁄₁₆" W × 17⁹⁄₁₆" D . . $1200.00
SV. Same as Reference Monitor but with 8" woofer, 1½" tweeter; crossover 2000 Hz; 94 dB SPL; 40 W max. power; 16 ohm imp. 27⁹⁄₁₆" H × 20⅞" W × 12¼" D $800.00

NT-T

CK10-2 Speaker System Kit
Two-way system with 6½" woofer & 2½" tweeter. Response 45-20,000 Hz. 8 ohms imp. Max. power input 20 W. 13" H × 8" W × 8" D $34.95
Pair of kits $59.95

CK20-2 Speaker System Kit
Two-way system with 8" woofer & 2" tweeter. Response 40-20,000 Hz. 8 ohms imp. Max. power input 50 W. 20" H × 10¼" × 9½" D $59.95
Pair of kits $99.95

CK 20-3 Speaker System Kit
Three-way system with 8" woofer, 5" mid-range, and 2" tweeter. Response 40-20,000 Hz. 8 ohms imp. Max. power input 50 W. 20" H × 10¼" W × 9½" D. $69.95
Pair of kits $119.95

CK50-4 Speaker System Kit
Four-way system with 10" woofer, 5" × 7" mid-range, and two 2½" tweeters. Response 30-20,000 Hz. 8 ohms imp. Max. power input 50 W. 26½" H × 15" W × 10½" D $99.95
Pair of kits $179.95

OHM ACOUSTICS

Model C+ Speaker System
Three-way, sealed system with 10" woofer, 2" tweeter, and 1" super tweeter; response 45-20,000 Hz ±4 dB; crossovers 1700 & 5000 Hz (series network); 8/6 ohm imp.; 33 W rms min. power required for 0.15 acoustic watt output; has continuously variable tweeter-level control; oiled-walnut finish on ¾" stock. 25" × 14" × 9¾" D $180.00

Model D Speaker System
Two-way, slot-vented bass reflex system with 10" woofer, 2" tweeter; 1700 Hz crossover (series network); response 52-19,000 Hz ±4 dB; 8/6 ohm imp.; 26 W rms min. power required; continuously variable tweeter-level control; ⅜" stock with choice of oiled-walnut finish or vinyl. 25" × 14" × 8" D $120.00

Model E Speaker System
Two-way, sealed system with 8" woofer, 2" tweeter; 1700 Hz crossover (series network); response 65-19,000 Hz ±4 dB; 29 W rms min. power required; continuously variable tweeter-level control; ⅜" stock, walnut-finished vinyl. 21½" × 11½" × 7¼" D $90.00

Some speakers are more equal than others.

Over the years, Rectilinear engineers have created a number of fine speakers. Some have even gone on to become classics.

Indeed, for a great many knowledgeable enthusiasts, Rectilinear has virtually redefined the listening experience.

Now, with a new generation of speakers, the Contemporary Laboratory Series, we have developed a family of speakers that are so clearly superior to anything that has gone before, that conventional comparisons no longer apply.

A case in point is the new Rectilinear 5.

Listening to this remarkable speaker is, quite simply, a revelation. It produces completely natural, uncolored sound of extraordinary clarity and subtlety. Yet, it is capable of generating very high sound pressure levels with only moderate power input.

The outstanding performance of the Rectilinear 5 is directly traceable to its comparatively simple, but highly refined design.

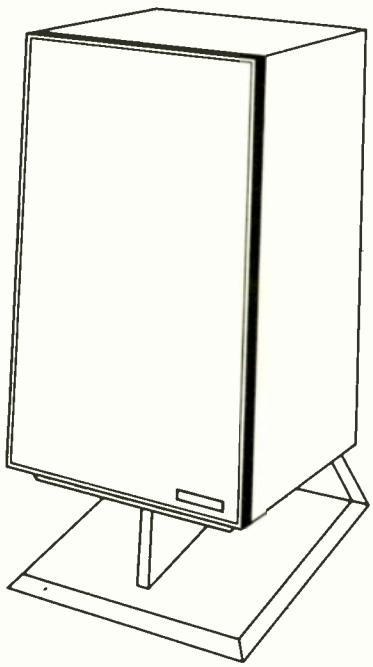
Flat, flatter, flattest.

Though nominally a four-way speaker system, the Rectilinear 5 differs from conventional multiple driver systems in some very fundamental respects.

In most systems, the individual drivers are operated over a restricted portion of their actual frequency range with the unwanted or undesirable frequency extremes "dumped" into elaborate crossover networks to maintain some semblance of smooth response.

By contrast, we take a simpler, but far more effective approach. We painstakingly design each driver for exceptionally smooth response over its entire operating range with the top end rolling off naturally, both mechanically and acoustically. Thus, we come very close to attaining that most elusive of all speaker characteristics, an apparently seamless transition from driver to driver.

Because the individual driver characteristics and their interrelationships have been so carefully worked out, the use of complicated crossovers with all their attendant problems is largely avoided. Instead, sophisticated leading edge filters are employed, allowing a much smoother transfer of energy. But of equal importance, phase integrity is maintained and transient response greatly improved.



Rectilinear Di persion Base optional

Another dividend of this innovative approach to speaker design is the enormous power handling built-in to the Rectilinear 5.

The final touch.

Obviously, we've invested a great deal of time and effort to make the Rectilinear 5 the most accurate speaker current technology permits.

Moreover, to insure unvarying excellence from unit to unit, we have instituted a new quality control program that may well be the most stringent in the industry.

One last thought. At a time when all too many companies have opted for exotic designs (read expensive), we have deliberately sought to create a clearly superior speaker system at a price that would still be within the reach of the discriminating enthusiast.

We think that alone makes us a little bit more equal than all the rest.

For complete information on the Rectilinear 5 and the rest of the Contemporary Laboratory Series write: Rectilinear Research Corporation, 107 Bruckner Boulevard, Bronx, N.Y. 10454. Canada: H. Roy Gray, Markham, Ont. Military and International inquiries: Rectilinear International Corp.

The Rectilinear® 5

CIRCLE NO. 37 ON READER SERVICE CARD

10 Speaker Systems

Model F Speaker System
Floor-standing system with 12" diameter Walsh radiator; response 37-19,000 Hz ±4 dB; vertical dispersion −3 dB at 18,000 Hz; 56 W rms min. power required; max. power handling 150 W rms continuous; 4/3.7 ohm imp.; oiled-walnut cabinet 44" H × 17¾" × 17¾" (bottom) tapering to 13" × 13" (top). $500.00

Model G Speaker System
Floor-standing system with 8" Walsh radiator; vented (4th order Butterworth filter design with 10" passive radiator); response 32-19,000 Hz ±4 dB (vertical dispersion −3 dB at 16,500 Hz); 44 W rms min. power required; max. power handling 225 W rms continuous; 18 to 6/4.3 ohm imp.; oiled-walnut or walnut-finished vinyl cabinet. 35" H × 12½" W × 11½" D . . . $350.00

Model H Speaker System
Three-way system with 8" woofer, 2" mid-range, and 1" dome tweeter; vented (4th order Butterworth filter design with 12" passive radiator); response 32-20,000 Hz ±4 dB, −3 dB at 18,000 Hz; 32 W rms min. power required; max power varies with frequency; imp. 20 to 8/6 ohms; continuously variable tweeter level control. ¾" stock oiled-walnut finish. 26" × 15" × 10¾" D . . . . . under $300.00

ONKYO

12 Speaker System
Two-way bass-reflex tuned-port system with 10" woofer, and 3" cone-type tweeter. Capacity 40 W. Response 33-20,000 Hz; crossover 2500 Hz. 5-position tweeter level control. 8 ohms. 13½" × 23¼" × 11⅝" $129.95

20 Speaker System
Three-way, linear-suspension design with 12" woofer, 2" hemispheric dome mid-range, and 1" hemispheric dome tweeter. Capacity 50 W. Response 35-20,000 Hz; crossovers at 700 & 7000 Hz. Has mid-range & tweeter level control. 10 W/ch rms minimum driving power. 23¼" × 13½" × 11⅝" $199.95

25A Speaker System
Three-way, linear-suspension design with 14" woofer, 2" hemispheric dome mid-range, and 1" hemispheric dome tweeter. Capacity 60 W. Response 30-20,000 Hz; crossovers at 700 & 7000 Hz. Has mid-range & tweeter level control. 10 W/ch rms minimum driving power. 8 ohms. 25½" × 14¾" × 11⅝" $249.95

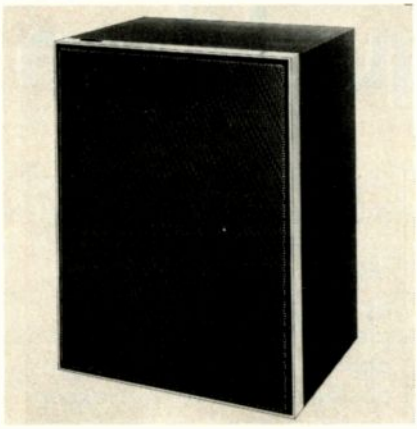
30 Speaker System
Three-way, linear-suspension design with 12" woofer, horn-type (10½" × 3½") mid-range, and 2¼" horn-type tweeter. Response 20-20,000 Hz; 700 & 5000 Hz crossovers. 60 W capacity. Has mid-range & tweeter level control. 8 ohms. 15 W/ch rms minimum driving power. 28½" × 16½" × 15½" $299.95

Radian III Two-Way Speaker System
Bass-reflex design with two high-compliance 6½" woofers and two 3" cone-type tweeters; 1500 Hz crossover. Frequency response 60-20,000 Hz. Max. input power 30 watts; 8 ohms impedance. Has high-range level control; built-in dispersion baffles and angled tweeters for 180-degree sound dispersion. 9½" W × 33½" H × 11⅜" D $119.95

8 Speaker System
Two-way, bass-reflex tuned-port speaker system; 8" woofer & 2" cone-type tweeter; response 35-20,000 Hz; maximum power capacity 30 W; 8 ohms imp; crossover 6000 Hz. 11⅜" W × 21⅝" H × 9¾" D $89.95

PHILIPS

RH532 Motional Feedback System
Three-way system with 8" motional-feedback woofer, 5" mid-range, 1" dome tweeter; two in-



tegrated power amplifiers (bass, 40 W sine wave, 0.1% dist. at 30 W. power bandwidth 10-3000 Hz, frequency range 5-2000 Hz; intermediate & treble, 20 W sine wave, 0.1% dist. at 15 W, power bandwidth 100-50,000 Hz, frequency range 500-60,000 Hz); crossover 500 Hz (active) & 4000 Hz (passive); inputs: switchable signal, preamp 1 V at 3000 ohms, power amp 7.5 V at 25 ohms, low-power amp 3 V at 35 ohms; power. 15" H × 11" W × 8" D. $365.00

PIONEER

CS-44G Speaker System
Sealed, 2-way bookshelf enclosure with 8" woofer and cone-type 2½" tweeter. Response 35-20,000 Hz. 8 ohms impedance. 25 W (dynamic) maximum input power. Oiled walnut. 11⅛" H × 19⅛" W × 9¾" D. $79.95

CS-63DX Speaker System
Sealed, 4-way floor standing enclosure with 15" woofer, two 5" mid-range, a horn-type tweeter, and two super-tweeters. Response 20-22,000 Hz. Has mid-range and tweeter controls. 8 ohms impedance. 80 W (dynamic) maximum input power. 28⅜" H × 18⅞" W × 13 1/16" D. Oiled walnut. $279.95

CS-66G Speaker System
Sealed, 3-way bookshelf enclosure with 10" woofer, 6½" mid-range, and cone-type tweeter. Response 35-20,000 Hz. Has tweeter control. 8 ohms impedance. 40 W (dynamic) maximum input power. 12¼" H × 22" W × 11½" D. $119.95

CS-99A Speaker System
Sealed, 5-way floor-standing enclosure with 15" woofer, 5" mid-range, horn-type tweeter, cone tweeter, and dome super-tweeter. Response 25-22,000 Hz. Has mid-range and tweeter controls. 8 ohms impedance. 80 W (dynamic) maximum input power. 25" H × 16" W × 11¼" D. Walnut $239.95

CS-500G Speaker System
Sealed, 3-way bookshelf enclosure with 10" woofer; 5" mid-range, and 3" tweeter. Response 40-20,000 Hz; 800 & 6000 Hz crossovers. Has tweeter control. 8 ohms impedance. 50 W (dynamic) maximum input power. 12¾" W × 22½" H × 12¾" D. Walnut $149.95

CS-700G Speaker System
Sealed, 3-way floor-standing enclosure with 12" woofer, 4¾" mid-range, and multi-cell tweeter. Response 35-20,000 Hz; 500 & 4500 Hz crossovers. Has mid-range and tweeter controls on front panel. 8 ohms impedance. 60 W (dynamic) maximum input power. Has individual speaker connections to the firm's multi-amp system. 26" H × 15" W × 12¾" D. Walnut $199.95

R300B Speaker System
Bass-reflex, 2-way design with 10" woofer and horn-type tweeter. 8 ohms. Response 45-20,000 Hz. 6300 Hz crossover. 40 W max. input. Has removable grille. Saran cloth color combination black/brown. 13" × 22½" × 11¾" D $119.95

R500B Speaker System
Bass-reflex, 3-way design with 10" woofer, 5" mid-range, and horn tweeter; crossovers at 800 & 5200 Hz. 8 ohms. Response 35-20,000 Hz. Max. input 60 W. Has removable grille and Saran cloth color combination black/brown. 13½" × 24⅛" × 12⅛" D $169.95

R700 Speaker System
Bass-reflex, 3-way design with 12" woofer, horn mid-range, and multicellular horn super-tweeter; crossovers at 750 & 14,000 Hz. 8 ohms. Response 35-20,000 Hz. Max. input 75 W. Has removable grille and Saran cloth color combination is black/brown. 15" × 26" × 13⅜" D $249.95

Project 60A Speaker System
Bass-reflex bookshelf speaker with 8" cone-type woofer, 1¾" cone-type tweeter; frequency range 50-20,000 Hz; crossover 3000 Hz; imp. 8 ohms; max. input power 20 W. 10¾" W × 18½" H × 9 5/16" D $79.95
Project 80. Similar to Project 60A except air-suspension type with 10" woofer, 1½" soft-dome mid/tweeter; response 35-20,000 Hz; crossover 700 Hz; max. input power 30 W. 11¾" W × 20¾" H × 11" D $99.95
Project 100. Similar to Project 80 except response 30-20,000 Hz; crossover 1000 Hz; max. input power 35 W. 13" W × 23" H × 10½" D. $129.95

HPM-200 Speaker System
Four-way acoustic-suspension system with two 10" woofers, 2½" soft-dome mid-range, 1 molecular film tweeter, 1 molecular film super tweeter; response 25-25,000 Hz; crossovers 100, 700, 2000, 5000 Hz; nominal imp. 6 ohms; sensitivity 89 dB SPL/watt/meter; continuous music power input 100 W; max. music power input 200 W; 32" H × 29" W × 19" D . . . $499.95

PM

150 Tower
Three-way speaker system with 12" woofer, 2" mid-range, 1" Mylar semi-spherical tweeter; mid/high unit adjustable 90° in horizontal axis; bi-amp crossover, attenuation rate 12 dB/octave, passive 5000 Hz attenuation rate 6 dB/octave; mid- to high 500 Hz = ±2.5 dB type; nominal imp. 8 ohms; will handle 50 W rms (l.f.), 25 W (mid-/h.f.) min.; 100 W (l.f.), 50 W (mid-/h.f.) recommended; response 40-20,000 Hz ±3 dB (usable to 30 Hz); walnut or oak veneers; black, brown, or orange foam grille; 40" H × 14" W × 14" D $295.00

PHASE CONCEPT

82V Speaker System
Two-way bookshelf system with 8" full-range woofer, 4" phenolic ring tweeter; two-way electronic crossover; frequency response 40-19,000 Hz; imp. 8 ohms; min. power 2 W rms; will handle 30 W rms; has variable treble presence control. Walnut polyvinyl cabinet with removable knit fabric grille. 23" × 13" × 12" D. $119.50
82W. Similar to 82V except has 3" × 7" exponential horn tweeter; frequency response 33-20,000 Hz; will handle 40 W rms; crossover 1500 Hz. Oiled-walnut-finished wood cabinet, racing stripe grille cloth. $169.00

123V Speaker System
Three-way system with 12" high-compliance woofer, 5" mid-range in tuned isolation chamber, 4" phenolic ring dome tweeter; response

25-20,000 Hz; imp. 8 ohms; min. power 2 W rms; will handle 50 W rms; crossovers 700 & 1500 Hz; has variable treble brilliance & mid-range presence controls. Walnut polyvinyl cabinet with removable formed knit grille. 23½" × 15½" × 12" D. $159.50

153V. Similar to 123V except 15" woofer, 4" × 10" exponential mid-range, 4" phenolic ring dome tweeter; response 23-20,000 Hz; 28" × 18" × 12" D. $199.50

124W Speaker System

Four-way speaker system with 12" woofer, 4" × 10" exponential mid-range, 3" × 7" horn tweeter, 4" phenolic ring dome tweeter; response 23-25,000 Hz; crossovers 800, 2500 & 6500 Hz; imp. 8 ohms; min. power 5 W rms; power handling capacity 60 W rms. Oiled-walnut-wood finished cabinet; removable pleated racing stripe grille. 23½" × 15½" × 12" D. ... $219.50

154WS. Similar to 124W except 15" woofer; response 23-22,000 Hz; imp. 8 ohms. 28" × 18" × 12" D. $329.50

2125W. Similar to 124W except two 12" woofers; response 18-30,000 Hz; power handling 100 W rms. 36½" × 15½" × 16" D. ... $379.50

POLK AUDIO

Nine Controlled Dispersion Array

Three-way free-standing tower design with four 4½" extended-range drivers, an 8" bass radiator cone, and 1" soft-dome h.f. unit in controlled dispersion array, arranged on front & rear baffles to provide dipolar radiation of bass & mid-range and direct radiation of highs; acoustic crossover 12 dB/octave at 180 Hz; response 43-19,000 Hz ±2 dB, 37-21,000 Hz −4 dB; max. output level 108 dB at 1 meter (any frequency above 100 Hz); power required 5 W rms/ch min., 100 W rms/ch max.; imp. nominal 8 ohms, min. 9.5 ohms at 70 Hz. 33½" H × 10½" W × 9" D. ..... $165.00 ea.

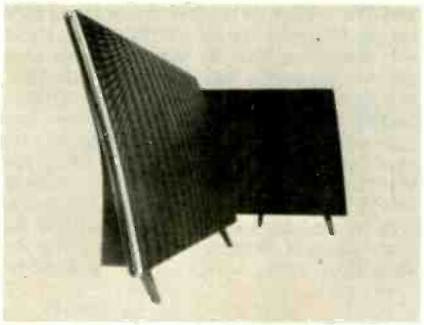
Seven Bookshelf Monitor

Three-way system with 8" sub-bass radiator, 6½" upper bass/mid-range unit, 1" soft-dome high-frequency unit; electrical crossover between upper bass/mid-range and dome radiator 12 dB/octave slope, acoustical crossover at 60 Hz; response 30-20,000 Hz. Walnut-grained vinyl cabinet; removable cloth grille. 24" H × 14" W × 9½" D. $119.95

QUAD

Electrostatic Speaker

Electrostatic unit; maximum output (6 ft on-axis in free space) 93 dB re 0.0002 dyne/cm²



50-10,000 Hz, 100 dB 70-7000 Hz; bandwidth 45-18,000 Hz; attenuation 18 dB/octave; dispersion 70 degrees horizontal, 15 degrees vertical; impedance 30-15 ohms (40-8000 Hz) falling above 8000 Hz; 100-120 V, 200-250 V, 50-60 Hz; front grille aluminum anodized bronze or black, polished wood end frames; 31" H × 34½" W × 10½" D. $450.00

RADIO SHACK

Nova 7B Speaker System

Sealed, 2-way bookshelf system with 10" woofer and two 3½" tweeters. Response 20-20,000 Hz. 8 ohms impedance. 60 W rms maximum input power. 12½" H × 22⅛" W × 11" D. Oiled walnut $119.50

Optimus 1B Speaker System

Sealed, 2-way bookshelf system. Response 20-25,000 Hz; 1000 Hz crossover. Has tweeter control. 8 ohms impedance. 12" H × 23" W × 11½" D. Walnut $89.95

Optimus 5B Speaker System

Sealed, 2-way floor-standing system with 12" woofer, two mid-range, and a 3" tweeter. Response 20-20,000 Hz. Has mid-range and tweeter controls. 8 ohms impedance. 25" H × 14" W × 11½" D. Oiled walnut. $114.50

Realistic MC-1500 Speaker System

Two-way floor or bookshelf system; 8" acoustic-suspension woofer; 3" high-compliance tweeter; response 40-20,000 Hz; walnut veneer enclosure with removable waffle grille; phono jack & screw terminal connections; 8 ohms. 23⅝" H × 13¾" W × 8½" D $79.50

Realistic Mach One System

Three-way floor-standing system; woofer, multicell mid-range horn, high-compliance tweeter horn; inductive/capacitive crossover network; response 20-25,000 Hz; 8 ohms; acoustically transparent grille cloth; genuine walnut veneer cabinet. 28⅜" H × 17⅝" W × 12" D ... $199.50

RECTILINEAR

Model XIb 2-Way Speaker System

Bass-reflex, 2-way bookshelf system with 10" woofer and 3½" tweeter. Response 45-18,500 Hz ±2 dB; 2000 Hz crossover. Has tweeter level control; 8 ohms impedance. Requires 10 watts (rms) driving power; 50 watts (rms) maximum power. 12" H × 23" W × 10½" D. Vinyl walnut finish. $99.00
Optional fretwork grille kit. $10.00

Model XII 3-Way Speaker System

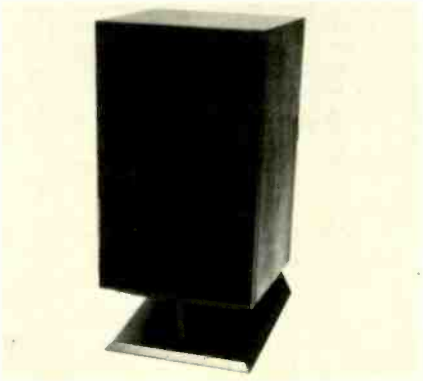
Bass-reflex 3-way bookshelf system with 10" woofer, 5" mid-range, and 2½" tweeter. Response 45-18,500 Hz ±2 dB; 350 and 4000 Hz crossovers. Has mid-range and tweeter level controls; 8 ohms impedance. Requires 10 watts (rms) driving power; 50 W rms maximum power. 25" H × 14" W × 10¾" D. Oiled walnut finish. $159.00

Mini III 3-Way Speaker System

Infinite-baffle, 3-way bookshelf system with 8" woofer, 5" mid-range, and 2" tweeter. Response 50-18,500 Hz ±4 dB; 400 and 8000 Hz crossovers. Had mid-range and tweeter level controls; 4 ohms impedance. 75 W rms maximum input power; 20 W rms min. 12" H × 19" W × 9½" D. Vinyl walnut finish. $109.00

5 Contemporary Lab Series

Sealed acoustic-suspension, 4-way bookshelf system with optional "Delta Dispersion Base;"



12" woofer, 7" woofer, 1½" dome mid-range, 1" dome tweeter; response 32-20,000 Hz ±2 dB; crossovers 200, 1800 & 10,000 Hz; no controls; 6 ohms nominal impedance; 250 W rms power handling. Oiled walnut finish. 25" × 15" × 14½". $299.00
With base. $319.00

7. Floor-standing version of Model 5. Has two 1½" dome mid-range and two 1" super tweeters; min. power 30 W rms, max. 350 W rms. 36" H × 18" W × 12" D. $399.00

Model IIIa Four-Way Speaker System

Four-way, floor-standing system with 12" woofer, 5" mid-range, two 2½" tweeters, two 2" tweeters; filter frequencies 400, 500, and 11,000 Hz; frequency response 32-18,500 Hz ±2 dB; 8-ohm imp.; min. power 30 W rms, max. 100 W rms; laminated walnut enclosure. 35" H × 18" W × 12" D. $279.00

RICHARD ALLAN

RA8 Two-Way Speaker System

Two-way system with 8" "Bextrene" cone bass unit & ¾" wide-dispersion dome tweeter; response 90-20,000 Hz ±3 dB; crossovers 3500 Hz high-pass at 18 dB/octave, low-pass at 12 dB/octave; modified Butterworth filters; power handling 30 W peak program, 20 W rms; imp. 8 ohms (min) to 22.5 ohms (max.); sensitivity: 10 W pink noise for 90 dB at 1 meter; teak or walnut veneer enclosure; fretwork grille. 15½" H × 10½" W × 9¾" D $136.50

RA82. Similar to RA8 but response 60-20,000 Hz ±3 dB; will handle 70 W program, 45 W rms; six-position level-control adjust in steps of 1 dB; 5 ohms (min) to 20 ohms (max.) imp. 3500 Hz high-pass crossover at 24 dB/octave, low-pass 18 dB/octave; sensitivity: 45 W pink noise for 96 dB at 1 meter (position 2 of control). 21½" H × 11" W × 9¾" D. $190.00

RA82L Two-Way Speaker System

High-power labyrinth speaker system; 8" woofer & ¾" wide-dispersion dome tweeter; ten-element crossover network with two filters and compensating network; woofer loaded by labyrinth-type transmission line absorber; response 40-20,000 Hz ±3 dB (steady-state sine wave); imp. 5 ohm (min.) to 20 ohm (max.); will handle 70 W program, 45 W rms; six-position level-control adjust in steps of 1 dB; 3500 Hz high-pass at 24 dB/octave, low-pass 18 dB/octave; teak or walnut veneer enclosure. 28½" H × 13½" W × 11½" D $235.00

ROMEX

RV-11 Two-Way Speaker System

High-efficiency tuned-port reflex design; 8¼" woofer & 4" tweeter; half-wave frequency divider network 12 dB/octave; constant resistance, zero phase shift at 1750 Hz crossover; 3-pos. room acoustics compensating control; will handle 25 W; response 40-22,000 Hz; nominal imp. 8 ohms; contemporary styling; hardwoods & veneers; finished on all six sides; press-fit grille. 14⅜" H × 13⅜" W × 9½" D. ..... $219.50 pr.

RV-8. Same except traditional cabinet. 13⅜" H × 13⅜" W × 9½" D. ..... $219.50 pr.

RV-27 Three-Way Speaker System

High-efficiency tuned-port reflex design; 10" woofer, 6" mid-range & 4" tweeter in hermetically isolated sub-enclosures; half-wave frequency divider network; constant resistance, zero phase shift at crossovers (1750 & 7000 Hz); 3-pos. room acoustics compensating controls; will handle 50 W; response 35-22,000 Hz; nominal impedance 8 ohms; contemporary styling; hardwoods & veneers; finished all six sides; press-fit grille. 23⅞" H × 13⅜" W × 13⅜" D. $199.50

RC-25. Same as RV-27 except traditional styling. $199.50

RV-47 Three-Way Speaker System

High-efficiency tuned-port reflex design; 12" woofer, 6" mid-range & two 4" tweeters; two

10 Speaker Systems

hermetically isolated sub-enclosures for mid-range & tweeters; half-wave frequency divider network, 12 dB/octave, constant resistance, zero phase shift at crossovers 875 & 7000 Hz; two 3-pos. room acoustics compensating controls; will handle 100 W; response 30-22,000 Hz; nominal impedance 8 ohms; contemporary styling; hardwoods & veneers; finished all six sides; press-fit grille. 26" H × 21⅞" W × 12⅜" D. $299.50

RV-45. Same as RV-47 but traditional styling. $299.50

ROYAL SOUND

Studio Monitor-100 System

Two-way acoustic-suspension system with 8" woofer, 3½" tweeter with the patented "Sym-Pulse" coil & magnet design; response 50-19,000 Hz; crossover 3000 Hz; max. power 40 W rms; 8 ohm imp.; rigid, one-piece construction. 19" H × 11" W × 10" D $61.75

Studio Monitor-200 System

Three-way acoustic-suspension system with 8½" woofer, 3½" mid-range, and 2" tweeter incorporating Sym-Pulse; response 50-20,000 Hz; crossovers 1500 & 4000 Hz; max. power 40 W rms; 8 ohm imp.; rigid, one-piece construction. 19" H × 11" W × 10" D $69.75

PRO-250 Speaker System

Two-way bookshelf system with 10" resistive-port woofer and 1½" dome tweeter; "Air Flow" resistance-loaded ports; response 40-20,000 Hz; crossover 1500 Hz; 8 ohm imp., max. power 80 W rms; 19" H × 12" W × 10" D $76.50

PRO-350. Same as 250 except response 30-20,000 Hz; power 100 W rms; 21⅜" H × 12⅝" W × 10" D. $101.50

SP-25 Speaker System

Three-way system with 8" woofer, 5" mid-range (with Sym-Pulse), and 1½" dome tweeter; imp. 4 ohms; power 35 W rms; removable grille; available in rosewood, walnut, black, and white finishes. $129.00

SP-35. Same except power 45 W continuous. $169.00

SP-55. Same except 10" external bass driver, 8" internal active compound driver; 8 ohm imp.; power 80 W rms; attenuators for mid-range & treble. $249.00

RTR

ESR-6 Electrostatic Tweeter System

Electrostatic add-on tweeter with built-in crossover and level controls for both tweeter & woofer. Response 1500-30,000 Hz ±3 dB; crossover 1500 Hz. Will handle 60 W continuous rms power (24 V max.); 8 ohms. Walnut cabinet with black grille cloth. 14½" × 12" × 14½" $179.95

ESR-15. Larger version of ESR-6. Has 15 electrostatic panels with built-in crossover at 1000 Hz. Response 1000-30,000 Hz ±3 dB. Will handle 100 W rms power. 8 ohms. Walnut cabinet with black grille cloth. 20" × 20" × 23½". $299.95

280DR Three-Way Speaker System

Features four 10" woofers, five 2½" mid-range/tweeters, one piezoelectric super tweeter; response 22-25,000 Hz; crossovers 2500 & 7500 Hz; impedance 8 ohms nominal; recommended amp power 25 to 100 W rms/channel; has mid-range & tweeter level controls, speaker protection circuit breaker with push-button reset, dual 5-way input jack. Hand-rubbed walnut veneer cabinet. 16½" × 39" × 16½" D. $369.95

180D Two-Way Speaker System

Features two 10" woofers and four 2½" tweeters; response 28-18,500 Hz; crossover 3000 Hz; impedance 8 ohms nominal; recommended amp power 25 to 60 W rms/ch; has tweeter level control, tweeter protection circuit breakers with push-button reset, bi-amp switch, dual 5-way input jacks. Hand-rubbed walnut veneer cabinet; 14" × 33¼" × 14" D. .. $249.95

HPR-12 Magnum Speaker System

Designed for use with low-power amps; has one 12" passive radiator, one 12" woofer, one 5" mid-range, and one 3" solid-state tweeter; response 30-25,000 Hz; crossovers 1500 & 7500 Hz; impedance 8 ohms nominal; recommended amp power 15 to 100 W continuous power into 8 ohms; mid-range and tweeter (continuously variable) controls, speaker protection circuit breaker, dual 5-way binding post. Hand-rubbed walnut veneer cabinet. 14½" × 36" × 13" D. $269.95

EXP-8 Speaker System

Two-way bookshelf system with 8" woofer & 3¼" tweeter with contact damping; frequency response 40-20,000 Hz; crossover 2000 Hz; imp. 8 ohms; recommended amp. power 20-60 W rms; features continuously variable tweeter level control; speaker protection circuit breaker with pushbutton reset; dual 5-way binding post; hand-rubbed walnut veneer enclosure. 19⅛" H × 11¼" W × 8½" D. $69.95

EXP-12. Similar to EXP-8 except 12" woofer; response 32-20,000 Hz; recommended amp. power 20-80 W rms. 25½" H × 14¼" W × 11½" D. $139.95

EXP-9 Speaker System

Two-way bookshelf system with 8" woofer & 3¼" tweeter with contact damping; frequency response 35-20,000 Hz; imp. 8 ohms; crossover 1200 Hz; recommended amp. power 30-60 W rms; features continuously variable tweeter level control; hand-rubbed walnut veneer enclosure. 23" H × 12" W × 9½" D. ... $99.95

EXP-10. Same as EXP-9 except 10" woofer, response 30-20,000 Hz; recommended amp. power 30-80 W rms. 25½" H × 14¼" W × 11½" D. $124.95

240D Column Speaker System

Two-way speaker system with 10" woofer, 8" woofer, 3¼" high-definition tweeter, two 2½" high-impedance tweeters; frequency response 28-20,000 Hz; crossover 1200 Hz; 4 ohm imp.; recommended amp. power 20-80 W rms/ch; features continuously variable high-frequency level control; speaker protection circuit breaker with push-button reset; dual 5-way input jack; hand-rubbed walnut veneer cabinet; double-knit grille cloth. 42" H × 14½" W × 12½" D. $229.95

2500 Studio Master Speaker System

Three-way speaker system with 25" woofer, fifteen 5" slot-loaded mid-range, eighteen 2½" slot-loaded tweeters; frequency response 15-18,500 Hz; crossovers 500 & 7500 Hz; imp. 8 ohms; recommended amp. power 25-150 W rms/ch; features mid-range and tweeter controls; 4.5 A speaker protection circuit; dual 5-way binding post; hand-rubbed walnut veneer enclosure. 59" H × 28" W × 23" D. Weight 265 pounds. $1250.00

SAE

Mark XIV Electrostatic Transducer

Has 12.3" low-frequency transducer; 5" mid-frequency transducer and constant-charge, bipolar-radiating electrostatic elements. Crossovers: low-freq. driver adjustable to 120 Hz, 240 Hz, 480 Hz at 12 dB/octave; mid-freq. drivers 240 Hz at 6 dB/octave continuously variable calibrated adjustment from −16 dB through +4 dB; electrostatics 1440 Hz at 12 dB/octave, efficiency level adjustable from −4 dB through +10 dB, continuously variable adjustment. Solid-state electronic protection. Minimum power input 100 W/ch; maximum power input no limit. 8 ohms impedance. Available in oiled walnut or rosewood with ebony fabric grille cloth. 42¾" H × 24" W × 18" D at base (6" D at top).

Oiled walnut ..... Pair $1800.00
Rosewood ..... Pair $2000.00

Mark X Dynamic Transducer

12" low frequency driver; 5" mid-frequency driver in an air-tight enclosure, and two 2½" tweeters (one radiating toward the rear). Crossovers at 1440 Hz, 240 Hz, 480 Hz all at 6 dB/octave. Has continuously adjustable high-frequency level control (−7 dB to +5 dB) and mid-frequency level control (−16 dB to +4 dB). 8 ohms imp. Minimum power input 20 W rms. Hand-rubbed oiled walnut cabinet. 25" H × 14½" W × 12" D $200.00

Mark XI Dynamic Transducer

Three-way system with 12" driver; two 5 mid-range; three 2½" forward-radiating tweeters, and one 2½" rear-radiating tweeter. Crossovers at 1440 Hz (high) and 240 Hz (mid-frequency) both at 6 dB/octave. Adjustable low-frequency crossovers at 120, 240, and 480 Hz at 6 dB/octave. Has continuously adjustable high-frequency (−7 dB to +5 dB) and mid-frequency (−16 dB to +4 dB) level controls. 8 ohms imp. Minimum power input 30 W rms. Hand-rubbed walnut enclosure. 27" H × 17" W × 12¼" D. $275.00

SANSUI

SP-7500X Speaker System

Four-way speaker system with 16" woofer, 8" mid-range, 6⅛" × 2" tweeter, two 2" cone-type super tweeters; frequency range 25-22,000 Hz; crossovers 1000, 6000 & 10,000 Hz; power rating 130 W (peak); three-position level control; walnut-grained finish on all-wood products; removable hand-carved grille. 17½" W × 26 1/16" H × 11 1/16" D $279.95

SP-5500X. Similar to SP-7500X except 15" woofer, two 5⅛" cone-type mid-range, 6⅛" × 2" tweeter, 2⅛" super tweeter; frequency range 25-20,000 Hz; power rating 120 W (peak). $239.95

SP-2500X. Similar to SP-5500X except 12" woofer and two horn-type 2⅛" tweeters; frequency range 30-20,000 Hz; crossovers 1200 & 5000 Hz; power rating 100 W (peak); 15⅛" W × 24 15/16" H × 11 1/16" D. $199.95

LM330 Speaker System

Linear-motion design with 10" cone-type woofer and 2 9/16" cone-type tweeter; power rating 60 W (peak); frequency range 31-20,000 Hz; crossover frequency 2000 Hz; walnut-grained wood cabinet; removable textured grille cloth. 12¼" W × 28" H × 12" D. $199.95

LM220. Similar to LM330 except 8 1/16" cone-type woofer; frequency range 32-20,000 Hz; power rating 45 W (peak). 11" W × 24 7/16" H × 9⅞" D. $169.95

LM110. Similar to LM220 except 6½" cone-type woofer; frequency range 38-20,000 Hz; power rating 35 W (peak). 9 3/16" W × 21 1/16" H × 7 1/16" D. ..... $249.95 pr.

SCOTT, H.H.

S-100 Speaker System

Sealed, 3-way full-range floor-standing speaker system with high-compliance, long-throw 15" woofer with aluminum voice coil, two 4½" cone mid-range units, and two 1" dome tweeters. Response 35-20,000 Hz ±4 dB; 700 & 3500 Hz crossovers; separate 3-position switches for tweeters & mid-range units. One pair tweeter/mid-range project forward; other pair upward. 4 ohms imp.; requires 20 W continuous power; will handle 125 W program. 29¼" H × 17⅜" W × 14½" D. Walnut $349.95

S-71 Speaker System
Sealed, 3-way floor-standing system with 12" woofer, 4½" mid-range, and two 1" dome tweeters. Response 42-20,000 Hz ±4 dB; 900 & 4500 Hz crossovers. Has 3-position mid-range/tweeter level switch. 8 ohms impedance. Requires 20 W minimum amplifier power; handles 100 W program material. 25" H × 15¼" W × 11¾" D $199.95

S-61 Speaker System
Sealed, 3-way floor-standing system with 10" woofer, 4½" mid-range, and 1" dome tweeter. Response 45-20,000 Hz ±4 dB; 1000 & 5000 Hz crossovers. Has 3-position mid-range/tweeter level switch. 8 ohms impedance. Requires 18 W minimum input; handles 75 W program material. 25" H × 14½" W × 11½" D $169.95

S-52 Speaker System
Sealed, 2-way floor-standing system with 10" woofer and 1½" dome tweeter. Response 42-20,000 Hz ±4 dB; 1200 Hz crossover. Has tweeter control. 8 ohms impedance. Requires 18 W driving power; 60 W maximum input. 24" H × 14½" W × 10½" D. Walnut $114.95

S-42 Speaker System
Sealed, 2-way bookshelf system with 8" woofer and 1" dome tweeter. Response 55-20,000 Hz ±4 dB; 2200 Hz crossover. Has tweeter control. 8 ohms impedance. Requires 10 W driving power; 35 W maximum input. 11¼" W × 22" H × 8½" D. Walnut $79.95

S-11D Speaker System
Sealed, 3-way floor-standing system with 10" woofer, 3½" mid-range, and 3" tweeter. Response 50-20,000 Hz ±4 dB; 900 & 3500 Hz crossovers. Has mid-range and tweeter controls. 8 ohms impedance. Requires 10 W driving power; 50 W maximum input. 24" H × 14½" W × 11¼" D. Walnut $149.95

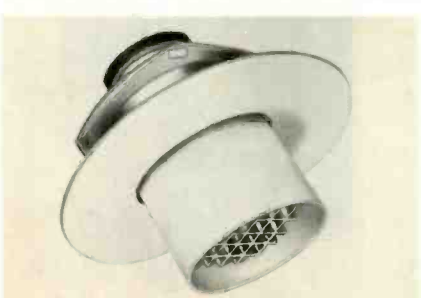
S-15 Speaker System
Sealed, 3-way bookshelf system with 10" woofer, 4" mid-range, and 3" tweeter. Response 55-20,000 Hz ±4 dB; 800 & 4000 Hz crossovers. Has 3-position tweeter/mid-range level switch. 8 ohms impedance. Requires 10 W driving power; will handle 50 W program material 23½" H × 11¾" W × 9" D $134.95

SCULPTURED SOUND

MIS III Speaker System
Musical instrument system with two bass woofers & two high-frequency drivers; max. power capacity 150 W rms; max. sound levels 123 dB at 4 feet at rated power; dispersion 270 degrees low, 220 degrees high; nominal imp. 4 ohms; frequency range 40-22,000 Hz; sensitivity (EIA) 60 dB at 30 feet on-axis with 0.001 W input; weatherproof housing. 29.5" H × 27.75" W $850.00

SHERRON

DKSP4-C Decorspeaker
Response 65-17,500 Hz; 5" speaker; 10 oz. ceramic magnet; impedance 8 ohms; power



handling 18 watts. Features 360-degree swivel tube for directing sound. Requires 5" depth for mounting; 6" o. d. . . . . $90.00 pr.

RS6-C Out-of-Sight
Completely recessed 5" speaker; response 65-17,500 Hz; 10 oz. ceramic magnet; impedance 8 ohms; power handling 18 watts. Can be used in pairs for stereo; or matched pairs for quadraphonic. Requires 6¾" depth for mounting; 6" o.d. . . . . $90.00 pr.

RS9-C Out-of-Sight
Features two-way 8" speaker; response 28-20,000 Hz; 2½ lb. magnet structure; impedance 8 ohms; power handling 33 watts. Requires 7" depth for mounting; 9" o. d. . . . . $160.00 pr.

SONAB

OA116 Speaker System
Three-way system with bass element in bass-reflex-type enclosure; one mid-range element; six dynamic tweeters; employs Carlsson "Ortho Acoustic" principle for pinpointing sound off walls & ceilings; frequency response 28-15,000 Hz; will handle 50 W rms; cabinet of particle board braced by cross-sections of ABS plastic; finished in walnut, rosewood, or black; available as matched and aligned stereo pair (left/right) 10" W × 26" H × 17" D. . . . . $489.00 ea.

SONOSPHERE

SP-12 Speaker System
Max. input power 10 W rms; frequency range 100-16,000 Hz; imp. 8 ohms; can be used as main or auxiliary speaker; supplied with magnetic mount to which the steel sphere adheres in any position. 4¾" dia. Black or white finish $24.95
Chrome finish $29.95
SPR-12. Same except with permanently attached plastic base for use on table, in trailers, boats, or cars; imp. 4 ohms. Black or white finish. $24.95
Chrome finish. $29.95

SOUND CELL

SC-100 Speaker System
Mechanically tuned system; electrical-mechanical diaphragm with atmospheric impedance matching; force-balanced energy piston; power conservator; sound propagator; rear-diaphragm energy transmitted in waveguide and conserved; patented pipe-transmission system; critically damped speaker diaphragm; input imp. 8 ohms; min. power ⅛ W, max. 4½ W; speaker imp. response 20-40,000 Hz ±2 dB; two speakers in stereo phase at 4 W rms/ch develop 100 dB SPL in 2500 cubic foot room. 8¾" × 10½" × 8¾" . . . . . $75.00 ea.

SP

Model VI Speaker System
Two-way bookshelf system with 6" woofer and piezoelectric tweeter; response 50-20,000 Hz ±5 dB; crossover 3000 Hz; imp. 8 ohms; will handle 30 W power; laminated simulated walnut enclosure. 19" H × 11" W × 9" D $79.00

Model VIII Speaker System
Two-way bookshelf system with 8" woofer and piezoelectric tweeter; response 40-20,000 Hz ±5 dB; crossover 2000 Hz constant voltage/constant impedance with high-frequency compensation components; imp. 8 ohms; will handle 75 W; laminated simulated walnut enclosure. 25" H × 13½" W × 10½" D $99.00

Model X Speaker System
Two-way bookshelf system with 10" woofer, Philips hard-dome tweeter; response 31-20,000 Hz ±5 dB; crossover 1500 Hz constant voltage/constant impedance with high-frequency compensation components; imp. 8 ohms; will handle 100 W; laminated simulated walnut enclosure. 27" H × 15½" W × 13" D . . . $129.00

SPENDOR

BC-3 Studio Monitor Speaker
Four-way system using same drivers as in BC-1 plus 12" woofer. 80 W power handling capacity. 14" × 14" × 32". Available in same finishes as BC-1. . . . . $895.00

BC-1 Monitor Speaker
Three-way system using 8" plastic cone of special design as bass driver, a Celestion Type 1300 mid-range, and an STC Type 4001G tweeter with LC network and matching transformer crossover. 8 ohms imp. Response 40-20,000 Hz ±4 dB. Available in teak, walnut, rosewood, and white. 25" × 12" × 12". . $350.00
BC-2. Same as BC-1 except will handle 50 W $425.00
Trolleys (recommended for best performance with all three systems) available in black, satin chrome, or white . . . . . $60.00 pr.

STARK DESIGNS

SR-1 Bookshelf System
3-way acoustic-suspension system with 10" woofer, 5" cone mid-range, and 1" dome tweeter. High-frequency dispersion is adjustable to control room acoustics by means of rotatable directed-dispersion module; crossovers at 650 & 5600 Hz; front-mounted tweeter and mid-range controls; impedance 8 ohms; 40 W continuous program; recommended amplifier power 10-80 watts rms/ch. Hand-rubbed oiled walnut finish. Foam grille available in red, orange, blue, brown, black. 24" H × 15" W × 10¾" D $165.00

SR-2. Same as SR-1 except has 12" long-throw woofer; 50 W continuous program; recommended amplifier power 12-100 watts rms/ch.

10 Speaker Systems

24" H × 15" W × 13" D $195.00
SR-3. Same as SR-2 with additional 5" mid-range and 1" dome tweeter on rear for 50% rearward dispersion above 650 Hz; 60 W continuous program; recommended amplifier power 15-120 watts rms/ch. 24" H × 16½" W × 13" D $240.00
Floor Bases. Available for all three models (FB-1, FB-2, FB-3) in hand-rubbed walnut finish with felt top. . . . . $30.00 pr.

SYLVANIA

AS5712 Speaker System
Sealed air-suspension design with 12" woofer, 4" mid-range, and 1" dome tweeter. Response 25-20,000 Hz, crossovers at 1500 & 6000 Hz. 8 ohms. Capacity 50 W continuous. 25⅜" × 16⅛" × 11⅞" D. Walnut-grained vinyl . . . $229.95 pr.

AS5710 Speaker System
Sealed air-suspension design with 10" woofer, 3" mid-range, and 2½" tweeter. Response 30-18,000 Hz. 8 ohms. Capacity 50 W continuous. 22⅞" × 14⅝" × 11⅜" D. Walnut-grained vinyl. . . . . $159.90 pr.

AS5708 Speaker System
Sealed air-suspension design with 8" woofer and 3" tweeter. Response 40-16,000 Hz; crossover at 5000 Hz. 8 ohms imp. Will handle up to 35 W continuous power per channel. Walnut-grained vinyl. 18¾" H × 12" W × 9" D. $99.90 pr.

GTE 210 Speaker System
Sealed air-suspension design with 10" woofer, 1½" dome mid/tweeter; crossover 1500 Hz; response 33-15,000 Hz ±3 dB; two-position level control for frequencies above 8000 Hz; 3-pos. mid-range level control. Walnut-grained vinyl with removable grille (finished interior speaker baffle). 24" H × 15⅝" W × 11¾" D. $119.95

TANNOY

Integra 40 Speaker System
Incorporates company's 12/60 Monitor Royal speaker system; will handle 40 W continuous program material; min. amp. power 15 W/ch; oiled-walnut finish all four sides. 23½" H × 15½" W × 11¾" D. $330.00
Era 55. Similar to Integra 40 except will handle 55 W continuous program material. 31½" H × 23" W × 17" D. $420.00
Regent 55. Similar to Era 55 in floor-standing enclosure. 27¾" H × 23½" W × 16" D. $384.00

Regent 75 System
Incorporates company's 15" 15/85 Monitor Royal speaker system; will handle 75 watts continuous program material; oiled-walnut finish. 33" H × 23½" W × 16" D. $507.00
Royale 85. Similar to Regent 75 except handles 85 W continuous program material. 42" H × 23½" W × 17¾" D. $597.00

TECHNICS BY PANASONIC

T-100 Two-Way Bookshelf System
Response 55-18,000 Hz; dispersion 120 degrees at 8000 Hz; min. power requirement 5 W; fusing recommended for input of more than 150 W speech/music; 8" ceramic-magnet woofer, 2" tweeter; 4800 Hz crossover; tweeter level control. Brown sculptured removable grille cloth. 20" H × 11" W × 10" D. $79.95

T-200A Two-Way Bookshelf System
Response 44-18,000 Hz ±3 dB (down 10 dB at 35 Hz, free field); dispersion 120 degrees at 10,000 Hz; power rating 10 W min. amp. input, 100 W max. speech/music input without fusing; will withstand sine-wave input of 40 W (400 Hz) for 5 min., peak power pulses beyond 450 W; 8 ohms imp. Has 10" woofer & 1¾" tweeter; 1800 Hz crossover; tweeter level control. Sculptured removable grille available in blue or brown. 21¾" H × 12" W × 10½" D $99.95

T-300 Three-Way Bookshelf System
Response 40-20,000 Hz ±3 dB; 10" woofer, 3" mid-range & 2" super tweeter; crossovers 1500 & 7500 Hz; has tweeter, mid-range level controls; 10 W min. amp. power, 100 W max. speech/music input without fusing; 8 ohms imp. Sculptured removable grille available in blue or brown. 24⅜" H × 13¾" W × 12½" D. $179.95

T-400 Four-Way Floor System
Response 38-20,000 Hz ±3 dB; 12" woofer, 5" mid-range, 3½" tweeter, and two 2" super tweeters; crossovers 700, 3000 & 7500 Hz; 10 W min. amp power, 100 W max. speech/music input without fusing; 8 ohms imp. Sculptured removable grille available in blue or brown; removable base. 27" H × 15" W × 13¼" D (inc. base) $279.95

T-500 Four-Way Floor System
Response 35-20,000 Hz ±3 dB; two 10" woofers, 5" mid-range, two 1¾" tweeters, two 2"

super tweeters; crossovers 600, 2000 & 8000 Hz; has tweeter, mid-range level controls; 10 W min. amp power, 100 W max. speech/music input without fusing; 8 ohms imp. Sculptured removable grille available in blue or brown; removable base. 29" H × 18¾" W × 14½" D (inc. base) $429.95

TEMPEST

Lab Series 1 Speaker System
Two-way bookshelf system with 12" long-excursion woofer backloaded through low-frequency-phase vent path and Heil air-motion transformer power-ring tweeter; frequency response 30-25,000 Hz; crossover 1500 Hz; dispersion 120 degrees horizontal, 40 degrees vertical; will handle 60 W continuous program, 160 W musical peaks; efficiency: 1 W input for 80 dB sound pressure at 15 feet; Corinthian walnut vinyl enclosure; choice of brown, blue, or rust grille cloth. 27" H × 15" W × 13⅞" D $219.00
Lab Series 2. Similar to Series 1 except has 10" woofer; response 35-25,000 Hz; 50 W continuous program, 140 W musical peaks. 24¼" H × 13¼" W × 13¼" D $169.00
Lab Series 3. Similar to Series 1 except has 8" woofer; response 40-25,000 Hz; 40 W continuous program, 100 W musical peaks. 22" H × 12¼" W × 10⅝" D $129.00
Lab Series 3e. Same as Series 3 except is factory adjusted for flat response with no individual control provisions. $108.00

TRUSONIC

JR-200M 3-Way Speaker System
Tuned-port bass-reflex design with 12" woofer, 5" acoustically isolated mid-range, and a horn-loaded dome tweeter; crossovers at 2500 & 7000 Hz. Response 20-20,000 Hz. Capacity 50 W rms. Has mid-range & tweeter level controls. 8 ohms impedance. 24" × 15¼" × 12" D. Oiled walnut $149.95

ULTRALINEAR

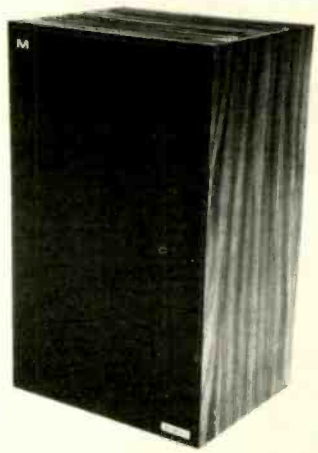
50 Two-Way Speaker System
Two-way bookshelf system with 10" woofer & 3" tweeter; "blow-out-proof" circuit breaker with reset push-button; response 40-17,000 Hz; crossover 2500 Hz; impedance 8 ohms; power requirement 3 W rms min., 30 W rms max.; high-density particle board enclosure, reversible foam grille. 23⅛" × 11¾" × 9¼" D. . . . $79.95
75. Similar to Model 50 except 12" woofer; response 35-17,000 Hz; power requirement 5 W rms min., 35 W rms max. 24⅜" × 14½" H × 9¼" D $99.95

100A Three-Way Speaker System
Three-way system featuring 12" woofer, 4½" mid-range, and 3" tweeter; resettable circuit breaker; response 32-17,500 Hz; crossovers 1500 & 4000 Hz; impedance 8 ohms; power requirement 5 W rms min., 40 W rms max.; high-density particle board enclosure; double-knit grille (available in choice of four colors). 24⅜" × 14½" × 12" $119.95
125. Same as Model 100 except 12" air-suspension woofer; frequency response 30-17,500 Hz $139.95

250 Three-Way Speaker System
Features air-suspension 15" woofer, 6" mid-range in separate sealed enclosure; 3" tweeter, 2" super tweeter; response 25-20,000 Hz; crossovers 800, 2600, 6000 Hz with mid-range level control; imp. 8 ohms; power required 15 W rms min., 70 W max. Walnut-grained finish on ¾" particle board; sculptured foam grille. 25" H (incl. base) × 23½" W × 12" D. $209.95

400 Tower Speaker System
Two-way system with 10" woofer & 2" phenolic ring tweeter; response 32-20,000 Hz; crossover 1500 Hz; imp. 8 ohms; power requirement 8 W rms min., 40 W rms max.; features "blow-out-proof" resettable push-button circuit breaker. Walnut-grained finish on high-density particle board; concave reversible foam grille. 42" H × 12" W × 9½" D. $149.95
450. Similar to Model 400 except has 10" woofer, 10" passive radiator, 1" dome tweeter; response 27-22,000 Hz; crossover 1750 Hz; power requirement 10 W rms min., 50 W rms max.; acoustic foam grille covers front and top of enclosure. 43½" H × 12" W × 12" D. $199.95

1000 Two-Way Speaker System
Features 10" acoustic-suspension woofer equipped with "inertial equalizer disc" for con-



trol of acoustic behavior of cone & "dual-mode array" incorporating two 3½" cone tweeters; response 35-22,000 Hz; crossover 2600 Hz

through RLC network with h.f. level control; power requirements 25 W rms min., 60 W rms max. Walnut-finished enclosure, sculptured black acoustic foam grille. 27" × 14½" × 12". Base included $199.95

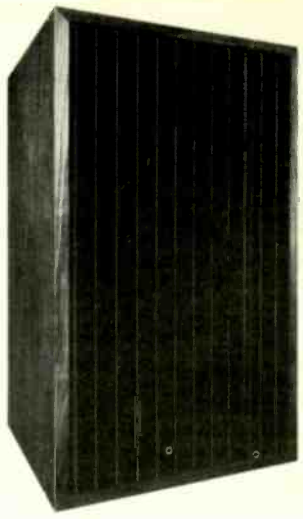
200 Three-Way Speaker System
Air-suspension design with 12" woofer, 5" sealed mid-range, 2" super-tweeter; response 28-20,000 Hz; crossovers at 400 Hz & 1500 Hz with mid-range control; imp. 8 ohms; power requirement 10 W rms min., 50 W rms max. Walnut finished particle board, three-dimensional grille front (available in choice of four colors). 24⅜" × 14½" × 12" D. $159.95

UTAH

MP-2000 Three-Way Speaker System
Three-way acoustic-suspension system with 12" woofer, 5" mid-range, 1" dome tweeter; response 30-20,000 Hz; will handle 30 W program (60 W peak); crossovers 2500 & 5000 Hz; variable mid & high-frequency control. Walnut veneer with acoustical foam grille available in blue, brown, or burnt orange. 15¼" × 24" × 12" D. $149.95

MP 3000 3-Way Speaker System
Floor-standing design with 15" woofer, 5" acoustically isolated mid-range, and two horn-loaded dome-radiator tweeters. Response 20-20,000 Hz; crossovers at 2500 & 7000 Hz (12 dB/octave LC types). Capacity 100 W peak. 8 ohms impedance. Has separate tweeter & mid-range controls and sculptured foam grille. Supplied with base. 27" × 20½" × 14" D (without base) $199.95

HS4-B 3-Way Speaker System
Tuned-port design with 12" woofer, compression horn mid-range, and horn-loaded phenolic



dome tweeter. Has treble control, sculptured foam front, and oiled walnut cabinet. Response 25-19,500 Hz; LC crossovers at 2500 & 5000 Hz. Capacity 90 W peak. 8 ohms impedance. 15" × 25¾" × 14" D. $169.95

AS-3 Two-Way Speaker System
Two-way system with 8" woofer and 3½" tweeter; crossover 4500 Hz; response 40-18,000 Hz; will handle 15 W rms. Vinyl walnut finish, dark tweed grille cloth. 10½" H × 17½" W × 8" D. $49.95

AS-5 Three-Way Speaker System
Three-way acoustic-suspension system with 10" woofer, 6" mid-range, 3½" tweeter; electrical crossovers at 2500 & 5000 Hz; response 40-18,000 Hz; will handle 25 W program, 50 W peak; 8 ohms impedance; sealed enclosure with fiberglass damping. Vinyl walnut finish, dark tweed grille cloth. 12½" × 22" × 19" D. $69.95

AS-7 Three-Way Speaker System
Three-way tuned-port system with 12" woofer, horn mid-range, 3½" tweeter; capacitive crossover at 2500 & 5000 Hz; response 35-18,000 Hz; will handle 30 W program, 60 W peak; 8 ohms impedance. Vinyl walnut finish, dark tweed grille cloth. 14" × 23" × 10" D. $89.95

AS-2AX Two-Way Speaker System
Two-way system with 8" woofer and 3½" tweeter; crossover 5000 Hz; response 45-17,500 Hz; will handle 15 W rms. Oiled-walnut veneer cabinet. 11¼" H × 17¼" W × 8¼" D. $69.95

A70-A Three-Way Speaker System
Three-way system with 10" woofer, 6" mid-range, 3½" tweeter; crossovers 2500 & 5000 Hz; will handle 20 W rms power; response 38-18,000 Hz. Oiled-walnut veneer cabinet. 12½" × 22" × 9" D. $99.95

WD-90 Three-Way Speaker System
Three-way system with 12" woofer, 8" mid-range, 3½" tweeter; crossovers 2500 & 5000 Hz; response 35-18,000 Hz; will handle 40 W rms power; tweeter control. Oiled-walnut veneer cabinet. 14" × 23" × 10" D. $109.95
HS1-C. Similar to WD-90 but response 30-19,000 Hz; 5" mid-range, horn-type tweeter. Oiled-walnut veneer cabinet. 15" × 25¾" W × 14" D. $129.95

WOLLENSAK

A-1050 Speaker System
Sealed-enclosure system. Response 8-12,000 Hz. 8 ohms impedance. Requires 6 W rms driving power. 7¾" cube on pedestal base .. $79.95

10 Speaker Systems

YAMAHA

NS-670 Three-Way Speaker System
Three-way system with 10" woofer, 2½" mid-range, and 1¼" tweeter; crossovers at 800 & 6000 Hz; fundamental resonance frequency 45 Hz; frequency response 40-20,000 Hz; will handle 50 W; 8 ohms; separate mid-range & tweeter controls. Walnut. 22¾" H × 12⅝" W × 10⅝" D. . . . . $460.00 pr.

NS-690 Three-Way Speaker System
Three-way system with 12" woofer, 3" mid-range, and 1¼" tweeter; crossovers at 800 & 6000 Hz; fundamental resonance frequency 40 Hz; frequency response 35-20,000 Hz; will handle 60 W; 8 ohms; separate mid-range & tweeter controls; separate input terminals for woofer, mid-range & tweeter to permit use of multi-amp system. Walnut. 24¾" H × 13¾" W × 11½" D. . . . . $560.00 pr.

NS-1000 Speaker System
Three-way speaker system featuring vapor-deposition beryllium-dome drivers; ribbon-type voice coils; 11.8" woofer, 3.46" mid-range, 1.18" tweeter; frequency response 40-20,000 Hz; crossovers 500 & 6000 Hz; 3-way, 12 dB/octave crossover network; imp. 8 ohms; resonance frequency 40 Hz; max. input capacity 100 W; mid-range & treble level controls; SPL 90 dB/W/m. Ebony enclosure with polyurethane finish. 15½" W × 28" H × 14½" D. Sold in mirror-image pairs only . . . . . $1350.00 pr.
NS-1000 M. Same specifications but different enclosure. Semi-gloss black. 14¾" W × 26½" H × 12¾" D. . . . . $960.00 pr.

NS-3 Three-Way Speaker System
Three-way system with 10" woofer, 1½" soft-dome mid-range, and soft-dome 1" tweeter; frequency response 40-20,000 Hz; power handling 50 W; min. input 15 W; 600 & 1200 Hz crossovers; imp. 8 ohms; Corinthian walnut-grained finish with black foam detachable grille. 24" H × 13⅝" W × 10½" D. . . $300.00 pr.
NS-2. Similar to NS-3 except two-way system; response 40-18,500 Hz; power handling 40 W; crossover 1200 Hz. 24¾" H × 11¾" W × 11" D. . . . . $200.00 pr.

ZENITH

E9012 Allegro 1000 System
Two-way system with 6½" woofer & treble horn; LC crossover; frequency response 60-15,000 Hz; imp. 8 ohms. Grained walnut-colored cabinet with formed grille cover. 16½" H × 10½" W × 7½" D. $49.95
E9014 Allegro 2000. Similar to 1000 except 8" woofer; frequency response 50-15,000 Hz; imp. 16 ohms. Also available in white with blue grille. 18⅝" H × 12⅜" W × 7⅞" D $59.95
E9018 Allegro 3000. Similar to 1000 except 10" woofer; frequency response 40-15,000 Hz; imp. 16 ohms. 22¾" H × 14½" W × 8⅞" D. $74.95

IF YOU NEED. . .

. . . additional information on any of the products listed, don't hesitate to write the manufacturer. See list of addresses beginning on page 6.

11 HEADPHONES & MICROPHONES

THE steady stream of announcements of new headphones from a number of manufacturers suggests that this must be one of the more active areas of hi-fi product development. The appeal of headphone listening is easy to understand. Listening to music via loudspeakers at levels approaching those of a "live" performance is likely to invite justifiable complaints from neighbors and perhaps other members of the household. On the other hand, with headphones one can listen at literally ear-splitting levels in complete privacy.

There are two general types of stereo headphones: those that seal the wearer's ears against outside sounds and the so-called "open-air" or non-isolating phones. The latter usually have porous foam ear cushions that offer little attenuation of external sounds.

Most headphones are dynamic units, resembling small speakers coupled directly to the ear cavity. Electrostatic phones have long been recognized as the finest, from the standpoint of fidelity, but they are rather expensive, tend to be bulky and heavy, and frequently cannot reproduce very high sound levels without distortion. Recent developments in highpolymer plastics have resulted in the appearance of lightweight, moderately priced phones with listening qualities similar to those of the better electrostatic types.

Parallel with the development of quadraphonics, phone designers have sought ways to give the headphone wearer the subjective effect of a four-channel speaker array. Most have fallen short of their goal, but there are some which—although they do not really duplicate the effect of listening through four speakers—nevertheless manage to impart a strong sense of directionality, spaciousness, and (to some extent) front-rear directionality to the sound. Four-channel phones are invariably bulky, but some are fairly comfortable to wear.

Just as a speaker has an individual sound character, no two headphones will sound the same. The vagaries of room acoustics have been replaced by the corresponding effect of the wearer's ear cavity dimensions, so that the final choice of a headphone for serious listening should be made on the basis of a personal listening evaluation. Be sure that the phones fit comfortably and can be worn for extended periods without distress. Although headphone listening cannot duplicate the sound of speakers, in many ways it is to be preferred over loudspeaker sound.

THE widespread use of home tape recorders implies a corresponding need for suitable microphones. Only the least expensive recorders (not of hi-fi caliber) are furnished with microphones, since a microphone whose quality is at all comparable to that of even a moderately priced cassette recorder is not inexpensive.

For most home-recording purposes, a medium-priced dynamic microphone is the best choice because of its ruggedness, good sound quality, and reasonable cost. Depending on individual circumstances, an omnidirectional or a cardioid pattern may be preferable. There are a number of microphones available at prices ranging from $40 to $80 and it is in this price class that most amateur recordists will find the best compromise between performance and cost. In this price range, too, one will find electret microphones, which are a form of condenser mike.

There are a few less expensive microphones that could be used, but it is safe to assume that they will not fully utilize the recorder's capabilities. On the other hand, higher priced microphones can produce truly high-quality recordings, even with a moderately priced tape recorder. Unfortunately, a casual user can hardly justify spending between $100 and $300 per microphone (of course, two are required for stereo). Many higher priced microphones are condenser types, that require separate power supplies, and ribbon types featuring a smoother and wider frequency response than moderately priced dynamic microphones.

Probably the best way to justify (to yourself) a sizable investment in microphones (assuming that "live" recording is one of your interests) is to remember that the microphone bears the same relationship to the recording process as the loudspeaker does to playback. No reproduced sound can be any better than the quality of the speakers will allow, and no recording can be any better than the quality of the microphones used to make it.

AKAI

ASE-22 Dynamic Headphones

Moving-coil type. Response 20-20,000 Hz. Sensitivity 1.0 mW, distortion 1% at 1.0 mW. 8 ohms impedance. ½ W. maximum input per phone. Has individual earphone volume controls. 6-ft. coiled cord. Weight 20 ounces $31.95

AKG

K-140 "Supra-Aural" Headphones

Frequency response 20-20,000 Hz; imp. 600 ohms ±20%, each channel over band; sensitivity 15μbar/V (approx. 97.5 dB SPL); continuous power level 240 mW at 1% THD (100 Hz); comes with 4-cond. cable, 3-cond. ¼" telephone plug; soft ear cushions; cardan construction. Weight 6.2 ounces..... $34.50

K-240. Similar to K-140 except transducer is combined with six passive bass radiators to extend bass response through bottom octave. $69.50

AUDIO-TECHNICA

AT-701 Dynamic Headphones

Uses a 47-mm dynamic driver; non-resonant, thermo-formed polymer diaphragm; copper-plated aluminum wire voice coil for minimum mass; response 30-20,000 Hz; impedance 4 to 16 ohms; sensitivity 97 dB SPL at 1000 Hz. Comes with coiled cord. Ear pads may be removed for replacement. 9 ounces $39.95

AT-702. Same as AT-701 except response 25-20,000 Hz; sensitivity 97 dB/SPL at 1000 Hz $49.95

AT-703. Same as AT-701 except response 20-20,000 Hz; sensitivity 94 dB/SPL at 1000 Hz $69.95

AT-706 Electret Condenser Phones

Condenser-type drivers with permanently charged diaphragm in push-pull configuration;

diaphragm 58 mm dia. x 3 microns thick; accessory adapter matches high impedance of condenser element to any standard amplifier output and includes headphone/speaker switch; response 20-20,000 Hz ±2 dB; impedance 4-16 ohms; 94 dB SPL at 1000 Hz. THD 0.1% 10.8 ounces impedance matching adapter 3¼" H x 3⅛" W x 8½" D. Comes with carrying case $129.95

AT-707 Electret Condenser Phones

Plugs into any headphone jack without adapter or power supply; features permanently polarized diaphragms; built-in impedance-matching circuit; response 40-20,000 Hz ±3 dB; sensitivity: 89 dB SPL at 1000 Hz; imp. 4-16 ohms; 10 ounces (less cord); 10-ft coiled cord... $79.95

AUDIOTEX

Marquis Stereo Headphones

Open-air, lightweight design. Response 20-20,000 Hz; 8 ohms imped. matches all amplifier 4-16 ohm outputs 6-ft cord and plug. Cushioned earpieces and adjustable padded headband. 30-5205 ..... $39.95

Mark IV Stereo Headphones

Wide-range dynamic type. Frequency range to

11 Headphones

above audibility at 1% distortion between 10-18,000 Hz. Removable, soft cushions; padded headband. 10-ft coiled cord with stereo plug. Imp. 8 ohms. Matches all 4-16 ohm outputs. 30-5206 ..... $59.95

Mark III Stereo Headphones
Slide-type volume control on each earpiece; response 20-18,000 Hz. 12-ft coiled cord with stereo plug. 8 ohms. Matches all 4-16 ohm outputs. 30-5204 ..... $38.95

Mark II Stereo Headphones
Response 20-20,000 Hz; 8 ohms. Comes with 6-ft flexible cord and stereo plug. 30-5202 ..... $22.50

Mark I Stereo Headphones
Response 30-15,000 Hz; 8 ohms. Comes with 10-ft coiled cord and stereo plug. 30-5200 ..... $18.95

Headphone Remote Control
Plugs directly into amplifier to control volume and balance of headphones; noise-free slide controls for each earpiece permit adjustment of volume and balance. Special switch allows for mono/stereo selection. Has 5-ft cord and 3-conductor stereo phone plug. 30-5250 ..... $12.95

BEYER/DYNAMIC

DT-48 Dynamic Headphones
Moving-coil type. Originally designed as an audiometry instrument for measuring human hearing in lab research. Range 16-20,000 Hz ±2 dB. Response virtually flat. Comes with 10-ft cord $130.00
DT48-K. Same as DT-48 except with plug-in coiled cable $140.00

DT900 Dynamic Headphones
Moving coil type. Response 30-18,000 Hz. 5-2000 ohms impedance. 200 mW maximum input per phone. 6-ft. cord $35.00

DT96A Dynamic Headphones
Moving coil type. Response 30-17,000 Hz. Sensitivity 1.0 mW at 400 Hz produces 110 dB (re 2×10^{-4} μbar). 50-200 ohms impedance. 100 mW maximum input per phone. 5-ft. cord. 8 ounces $52.50

DT100 Dynamic Headphones
Moving coil type. Response 30-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 110 dB (re 2×10^{-4} μbar). 5-100-400-2000 ohms impedance. 1 W maximum input per phone $70.00

DT480 Dynamic Headphones
Moving coil type. Response 20-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 115 dB (re 2×10^{-4} μbar). 25-200 ohms impedance. 1 W maximum input per phone $95.00

DT302 Lightweight Phones
Designed to be connected directly to either high- or low-impedance outputs; response 20-20,000 Hz; rated power approx. 7 mW = 2.1 V for 600 ohms; equipped with sponge ear cushions, stereo phone jack plug; 2.3 ounces without cord $29.95

DISCOPHONE

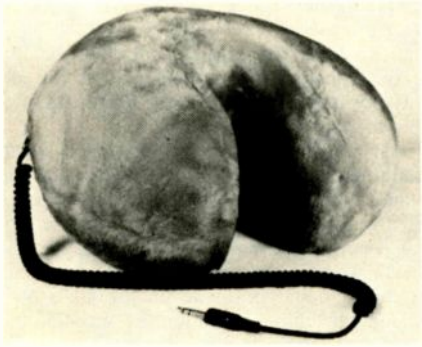
Stereo Headphones
Provides 360-degree "wrap-around sound" from stereo system and records; comes complete with decoding system and special headphone; will not clip or break-up (to 110 dB output); can work directly from most tape recorder preamp monitors, all stereo systems... $59.95

ESS

amt Stereo Headphones
Full-range Heil air-motion transformer headphones; frequency response 20-20,000 Hz; dist. 0.3% 1 kHz at 90 dB SPL; sensitivity 35 dB SPL for 1 mV input; imp. 32 ohms; max. input 14,000 mV; square-wave risetime 15 μsec at 5000 Hz; comes with 14-foot coiled cord. 14 ounces $97.00

HEAR-MUFFS

HM-4000 "Supermuffs"
Stereo headphones; washable high-pile acrylic cover; 10-ft coiled cord; 4" dynamic drivers;



compatible with 4-16 ohm output impedance; response 30-18,000 Hz; THD unmeasurable at 95 dB SPL; 1.5 W/ch continuous power handling capability; 21 ounces $37.95

PM-2C "Promuff"
Stereo audio monitor with audio energizer for direct connection to speaker output terminals of audio amplifier; two 4" dynamic audio driving elements; black vinyl cover with fabric insert for audio frequency transparency; 10-ft coiled cord plus 25-ft extension cord; frequency response 20-20,000 Hz; THD unmeasurable at 95 dB SPL $54.95

KOSS

Technician/VFR Headphones
Stereo headphones with variable-frequency-response controls; slide-type controls at base

of each earcup permit fine tuning the shape of the response curve; frequency response 10-22,000 Hz; THD 0.4% at 1 kHz (100 dB SPL); SPL 108 dB (1% THD at 1 kHz); features Pneumalite ear cushions to exclude outside sounds; wide vinyl headband with self-adjusting yoke; black and chrome; equipped with boom microphone mount for professional applications; 4-conductor coiled cord; 17 ounces. $75.00

K/7 Stereo Headphones
Lightweight dynamic stereo headphones; features shockproof, polypropylene construction; one-piece flexible headband; foam-filled vinyl ear cushions; will operate from outputs with source impedances of 3.2-600 ohms; response 20-16,000 Hz; sensitivity 0.07 V rms sine wave at 1 kHz (100 dB SPL); 4-conductor "Y" cord; 10.9 ounces $17.95

ESP-9 Electrostatic Headphones
Frequency response 15-15,000 Hz ±2 dB. Sensitivity 80 dB SPL (reference 0.0002 dyne/cm²). Distortion less than 0.2% at 110 dB SPL. 4 to 16 ohms impedance. 6-ft. coiled cord. 19 ounces. Black Pneumalite earcushions for ambient noise isolation. Designed for critical studio monitoring $175.00

ESP-6 Electrostatic Headphones
Frequency response 30-19,000 Hz ±5 dB. Sensitivity 80 dB SPL (reference 0.0002 dyne/cm²). Distortion less than 0.2% at 110 dB SPL. 4 to 16 ohms impedance. 10-ft. coiled cord. 27 ounces. Black Pneumalite earcushions for ambient noise isolation. Self-contained polarizer $130.00

PRO-4AA Dynamic Headphones
Frequency response 10-20,000 Hz. Distortion is negligible at 95 dB SPL. 3.2 to 600 ohms impedance. 10-ft. coiled cord. 19 ounces. Pneumalite earcushions for ambient noise isolation $65.00

PRO-600AA Dynamic Headphones
Same as PRO-4AA except nominally 600 ohms voice-coil impedance for matching audio transmission lines. 600 ohms characteristic impedance. Available on special order $70.00

KO-727B Dynamic Headphones
Frequency response 10-16,000 Hz. Distortion unmeasurable at 95 dB SPL. 3.2 to 600 ohms impedance. 10-ft. coiled cord. 19 ounces. Black $34.95

K-6LC Dynamic Headphones
Frequency response 10-16,000 Hz. Distortion unmeasurable at 95 dB SPL. 3.2 to 600 ohms impedance. 10-ft. coiled cord. Individual earphone volume controls. Brown/beige .. $29.95
Model K-6. Same except without volume controls $19.95

HV-1 Dynamic Headphones
Has 2" dia. driver & will operate from 3.2 to 600 ohm outputs. Response 20-20,000 Hz; capacity 5 V continuous with provision for 14 dB-SPL transient peaks. 9.3 ounces. 10-ft coiled cord $44.95

T-4A Connector Box
Accepts up to five sets of stereophones. 14-ft. cord with 3-conductor phone plug fits standard headphone jack. Private listening for five persons at one time. Unit measures 6" diameter and has walnut-like base combined with black trim and aluminum plug-in panel. $12.95

T-10A Chairside Listening Station
Offers remote control for two sets of stereophones. Features separate volume controls for each stereophone and a speaker "on-off" switch. Wires directly to amplifier or receiver. Unit measures 6" diameter and has a walnut-like base $19.95

T-5A Remote Control Station
Similar to T-10A. Has jacks for two sets of stereophones. Left- and right-channel volume controls and speaker "on-off" switch. Has walnut-like base combined with black trim. $9.95

T-3 Speaker/Headphone Transfer Switch
Provides a speaker "on-off" switch and stereophone jack. Connects to speaker terminals of amplifier or receiver. Adds low-impedance jack to system for wide-range performance of stereophones $7.95

HV/1a Stereophones
Features low-mass "Decilite" driver elements for coverage 15-20,000 Hz; will operate from

outputs of 3.2 to 600 ohms; dist. 0.5% at 109 dB SPL; will handle 5 V rms continuous with provision for 14-dB SPL transient peaks; acoustical sponge earcushions; extendible headband with self-adjusting, pivoting yokes and soft padded vinyl cover; 3-conductor coiled cord (10-ft extended); 9.3 ounces $49.95

HV/1LC. Same except response 20-20,000 Hz; miniature volume/balance control per earcup. 9.9 ounces $54.95

"Phase/2" Stereophones

Frequency response 10-20,000 Hz; will operate from outputs of 3.2 to 600 ohms; dist. 1% at 100 dB SPL; 100 dB SPL/2.5 V rms; will handle 5 V rms continuous with provision for 14-dB SPL transient peaks; Pneumalite earcushions for high-ambient noise isolation; two rotary panoramic source controls on each earcup; slide-type ambience expander on right earcup; comparator switch on left earcup; extendible stainless steel headband with self-adjusting pivoting yokes. 24 ounces $75.00

LAFAYETTE

F-600 Open-Acoustic Headphones

Open-acoustic stereo design. Response 20-20,000 Hz. Lightweight open-air foam ear cushions with adjustable headband. Imp. 200 ohms. Comes with 5-ft cord and plug $24.95

F-990 Stereo Headphones

Response 20-20,000 Hz. Has two 3½" wide-range transducers; air-tight earphone cushions; fully adjustable cushioned headband. Imp. 8 ohms. Comes with 6½-ft cable and standard stereo phone plug $29.95

F-700 Lightweight Headphones

Features ultra-thin diaphragm with rare-earth-magnet transducer; response 18-22,000 Hz; adjustable vinyl leatherette headband; foam-padded earcups; max. input 100 mW; imp. 4-150 ohms; 6½-ft cord with ¼" plug. 4.6 ounces $34.95

RP-50 Criterion Polymer

Features high-sensitivity flat polymer transducers integrated with voice coils and high-energy magnet structures; earpieces are open-air, fully padded; response 20-20,000 Hz; imp. 4-16 ohms; output 94 dB SPL; 9½-ft cord with plug; 10 ounces..... $59.95

MARANTZ

SE-1S Electrostatic Headphones

Response 20-20,000 Hz ±3 dB; dist. 0.5% 40-20,000 Hz at 100 dB SPL, 1.5% at 20 Hz; im-

pedance 30 ohms; energizer has built-in headphone/speaker switching; facilities for additional set of phones; protective circuit for regulating extremely loud passages; overload protection; 14 ounces $129.95

SD-5 Dynamic Headphones

Response 30-15,000 Hz; THD 1% at 30 Hz, 0.18% at 1000 Hz, 0.25% at 10,000 Hz (all at 100 dB SPL); 8 ohms imp.; sensitivity: 0.15 V rms for 200 dB SPL; Mylar diaphragm dynamic transducers; soft ear cushions with tailored acoustical seal; 16 ounces..... $39.95

MURA

SP-100 Stereo Headset

Lightweight headset. Frequency response 30-15,000 Hz. Comes equipped with 8-ft cord..... $9.95

SP-502 Stereo Headset

Features slide volume controls for each earpiece. Response 30-18,000 Hz. Imp. 8 ohms. Comes with 10-ft coiled cord..... $11.50

SP-504 Stereo Headset

Features fully padded headband and oversized ear cushions. Individual slide volume and tone controls and stereo/mono switch included. Response 30-18,000 Hz. 8 ohms imp. 10-ft coiled cord..... $19.95

SP-606 Stereo Headset

Open-air design to accommodate surrounding sounds while listening. Mylar speakers for improved response. Response 20-20,000 Hz. 1 mW power required. 8 ohms impedance. Comes with 10-ft coiled cord & fitted case.... $19.95

SP-103A Stereo Headset

Features tone and volume controls on each earcup. Response 20-20,000 Hz. Has stereo/mono switch, 8 ohms impedance. 10-ft coiled cord..... $24.95

SP-205 Stereo Headset

Features slide-type volume and tone controls; Mylar speakers; stereo/mono switch. Impedance 8 ohms. Response 30-20,000 Hz ±5 dB. Includes 16-ft coiled cord and zippered storage case..... $37.50

SP-206 Stereo Headset

Features Mylar speakers and vented housing with bass-reflex-type enclosure. Has individual volume and tone controls. Response 20-20,000 Hz ±4 dB. Impedance 8 ohms. Stereo/mono switch. Comes with 25-ft coiled cord and zippered storage case..... $37.50

NAKAMICHI

HP-100 Monitoring Headphones

Dynamic type designed primarily for monitoring; response 20-20,000 Hz; imp. 8 ohms ±20% (1 kHz); output SPL 90 dB ±3 dB per mW at 1 kHz; max. input power 500 mW (117 dB SPL); channel balance within 3 dB at 1 kHz; vinyl-covered, foam padded earpieces; adjustable headband; 8-ft coiled cord with molded plug and strain relief; weight 14.3 ounces..... $50.00

PICKERING

OA-2 Headphones

Lightweight, open-audio design with special adapter for use with portable radios, tape recorders, and TV sets. 8 ohms. Max. input power 300 mW; sensitivity 100 dB at 600 Hz; response 30-19,000 Hz; dist. 1% (100 dB SPL). 7-ft cord. 10.9 ounces..... $22.95

OA-3 Headphones

Lightweight, open-audio design. 15 ohms ±10% at 1000 Hz; max. power input 0.2 Wrms/ch; response 20-20,000 Hz; dist. ½% at 100 dB SPL; sensitivity 100 dB SPL at 0.10 V input at 1000 Hz each channel. 1½" Mylar diaphragm dynamic transducer. Extend-adjust. headband with full pivot yoke and padded vinyl cover; soft vinyl foam ear cushions; 10-ft, 3-cond. coiled cord. Weighs 7.5 ounces (without cord)..... $39.95

4955 Headphones

Dynamic type. 8 ohms impedance; response 40-11,000 Hz ±3 dB; 30-18,000 Hz ±6 dB; sensitivity 100 dB SPL; max. input 0.5 W rms; distortion 1% at 115 dB SPL; 10-ft coiled cord. 28 ounces. $64.95

PIONEER

SE-205 Stereo Headphones

Dynamic type covering a frequency range of 20-

11 Headphones

20,000 Hz. Cone-type speaker in each earpiece. Matching imp. 4 to 16 ohms. Max. input power 500 mW each channel. Comes with 8.2-ft cable. 16 ounces $24.95

SE-305 Stereo Headphones
Dynamic type covering a frequency range of 20-20,000 Hz. 8 ohms imp. each channel; matching imp. 4 to 16 ohms. Max. input power 500 mW each channel. Comes with 16-ft, 5-in coiled cord. 15 ounces $34.95

SE-405 Stereo Headphones
Dynamic type covering a frequency range of 20-20,000 Hz. 8 ohms imp.; input power 500 mW each channel. Unit features polyester-film diaphragm; special ear pads with sliding-type adjusting headband and clickstops for easy listening; volume controls for both left and right channels. 16½-ft coiled cord $44.95

SE-500 Stereo Headphones
Incorporates high-polymer film diaphragm; frequency range 20-20,000 Hz; sensitivity 100 dB/3V; max. input power 30 V/ch; resistant to temperature/humidity changes; plugs directly into headphone jack of any amplifier or receiver. $49.95

SE-505 Headphones
Two-way stereo dynamic design with a woofer & tweeter in each phone; 8 ohms each channel. Response 20-20,000 Hz. Sensitivity 108 dB/0.3 V; Features both tone & volume controls on each phone; maximum input 500 mW each phone. With 16-ft coiled cord $59.95

SE-700 Stereo Headphones
Features high-polymer driver elements; frequency range 20-20,000 Hz; matching im-

pedance 4 to 16 ohms; sensitivity 100 dB/3 V..... $79.95

RADIO SHACK

Nova-15 Headphones
Dynamic type. Ported open-back earcups. Response 20-20,000 Hz. 10-ft cord. 4 to 16 ohms impedance $21.95

Pro-1 Headphones
Dynamic type. Ported open-back earcups. Response 20-20,000 Hz. 10-ft cord. 4 to 16 ohms. Has individual earphone volume controls..... ..... $54.95

Custom Pro Headphones
Dynamic type. Response 20-20,000 Hz. Impedance 4 to 16 ohms; bass port $24.95

Nova Pro Headphones
Stereo dynamic design with volume controls on each earcup. Response 20-20,000 Hz; 8 ohms impedance. 10-ft. coiled cord $34.95

LV-10 High-Velocity Phones
Features electro-acoustical design plus 2" dynamic elements; response 20-20,000 Hz; 0.5% dist.; acoustical sponge earpieces; soft vinyl-covered headband with self-adjusting yokes; 4-16 ohms imp.; 10-ft coiled cord; plug. $39.95

ROYAL SOUND

HP-40 Headphones
Lightweight phones with rubber-cushioned brushed tone aluminum earcups; frequency range 20-22,000 Hz; sensitivity 110 dB at 0.3 V; matching imp. 4-16 ohms each channel; unbreakable, adjustable headband; 20-ft coiled cord with stereo plug; brown simulated leather. $39.95
HP-42. Same except matching imp. 4-16 ohms; black simulated leather..... $39.95

HP-50 Stereo Headphones
Super-velocity headphones; sensitivity 100 dB SPL/mW; frequency range 18-22,000 Hz; matching imp. 4-150 ohms each channel; max. input 0.1 W; super-thin earpads; black simulated leather headband; 10-ft straight cord with stereo plug..... $53.00

SANSUI

SH-15 Stereo Headphones
Non-isolating headphones with ¾" full-range dome speakers; matches amplifier impedances 4-32 ohms; nominal imp. 25 ohms; frequency response 20-20,000 Hz; max. input power 65 mW; sensitivity 97 dB at 1000 Hz; acoustical foam urethane earpads; washable earpads; adjustable headband; 9.8-ft cord; weight 9.2 ounces (headphones only)..... $79.95
SH-5. Same as SH-15 but lightweight version; 6.6-ft cord; weight 8.5 ounces (headphones only)..... $34.95

SCINTREX

Mark IV Stereophones
Features flat response 15-20,000 Hz; response 20-15,000 Hz ±3 dB. Sensitivity (100 dB SPL) 10 mW. Maximum input 2 W; max. output 120 dB. HD 0.3% at 1000 Hz at max. dB. Ambient noise isolation 40 dB at 1000 Hz. 4-8 ohms impedance. ABS ear cups and fluid-filled ear cushions. Features patented dual-driver cavity assembly. Comes with 14-ft coiled cord with special strain-relief feature. Black with chrome-plated headband. 18 oz $59.95

PRO-500 Stereophones
Response 15-20,000 Hz; 20-18,000 Hz ±3.5 dB. HD 0.9% at 1000 Hz at max. dB. Sensitivity (100 dB SPL) 6.3 mW; max. input 1 W; max. output 110 dB. 4-300 ohms impedance. Ambient noise isolation 40 dB at 1000 Hz. Equipped with patented dual-driver cavity assembly. Liquid-filled ear cushions. Individual volume controls in each earcup. 14-ft coiled cord with strain-relief feature. 18 oz $69.95

"Supra" Lightweight Stereophones
Open-air design with "Supraform" acoustics and high velocity drivers. Weighs only 6.5 oz, including cord. Response 20-20,000 Hz; 20-12,000 Hz ± 6 dB. Impedance 4-200 ohms. HD at max. dB less than 1%. Sensitivity 0.5 mW at 100 dB SPL. Max. input 4 mW; max. output 110 dB. Foam plastic ear cushions, 10-ft coiled cord with strain-relief feature. Chrome-plated headband..... $29.95

88 Stereophones
Lightweight (9 oz) circumaural design which will withstand rugged use. Impedance 4-300 ohms. Sensitivity (100 dB SPL) 4 mW. Maximum input 1 W; max. output 110 dB. Response 15-20,000 Hz. HD 0.9% at 1000 Hz at max. dB. Ambient noise isolation 20 dB at 1000 Hz. Cycolac ear cups with foam ear cushions. Has automatic frequency compensation. Black with Polypropylene headband. 14-ft coiled cord with strain-relief feature $29.95

SX-4 Stereo Headphones
Incorporates four separate drivers for spacial and dimensional effect of 4-ch sound in stereo mode; response 15-20,000 Hz (20-15,000 Hz ±4 dB); HD at 110 dB SPL, 1000 Hz: 0.8% stereo, 0.6% "Experiential"; impedance 4-1000 ohms; max. input power (loaded) 43 mW; max. acoustic output (loaded) 110 dB; ambient attenuation 40 dB; liquid earseals; padded head cushion; 14-ft coiled cord; 19 ounces.... ..... $59.95

98 Stereophones
Features patented dual-cavity design and contoured response for accented bass and treble to match hearing characteristics. 4-300 ohms impedance. Sensitivity 6 mW; max. input 1 W; max. output 110 dB. Response 15-20,000 Hz. HD 1% at 1000 Hz at max. dB. Ambient noise isolation 40 dB at 1000 Hz. ABS ear cups and liquid-filled ear cushions. Chrome-plated headband. Comes with 14-ft coiled cord with strain-relief feature. 16 oz $49.95

SENNHEISER

HD414 Headphone
Patented dynamic "open-aire" design. 2000 ohms/ch. Response 20-20,000 Hz. Sensitivity 17.7 μbar/V. Normal power 1 mW/ch (1.41V) for sound pressure of 102 dB. HD 1% at 22 V & 1000 Hz. Can be connected to any preamp output. 5 ounces without cord. 10-ft. cable $49.75

HD424 Headphone
Deluxe dynamic headphone with patented "open-aire" design. 2000 ohms/ch. Response 15-20,000 Hz. Sensitivity 17.7 μbar/V. Normal power 1 mW/ch (1.41 V) for sound pressure of 102 dB; HD less than 1% at 22 V and 1000 Hz. Can be connected to many preamp outputs. 6.5 ounces without cord. Removable head and ear cushions. 10-ft cable..... $79.75

HD44 Headphone
Lightweight stereo headphone (1.2 ounces without cable). Patented dynamic "open-aire" system with under-the-chin configuration. 600 ohms/ch. Response 52-10,000 Hz. Normal power 1 mW/ch (1.41 V) for average listening level. Comes equipped with a 10-foot cable..... ..... $29.75

STANTON

Dynaphase Sixty Headphones
Dynamic design; two-way system—woofer & tweeter with individual LC crossover. Response 40-11,000 Hz ±3 dB. Sensitivity 95 dB for 1 mW at 1000 Hz (100 dB sound pressure level). Distortion 1% at 115 dB SPL. Impedance 8 ohms. Power input 0.5 W rms max. per phone. 10-ft. coiled cord. 28 ounces. Blue and black $64.95

Dynaphase Forty Headphones
Dynamic design. Response 60-10,000 Hz ±3 dB. Distortion 1% at 115 dB SPL. 8 ohms impedance at 1000 Hz; Power input 0.5 W rms max. per phone. 10-ft cord. 21 ounces. Blue-black/chrome $44.95

Dynaphase Fifty Headphones
Same as Dynaphase Forty except has volume control on each earpiece..... $54.95

Dynaphase Twenty-Eight Headphones
Open audio headphone with plug for AM-FM, tape recorder listening; response 30-19,000 Hz; 8 ohms impedance; distortion less than 1% at 100 dB SPL; 10-ft coiled cord; weight 11 ounces. $27.95

STAX

SR-5 Headphones
Electrostatic push-pull type; response 30-25,000 Hz ±1 dB; SPL 95 dB at 50 V rms input; maximum level 115 dB; weight 432 g including cord. Comes with SRD-6 energizer, a polarizing supply and signal source; response 20-20,000 Hz ±1 dB; dist. 0.1% at 1 W, 1000 Hz. Overall size 2 11/16" W × 2 5/8" H × 6 1/2" D $125.00

SR-X-III Superphones
Electrostatic push-pull type; response 20-27,000 Hz ±1 dB; SPL 95 dB at 100 V rms input; maximum level 115 dB; weight 370 g including cord. Comes with SRD-7 energizer, a polarizing supply and signal source; response 10-30,000 Hz ±2 dB; distortion 0.02% at 1 W, 1000 Hz. 2 7/8" W × 4 3/4" H × 8" D $225.00

SUPEREX

PRO-B-VI Headphones
Has acoustic-suspension woofer and ceramic tweeter. Response 15-22,500 Hz. 4 to 16 ohms impedance. 2 W maximum input per phone. 15-ft. coiled cord. Cordovan, ivory, or transparent $60.00

ST-N "Newport"
Contemporary design dynamic stereophones with post and yoke headband. Response 30-15,000 Hz. Cordovan $19.95

930 Headphones
Moving-coil dynamic type. Response 40-14,500 Hz. Adjustable stainless headband. 7-ft cord $14.95

SW-IV Headphones
Dynamic element. Response 30-15,000 Hz. Adjustable headband. 10-ft coiled cord. Black with red trim $24.95

927 Headphones
Woofer/tweeter headphone. Response 25-19,000 Hz. Dynamic woofer, ceramic tweeter, L-R crossover. Fully adjustable stainless headband. 10-ft coiled cord $35.00

PEP-79E Electrostatic Headphones
Electrostatic system consisting of PEP-74 stereophones and CC-79 control console; response 10-22,000 Hz ±5 dB; acommodates one set of stereophones; designed to use level controls of main amp or receiver; no connection to a.c. power line; source impedance matched for 4-16 ohm termination; for bookshelf or table-top installation. Wood-grain vinyl over steel case. 7" W × 2 1/2" H × 4" D $90.00
STEX-15-P. 15-ft extension cord for PEP-74 ..... $9.95

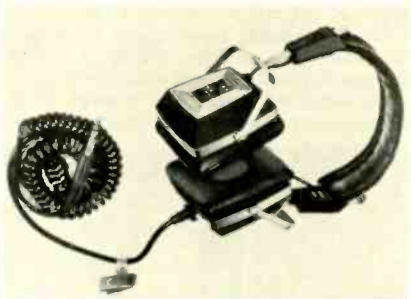
PEP-81 Electrostatic Headphones
System consists of PEP-81 stereophones and CC81 control console; frequency response 15-18,000 Hz ±2 dB; 10-22,000 Hz ±5 dB; dist. 0.2%; imp. matched to CC81 console for 4-16 ohms; isolation-type design; fully adjustable headband; expanded vinyl-covered foam cushions; 15-ft coiled cord; control console has level controls for both channels (20 dB range); will accommodate two sets of stereophones; dual polarization (a.c. and self); self-protecting circuits to prevent headphone damage; decorator-designed walnut-veneer enclosure; 11" × 3 1/4" × 6 1/2". Headphones 8 1/2 ounces.. $150.00
Extra set PEP-81 stereophones $78.00
Extension cord for PEP-81 ..... $9.95

EP-5 Electrostatic Headphones
Combines a Mylar woofer with an electrostatic tweeter for heavier bass capability; separate energizer which can be driven from any power amp or receiver; response 10-24,000 Hz; crossover 4000 Hz; energizer has speaker/phones switch, internal overload protection; fully adjustable headband; 15-ft coiled cord. Wood-grained vinyl finish cabinet..... $80.00

PRO-VII Headphones
Features Mylar woofer/tweeter combination; response 15-23,000 Hz; fully adjustable padded headband; 15-ft coiled cord with molded plugs & strain reliefs. 18 ounces..... $65.00

TL-3 Trans-Linear Headphones
Features Trans-aire principle; response 25-20,000 Hz; fully adjustable steel & aluminum headband; snap-on soft-foam replaceable cushions; coiled cord with molded plug and strain relief..... $40.00

Classic CL-1 Stereophones
Lightweight, isolating-type headphones; wide-range Mylar element provides response 10-



20,000 Hz; dist. 0.30% at 400 Hz, 110 dB SPL; sensitivity 10 mW (0.6 V) for 110 dB at 400 Hz; imp. 35 ohms; comes with 15-ft retractable cable; fully adjustable steel and aluminum headband; foam-filled vinyl ear cushions. 10.6 ounces excluding cable. $55.00

914 Stereophones
Wide-range Mylar element; frequency response 15-20,000 Hz; individual slide volume controls on each earcup; cordovan-colored shells; 10-ft coiled cord. 15 ounces..... $40.00

SYLVANIA

SP25 Stereo Phones
Full-frequency phones with foam-filled earcups to reduce room noise and increase comfort. Lightweight construction and with adjustable headband. Has 14-ft coiled cord. Black vinyl finish..... $19.95

SP40 Stereo Phones
Response 20-20,000 Hz. Distortion less than 1% at 120 dB. Features foam-filled earcups for good coupling to ear for extended bass response. Lightweight construction and with adjustable headband. 8-ft coiled cord. Black and white vinyl finish with chrome trim ... $39.95

TEAC

HP-101 Dynamic Headphones
Stereo design. Frequency response 18-20,000 Hz. 8 ohms. Input sensitivity 1 mW, maximum power 500 mW. 6-ft. cable..... $40.00
HP-102. Same as HP-101 except 10,000 ohms impedance $40.00

TECHNICS BY PANASONIC

EAH-80A Electret Headphones
Electret element supplies advantages of electrostatic without its drawbacks. Distortion-canceling design. Adapter/control box included for direct connection to speaker output and control of speaker and headphone output. Lightweight headset (12.5 oz) with self-adjusting assembly. 6-ft, 7-in cord to control box plus 6-ft, 7-in coiled cord to headphone. Max. input (to adapter) 5 V; input imp. to adapter 4 to 16 ohms. Sensitivity (1 V, 500 Hz) 101 dB. Max. sound pressure level output 115 dB. Distortion (101 dB, 500 Hz) 0.8%. Response 20-20,000 Hz $79.95

TELEPHONICS

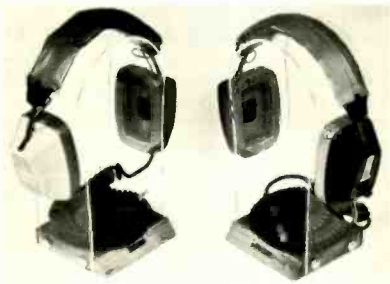
TEL-111 Electret Headphones
Response 18-24,000 Hz; sensitivity 104 dB; dist. 0.2% at 115 dB SPL. Separate power pack

requires no external a. c. power. Black and chrome finish. Designed for studio monitoring. 17 ounces $87.50

TELEX

Studio 1 Headphones
Dynamic design. Response 20-22,000 Hz. Sensitivity 105 dB SPL/mW. Distortion 1.0% at 122 dB SPL. 3 to 16 ohms impedance. 1.0 W maximum input per phone. Has volume controls on each earphone. 15-ft. coiled cord. 24 ounces. $74.95
Studio 2. Same but without volume controls $64.95

300 Stereo Headphones
Dynamic design. Has 15-ft coiled cord. 8 ohms.



Gold with cinnamon brown trim..... $39.95
400. Designed for additional convenience. Has volume control on each earpiece; audio metric driver. $49.95
200. Features two volume controls; 15-ft coiled cord..... $29.95

TOSHIBA

HR-80 Dynamic Headphones
Dynamic headphones; response 20-20,000 Hz; rated input power 15 mW/ch. Imp. 4-50 ohms. Comes with 6.6-ft cord $17.95

HR-50 Stereo Headphones
Two-way dynamic headphones with stereo effect changeover switch (stereo/binaural); rated power 1 mW/ch; response 20-20,000 Hz; crossover 400 Hz; imp. 4-16 ohms. Comes with 6.6-ft cord $29.95

YAMAHA

HP-1 Stereo Headphones
Lightweight "Orthodynamic" design featuring sintered ferrite disc magnets with combination voice-coil diaphragm between; frequency response 20-20,000 Hz; output 96 dB/mW SPL; 3 W rated input; max. input 10 W; HD 0.3% at 90 dB SPL, 3.0% at 120 dB SPL; impedance 150 ohms; soft leather strap distributes weight over entire head; 7-ft, 10.5" straight cord; weight 0.64 lb with cord $65.00
HP-2. Same except output 93 dB/mW SPL; weight 0.51 lb. $45.00

11 Microphones

ADVENT

MDC-1 Microphones

Matched pair of low-impedance microphones. Cardioid pickup pattern. Frequency response

50-16,000 Hz. Balanced output. Has 20-ft cables and stands. Pair $99.95

AKG

D-109 Dynamic Microphone

Sensitivity −56 dB ASA. Response 50-15,000 Hz ±3.5 dB. 200 ohms impedance. Omnidirectional pattern. Use for speech. Has lavalier, dust filter or windscreen, 30-ft. cable, and chrome finish. Connector not included . $55.00

D-160E Dynamic Microphone

Sensitivity −55 dB ASA. Response 50-15,000 Hz ±3 dB. 200 ohms impedance. Omnidirectional pattern. Use for tape recording. Has slip-in stand attachment, dust filter or windscreen, with detachable windscreen. With windscreen presence rise, without windscreen linear response. Comes with 15-ft. cable, XLR connector, and chrome finish $69.00

D-190E Dynamic Microphone

Sensitivity −53 dB ASA. Response 40-15,000 Hz ±3 dB. 200 ohms impedance. Cardioid pattern. Use for music. Has slip-in stand attachment, dust filter or windscreen, XLR connector. Comes with 15-ft. cable $65.00
Model D-190TS. Same as D-190E except high impedance operation with "on-off" switch. Has 24-ft. cable and phone plug $85.00

D-200E Dynamic Microphone

Sensitivity −55 dB ASA. Response 30-15,000 Hz ±3 dB. 200 ohms impedance. Cardioid pattern. Use for music and tape recording. Has slip-in stand attachment, dust filter or windscreen. Comes with 15-ft. cable, XLR connector, matte grey finish $85.00
Model D-200TS. Same as D-200E except for high impedance operation with "on-off" switch, 24-ft. cable, and phone plug $105.00

D-707E Dynamic Microphone

Sensitivity −52 dB ASA. Response 50-15,000 Hz ±3.5 dB. 200 ohms impedance. Cardioid pattern. Use for tape recording. Comes with slip-in stand attachment, pop or blast filter, chrome finish, 15-ft. cable, and XLR connector $55.00
Model D-707TS. Same as D-707E but for high impedance operation with "on-off" switch, 24-ft. cable, phone jack $75.00

D-1000E Dynamic Microphone

Sensitivity −53 dB ASA. Response 40-16,000 Hz ±3 dB. 200 ohms impedance. Cardioid pattern. Use for rock vocals. Has slip-in stand attachment, pop or blast filter, chrome finish, 15-ft cable, and XLR connector $75.00
Model D-1000TS. Same as D-1000E but for high impedance operation with "on-off" switch, 24-ft. cable, and phone plug ... $95.00

D-140E Dynamic Microphone

Sensitivity −51 dB; 0.23 mV/μbar; response 30-17,000 Hz ±2.5 dB; cardioid pattern; 200 ohms impedance; use for on-stage requirements; will handle up to 128 dB with less than 1% dist. System internally suspended and encapsulated with wire mesh windscreen, lined with polyurethane foam. Has −10 dB bass-attenuation switch, XLR-3 connector, SA-25 stand adapter. 6" long × 1¾" dia. 6.2 oz. $150.00

Electret Condenser Mike System

Modular system consisting of one basic powering module, four interchangeable capsules, and accessories. Powering module has battery compartment for 5.6-volt battery, "on-off" switch for shifting battery to clean contact points, 550-hour continuous operation, and adaptability for phantom powering off d.c. supply. Interchangeable capsules include: CE-1 cardioid capsule plus condenser mike preamp; CE-2 omnidirectional capsule with preamp; CE-5E cardioid capsule with integral suspension and

wire mesh screen plus preamp; CE-10 miniature lavalier attachment with integrated FET preamp.
SE-5E. Powering module $60.00
CE-1 ..... $45.00
CE-2 ..... $45.00
CE-5E $55.00
CE-10 ..... $85.00
CE-501E. For cardioid operation; consists of CE-1 capsule, SE-5E powering module, SA-11/1 stand adapter, W-3 windscreen $119.00
CE-505E. For cardioid operation; consists of integral suspension and windscreen, CE-5E capsule, SE-5E powering module, and SA-11/1 stand adapter $129.00
CE-510E. For lavalier operation; consists of CE-10 lavalier element and SE-5E powering module $145.00

AUDIOTEX

Low-Impedance Microphone

Designed as a replacement unit for many tape recorders built prior to 1969 as well as some later models. Cord terminated in miniature and subminiature plugs to fit most tape recorders; adapter for recorders using concentric jack included. 200 ohms. 30-2300 ..... $8.95
30-2302. Same except 50,000 ohms impedance $9.75
30-2304. Same except equipped with 5-pin and 3-pin DIN plugs found on all European and some American and Japanese recorders. 200 ohms $9.75

Dynamic Microphone

For recording groups and soloists; cardioid pattern. Wide, flat frequency response. 50-13,000 Hz; output −58 dB (on high impedance). Rugged construction, built-in windscreen. 20-ft cable with standard phone plug and adapter for floor or desk stand. Built-in volume control with on-off switch. Dual (hi/lo) impedance. 30-2314 ..... $39.95

Omnidirectional Microphone

Response 55-13,000 Hz; output −62 dB (on high impedance). Rugged construction. Comes with 15-ft cable, standard phone plug, swivel holder, on-off slide switch, and windscreen for outdoor use. Dual (hi/lo) impedance. 30-2312 ..... $36.95

Omnidirectional Microphone

Response 80-13,000 Hz. High impedance. Comes with 10-ft cable with standard phone plug, on-off slide switch, desk stand. Sensitivity: −58 dB. 30-2310 ..... $32.95

Microphone Mixer

Allows combination of up to four mikes mono or two mikes to each stereo channel; separate control for each mike; on-off switch; stereo/mono selector switch; 9-volt battery operated. Standard ¼" phone jack inputs, phono pin jack outputs. 30-2320 ..... $27.95

Microphone Boom

Fits all standard mike floor stands. Has adjustable counterweight; movable clamp and hinge design for any desired position. Standard ⅝-27 thread. 31" long. 30-2370 .. $14.95

Floor-Type Stand

Heavy cast-iron, self-leveling base with polished chrome-plated telescoping tubing. Adjusts from 34" to 64". Top of tubing has standard ⅝-27 thread to fit all standard mikes. 30-2360 ..... $16.95

Folding Microphone Stand

Folds and unfolds in seconds; weight 3½ pounds; chrome-plated tubing extends to 60"; folded size 33". Legs have rubber tips to prevent skidding and scratching. 30-2362 ..... $21.00

BEYER/DYNAMIC

M-500 Dynamic Ribbon Microphone

Super-cardioid; response 40-18,000 Hz ±2.5 dB. Sensitivity: −153 dBm (EIA); 200 ohms imp. Has four-stage integral blast filter and Cannon XLR termination. Especially designed for rock vocals; low pop and breath noise even when singer's lips touch microphone $140.00

M-160 Double-Ribbon Microphone

Super-cardioid dynamic type. Response 40-18,000 Hz ±2.5 dB. Sensitivity: −152 dBm (EIA); 200 ohms impedance. Low sensitivity at 120 degrees to axis. Suitable for stereo recording. Cannon XLR termination $230.00

M-260 Dynamic Ribbon Microphone

Super-cardioid design. Response 50-18,000 Hz ±2.5 dB. Sensitivity −153 dBm (EIA). High-energy ribbon. 200 ohms imp. Suitable for speech, music, or vocals 1¾" mesh head ×6" long. Cannon XLR termination $110.00
M-260SM. Same as M-260 except with "on-off" and bass-cut switch. $130.00

M-550S Moving-Coil Microphone

Omnidirectional dynamic type. Response 70-18,000 Hz. For tape recording and general applications. Sensitivity: −152 dBm (EIA); will work with all impedances. Suitable for use indoors and outdoors. Comes with clamp, table stand, cable with jack plug, "on-off" switch, and presentation case. $42.50

M-810-N Moving-Coil Microphone

Dynamic cardioid design. Response 50-16,000 Hz. Sensitivity: −148 dBm. Suits all impedances. Designed for tape recording applications. Comes with windshield, clamp, and detachable 16-ft cable with jack, all housed in lined case. $70.00

"Soundstar" X1N Dynamic Microphone

Dynamic cardioid design. Response 30-18,000 Hz ±2.3 dB. Sensitivity: −146 dBm (EIA); 200 ohms imp. Front-to-back attenuation greater than 20 dB. For tape recording, music, and vocals. Has built-in pop screen and hum compensation coil. Cannon XLR termination .. $80.00
"Soundstar" X1HL. Same as X1N except with high/low imp. switch $90.00

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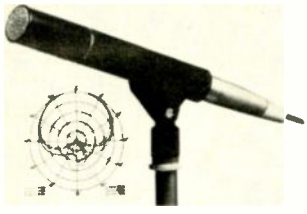
11 Microphones

M-69 Moving-Coil Microphone
Dynamic cardioid design. Response 50-16,000 Hz ±3 dB. Sensitivity: −144 dBm (EIA); 200 ohms imp. For indoor/outdoor applications; unaffected by temperature or humidity . . $95.00
M-69-SM. Same as M-69 but with "on-off" and bass-cut switch. $115.00

M-101 Moving-Coil Microphone
Omnidirectional type. Response 40-20,000 Hz. Sensitivity: −150 dBm (EIA); 200 ohms imp. Withstands pressures associated with modern music (modulated voltages up to 2V). Low handling noise. 4½" × ⅞". Cannon XLR termination $120.00

M-67 Moving-Coil Microphone
For tape recording, interviewing, and general outdoor/indoor work. Cardioid type. Response 40-18,000 Hz ±2.5 dB. Sensitivity: −148 dBm (EIA); 200 ohms imp. Special transducer mounting minimizes handling noise. Has built-in "on-off" bass-cut switch. 7¾" × 1½". Cannon XLR termination. $130.00

M-201 Moving-Coil Microphone
Super-cardioid dynamic type. Response 40-18,000 Hz. Sensitivity: −149 dBm (EIA); 200



ohms imp. 6" × 1⁹⁄₁₆". Cannon XLR termination. Comes with clamp and presentation case $165.00

M-88 Moving-Coil Microphone
Super-cardioid dynamic type. Response 30-20,000 Hz ±2.5 dB. Sensitivity: −144 dBm (EIA). Special transducer mounting eliminates body noise. Will withstand rough handling, humidity and temperature changes. For studio work, recording artists, and instrumentalists $218.00

ELECTRO-VOICE

CS15 Electret Condenser Microphone
Remotely powered electret condenser mike with cardioid pickup pattern; greatest rejection

at 180 degrees off-axis; single-D cardioid design emphasizes bass when used close-up; response 40-18,000 Hz; low imp.; output −45 dB; dist. 1% THD (open circuit) at 141 dB SPL; dynamic range 119 dB; operating voltage 8 to 48 volts, accepts standard 48-V remote powering; or use PS8 battery power supply; EIA sensitivity −137 dB. Comes with 15-ft cable, A3-type cable-to-mike connector, and stand mounting clamp; weight 8 ounces. 7" long × 1" max. dia. Fawn beige finish $198.00
PS8. Inline battery power supply; takes 126-type 8.4 V mercury battery; A3-type professional connectors. $45.00

635A Dynamic Microphone
Sensitivity −149 dB EIA. Response 80-13,000 Hz ±3 dB. 150 ohms impedance. Omnidirectional pattern. Hand-held with slip-in stand attachment. Use for tape recording and broadcasting. Has a four-stage pop or blast filter, 15-ft. cable, Switchcraft A3F connector. Fawn beige matte finish $60.00

670A Dynamic Microphone
Sensitivity −152 dB EIA. Response 60-14,000 Hz. User selects high or low impedance. Single-D cardioid. Hand-held with slip-in stand attachment. Use for speech, rock vocals, music, and tape recording. Has built-in "Acoustifoam" pop or blast filter, "on-off' switch, 15-ft. cable, and Switchcraft A3F connector. Frequency response varies with distance from microphone (maximum bass response is ¼" from source). Features an anodized brass finish. $75.00

670AV Dynamic Microphone
Sensitivity −152 dB EIA. Response 60-14,000 Hz. User selects high or low impedance. Single-D cardioid. Hand-held with slip-in stand attachment. Use for speech, rock vocals, music, and tape recording. Has built-in "Acoustifoam" pop or blast filter, "on-off" switch, 15-ft. cable and Switchcraft A3F connector. Features a special thumb-actuated volume control for user convenience. Bass response varies with distance from sound source. Non-reflecting finish. $79.80

RE10 Dynamic Microphone
Response 90-13,000 Hz. Super-cardioid polar pattern. 150 ohms impedance. Output −56 dB (0 dB = 1 mW/10 dynes/cm²). Sensitivity −150 dB EIA. Has 18-ft. cable. 6¾" × 1⅜" with carrying case. $110.10
RE11. Same as RE10 but with built-in super pop- & wind filter. $120.00

RE55 Dynamic Microphone
Response 40-20,000 Hz. Omnidirectional pattern. 150 ohms impedance. Output −55 dB (0 dB = 1 mV/10 dynes/cm²). Sensitivity −149 dB EIA. 15-ft. cable. 10½" × 1³⁄₃₂" with carrying case. $190.20

671 Dynamic Microphone
Sensitivity −154 dB (EIA) low-Z; −156 dB (EIA) hi-Z. Response 60-14,000 Hz. User selects high

or low imp. Cardioid pattern. Features hand-held design with slip-in stand clamp, integral "ball-type" Acoustifoam pop or blast filter, "on-off" switch, 15-ft cable, and A3F connector. Directional single-D emphasizes low-frequencies when used close-up. Satin chrome finish. $68.70

660 Dynamic Microphone
Sensitivity −150 dB (EIA) low-Z; −150.5 dB (EIA) hi-Z. Response 90-13,000 Hz. User selects high or low imp. Super-cardioid pattern. Can be used hand-held or in stand clamp. Variable-D for smooth response on or off-axis with no proximity effect. Professional-style 15-ft cable and mike-end connector. Satin chrome finish. $72.00
661. Same as Model 660 except stud-mounted and with "on-off" switch. $75.00

631A Dynamic Microphone
Sensitivity −149 dB EIA. Response 80-13,000 Hz. May be ordered hi or lo impedance. Omnidirectional pattern. Hand-held with slip-in stand attachment. Use for speech, vocals, music, and tape recording. Has silent, magnetic "on-off" switch with removable actuator button; 15-ft cable; Switchcraft A3F connector. Satin chrome finish. $45.55
All of the above prices are "Net." Slightly higher in Western states.

GROUP 128

SD-140Z Professional Electret Mike
Omnidirectional; response 40-16,000 Hz ±3 dB; 0.2% dist. at 100 dB; SPL capability to 150 dB; output 200 ohms balanced from standard XLR-3 connector located on separate miniature level-control power module; system includes mike with windscreen, cable, remote gain control, power module, and mike stand adapter; black with blue windscreen; weight 2 ounces. $189.00
SD-140. Same except has high-imp. output from standard phone jack. $164.00

Ext 14 Extension Boom
Lightweight extension boom option for either model SD mike; adds 14 inch reach to mike; several can be used for long-reach applications. $4.95

P800 "Buffalo" Pickup Mike
Contact pickup for acoustic guitar and other acoustic instruments; can be attached or removed in seconds using adhesive tabs supplied; complete with miniature belt-worn preamp and gain-control unit, connecting cable, complete instructions; hi-Z phone jack output; available with XLR/Cannon output as P800-Z for low-Z preamps. $99.50

HITACHI

NDM-32 Dynamic Microphone
Sensitivity −78 dB. Response 70-12,000 Hz ±4

11 Microphones

dB. Impedance 600 ohms. Omnidirectional with desk stand. Use for speech and recording applications. Supplied with plug connector and windscreen. 16-ft. cable. Black. $35.00

LAFAYETTE

Deluxe Ball Dynamic Microphone
General-purpose, omnidirectional, dual-impedance (50,000 & 250 ohms), selectable at cable end. Output at high impedance −59 dB. Frequency response 100-10,000 Hz. Has "on-off" switch. Includes ball screen, 20-ft cable, phone plug, black metal desk stand, and floor-stand adapter. Die-cast case finished in satin aluminum, Case is 6¼" long × 2⅛" max, dia. of ball. $24.25

Electret Condenser Microphone
Unidirectional cardioid pattern with high front-to-back rejection ratio and flat frequency response from 30-16,000 Hz. Impedance 600 ohms but can be used with inputs up to 20,000 ohms. FET circuitry. Powered by one "AA" penlite cell. Foam windscreen, 20-ft shielded cable, standard ¼" phone plug, metal tripod-type desk stand, floor-stand adapter, and battery are included. $34.95

Cardioid Dynamic Microphone
Dual-impedance, general-purpose microphone; unidirectional pickup; response 100-10,000 Hz; output level −57 dB; dual impedance switch selected; on/off switch; chrome finish; pop-proof wire mesh grille; 20-ft detachable cable; stand swivel adapter. 8" long × 1" dia. $24.50

MU-100 Dynamic Microphone
Unidirectional pickup; output −56 dB; response 200-10,000 Hz; user selects high or low impedance; hand-held with Switchcraft connector to body; "on/off" switch; shock-mounted transducer and Mylar diaphragm for rugged use; use for speech, rock vocals, and tape recording; cable end free; die-cast case; non-glare finish. $39.75

MU-101. Same as MU-100 except increased maximum working distance and rejection of unwanted background sound. 1.65" dia. head; 7¼" × 1" body. $39.75

MU-102. Same as MU-100 except response 50-13,000 Hz; −58 dB output; for use where feedback or background noise is not a problem. $39.75

ML-1 Lavalier Condenser Mike
Response 50-15,000 Hz; −80 dB output; tie-clasp holder; noise-reducing cable to FET preamp & power supply; 600-ohm output imp.; 1½" × ⅔" dia.; comes with "AA" battery, shielded cable, phone plug. $19.50

ML-2 Same except response 50-13,000 Hz; 800-ohm imp.; −66 dB output; 1" × ⅝" dia. $24.50

Tie-Tac Lavalier Mike
Ultra-miniature omnidirectional mike; 19/64" dia. × ¾" long; switchable high/250-ohm imp.; response 20-15,000 Hz; 55 dB output; has FET/IC power supply with professional XLR connector; battery operated; comes with 15-ft cable. Mike weighs ½ ounce, power supply 3 ounces. $59.95

MERITON

CNM-70 Condenser Microphone
Omnidirectional electret unit; frequency range 40-20,000 Hz with tone separation; FET circuitry; sensitivity −73 dB ±3 dB (0 dB = −1 V/μ bar at 1 kHz); imp. 600 ohms; comes with stand adapter, 16-ft, 5-in cable, ¼" dia. plug. 1 3/32" dia. × 6 9/32" H. $79.95

CNM-75 Condenser Microphone
Unidirectional electret unit; frequency range 50-15,000 Hz; has built-in bass roll-off switch to attenuate low-end response during close miking; sensitivity −73 dB ±3 dB; imp. 600 ohms; FET circuitry; comes with stand adapter, 16-ft, 5-in cable, ¼" dia. plug. ⅞" dia. × 6 13/16" H $99.95

DNM-40 Dynamic Microphone
Unidirectional dynamic unit; features three windscreens; dual-impedance matching; flat response, film diaphragm; standard connectors for studio or home recorders; built-in on-off switch; comes with holder for stand use, 16-ft, 5-in cord, ¼" dia. plug. 1 11/16" dia. × 6 9/16" H $39.95

DNM-25 Dynamic Microphone
Unidirectional dynamic unit; response 150-10,000 Hz; sensitivity −78 dB ±3 dB; imp. 250 ohms (unbalanced); built-in on-off switch; comes with table stand with mini plug. 1⅜" dia. × 6⅜" H. $14.95

DNM-20 Dynamic Microphone
Omnidirectional dynamic unit; features polyester film diaphragm; built-in on-off switch; response 70-12,000 Hz; imp. 250 ohms (unbalanced) comes with table stand. 1 1/32" dia. × 5 11/16" H. $19.95

DNM-10 Dynamic Microphone
Omnidirectional replacement unit for use with cassette recorders; response 100-10,000 Hz; imp. 250 ohms (unbalanced); comes with table stand, windscreen, mini plug. 1" dia. × 4 15/16" H $9.95

NAKAMICHI

CM-300 Electret Condenser Microphone
Studio-type system featuring interchangeable capsules. Basic set comes with CP-1 cardioid and CP-2 omnidirectional capsules; windscreen; 15-ft cable; XLR connector; battery; stand adapter; optional capsules: CP-3 small-diameter super-omnidirectional; CP-4 super-directional (shotgun); built-in 10 dB attenuating pad; "lo-cut" proximity effect compensator; response 30-18,000 Hz (CP-1), 20-15,000 Hz (CP-2), 20-18,000 Hz (CP-3), 30-20,000 Hz (CP-4), all at ±3.5 dB; imp. 200 ohms balanced; sensitivity: −76 dB ±2.5 dB (CP-1, CP-2, CP-4), −74 dB ±2.5 dB (CP-3); max. SPL at 3% dist.: 138 dB (CP-1, CP-2), 136 dB (CP-3), 118 dB (CP-4); dynamic range: 114 dB (CP-1, CP-2), 107 dB (CP-3), 94 dB (CP-4) $110.00
Optional CP-3 capsule $30.00
Optional CP-4 capsule $50.00

CM-300 × 3 Tri-Microphone. Three CM-300 microphone sets combined in one package; designed for use in the company's tri-microphone recording system; comes with special carrying case with space for headphones, cables, accessories $300.00

CM-1000 Condenser Microphone
Features interchangeable capsules; resistant to extremes of temperature & humidity; comes with battery power supply, CP-101 unidirectional capsule, windscreen, connecting cables with XLR connectors, case, 10 dB and 20 dB attenuators, proximity effect compensator; response 20-20,000 Hz ±2.5 dB; impedance 600 ohms balanced; sensitivity −67 dB ±1.5 dB; max. SPL at 3% dist. 139 dB; dynamic range 115 dB; S/N 50 dB (weighted). . $290.00
Optional CP-102 super-omni capsule . $100.00

NEUMANN

FET-80 Condenser Microphones
A line of studio microphones that come in many configurations from omni, figure-8, cardioid, multiple pattern to multiple pattern stereo. All can be either battery or phantom (separate power supplies) powered.
KM-83. Omnidirectional $230.00
KM-84. Cardioid $230.00
KM-85. Cardioid, with low-frequency roll-off $230.00
KM-86. Three-pattern, switchable $605.00

PIONEER

CM-2S Electret Microphone
Dual-element electret condenser unit; hypercardioid pattern; response 20-20,000 Hz; output impedance 1000 ohms; sensitivity −68 dB at 1 kHz (0 dB = 1 V/μ bar); maximum SPL 126 dB; S/N 46 dB; 1.5-V "AA" cell power supply; 6.06" H × 4.33" W; weight 11.2 ounces; 21-ft cable; pair comes mounted on desk stand. $59.95

CM-1 Electret Microphone
High molecular diaphragm electret condenser element; selectable omni- or uni-directional pattern; response 40-20,000 Hz (uni), 20-20,000 Hz (omni); output impedance 600 ohms unbalanced; sensitivity −69 dB (uni), −74 dB (omni) (both 0 dB = 1 V/μ bar); 126 dB maximum SPL; 1.5-V "AA" cell power supply; 1.42" dia. × 8.37" long; weight 10.56 ounces; comes with 18-ft cable. $99.95

PML

DC-20 Condenser Microphone
Omnidirectional pattern. Response 30-20,000 Hz. Sensitivity −56 (1.5 mV); noise 23 dB; impedance 200 ohms. Comes with stand adapter and connecting cable $122.95
DC-21. Same except cardioid pattern . $122.95

DC-73 Condenser Microphone
Cardioid pattern. Has electrical pop filter. Response 30-20,000 Hz (100-20,000 Hz); Sensitivity −60 dB. (1.0 mV); noise 21 dB; impedance 200 ohms. Comes with stand adapter and connecting cable $160.95

DC-96 Condenser Microphone
Cardioid pattern. Response 30-18,000 Hz. Sensitivity −61 dB (0.9 mV); noise 17 dB; impedance 200 ohms. Comes with stand adapter and connecting cable $242.95

EK-71 Condenser Microphone
Omnidirectional pattern. Response 80-18,000 Hz. Sensitivity (hi-Z) −38 dB (2.5 mV); impedance hi-Z. Comes with stand adapter and connecting cable $97.95
EC-71. Same except cardioid pattern . . $97.95

FP-92K Electret Microphone
Omnidirectional pattern. Pre-polarized with built-in 6 V battery. Response 30-20,000 Hz. Sensitivity −66 dB (0.5 mV); noise 23 dB; impedance 200 ohms. Comes with stand adapter and connecting cable $146.95
FP-92C. Same except cardioid pattern $146.95
FP-92C+. Same except has windscreen and shockmount $183.95
FP-92K+. Same as FP-92K except has windscreen and shockmount $183.95

S/BE CL3 Electret Microphone
Tie-bar design. Omnidirectional pattern. Response 80-17,000 Hz. Sensitivity −30 dB; noise 23 dB; impedance 200 ohms. Requires 22½ V battery $163.95

Power Supplies
Battery supply for DC-20, DC-21, DC-73, DC-96. 48 V d. c. output. Impedance 50,200, 600, and hi-Z.
7320-M. Mono $49.95
7320-S. Stereo $55.95
110 V. a. c. supply for DC-20, DC-21, DC-73, DC-96.
6320-M. Mono $74.95
6320-S. Stereo $102.95

Battery supply for EC-71 and EK71.
7140-M. Mono $45.95
7140-S. Stereo $53.95

RADIO SHACK

Pro-100 Microphone Kit
Supplied as a pair with 13-piece accessory package including wind screens, table stands, floor stand adapters, lavalier cords, and cables. Response 10-10,000 Hz. Switchable 250 and 10,000 ohm impedance $39.95

Highball Dynamic Microphone
Cardioid design. Response 50-15,000 Hz. Features "on-off" switch and internal push-on impedance change 50/250 ohms or 50,000 ohms. Has pop filter and 15-ft. cable .. $39.95

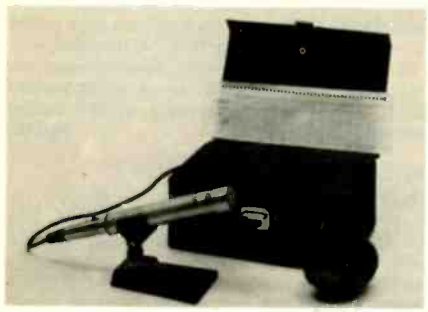
Highball 5 Dynamic Microphone
Cardioid design. Response 70-13,000 Hz. Has change plug for 600 to 20,000 ohm impedance. Stand adapter and 15-ft. cable .. $34.95

Electret-1045 Condenser Microphone
Cardioid design. Response 30-15,000 Hz. Can be switched from low imp. (600 ohms) to high imp. (20,000 ohms). Has windscreen and desk stand. Powered by single penlight. $34.95

Electret-1044 Condenser Microphone
Omnidirectional pattern. Response 30-15,000 Hz. Can be switched from 600 to 20,000 ohm impedance. Has foil diaphragm, windscreen, and mike stand. Powered by single penlight battery. $29.95

REVOX

3500 Dynamic Microphone



Dynamic unidirectional moving-coil type; cardioid pattern; response 40-18,000 Hz; impedance 600 ohms; comes with windscreen, clamp, table stand, and case; Cannon XLR connector; each unit supplied with own frequency-response curve..... $165.00

SENNHEISER

MD-211U Dynamic Microphone
Omnidirectional unit. Response 40-20,000 Hz. Sensitivity −58 dBm (0.13 mV/μbar) ±2.5 dB. Has extremely wide, flat response unusual in a moving-coil microphone. 4¾" × 1" dia. Fitted with Cannon XLR connector and cable. $214.50

MD21N Dynamic Microphone
Omnidirectional, 200-ohm impedance design. Response 50-15,000 Hz ±3 dB. Sensitivity 0.2 mV/μbar at 1000 Hz. EIA rating −145.8 dB. Output level −53 dBm (1 mW/10 dynes/cm²). Fitted with small Tuchel connector. Has balanced output. 10 ounces. 4¾" × 1⅞" × 1⅞". $126.00

MD421U Dynamic Microphone
Cardioid, 200-ohm impedance design. Response 30-17,000 Hz ±5 dB. Sensitivity 0.2 mV/μbar ±3 dB at 1 kHz. EIA rating −145.8 dB. Output level −53 dBm (1 mW/10 dynes/cm²). Has front-to-back ratio 18 dB, −2 dB and a variable bass attenuator. Fitted with XLR connector and cable. 7" × 1⅞" × 1 13/16". $193.00

MD412HLM Dynamic Microphone
Super-cardioid. Features a built-in triple-impedance transformer to permit mike to be con-

nected directly to any tape recorder. High impedance is 25,000 ohms for tube units; 800 ohms medium impedance for transistor recorders; 200 ohms low impedance for recorders of either type fitted with low-impedance input transformers. Response 50-12,000 Hz. Side attenuation 20 dB at 120 degrees. Sensitivity 1.25 mV/μbar at 1 kHz: EIA rating −154 dB; output level −58.1 dBm (1 mW/10 dynes/cm²) all at high-imp. setting. Comes with table stand, floor stand adapter, and zippered case. 8 ounces $72.50

MD416 Dynamic Microphone
Cardioid type especially designed for close miking. Response 50-15,000 Hz; sensitivity 0.13 mV/μbar ±3 dB; impedance 200 ohms; Cannon XLR connector. Has built-in isolation system to eliminate handling noise; built-in pop filter; outdoor pop filter; threaded stand mount with quick-release clip and cable..... $180.50

MD441 Dynamic Microphone
Super-cardioid design. Response 40-20,000 Hz; sensitivity 0.2 mV/μbar ±3 dB. Has brilliance switch for nominal 5 dB boost at 5 kHz; 5-position bass attenator. Front-to-back ratio is 20 dB, −3 dB. Comes with cable and quick-release mount that fits on floor stand or accessory table stand MZT-441. Windscreen for microphone is Model MZW441. 1.3" H × 1.4" W × 9.6" long..... $275.00

SHURE

300 Ribbon Microphone
Sensitivity −153 dB (EIA). Response 40-15,000 Hz. User selects high or low impedance. Bidirectional. Hinge mount to stand. Use for speech and music. Has 20-ft. cable and connector. Gray $115.20

515SA "Unidyne B" Microphone
Dynamic type. Sensitivity −154 dB (EIA). Response 80-13,000 Hz. High impedance. Cardioid pattern. Hand-held with slip-in stand attachment. Use for speech, rock vocals, and music. Has "on-off" switch and 15-ft. cable. Chrome finish $30.30
Model 515SB. Same as Model 515SA except low impedance..... $30.30

545 "Unidyne III" Microphone
Dynamic type. Sensitivity −149 dB (EIA). Response 50-15,000 Hz. User selects high or low impedance. Cardioid pattern. With slip-in stand attachment and hinge mount to stand. Designed specifically for speech, music, and tape recording. Supplied with 15-ft. cable and Amphenol-type MC4M connector. Chrome finish $64.20
Model 545S. Similar to Model 545 but has cable connection through hinge and "on-off" switch in upright..... $68.40
Model 545SD. Same as Model 545 but has

"on-off" switch on microphone barrel.. $68.40
Model 545L. Similar to Model 545 but has lavalier cord and clip..... $53.85

546 "Unidyne III" Microphone
Dynamic type. Sensitivity −154 dB (EIA). Response 50-15,000 Hz. User selects high or low impedance. Cardioid pattern. Hinge mount to stand. Use for speech, rock vocals, and music. Comes with 20-ft. cable and connector. Chrome finish..... $103.80

548SD "Unidyne IV" Microphone
Dynamic type. Sensitivity −141 dB (EIA). Response 40-15,000 Hz. User selects high or low impedance. Cardioid pattern. Hand-held with slip-in stand attachment. Use for speech and music. Has "on-off" switch, 15-ft. cable, and connector. Chrome finish $80.40

55S "Unidyne II" Microphone
Sensitivity −148 dB (EIA). Response 50-15,000 Hz. User selects high or low impedance. Cardioid pattern. Hinge mount to stand. Use for speech and music. Supplied with Amphenol-type MC3M connector and 15-ft. cable. Chrome finish $64.20
Model 55SW. Same as Model 55S except has built-in "on-off" switch..... $65.40

565 "Unisphere 1" Microphone
Dynamic type. Sensitivity −148.5 dB (EIA). Response 50-15,000 Hz. User selects high or low impedance. Cardioid pattern. Hinge mount to stand. Use for speech, rock vocals, and music. Has pop or blast filter, 15-ft. cable, and connector. Chrome finish $72.60
Model 565SD. Same as Model 565 except has "on-off" switch..... $75.60
Model 566. Similar to Model 565 except with shock mount..... $110.40

578 "Omnidyne" Microphone
Sensitivity −154 dB (EIA). Response 50-15,000 Hz. User selects high or low impedance. Omnidirectional pattern. Hand-held. Use for speech and music. Has "on-off" switch, a 15-foot cable, and connector. Supplied with chrome finish..... $60.00
Model 578S. Similar to Model 578 except has swivel assembly..... $67.20

579SB "Vocal Sphere" Mike
Sensitivity −151 dB (EIA). Response 50-15,000 Hz. Low impedance, omnidirectional pattern. Has slip-in stand attachment, "on-off" switch, pop or blast filter. Use for speech, rock vocals, and music. Supplied with 20-ft. cable and connector. Chrome finish $50.85

580SA(B) "Unidyne A" Mike
Sensitivity −151 dB (EIA). Response 50-13,000 Hz. User specifies high or low impedance. Cardioid pattern. Hand-held with slip-in stand attachment. Use for speech and music. Comes with "on-off" switch, 15-ft. cable, and connector. Chrome finish $46.65

585SA(B) "Unisphere A" Mike
Sensitivity −151 dB (EIA). Response 50-13,000 Hz. User specifies high or low impedance. Cardioid pattern. Hand-held with slip-in stand attachment. Use for speech, rock vocals, and music. Has pop or blast filter, "on-off" switch. Supplied with 15-ft. cable and connector. Chrome finish $50.85

11 Microphones

Model 585SAV. Similar to Model 585SA(B) but has volume control on microphone barrel. $55.65

588SA(B) "Unisphere B" Mike

Sensitivity −155 dB (EIA). Response 80-13,000 Hz. User specifies high or low impedance. Cardioid pattern. Hand-held with slip-in stand attachment. Use for speech, rock vocals, and music. Has pop or blast filter, "on-off" switch. Comes with 15-ft. cable and connector. Chrome finish $43.65

589S "Unidyne C" Mike

Unidirectional dynamic type; response 90-13,000 Hz; 150 ohm imp. to match any input from 20-200 ohms, also high impedance; built-in "on-off" switch with lockplate; internal rubber vibration-isolator shockmount; 15-ft two-conductor shielded with 3-pin female connector on mike end; zinc die-casting housing with silver-metallic finish, stainless steel grille; 7" × 1 9/16"; weight 12 ounces less cable. $51.00

SONY from SUPERSCOPE

ECM.16 Tie Clasp/Lapel Mike

Sensitivity −57.8 dB (0 dB = 1 V/10 μbar). Response 50-13,000 Hz. Low impedance, omnidirectional pattern. Lavalier-type for speech and tape recording. Supplied with mini connector. Internal battery operation. 6-ft. cable. 9/16" dia. × 1 9/16" long. Silver $34.95

ECM-18 Condenser Microphone

Sensitivity −56.8 dB (0 dB = 1 V/10 μbar). Response 50-12,000 Hz. Low impedance, cardioid pattern. Hand-held type for speech, music, and tape recording. Supplied with mini connector, dust filter or windscreen. 6.5-ft. cable. Internal battery operation. Silver gray and black. $27.95

ECM-33P Condenser Microphone

Sensitivity −54.8 dB (0 dB = 1 V/10 μbar). Response 40-15,000 Hz: Low impedance, balanced 250/600 ohms. Cardioid pattern. Hand-held with "slip-in" stand attachment. Use for speech, rock, vocals, music, and tape recording. Comes with dust filter or windscreen and 20-ft. cable. Connector not included. Internal battery/phantom powering. $129.95

ECM-99 Condenser Microphone

Sensitivity −53 dB (0 dB = 1 V/10 μbar). Response 50-12,000 Hz. Low impedance. Cardioid (dual) pattern. Hand-held with "slip-in" stand attachment. Use for music and tape recording. Comes with dust filter or windscreen, 10-ft. cable, mini (2) connector, one-point stereo pickup. Internal battery operation. Nickel satin finish $49.95

F-27 Dynamic Microphone

Sensitivity −58 dB (0 dB = 1 V/10 μbar). Low impedance. Cardioid pattern. Hand-held. Use for speech and tape recording. Supplied with mini connector and 6.5-ft. cable. $14.95

ECM-170 Condenser Microphone

Sensitivity −56 dB. Response 20-16,000 Hz. Low impedance. Omnidirectional pattern. Use for live recording of large ensembles. Has voice/music switch for adjusting frequency response. Comes with two-conductor shielded cable, accessory windscreen, and microphone holder. $79.95

ECM-220 Condenser Microphone

Sensitivity −57/−41 dB. Response 50-12,000 Hz. Impedance 200/10,000 ohms. Unidirectional pattern. Use for live music pickup. Has "on-off" switch; dual-impedance switch; built-in windscreen. Comes with microphone holder, battery, and audio cable. $49.95

ECM-250 Condenser Microphone

Sensitivity −57 dB. Response 50-14,000 Hz. Low impedance. Cardioid pattern. For all types of recording. Has built-in windscreen, making it suitable for outdoor recording. Comes with battery, mike stand adapter, cable, and carrying case. $59.95

ECM-270 Condenser Microphone

Sensitivity −56 dB. Response 40-16,000 Hz. Low impedance. Unidirectional pattern. Use for recording live musical performances. Lightweight for stage, nightclub, and other situations where performer holds mike. Comes with accessory windscreen, microphone holder, and cable. $79.95

ECM-280 Condenser Microphone

Sensitivity: −56 dB. Response 30-18,000 Hz. Low impedance. Cardioid pattern. Has bass roll-off switch and a built-in windscreen. An additional removable windscreen works in conjunction with the unidirectional pickup pattern for outdoor recordings free from wind and background noise. Incorporates FET electronics. Comes with battery, mike stand adapter, cable, and carrying case. $99.95

TEAC

MC-201 Microphone

Electret. Response 50-15,000 Hz. Balanced 600 ohms. Has slip-in stand attachment, windscreen, and 10-ft. cable. $80.00

ME-120 Microphone

Electret. Cardioid or omni; two-position response switch; balanced 200 ohms; response 40-18,000 Hz (cardioid), 30-16,000 Hz (omni). Comes with stand attachment, two windscreens, 15-ft cable. $120.00

ME-80. Same except response 50-16,000 Hz. $80.00

ME-50. Same except cardioid; unbalanced or balanced 10,000 or 200 ohms; response 50-14,000 Hz. $50.00

109-A Mike Input Transformer

Designed to match low-impedance mikes to high-impedance inputs; will terminate low-impedance, balanced signal to allow interfacing with most consumer tape recorders & mixers. $19.50

TECHNICS BY PANASONIC

RP-3850 Electret Condenser Mike

Cardioid pattern; FET head amplifier; tone-adjust switch; PAD 10-dB sensitivity switch; detachable windscreen; response 20-16,000 Hz; sensitivity −72 dB at 1000 Hz; 0 dB = 1 V/μ bar; output Z 600 ohms balanced; S/N 46 dB; max. input = 128 dB SPL. Operates 5000 hrs on single AA cell. Comes with Cannon cable connector. $149.95

RP-3830E. Similar to 3850 except response 50-15,000 Hz; sensitivity −74 dB; Switchcraft cable connector. $99.95

RP-3550E. Similar to RP-3830E except fixed windscreen; Switchcraft cable connector. $79.95

TURNER

500 Microphone

Dynamic type. Sensitivity −151 dB (EIA), response 40-12,000 Hz. User selects high or low impedance. Cardioid pattern. Hand-held with "slip-in" stand attachment. For use in recording speech, rock vocals, and music. Pop or blast filter. Detachable 20-ft. cable. Supplied with XLR connector. Satin chrome finish... $120.00

Model S-500. Same except with rotary "on-off" switch. $125.00

700 Microphone

Dynamic type. Sensitivity −151 dB (EIA), response 40-15,000 Hz. User selects high or low impedance. Cardioid pattern. Hand-held with "slip-in" stand attachment. For speech, rock vocals, and music. Pop or blast filter, "on-off" switch. Detachable 20-ft. cable. Comes with Switchcraft A4F connector. Satin chrome finish $120.00

2300 Microphone

Dynamic type. Sensitivity −151 dB (EIA), response 50-15,000 Hz. High-impedance, omnidirectional. Hand-held with "slip-in" stand attachment. For speech, rock vocals, music, and tape recording. Has 20-ft cable, "on-off" switch, and phone plug. Satin chrome finish $100.00

Model 2302. Same except low-impedance version. $100.00

S-2850 Microphone

Dynamic type. Sensitivity −161 dB (EIA), response 70-12,000 Hz. User selects high or low impedance. Cardioid pattern. Hand-held with "slip-in" stand attachment, lavalier clip. Use for speech and tape recording. Does not include connector but does have "on-off" switch and 12-ft. cable. Black $60.00

45 Cardioid Microphone

Dynamic design. Sensitivity −155 dB (EIA), response 100-13,000 Hz. High impedance. Use for speech, group singing, and music. Supplied with 20-ft. cable, phone plug, stand adapter, and "on-off" switch. $50.00

Model 45A. Same except low-impedance version. $50.00

603H Microphone

Dynamic type. Sensitivity −151 dB (EIA), response 50-15,000 Hz. High impedance. Cardioid pattern. Hand-held with "slip-in" stand attachment. For speech, rock vocals, and music. Pop or blast filter, "on-off" switch. Detachable 20-ft. cable. Satin chrome finish..... $100.00

Model 603L. Same except low-impedance version. $100.00

NOTICE TO OUR READERS

We consider it a valuable service to our readers to continue, as we have in previous editions of the STEREO DIRECTORY & BUYING GUIDE, to print the prices submitted by the manufacturers for items described as available at press time. With few exceptions, prices submitted by manufacturers should be considered "audiophile net."

We are aware that prices vary across the country in different trading areas. It is obvious that we are not in a position to quote local prices for the various trading areas in the United States on each of the items listed.

We would like to point out that almost all manufacturers' and distributors' prices are subject to change without notice.

Introduction to TAPE & ACCESSORIES

CHOOSING a suitable tape is simple if the recorder manufacturer has indicated for which tapes his machine is biased. Most open-reel types are offered in different grades, such as "standard" (which is rarely identified as such) an "low-noise/high-output" or "extended range." The latter can be superior with respect to frequency range, distortion, and noise level if the recorder is correctly biased for them; if not, a standard tape may actually be preferable. Lacking specific information (a few recorder manufacturers do publish recommended brands of tape, but many do not), experiment with both kinds to see if the premium-grade tape produces audibly superior results.

The basic length of tape on a 7-inch reel is 1200 feet, but most brands are also available in a long-play form with 1800 feet of thinner tape on the same size reel. Some companies also offer "double-play" or "triple-play" tapes, with up to 3600 feet, but they are more subject to "print-through" and can be stretched or broken by some tape transports. It is well to avoid the thinnest tapes unless their extra playing time is really needed.

A similar situation exists with cassettes, with other complicating factors. Most cassette recorder manufacturers do not identify the specific tape for which their machines are biased and this can have a major effect on the end product. If certain brands are specified in the recorder instructions, limit your choice to them (unless you wish to experiment). If not, a trial-and-error process is indicated.

Most good cassette decks have bias/equalization switching for conventional ferric-oxide tapes (sometimes for two grades), plus chromium-dioxide tapes. A chrome tape often provides a slightly extended high-frequency response and lower noise level and is less subject to high-frequency tape saturation than most ferric-oxide tapes, but the differences are not great between any brand of chromium-dioxide and a good make of ferric-oxide tape. Formerly, chrome tapes were more expensive, but today there are numerous exceptions to this rule.

The mechanical quality of the cassette is very important for successful operation of the system. Well-known branded cassettes are generally of high quality, but inexpensive, unbranded "white box" cassettes are invariably inferior in sound quality and have a tendency to jam or break.

The same considerations apply to 8-track cartridge tapes, except that the range of tape coatings is more limited. Since the performance of even the best cartridge recorder is critically dependent on the mechanical quality of the cartridge, it is wise to use a good grade of branded cartridge. Most cartridge tapes are fairly similar in their magnetic properties, the chief exception being the Scotch "Classic" high-energy tape designed for recorders with the special bias it requires.

MANY accessory devices are meant to enhance dynamic range, either by volume expansion or noise reduction or a combination of the two. Another large category is that of multi-band equalizers, which can range from an inexpensive five-band unit to a very expensive 1/3-octave model with some 30 separate control bands. Dolby adapters are available from several manufacturers and are chiefly useful for decoding Dolby FM transmissions or for use with older tape decks lacking built-in Dolby circuitry.

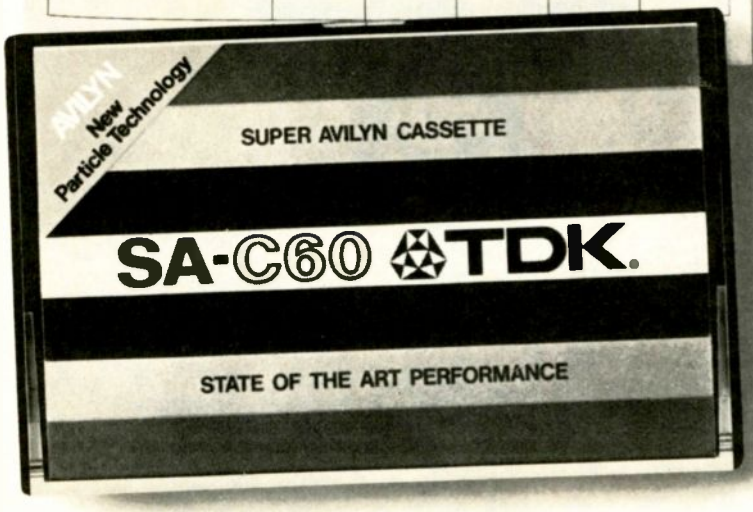
With renewed interest in bi-amplifier and tri-amplifier systems, several companies are producing electronic crossover networks. Although few commercial speakers provide access to the individual drivers, some of these devices make it possible to add a "subwoofer" or other outboard speaker to an existing system without modifying the normal operation of the main speaker.

Other accessories, too numerous to mention in detail, include switching and control devices, record cleaners and tape erasers, tape and disc storage and cataloguing systems, and microphone mixers. Part of the appeal of component high-fidelity is the ease with which a system can be expanded or modified with a minimum of obsolescence, and this is reflected in the vast number of products available as "accessories."

INTRODUCING TDK SUPER AVILYN. IT OUTSOUNDS CHROME. AND THE #1 FERRICHROME.

INDEPENDENT LAB TEST RESULTS

	TDK SA	A	B	C	D
Signal-to-Noise Ratio	1st	4th	1st	6th	7th
Distortion (I.M.)	1st	2nd	3rd	7th	6th
Low-Frequency Response Accuracy	1st	1st	1st	1st	1st
Mid-Frequency Response Accuracy	1st	2nd	5th	5th	2nd
High-Frequency Response Accuracy	2nd	2nd	6th	5th	1st
Maximum Output Level (3% thd)	1st	2nd	4th	6th	5th
Output (0 VU)	1st	4th	5th	2nd	2nd
Surface Abrasiveness	low	high	high	high	low



Seven tapes were tested (TDK SA, TDK KR, Scotch Chrome, BASF Chromdioxid, Advent Chrome, Scotch Classic, and Maxell UD) and ranked 1st to 7th. The chart shows the results for 5 representative tapes tested.

The following tape decks were selected for use in the tests: Nakamichi 500 & 1000, Advent 201, and TEAC 450.

SA now available in C 90.

You want the best sound you can get from your cassette recorder without worrying about headwear. And until now, chrome and ferrichrome had the sound—they outperformed ferric oxide tapes in extended high frequency response with lower noise.

Well, TDK has advanced cassette recording to a new standard of high fidelity. It's new Super Avilyn, the cassette that outsounds chrome, the best-selling ferrichrome, and the top-ranked ferric oxide tapes.

Its magnetic particle is new. It soaks up more sound and plays it back with less distortion. That's power and clarity you can hear.

Super Avilyn doesn't require special bias/eq. setting for optimum performance. It is compatible with any tape deck that has the standard CrO_2 bias/eq. setting.

Distortion—that's the big story. Look at these lab test figures.

LEAST DISTORTION—CLEAREST SOUND.

RECORD INPUT LEVEL	TDK SA	A	B	C	D
0 VU	11%	13%	26%	50%	32%
-5VU	4.5%	5.4%	11%	17.5%	5.4%
-10VU	4.2%	4.5%	8.5%	7.8%	4.8%
-20VU	4.9%	5.0%	8.0%	5.2%	6.0%

SMPTE METHOD: I.M. DISTORTION—7000 Hz—60Hz, 4:1 ratio.

There's just no contest. Super Avilyn delivered the clearest, cleanest sound. More lifelike sound—and to a discriminating ear, that's the ultimate test. Fact is, Super Avilyn is the new state of the art.

TDK Electronics Corp.
755 Eastgate Blvd., Garden City,
N.Y. 11530. Also available in Canada.

TDK®

Wait till you hear what you've been missing.

12 BLANK TAPE & ACCESSORIES

ADVENT

Chromium-Dioxide Cassettes

Comes in screw-type housing with special lead-

er tape that cleans heads. In lots of six, comes with free optional storage album.

C-60 ..... $2.70
C-90 ..... $3.50
C-120 ..... $4.55

AMPEX

364 Series 20/20+ Cassettes

364-C42. 42 min $3.19
364-C60. 60 min $3.49
364-C90. 90 min $5.29
364-C120. 120 min $6.79

363 Series Chromium-Dioxide Cassettes

363-C40. 42 min $3.19
363-C60. 60 min $3.49
363-C90. 90 min $5.29

370 Series Cassettes

Low-noise/high-output type.

370-C42. 42 min $2.09
370-C60. 60 min $2.29
370-C90. 90 min $3.49
370-C120. 120 min $4.79

350 Series "Super" Cassettes

350-C42. 42 min $1.19
350-C60. 60 min $1.49
350-C90. 90 min $2.29
350-C120. 120 min $3.59

381 Series 8-Track Cartridges

381-42E. 42 min $2.49
381-84E. 84 min $2.99

388 Series 20/20+ Cartridges

388-42E. 42 min $3.29
388-84E. 84 min $3.89

20/20+ Series Open-Reel Tapes

Back-coated professional mastering tape.

372-15. 1200 ft, 7" reel, 1.5-mil $6.59
373-15. 1800 ft, 7" reel, 1.0-mil $8.09
373-17. 3600 ft, 10½" NAB reel, 1.0-mil $23.39

PRT Series Open-Reel Tapes

High-frequency polyester.

331-13. 600 ft, 5" reel, 1.5-mil $2.89
341-13. 900 ft, 5" reel, 1.0-mil $3.89
331-15. 1200 ft, 7" reel, 1.5-mil $4.29
341-15. 1800 ft, 7" reel, 1.0-mil $6.59
351-15. 2400 ft, 7" reel, 0.5-mil $10.69
361-15. 3600 ft, 7" reel, 0.5-mil $11.59

Demagnetizer/Head Cleaner

E3220BL. For cassette players/recorders $5.99
E3228. For 8-track players/recorders $6.99

BASF

LH Series Reel-to-Reel Tape

7" × 1800 ft. $8.75
7" × 2400 ft. $11.25
7" × 3600 ft. $16.25
10½" × 3600 ft (NAB hub). $21.85

LHS Series Reel-to-Reel Tape

7" × 1800 ft. $10.60
7" × 2400 ft. $13.75

LPR Professional Tape

10½" × 3600 ft (NAB hub). $28.70

Performance Series Cassettes

Album snap pack, standard package.

45 min $2.50
60 min $2.85
90 min $4.25
120 min $5.75

Performance Series Cartridges

Standard package.

45 min $3.10
64 min $3.35
90 min $3.75

Studio Series Cassettes

Album snap pack, standard package.

60 min $3.75
90 min $5.60
120 min $7.50

Studio Series Cartridges

Standard package.

45 min $3.75
64 min $4.10
90 min $4.35

Chromium-Dioxide Cassettes

Album snap pack, standard package.

60 min $3.75
90 min $5.60
120 min $7.50

CAPITOL

Capitol 1 Cassettes

C-30, 15 min/side $0.98
C-60, 30 min/side $1.19
C-90, 45 min/side $1.93
C-120, 60 min/side $2.70
C-30, Three pack $2.77
C-60, Three pack $3.38
Cassette head cleaner $1.09
Cassette saver $2.19

Capitol 1 8-Track Cartridges

32 min/150 ft $1.93
40 min/190 ft $2.09
64 min/300 ft $2.26
80 min/380 ft $2.34
100 min/470 ft $2.77
4 pk of 40 min $6.08
4 pk of 80 min $7.12
Cartridge head cleaner $1.19

Capitol 1 Open-Reel Tape

Standard play, 1.5-mil polyester

600 ft., 5" reel $2.83
1200 ft., 7" reel $3.66

Extra play, 1.0-mil polyester

900 ft., 5" reel $3.01
1800 ft., 7" reel $4.24

0.5-mil polyester, tensilized

1800 ft., 5" reel $4.52
2400 ft., 7" reel $5.21

"the music tape" Cassettes

High-output/low noise with "cushion-aire" backing.

C-45. 45 min. $2.49
C-60. 60 min. $2.99
C-90. 90 min. $4.49
C-120. 120 min. $5.99
C-45. Stak-pak (2 cassettes) $4.98
C-60. Stak-pak (2 cassettes) $5.98
C-90. Stak-pak (2 cassettes) $8.98
C-120. Stak-pak (2 cassettes) $11.95

"the music tape" Cartridges

High-output/low noise.

8T-45. 45 min. $3.19
8T-60. 60 min. $3.43
8T-90. 90 min. $3.63
8T-100. 100 min. $3.86
8T-120, 120 min. $4.66

"the music tape" Open-Reel

High-output/low noise with "cushion-aire" backing.

FDS-1200. 1200 ft, 7" reel $6.85
FDS.1800. 1800 ft, 7" reel $8.75
FDS-2500. 2500 ft, 10½" reel $20.00
FDS-3600. 3600 ft, 10½" reel $23.75

COLUMBIA

Cassette Tapes

Each side color-coded for easy identification. High-output/low-noise gamma-ferric oxide. Response 20-20,000 Hz. Tensilized polyester base. Delrin rollers; constant-tension pressure pad for consistent tape-to-head contact; mounted in three-sided Mumetal shield to prevent pickup of hum and noise; two re-recording labels included.

2CB-80040. 40 min. $1.99
2CB-80060. 60 min. $2.29
2CB-80090. 90 min. $3.49

12 Blank Tape

2CB-80012. 120 min. $3.39
2CB-800HC. Head cleaner. $1.39

8-Track Tapes with "ConvertaQuad"

Back-lubricated high-output/low-noise gamma-ferric oxide tape. Response 20-20,000 Hz. Three-point Delrin tape suspension; silicone/rubber pinch roller; foam pressure pad; one-piece hub; features "ConvertaQuad" plastic slug for activating sensing device on 4-ch tape deck.

8CB-80740. 40 min. $2.29
8CB-80750. 50 min. $2.59
8CB-80780. 80 min. $2.99
8CB-80710. 100 min. $3.49
8CB-807HC. Head cleaner. $1.49

Open-Reel Tapes

High-output/low-noise gamma-ferric oxide tape. Index and timing chart included with all packages.

4CB-80412. 7" × 1200 ft, 1.5-mil polyester. $4.79
4CB-80418. 7" × 1800 ft, 1.0-mil polyester. $5.98
4CB-80424. 7" × 2400 ft, 0.5-mil polyester. $7.99
4CB-80436. 7" × 3600 ft, 0.5-mil polyester. $9.99

FUJI

FX Cassette Series

Low-distortion, wide-dynamic-range tape for music recording and reproduction; flat frequency response; extended frequency range.

C46FX. 23 min./side $3.10
C60FX. 30 min./side $3.50
C90FX. 45 min./side $4.70

FL Low-Noise Cassettes

C30FL. 15 min./side $2.00
C60FL. 30 min./side $2.50
C90FL. 45 min./side $3.60
C120FL. 60 min./side $5.00

8-Track Cartridges

S-40 ..... $3.00
S-60 ..... $3.50

FB-151 Open-Reel Tapes

Ultra-low-noise, high-output, back-coated master recording tape; for use on tape recorders equipped with bias selector.

1200-ft, 7" reel $8.50
1800-ft, 7" reel $11.00
3600-ft, 10½" metal reel $30.00

FG Open-Reel Tapes

High-sensitivity ferric-oxide music tape; for use on tape recorders equipped with bias selector.

1200-ft, 7" reel $6.00
1800-ft, 7" reel $8.00
3600-ft, 10½" metal reel $22.50

FM Open-Reel Tapes

Low-noise, high-output ferric-oxide tape; for use with all standard tape recorders.

900-ft, 5" reel $5.00
1200-ft, 7" reel $5.70
1800-ft, 7" reel $6.50

FB-101 Professional Tape

Back-coated, high-speed mastering tape; ¼", 1.5-mil.

2400-ft, 10½" reel $24.00

HITACHI

"Ultra-Dynamic" Cassettes

UDC-60, 60 min $3.45
UDC-90, 90 min $4.75
UDC-120, 120 min $5.95

Low-Noise Cassettes

C-30, 30 min $1.95
C-60, 60 min $2.45
C-90, 90 min $3.45
C-120, 120 min $4.95

All "suggested list" prices

IRISH

200 Series Professional Tape

Standard, 1½-mil, polyester base, ¼"
231-131, 600 ft., 5" reel $3.55
231-151, 1200 ft., 7" reel $5.90
Extra-length, 1-mil, polyester base, ¼"
241-131, 900 ft., 5" reel $3.95
241-151, 1800 ft., 7" reel $6.75
241-173, 3600 ft., 10½" NAB aluminum reel $22.00
Double-length, ½-mil polyester tensilized base.
251-151, 2400 ft., 7" reel $8.90
0.5-mil, polyester tensilized base, ¼"
261-151, 3600 ft., 7" reel $10.95

270 Series Tape

Low-noise, high-output, back coated.
276-151, 1200 ft, 7" reel $8.25
276-173, 2500 ft, 10½" NAB aluminum reel $19.60
276-273, 2500 ft, 10½" NAB aluminum reel $41.00
277-151, 1800 ft, 7" reel $10.00

Professional-Series Cassettes

In album/mailer
261-C40, 20 min/side $1.70
261-C60, 30 min/side $1.90
261-C90, 45 min/side $2.90
261-C120 60 min/side $4.45

Low-Noise, Extended-Range Cassettes

Flip-top plastic box
262-C40, 20 min/side $2.65
262-C60, 30 min/side $3.00
262-C90, 45 min/side $4.45

Chromium-Dioxide Cassettes

Flip-top plastic box
263-C60, 30 min/side $5.00
263-C90, 45 min/side $7.55

8-Track Cartridges

8T42, 42 min. $3.20
8T84, 84 min. $3.85

LAFAYETTE

Criterion XHE Reel-to-Reel Tapes

On plastic reels. For recorders with switchable bias and equalization.

1200 ft, 7" reel, 1.5-mil $5.79
1800 ft, 7" reel, 1.0-mil $6.99

Criterion XHE Series Cassettes

Low-noise, (XHE) extra high energy, high-output. Wide dynamic range with high-frequency response of 30-20,000 Hz. Gamma ferric-oxide formulation. Hard, clear plastic storage box.

C-60. 30 min/side $2.99
C-90. 40 min/side $3.99
C-120. 60 min/side $4.99

Criterion Cassettes

C-60 30 min/side $1.49
C-90 40 min/side $1.99
C-120 60 min/side $2.49

Low-Noise Cassettes

C-60 30 min/side $0.99
C-90 40 min/side $1.49
C-120 60 min/side $1.99

8-Track Low-Noise Cartridges

45 min $1.99
90 min $2.49

MALLORY

Professional Cassettes

Packaged in Philips box.

CP30. 30 min $2.20
CP60. 60 min $2.25
CP90. 90 min $2.95
CP120. 120 min $3.50

Cassette Head Cleaner

CHC $1.75

Fliptape Cassettes

Low-noise cassettes designed specifically for youth market. Packaged in poly box.

FL45. 45 min $1.85
FL60. 60 min $1.95
FL90. 90 min $2.65
FL120. 120 min $3.20

Duratape 8-Track Cartridges

8T-45. 45 min $3.35
8T-90. 90 min $3.95
8T-HC. Head cleaner $2.10

MAXELL

UDXL Epitaxial Cassettes

Non-chrome, high-bias tape.

UDXL-C-60, 30 min/side $4.89
UDXL-C-90, 45 min/side $6.89

Ultra-Dynamic Cassettes (High Bias)

UDC-46, 23 min/side $3.05
UDC-60, 30 min/side $3.50
UDC-90, 45 min/side $4.99
UDC-120, 60 min/side $6.80

Low-Noise Cassettes (Normal Bias)

LNC-30, 15 min/side $1.99
LNC-60, 30 min/side $2.29
LNC-90, 45 min/side $3.50
LNC-120, 60 min/side $4.70

Low-Noise Tape (Normal Bias)

1.5-mil polyester
LNE-50-60, 1200 ft., 7" reel $6.88
LNE-50-120, 2500 ft., 10½" reel $15.20
1-mil polyester
LNE-35-90, 1800 ft., 7" reel $8.25
LNE-38-180, 3600 ft., 10½" reel $20.00
0.5-mil polyester
LNE-25-120, 2400 ft., 7" reel $11.70
0.5-mil polyester
LNE-18-180, 3600 ft., 7" reel $14.40

Back-Coated Extended-Range

Back-coated, ultra-dynamic, high-energy, high-bias type.

1.5-mil polyester
UD50-60B, 1200 ft, 7" reel. $9.20
UD50-120B, 2500 ft, 10½" reel. $26.20
1-mil polyester
UD35-90B, 1800 ft, 7" reel. $11.35
UD35-180B, 3600 ft, 10½" reel. $31.00

Extended-Range Tape (High Bias)

Ultra-dynamic, high-energy type.

1.5-mil polyester
UD50-60, 1200 ft., 7" reel $7.65
UD50-1200, 2500 ft., 10½" reel $20.40
1-mil polyester
UD35-90, 1800 ft., 7" reel $8.70
UD35-180, 3600 ft., 10½" reel $21.90

8-Track Cartridges (Normal Bias)

8T-200, 40 minutes $2.85
8T-300, 60 minutes $3.25
8T-400, 80 minutes $3.45

MEMOREX

Low-Noise, High-Output Tape

Standard play. 1.5-mil polyester, ¼"
600 ft, 5" reel $2.99
1200 ft, 7" reel $5.29
2500 ft, 10½" reel $12.99
Long-play, 1-mil polyester, ¼"
900 ft, 5" reel $3.89

1800 ft, 7" reel $6.39
3600 ft, 10½" reel $15.99
Double-play, tensilized polyester, ¼".
1200 ft, 5" reel $5.29
2400 ft, 7" reel $8.69

MRX₂ Oxide Cassettes

C-30. 15 min/side $1.89
C-45. 22½ min/side $2.09
C-60. 30 min/side $2.29
C-90. 45 min/side $3.39
C-120. 60 min/side $4.59

Chromium-Dioxide Cassettes

C-45. 22½ min/side $2.79
C-60. 30 min/side $2.99
C-90. 45 min/side $4.49

8-Track Cartridges

45 min $2.59
60 min $2.79
90 min $2.99

MERITON

Ferri-Chrome Cassette

FeCr C-60. 31 min./side $3.79

Chromium-Dioxide Cassette

CrO_2 C-60. 31 min./side $3.19

Low-Noise, High-Output Cassettes

LH C-60. 31 min./side $2.49
LH C-90. 46 min./side $3.59

Low-Noise Cassettes

LN C-60. 31 min./side $1.49
LN C-90. 46 min./side $2.29
LN C-120. 61 min./side $3.49

NAKAMICHI

"EX" Cassette Tapes

Specially formulated ferrocrystal tape for improved frequency response, S/N ratio, and dynamic range; special binder for even particle distribution and reduced head wear.

C-60 ..... $3.69
C-90 ..... $4.79

Chrome Cassette Tapes

Chromium-dioxide tape for improved frequency response, S/N ratio, and extended high-frequency output.

C-60 ..... $4.59
C-90 ..... $5.99

SCOTCH

Cassettes

High Energy

Features "High Energy" tape for quality sound; fully compatible with all cassette recorders. Has "Posi-Trak" back treatment. Album package.

45 min $3.10
60 min $3.75
90 min $5.60

Low-Noise/High-Density

Multi-purpose cassette featuring full dynamic range throughout the audible sound spectrum. "Posi-Trak" back treatment. Album package.

45 min $2.50
60 min $3.00
90 min $4.50
120 min $6.00

Highlander/Low-Noise

For all-purpose cassette use. Polyester base.

45 min $1.60
60 min $1.85
90 min $2.85
120 min $4.35

"Classic" Cassettes

Features layers of chromium-dioxide and low-noise ferric-oxide to produce high-frequency performance equal to "chrome," but an additional 5 dB increase over CrO_2 in low-frequency range; fully compatible with all recorders; "Posi-Trak" back treatment. Album package.

45 min $3.75
60 min $4.35
90 min $6.25

Chrome Cassettes

Features chromium-dioxide tape for extended high-frequency range; designed specifically for tape decks equipped to handle CrO_2; "Posi-Trak" back treatment. Album.

45 min $3.10
60 min $3.75
90 min $5.60
120 min $7.50

Open-Reel Tapes

High-Output/Low-Noise

12 Blank Tape

Provides 50% increase in signal output and additional 3 dB in dynamic range over conventional low-noise tapes.

No. 206. Polyester base, "Posi-Trak" backing, leader, and trailer. 1.5-mil. 60 min at 7½ ips; 7" reel $7.50
2 hrs (2400') at 7½ ips, 10½" reel ... $20.00
No. 207. Polyester base, "Posi-Trak" backing, leader, and trailer, 1-mil. 90 min at 7½ ips; 7" reel $9.35
3 hrs (3600') at 7½ ips, 10½" reel ... $23.75

Low-Noise/Dynarange

Provides high-fidelity recording even at 3¾ ips. Multi-purpose tape providing full dynamic range throughout audible spectrum. S/N is 4 to 6 dB better than standard tapes.

No. 211. Polyester backing, white yellow trailers. 1.5-mil. 30 min at 7½ ips (5" reel); 60 min (7" reel). 30 min $3.75
60 min $5.60
2 hrs (2400') at 7½ ips, 10½" reel ... $17.50
No. 212. 1.0-mil. 45 min at 7½ ips (5" reel); $4.35
90 min (7" reel) $7.50
3 hrs (3600') at 7½ ips, 10½" reel ... $21.25
No. 213. 0.5-mil tensilized. 120 min at 7½ ips (7" reel) $11.25
4 hrs (4800') at 7½ ips, 10½" reel ... $32.50
No. 214. 0.5-mil tensilized. 90 min at 7½ ips (5" reel); $7.50
180 min (7" reel) $15.00

Highlander/Low-Noise

All-purpose economy tape for vocals as well as speech.

No. 228. 1-5 mil. 60 min at 7½ ips (7" reel) $4.35
No. 229. 1-mil. 90 min at 7½ ips (7" reel) $6.25

"Classic" Open-Reel Tapes

High-frequency performance 3 dB higher than No. 206-207; S/N 8 dB higher than standard recording tape; polyester base; "Posi-Trak" backing; leader, trailer. Padded book-style box.

CL.7R60. 1.5-mil, 60 min. at 7½ ips (7" reel) $8.75
CL-7R90. 1.0-mil, 90 min. at 7½ ips (7" reel) $10.60
CL-7R120. 0.5-mil, 120 min. at 7½ ips (7" reel) $13.75
CL-10R120. 1.5-mil, 120 min. at 7½ ips (10" reel) $22.50
CL-10R180. 1.0-mil, 180 min at 7½ ips (10" reel) $26.25
CL-10R240. 0.5-mil, 240 min at 7½ ips (10" reel) $35.00

"Classic" 8-Track Cartridges

Features special low-noise ferric-oxide coating for high-frequency sensitivity of 7 dB higher; S/N at low frequencies 6 dB higher than standard cartridges; fully compatible, oxide coating heavy-duty lubricated polyester backing.

8TR-45. 45 min $3.75
8TR-90. 90 min $5.00

8-Track Cartridges

Features low-noise oxide coating on heavy-duty lubricated polyester backing.

High-Output/Low-Noise

Full 2-dB increase in output over premium tapes. Captures full balanced sound.

8TR-45 HO/LN. 45 min $3.75
8TR-90 HO/LN. 90 min $4.35

Low-Noise/Dynarange

All-purpose cartridge

8TR-45. 45 min $3.10
8TR-90. 90 min $3.75

ERK-130 Cassette Edit/Repair Kit

Contains precision splicing block; spindle for manually winding cassette tape; six polyester picks (adhesive tipped for retrieval of tape ends lost in housing); six 130-mil splicing tabs; detailed instruction booklet $3.10

Pre-Cut Tabs

SPT-7/32-36. 36 pre-cut 1.0-mil polyester splicing tabs $1.25
SST-7/32-18. 18 pre-cut aluminized sensing tabs. $1.25

Head Cleaners

S-C-HC. Cassette head cleaner $1.85
S-8TR-HC. 8-track head cleaner $3.00

"Classic" Tape Indexing System

1" × 8" × 8½" bookshelf index for cataloguing 288 tapes; easy access to any tape through complete cross-reference to individual titles by artist or music/sound style. CL-TIS $7.95

SONY from SUPERSCOPE

Professional Recording Tape

Extra-heavy-formula Oxi-coat homogenized oxide coating; polyester back, "lubri-cushion" impregnated lubricant.

PR-150-3. 300 ft, 3¼" reel, 1 mil $1.99
PR-150-9. 900 ft, 5" reel, 1 mil $3.49
PR-150-18. 1800 ft, 7" reel, 1 mil .. $6.49
PR-150-36. 3600 ft, 10½" reel, 1 mil. $17.95

Low-Noise, High-Output Tape

On 1-mil polyester base.

SLH-180-18. 1800 ft, 7" reel $7.99
SLH-180-36. 3600 ft, 10½" reel $22.95

Low-Noise Cassette Tape

C-45 Plus 2. 23 min/side $1.59
C-60 Plus 2. 31 min/side $1.69
C-90 Plus 2. 46 min/side $2.49
C-120 Plus 2.61 min/side $3.69

Ultra-High-Fidelity Cassette Tape

UHFC-60 Plus 2.31 min/side $2.69
UHFC-90 Plus 2.46 min/side $3.79
UHFC-120 Plus 2. 61 min/side $4.99

Chromium-Dioxide Cassettes

CRO-60. 60 min $3.49
CRO-90. 90 min $4.29

Ferri-Chrome Cassettes

FeCr-60 Plus 2. 31 min/side. $3.99

8-Track Cartridges

8T-40 Plus 2. 21 min/side $3.49
8T-60 Plus 2. 31 min/side $3.99
8T-80 Plus 2. 41 min/side $4.49

SOUNDCRAFT

Cassette Tapes

2SR-80130. 30 min. $0.89
2SR-80140. 40 min. $0.99
2SR-80160. 60 min. $1.49
2SR-80190. 90 min. $1.89
2SR-80112. 120 min. $2.09
2SR-801HC. Head cleaner. $1.49

8-Track Tapes

8SR-80340. 40 min. $1.69
8SR-80380. 80 min. $1.99
8SR-803HC. Head cleaner. $1.39

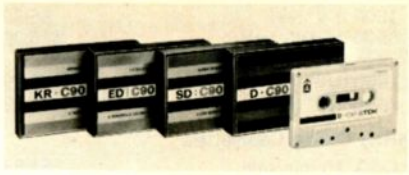
Open-Reel Tapes

4SR-80512. 7" × 1200 ft. $3.49
4SR-80518. 7" × 1800 ft. $3.99
4SR-80524. 7" × 2400 ft. $4.49
4SR-80536. 7" × 3600 ft. $7.49

TDK

"Extra Dynamic" Cassettes

Exclusive "stagnetite" coating for highest MOL (maximum output level), wide dynamic range, high S/N. Response 20-23,000 Hz. Includes new 45-min. "record-album-length." Polyester base.



ED-C45, 45 min $2.69
ED-C60, 60 min $2.99
ED-C90, 90 min $4.49

"Super Dynamic" Cassettes

High-performance gamma ferric oxide for wide dynamic range, low-noise, and distortion-free output. Response 30-20,000 Hz. Polyester back.

SD-C45, 45 min $2.19
SD-C60, 60 min $2.39
SD-C90, 90 min $3.59
SD-C120, 120 min $4.79

"Dynamic" Cassettes

Features company's new M-400 gamma ferric-oxide coating. Includes new 3-hour "4-record-album-length" cassette plus new single-album-length cassette. Polyester back.

D-C30, 30 min $1.39
D-C45, 45 min $1.49
D-C60, 60 min $1.59
D-C90, 90 min $2.29
D-C120, 120 min $3.29
D-C180, 180 min $4.79

KR Chromium-Dioxide Cassettes

Outstanding linearity at very high frequencies. Use on machines with CrO_2 bias. Polyester back. Packed in plastic boxes.

KR-C60, 60 min $2.99
KR-C90, 90 min $4.49

"Endless" Cassettes

Endless-loop design with safety feature against accidental reversal. Usable in conventional cassette machines. Polyester backing. Packaged in plastic boxes.

EC-20S, 20 sec $3.99
EC-30S, 30 sec $3.99
EC-1,1 min $3.99
EC-3, 3 min $4.19
EC-6, 6 min $4.59
EC-12, 12 min $5.49

Head Cleaner Cassette

Chromium trioxide removes deposits, laps and polishes pitted heads. Unique check-off chart on box keeps record of cleaner life.

HC-1 ..... $1.19

"Super Dynamic" 8-Track Cartridges

Full-fidelity 8-track cartridges with gamma ferric oxide. Response 20-23,000 Hz. High saturation and output level (MOL). Has broad dynamic range, high S/N, and minimum distortion.

8TR-40SD, 40 min $2.99
8TR-80SD, 80 min $3.99

"Audua-L" Open-Reel Tape

High-density ferric-oxide coating for high output, low noise, stability and durability.

L1200. 1200 ft, 7" low-torque reel ... $5.99
L-1800. 1800 ft, 7" reel $7.49
L-3600. 3600 ft, 10½" NAB reel ... $19.95

S Open-Reel Tape

Open-reel tape with reproduction characteristics of SD cassettes.

S-1200 ..... $4.99
S-1800 ..... $5.99
S-3600P. Plastic reel $13.99
S-3600M. Metal reel $17.49

SA (Super Avilyn) Cassettes

Uses new particle technology (improved ferric-oxide).

SA-C60 ..... $3.29
SA-C90 ..... $4.79

ACE AUDIO

Audio Equalizer
Complete tone-control system; can be used with company's preamps or other equipment; rated output 2 V to 10,000-ohm load; gain unity ±0.5 dB; IM & HD 0.05%; freq. range ±12 dB; bass (50 Hz and below), 250 Hz, 1000 Hz, 3500 Hz, treble (10,000 Hz and above); freq. response 5-100,000 Hz ±1 dB; hum & noise 80 dB below 2 V output; inputs: main, tape monitor; outputs: main, tape out; switches: power; defeat; tape monitor; unswitched convenience outlet; Canadian maple end caps; 3½" H × 12¼" W × 7" D. $133.75
Kit version $84.25
Construction manual $2.25

ADVENT

MPR-1 Microphone Preamplifier
For use with low-impedance balanced or unbalanced microphones. Switchable gain for either 40 or 60 dB. Operated by power supply of Advent 201 cassette deck. 5¾" × 2¾" × 1" D $34.95

100A Dolby System
Noise-reduction unit with Dolby system for home tape recording/playback. Also plays Dolby-encoded pre-recorded commercial tapes and FM broadcasts. Provides four-input mixing (two on each channel), headphone monitoring, and sound-on-sound recording. Harmonic and IM distortion 0.1%. 5" × 12⅞" × 8¾" D. Cabinet extra. $300.00

101 Dolby System
Similar in principle to Model 100A, but can only be used in record or playback mode (uses same circuitry), but not simultaneously for two operational modes. $150.00

ALL-TEST

Laboratory Reference Phono Preamp
Amplifies magnetic phono cartridge signals to level which will drive high-level inputs of any stereo amp, integrated amp, or receiver; IM distortion 0.01%; noise 80 dB below 10 mV input, 20-20,000 Hz (input shorted); negative feedback 70 dB at 1 kHz; gain 36 dB at 1 kHz; input imp. 47,000 ohms ±5%; frequency response 20-20,000 Hz ±0.5 dB of RIAA curve; channel separation 80 dB at 10,000 Hz; max. output 8 V rms into 47,000 ohms or higher, 7 V rms into 10,000 ohms; channel balance within ±0.1 dB; 10-year warranty..... $150.00

ALTEC

729A "Acousta-Voicette"
Used to modify combined response of room and speaker as required for optimum flatness of frequency response in specific listening area. Has narrow-band adjustable filters, each covering ⅓ octave. Stereo design with 24 filters for each channel covering center frequencies between 63 and 12,500 Hz. Loss/octave adjustable from 0 to 12 dB. 17 dB gain each channel to compensate for equalization losses . $875.00

AUDIO-TECHNICA

AT-6001 Disc Cleaner
Double-action cleaning system combines soft bristle brush and plush pad to loosen and remove groove dirt; small arm on weighted base may be placed on motorboard; may be used

12 Accessories

with most manual turntables or automatic when in manual mode; replacement pad & brush kit available. $9.95
AT-601. Replacement kit for AT-6001 .. $1.95

AT6010 Record Cleaning Kit
Consists of dropper, anti-static cleaning fluid (applied from back for streak-free use), pad holder, cleaning edge, adhesive for mounting holder, fluid (AT608), and instructions. . $5.95
AT6008. Similar to AT6010 except cleaner rotates on moving record; comes with holder, cleaning brush, applicator, fluid (AT608). $9.95
AT608. Anti-static record-cleaning fluid . $1.95

AT610 Cable Set
Low-capacitance cables for connecting turntable and CD-4 demodulator or amplifier; 4-ft shielded cable with molded pair phono plugs each end; total capacitance 52 pF. Only one set needed per turntable. $6.95

AT-6003 Tri-Capsule
For keeping extra cartridges and plug-in shells safe and handy; consists of three smoked plexiglass domes which will house three cartridge-shell assemblies $9.95

AUDIOTEX

The company carries a complete line of tape accessories for use with open-reel, cassette, and 8-track equipment.
30-2150. Cleaning pen for tape heads $1.95
30-126. Kleentape for open-reel recorder heads $2.25
30-026. Tape cleaning cloth $0.90
30-129. Tape Care Kit, Jr. contains head cleaner, cotton swabs, and cleaning cloth $1.60
30-630. "Blast-off" tape head cleaner, 3-oz. aerosol can $1.95
30-128. Same except in 6-oz aerosol can $2.75
30-124-1. Recording head cleaner, 2-oz bottle $1.00
30-124-2. Recording head lubricant, 2-oz bottle $1.00
30-636. Tape player care kit contains cleaner and head lubricant, two 6" brushes, 10 plastic pouches to protect tape reels, cassettes, or cartridges. $3.25

BSR-ELECTRONICS

FEW-3 Frequency Equalizer
Stereo frequency equalizer provides 12 zones of control for each channel. Has two VU meters, defeat switch, and switch back control for both playback and recording. Distortion 0.007%. $199.95

FEW-2 Frequency Equalizer
Two-channel, five-zone per channel, frequency equalizer. Response: flat setting 5-100,000 Hz ±1 dB; tone control range ±12 dB at 60, 240, 1000, 3500, and 10,000 Hz. IM dist. 0.05% at 2 V output; HD 0.05% at 2 V output (20-20,000 Hz); max. output 9 V $99.95
FEW-4. Similar to FEW-2 but 4-channel version $199.95

BURWEN

DNF 1201 Dynamic Noise Filter
Will work on any 2-channel or matrix encoded source; provides 14 dB noise reduction; does not require pre-encoding. Push-button controls to select proper mode of noise reduction: Phono position for any 33 or 45 record played directly or recorded on FM; Phono 78 is for 78 rpm discs; Tape/FM is for cassette, open-reel, cartridge, or FM broadcasts. Includes sensitivity control. Frequency response (minimum bandwidth) −3 dB at 500 Hz, −10 dB at 1000 Hz, −20 dB at 2500 Hz; (maximum bandwidth) ±0.5 dB max. 10-20,000 Hz. HD 0.2% max. 20-10,000 Hz at 3 V input, sensitivity max.; 0.0 dB gain at 1 kHz, adjustable via rear-panel controls; internal noise 100 μV rms 20-20,000 Hz. Has six phono pin jacks, extra parallel input jacks for connection to tape deck. 11⅜" W × 3¾" H × 8⅞" D. 115 V ±10%, 50-60 Hz (8 W, 230 V version available). $339.95

EQ3200 Frequency Extender/Equalizer
Combines features of graphic equalizer with a set of non-interacting tone controls; three basic control groups: low-frequency range extender with five pairs of peaking controls; high-frequency range extender with five pairs of peaking controls; program equalizer with five pairs of independent equalizers for tilting frequency response; boost or attenuation up to 45 dB at 16 Hz and 24 kHz; slide pots with 0.1 dB resolution; 18 dB/octave 35-Hz high-pass filter reduces turntable rumble; overall dynamic range is 110 dB at flat setting; metal case with solid walnut side panels. 18.7" W × 5.6" H × 11.1" D. Rack mount version available. $1095.00

B.X. & L.

"Amp-Lay-Switch"
Amplifier delay switch with adjustable delay from 0 second to 2 hours; can serve as master switch for entire component system. . . $79.95

C/M LABORATORIES

601 Electronic Crossover
127 switch-selected crossover points from 100 Hz to 12,700 Hz; response from selected cutoff to 50,000 Hz ±0.5 dB; 6 dB/octave crossover; has left & right channel outputs; THD 0.5% at rated output; IM 0.5% at 2 V equiv. single frequency amplitude; over-all gain 0 dB, ±1 dB max; individual level controls for high- & low-pass amps. 2½" H × 11⅝" W × 5¼" D. $158.00

CROWN INTERNATIONAL

OC-150 Stereo Output Control Center
Designed to increase system flexibility in sophisticated audio installations. Provides output monitoring capabilities supplied by two 3½" meters; speaker switching for three sets of speakers; two variable-pad headphone jacks. Meters can be used in either of two measuring modes in any of five full-scale ranges; full-scale voltage sensitivity of meter is variable from 1.4 volts to 140 volts. Will monitor three separate amplifier outputs, including main system amplifier output. Two front-panel jacks are available with three levels of attenuation; one position feeds jack directly from amplifier output; other two positions provide different degrees of attenuation for more sensitive headphones. 5¼" × 17" × 8⅛". $349.00
5R cabinet $45.00

VFX-2 Crossover/Filter
Dual-channel unit can perform either crossover or bandpass functions. Two filters per channel, each continuously variable from 20 to 20,000 Hz. Filter rolloff is at a fixed 18 dB/octave. Response 20-20,000 (IHF load) ±0.1 dB; 2-58,000 Hz (IHF load) typically ±0.2 dB; 18-38,000 Hz (600 ohm load) ±0.5 dB. Gain 15.5 dB max. from balanced/unbalanced input; hum & noise 113 dB below rated output from shorted unity gain input 20-20,000 Hz; IM dist. less than 0.01% at rated output; has separate 18-dB Butterworth high-pass and low-pass filters with adjustable corner frequencies All aluminum black and clear brushed anodized chassis. 19" standard rack mount × 3½" H × 5¾" D $299.00

dbx

117 Dynamic Range Enhancer
A compressor/expander that permits listener to restore up to 20 dB of the dynamic range missing from records, tapes, or FM broadcasts. As a classical compressor/expander, allows the recordist to make full dynamic range tapes on moderately priced recorders and obtain 20 dB or more improvement (S + N)/N. $175.00
119. Same features as 117, plus peak limiting/unlimiting above user-selected threshold; LED indicator light $198.00

120 Series Noise Reduction Systems
Provides 30 dB noise reduction and 10 dB additional headroom when recording with open-reel, cartridge, or cassette recorders; eliminates tape hiss and noise in live recording; prevents additional noise build-up in tape duplicating or recording off-the-air; also decodes dbx encoded discs.
Model 122. Two-channel switchable record or play. $259.00
Model 124. Four-channel switchable record or play. $379.00

150 Series Noise Reduction Systems
Allows recordists to make noise-reduced tapes to studio standards on better-grade audiophile recorders. Fully compatible with company's studio professional models but with single-ended inputs/outputs and RCA-type phono connectors to facilitate connections to audiophile recorders, amplifiers, etc. Provides 30 dB noise reduction with 10 dB more headroom. Extruded aluminum and solid walnut cabinet. 3½" H × 9" W × 10½" D.
Model 157. Two-channel simultaneous record and play. $600.00
Model 152. Two-channel switchable record or play. $475.00
Model 154. Four-channel switchable record or play (may also be used as two-channel simultaneous record and play). $750.00

DCE

Model 30 Nine-Band Stereo Equalizer
Active program equalizer with switchable inflection points for variable Q. 19" W × 5¼" H × 12" D $799.00
Genuine walnut-veneer cabinet $50.00

DISCWASHER

dII Record Cleaning System
System comprises a two-part kit containing special fluid and soft-pile fiber brush. Removes micro-dust, fingerprints, and cigarette smoke. Also eliminates destructive biological growth. Leaves no residue. Complete kit $15.00
Replacement fluid $2.25

"discorganizer"
Solid walnut organizer which will house the record-cleaning system and provides space for reserve spindles, stylus guards, cartridges, and other phono accessories $5.95

"Turntable Foundation"
Cultured marble base with critically engineered damping feet to reduce bass feedback from high-quality speakers; has two apertures which puts a marble barrier between preamp cords and power line connections to eliminate 60-Hz hum; reduces skipping from floor vibration. 17" × 22" $40.00

D-Stat Mat
Very thin active-carbon turntable mat which polarizes record surface to reduce static during playback. $9.95

SC-1 Stylus Cleaner

Stylus cleaning brush of calculated density nylon; won't snag cantilevers; silvered mirror magnifies stylus and cartridge for examination; cleaning & magnifying system retracts into walnut handle. $6.00

DYMEK

DA3 BCB Directional Antenna
Shielded ferrite-rod directional AM broadcast-band antenna; can be used with any AM tuner or receiver with or without internal antenna; table-top mounting; provides gain and tuning through improved tuner/receiver sensitivity; rotatable and tilting ferrite-rod head; base contains r.f. tuned circuits and solid-state preamp.; frequency range 540-1605 kHz medium-wave band. 13.375" W × 11" H × 9.062" D; ferrite head 13.625" W × 2.75" H × 3.0" D; ferrite rod length 12"; head tilt range 53 degrees; rotational range 270 degrees. $155.00
DA4. Same except frequency range 150-300 kHz long-wave plus 540-1605 kHz medium-wave bands. $175.00

EDITALL

KP-2 Editing Kit
Complete kit includes splicing block, 30 splicing tapes, demagnetized razor blade, and grease pencil for 1/4" audio tape $4.50

KS-2 Editing Kit
For 1/4" tape, includes a 4" × 3/4" × 1 1/4" block, marking pencil, roll of splicing tape, and cutting blade $11.50

KS-3 Editing Kit
Same as KS-2 except includes larger block (5 3/4" × 1" × 3/8") $13.50

ELECTROMEDIA DESIGN

Control One Switch
Signal-activated control center for hi-fi component systems; shuts down system ten minutes after signal is lost; less than ten minutes and time-constant is automatically reset; front-panel "on" switch turns system on again; "off" switch can shut-off entire system; switching relay contact rating 550 W; can handle 1000 W systems. Matte black and walnut enclosure with satin aluminum panel. 12 3/4" W × 2 1/2" H × 4" D. $49.95

FERROGRAPH

RTS-2 Recorder Test Set
Will test wow & flutter, frequency response, (S + N)/N ratio, gain, distortion, crosstalk, erasure, input sensitivity, output power, and drift. Input required 35 mV to 5 V. Has output for oscilloscope. 17 3/8" × 10" × 5 5/8" H $1300.00

FIDELITONE

Fidelistat #3044
Plush record cleaner designed to reduce static and remove grit from records. $3.99

Disc Jockey #3045
Attaches to turntable; soft bristle brush removes dust; plush pad sweeps away dust; supplied with anti-static fluid. $5.99
#3050. Replacement fluid $1.49

Stylus Cleaner #3040
Special cleaning fluid which is applied to stylus with brush. $1.99

Fidelicare Kit #3051
Contains Fidelistat and stylus cleaner .. $5.99

Intensive Care Kit #3052
Contains Fidelistat, anti-static fluid, Disc Jockey, and stylus cleaner. $10.99

FINCO

FM-5 Antenna
Ten-element, deluxe gold Corodized antenna. Has twin drive elements and maximum gain over full FM band $49.30

FM-3 Antenna
Four-element broadband FM yagi. Features narrow directivity pattern. Aluminum construction, gold Corodized $22.25

FM-4G Antenna
Twin-drive FM antenna with impedance-control "T" match stubs. Six elements, wideband (88-108 MHz) yagi. Aluminum construction, gold Corodized $33.75

FMT Antenna
All-directional FM antenna kit with two folded dipoles at right angles with quarter-wave phasing stub for 360-degree pickup pattern without rotor. Gold Corodized $15.55

FM Stereo "S" Antenna
All-directional "S" type design. High gain. Gold Corodized $8.00

75-Ohm FM Antennas
75-ohm versions of the Models FM-5 and FM-4G. To be used with coax-cable transmission lines in difficult, high-interference areas. Furnished with indoor matching balun transformer to balance 75-ohm coax to 300-ohm input of set.
CX-FM-5 ..... $57.10
CX-FM-4G $41.60

HEATH

AD-1013 Audio-Scope
Audio oscilloscope capable of monitoring such parameters as channel separation, phasing, relative signal strengths, multi-path reception, and center tuning on all 2- and 4-channel stereo systems. Inputs for left-front, left-back, right-front, right-back, and multi-path, independently switchable or in any combination; front-panel input provided for observing any external source (permitting use as conventional scope); lighted function indicators; built-in 20-20,000 Hz audio oscillator; front-panel controls for selecting frequency of audio oscillator and controlling amplitude of generated signals. 5 1/8" H × 18 1/2" W × 13 1/2" D. Kit, less cabinet $209.95
ARA-1500-1. Walnut-stained veneer cabinet $24.95

IAD

Dynamic Volume Expander
Designed to be connected between preamp output and power amp input; compatible with vacuum-tube and solid-state equipment; frequency response 5-100,000 Hz ±0.3 dB; insertion gain 0 dB without expansion; expansion factor: controllable 0 dB to +15 dB; hum & noise and crosstalk 86 dB below rated output; THD 0.01% at rated output (100-10,000 Hz), any level up to rated output 0.05% and 0.005% for any level below 1 V rms (20-30,000 Hz); channel balance within 1 dB; input imp. 47,000 ohms; output imp. 600 ohms; 3 3/4" H × 12" W × 5 1/4" D. $279.00

JFD

FM Stereo Antennas
Log periodic antennas designed specifically for FM/FM stereo; features full-wavelength cap-electronic dipole design; high gain and S/N; extra-high front-to-back ratio; pinpoint directivity (10 to 25 degrees narrower than yagi); low v.s.w.r.; 300-ohm impedance match (convertible to 75 ohms by means of Color

12 Accessories

Shield-82 coaxial cable and 300 ohm/75 ohm matching transformer); gold alodized aircraft aluminum construction.
LPL-FM-10. Ten cell system for far fringe reception. Gain 9.9 dB ±0.6 dB/half wavelength dipole; "E" plane half-power beamwidth 43 degrees; v.s.w.r. median 1.5: 1; front-to-back ratio median 26 dB; turning radius 97". 116" long × 112" W $62.16
LPL-FM8A. Eight cell system for fringe reception. Gain 8.7 dB; half-power bandwidth 46 degrees; v.s.w.r. median 1.8:1, front-to-back ratio median 20 dB; turning radius 84". 121" long × 112" W $50.40
LPL-FM6A. Six cell system for near fringe reception. Gain 8.3 dB; half-power beamwidth 48 degrees; v.s.w.r. median 1.5:1, front-to-back ratio median 18 dB; turning radius 72". 98" long × 112" W $37.30
LPL-FM4A. Four cell system for suburban/local reception. Gain 6.5 dB; half-power beamwidth 49 degrees; v.s.w.r. median. 1.6:1; front-to-back ratio median 16.6 dB; turning radius 63". 63" long × 112" W $24.85

JVC

SEA-10 Sound Effects Amplifier
Five-zone sound-effects amplifier/equalizer circuit, switchable to 40, 60, 250, 1000, 5000, 10,000 and 15,000 Hz. Permits sound equalization during recording as well as playback. 5¼" × 7½" × 10" D. $129.95

NR-1020 ANRS Noise-Reduction Unit
Automatic noise-reduction unit for use with reel-to-reel, cassette, and cartridge tape decks. Improves (S + N)/N by 5 dB at 1000 Hz and 10 dB at 10,000 Hz. Includes built-in 400-Hz oscillator, two meters, two recording-level and two playback-level controls, reel-to-reel and cassette calibration tapes. 3⅜" × 13⅛" × 7½"D $149.95

KIRSCH

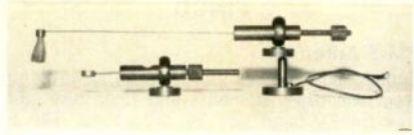
SH-595 Stereo Shelf Unit
Pre-finished shelf unit which can be assembled without tools or glue; will house turntable,

amplifier, speakers, and records; wood-grained walnut vinyl laminate finish. 63" W × 29" H $129.00

Vertical Stereo Shelf Unit
Includes one full and six end shelves, 18 12" spindles, 2 spacers, 6 finials, and 6 feet to permit assembly to meet equipment requirements. 63" W × 46" H $159.00

KMAL

Record Sweeper
Brush assembly with adjustable counterweight control over tracking force; needle-bearing pivot for low friction; squirrel hair brush; all



metal construction; grounding wire to remove static charges; adjustable height; adjustable eccentric platform. $18.95
Sweeper/Stylus Balance. Same as standard sweeper but with fluid level built into barrel of arm and counterweight inscribed with calibration marks; short shaft with small metal platform converts unit into accurate stylus balance. $28.95

Turntable Leveling Kit
Kit consisting of leveling feet and bubble level. $9.95

LAMB

PML422 Mixer
Four-channel input; stereo or mono output with provision for 4-ch output upon interconnection of a second unit; individual faders for each channel; separate high-, medium-, and low-frequency equalization; two-channel & four-channel; pan pots & echo send controls; group faders for each output channel; limiters with adjustable threshold and release; two VU meters monitor output; Cannon XLR input termination; jack sockets at outputs. $675.00

MAGNESONICS

Erase-Sure Tape Eraser
Will erase a cassette or 8-track cartridge to –65 dB from 0 reference. Battery operated (four "AA" cells, included). 4" × 3½" × 2¾". . $19.95

Speedy-Winder
Will rewind a C-60 cassette in 30 seconds. Battery operated (four "AA" cells, included). 4" × 3½" × 2¾". $19.95

METROSOUND

M3 Metrocare Kit #1
Combines dust-removing sponge applicator and spirit-based anti-static applicator; brush can be used to clean stylus. $3.98

M4 Klenzatape Kit
For use with open-reel tape recorders; consists of non-abrasive band and fluid cleaning agent; removes normal residue and dirt. $5.49

M11 Stylus Cleaning Kit
Combines a non-residue-producing fluid and finely cut brush. $3.19

M24 Lubricating Kit
For use with all transcription and automatic turntables; consists of two different grades of oil as well as fine silicone grease. $3.49

M26 Ioniser Mark II
Consists of plush cleaner to remove dust and dirt particles; permanent anti-static agent and ioniser fluid. $4.79

M39 Head & Capstan Cleaner
Consists of non-abrasive cartridge and cleaning fluid applied before cartridge is inserted in machine. $6.19

M43 Super Groovemaster
Device rests on weighted, height adjustable stand; counterbalanced cleaning arm; roller/brush with roller before the brush; no fluids required. $9.89

M45 Discmaster
Consists of arm-like hollow tube with 45-degree offset cleaning head; fluid; capillary sponge; a modified Super Groovemaster arm; plus small brush for cleaning system components. $21.98

M52 Metrocare Kit #2
Contains small version of Ioniser, anti-static fluid, stylus brush. $5.49
M53 Kit #3. Same as M52 except has full-size Ioniser and stylus cleaning kit. $8.49
M54 Kit #4. Same as M52 except includes Super Groovemaster, Ioniser, and stylus cleaning kit. $17.98

M55 Autochange Groovemaster
Similar to Super Groovemaster but for automatic turntables; attaches to tonearm with adhesive shoe; brush/shoe assembly add 1½ gr of weight. $4.98

MURA

A-10 Stereo Volume Control
Stereo/mono switch enables headset to be used with radio, TV, electronic organ, or other mono program sources. Features electronic slide controls and 15-ft extension cord. $7.50

NAKAMICHI

Head Demagnetizer
Slim-line, easy-to-use recorder head demagnetizer, specially designed for the company's Models 1000 and 700 cassette decks .. $15.80

NORTRONICS

5600 Quadrasonic Record/Play Heads
Four-track, four-channel, laminated core heads with all-metal hyperbolic face construction. #5601. Special record-only head, low imp., 50 mH, 500 μin gap spacer. For use with vacuum-tube or transistor circuits. No-mount type $109.95
#5602. Low imp., 90 mH, 100 μin gap spacer. For use with vacuum-tube or transistor circuits. No-mount type. $109.95
#5603. Medium imp., 370 mH. 100 μin gap spacer. For use with vacuum-tube or transistor circuits. No-mount type. $109.95

Replacement Tape Heads
Replacement heads are available for 4100 models of recorders. Universal head #5800 for 8-track players; #5130 and#5230 for cassette recorders.
8-Track $12.00
2-track mono cassette $21.60
4-track stereo cassette $20.60
The company has prepared a 31-page "Recorder Care Manual" which is available without charge from local Nortronics distributors.

NUCLEAR

3C500 Staticmaster
Soft-hair retractable brush with extra-strength polonium element. Designed to neutralize static and remove dust from records $14.95
Replacement cartridge $9.95

PANASONIC

RP-966P Outboard Dolby Unit
Has built-in oscillator for proper recording level adj., Dolby level meter for proper Dolby level adjustment, recording level control for matching program source levels to tape deck levels, and Dolby for FM broadcasts in both playback and record $69.95

PICKERING

PST-1 Stylus Timer
Measures actual stylus wear-time from 0 to 1000 hours in increments of 100 hours. Features mercury coulometer, powered by standard mercury battery, as indicator; easily resettable after 1000 hours. Mounts on turntable

under tonearm. 2⅞" long × 1" W × 1" H. Comes with mercury battery $13.95

PIONEER

SR-202W Reverberation Amp

Double-scatter system blends direct signals from source with reverb effect. Reverb time 0-2.5 seconds at 1 kHz. HD less than 0.2% at 1 kHz reverb time. Minimum output level 330 mV. Response 20-35,000 Hz ±2 dB (min. reverb time) and 20-50,000 Hz ±10 dB (max. reverb time). (S + N)/N 65 dB at 330 mV output. Universal power supply $139.95

SD-1100 Stereo Display

Designed for measurement and scoping of all audio components and stereo characteristics. Will show any waveform and measure voltage level and phase shift. Has built-in audio oscillator 20-20,000 Hz with automatic or manual sweep. Can also be used for 4-channel analysis. With universal power supply..... $599.95

MA-62 6-Channel Mixing Amp

Has input facilities for up to six mikes; each channel has alternative terminal for line or phono inputs; two channels equipped with pan pots; four with location switches; mike attenuators for each channel; low-cut filters for mike input; portable design; has two stereo output terminals; pointer-index markers for each of the six long-throw faders (plus master volume faders). 15¾" W × 5 5/16" H × 10⅜" D... $249.95

SF-850 Electronic Crossover

Provides ten crossover points (125, 250, 500, 700, 1000—low/mid; 1000, 2000, 4000, 6000, and 8000—mid/high); three-position slope selection (6 dB, 12 dB, 18 dB/octave); three channels (low, mid, high); input imp. 100,000 ohms (1 kHz), output imp. 1000 ohms; HD 0.3%; insertion loss −2 dB; S/N 85 dB; independent level controls for low, mid, high. 13¾" W × 15½" H × 21⅞" D..... $199.95

ROBINS

Cassette Head Demagnetizer

Removes excessive magnetic build-up. Designed to be used every 15-20 hours of player/recorder use. 110 V, 50-60 Hz operation. #36002 ..... $10.00

Test/Clean Cassette

Performs three functions to help maintain optimum recorder/player performance: cleans heads, tests for correct head alignment, and tests stereo balance equalization between channels. #THC-6 ..... $2.95

Bulk Tape Eraser

Erases cassettes, cartridges, open-reel, and magnetic-striped film; has momentary contact switch; reduces background noise levels below normal erase-head levels; 110-120 V a.c. #R24017..... $26.00

Head Demagnetizer

Reduces residual magnetism which causes noise build-up; interchangeable tips accommodate all open-reel, cassette, and cartridge equipment; built-in switch; 110-120 V a.c. #R25011 ..... $15.00

Economy Model. Features plastic-shielded probe. #R25008..... $7.50

Cassette Maintenance Kit

Demagnetizes tape heads of home and auto cassette players/recorders; employs rotary magnet; includes non-abrasive head-cleaning tape; designed to be used after every 15-20 hours of player/recorder use; cordless..... #R36008 ..... $6.50

Disc Cleaner

Stops static and removes dust & grime; soft velvet-cushioned cylinder; comes with storage tube & cleaning brush. #R41195..... $3.25

Mark IV Record Ionizer

Eliminates static and removes dust; soft velvet pad, permanent anti-static agent; comes with dust cover. #R41055..... $6.25

Professional Groovemaster

Automatically removes dirt and dust from record grooves; velvet cylinder, tapered bristle nylon brush, finger-lift for raising and lowering arm to turntable; can be used with anti-static fluid if desired. #R41035..... $13.00

RPM

"The Whisker" Record Cleaner

Electro-mechanical record cleaning system; consists of wood-grained plastic base, cushioned pedestal for mounting record, anti-static/anti-bacterial cleaning solution, power-driven cleaning head with spring-mounted camel's hair brush; 115-volt shaded-pole motor drives cleaning head around record; removes dust, grit, paper particles, ashes, grease, body oil, moisture in two revolutions..... $50.00

RUSSOUND

QT-1 Audio Control Center/Patchbay

Allows multi-component stereo or 4-channel systems to be permanently connected by audio cables with switching and patching functions handled by front-panel switches and use of 16 patchcords; permits interconnection of up to four recorders, noise-reduction units, graphic equalizers, matrix or CD-4 decoders for straight listening, recording off air, copying, editing, dubbing, original recording sessions, etc. Walnut-finished cabinet. 14" W × 4¾" H × 5" D.... ..... $249.50

TMS-1W Tape Recorder Selector

Allows up to three tape recorders or other signal sources to be interfaced through the tape input/output of a single receiver or amplifier. Record or play any or all, at the same time, in any combination. Use for tape duplicating, editing, mixing, program production. Also interconnects graphic equalizers, Dolby and dbx devices, sound-effects generators, echo chambers, delay lines, and synthesizers. Walnut cabinet..... $34.95

TMS-1. Same but in utility steel cabinet. $29.95

MP-2 Speaker/Amplifier Control Center

Feeds either of two amplifiers to up to four sets of stereo speakers without overloading amplifier output stage. Separate constant-impedance L-pad for each set of speakers. Uses any combination of 8 or 16 ohm speakers and handles the output of any component amplifier designed for the home. Walnut cabinet. $69.95

SWB-2W Speaker/Amp Selector Switch

Permits either of two amplifiers to drive any one, two, or three sets of stereo speakers of 8 or 16 ohms impedance without overloading output. Can be used to connect multiple speaker systems to amps having only one set of speaker terminals. Maintains proper load imp. on amplifier irrespective of number of speakers or their impedance. Can also be used for making A-B tests of any two amps or speaker systems. Walnut cabinet $25.95

SWB-2. Same but in utility steel cabinet. $14.95

SAE

Mark XXVIIB Half-Octave Equalizer

Dual-control active equalizer for altering frequency response of a stereo sound system; has 40 frequency level controls, 40 toroidal bandpass filters; level control range of ±16 or ±8 dB; zero dB center detent position; EQ defeat switch; tape monitor switch; frequency response 20-20,000 Hz ±0.25%, 3 dB down to 600,000 Hz; HD 0.02% at rated output 2.5 V rms (20-20,000 Hz); IM 60 & 7000 Hz 4/1; 60 & 12,000 Hz 4/1; 60 & 2000 Hz 4/1 less than 0.02%; S/N 90 dB; max. output 14 V into high imp.; input imp. 10,000 ohms; equalizer control range 20, 40, 60, 80, 120, 160, 240, 320, 480, 640, 960, 1280, 1800, 2500, 3700, 5000, 7500, 10,000, 15,000, and 20,000 Hz plus pink-noise generator for proper room equalization. 17" W × 7" D × 8¾" H... $550.00

SHURE

SA-1 "Solo-Phone"

Stereo amplifier for headphones. Permits two sets of phones to be used simultaneously. Has balance control, dual input for tape/tuner or phono. Inputs: phono 47,000 ohms equalized for magnetic cartridge, tuner 250,000 ohms. Output 8 ohms, 100 mV. 10¼" × 3½" × 3⅞" D $33.33

Model SA-1F. Same as SA-1 except panel-mounting version..... $39.33

M68 Microphone Mixer

Five channels. A transistorized portable mixer for p.a. and tape recorders. Has four mike inputs for high- or low-impedance microphones, one high-level auxiliary input for tape, tuner & accessories, individual volume control to balance each of five inputs, and a master volume control to simultaneously control level of all inputs. Has high-impedance mike and auxiliary outputs. 105-130 V, 50/60 Hz $93.60

M67 Microphone Mixer

Four low-impedance balanced mike inputs & one line input. Has built-in tone oscillator for calibration. Response 20-20,000 Hz ±2 dB. Has automatic switchover to battery if power fails. Gain 90 dB max. (150-ohm mike into 600-ohm line). Battery power supply $25.00 extra. 11⅜" × 7½" × 2½" $181.20

SONY from SUPERSCOPE

MX-14 Stereo/Mono Mixer

Active six-channel mixer for mixing down six channels of input into two of output. Operates on 8 "C" cells. Straight-line volume controls for each input. Has reference tabs and two VU meters..... $249.95

NR-115 Dolby Adapter

Designed to be used with any two- or three-head open reel, cassette, or 8-track cartridge tape recorder. Has line-input facility; built-in 400-Hz oscillator for input/output balancing; record/playback mode switch; illuminated meter with right/left channel switching; two playback semi-fixed controls; and two input level controls. $129.95

NR-335 Dual-Process Dolby Adapter

Specifically designed for three-head machines. Permits simultaneous operation in both record and playback modes. Features built-in headphone jack; two mike input jacks; two professional VU meters; a two-position mike attenuator switch; tape/source monitor switch. Has built-in 19-kHz filter switch; two playback volume controls, two record-level controls; built-in 400-Hz oscillator for input/output balancing $299.95

SOUNDCRAFTSMEN

RP2212 Record/Playback Equalizer

Stereo audio frequency equalizer using four LED's to provide front-panel display for balancing input-to-output signal ratios; plugs into any receiver or preamp with tape monitor inputs and outputs; includes tape monitor inputs and outputs with push-button selection for tape monitor, equalized or unequalized output for speakers/room equalization, or equalized tape recording separate outputs for tape recorder and amplifier hookup; features two separate ten-octave equalization panels with plus or minus 12 dB boost & cut; separate equalized signal zero-gain controls. Walnut vinyl case. $349.50

ADVERTISERS INDEX

12 Accessories

PE2217 Preamp-Equalizer

Provides continuous visual monitoring of input-to-output balance as well as overload warning using LED's; discrete ten-octave equalizers for each channel; push-button patching for control flexibility with interlocked push-buttons to prevent inadvertent program destruction; has 39 separate front-panel control functions permitting simultaneous tape-dubbing into two recorders with output equalized or unequalized while monitoring either input or output; full-spectrum gain controls for each channel; automatic equalizer-defeat when line or tape equalization is not in use; six a.c. outlets; dual outputs for scope, bi-amp, 4-ch hookup, or other special applications; response 5-100,000 Hz ±0.25 dB; THD & IM 0.01%. Walnut grained cabinet. 7¼" × 20" × 11¼" $499.50

20-12A Audio Frequency Equalizer

Frequency response 20-20,480 Hz ±½ dB at zero setting; has toroidal and ferrite-core inductors (10 octave-bands per channel); IM & THD 0.1% at 2 V; S/N 90 dB at 2 V input; input imp.: operable from any source 100,000 ohms or less; output imp.: operable into 3000 ohms or more; range: 12 dB boost & 12 dB cut each octave; zero-gain controls for left & right channels provide continuously variable 18 dB range for unity gain compensation from −12 dB to +6 dB; walnut-grained wood case. 7¼" × 20" × 11¾" D. $299.50

SWITCHCRAFT

621P1 FM Compensator

Designed to be used with system which includes tape recorder with built-in or outboard Dolby-B noise-reduction circuitry, receiver, amplifier, or tuner; permits listening to decoded Dolby FM broadcasts with separate Dolby B noise-reduction unit or recording Dolby FM broadcasts in B-type encoded form; has 75 μsec & 25 μsec switch positions; glossy black enamel finish. 2" × 2" × 1" $12.95

622P1. Connects in-line for FM stereo listening/taping of Dolbyized programs in a system with separate Dolby-B noise-reduction unit; two-channel capability for both FM and tape inputs. 3" × 2" W × 1" H $25.00

"Mini-Mix" Mike Mixer

Has two high-impedance inputs each with own level control; single output available with variety of connectors. 2" × 1¾" × 1" ... $11.15

306P1 Stereo Mike Mixer

Stereo/mono mixer; will handle four sound sources (mikes, electric instruments, etc.); through one amplifier; accepts up to two high-impedance inputs in stereo mode, four high-impedance inputs in mono mode. 2" H × 6 W × 3" D $29.15

306TRP1. Same as 306P1 except has two built-in transistorized amplifiers. $49.15

301P1. Similar to 306P1 except mono; mixes four mono sound sources. $27.15

301TRP1. Same as 301P1 except has one built-in transistorized amplifier. $39.15

308TRP1 Mixer/Preamp

Individual controls for four inputs; master output gain control; mono/stereo and phono equalization switches on back panel; a.c. powered. $190.15

676P1 Listening Station

Compact audio junction box that provides four auxiliary outputs for multiple headphone use; has four 2-conductor phone jacks wired in parallel, two side-panel grommets for multiple wiring. $5.05

The company also carries a comprehensive line of adapters, interconnect cables, and audio accessory kits.

SWTP

EQ-1 Stereo Octave Equalizer

Has nine independent controls/channel; one-octave response per control; provides up to ±12 dB correction; controls for each channel operate independently; designed to be connected between preamp and amplifier or into tape monitor jack of preamp; frequency response 5-50,000 Hz ±1.0 dB; dist. 0.1%; all-metal enclosure with black vinyl-covered top; red-gold finished front panel; operates from 110-120 V, 50-60 Hz. Kit. $99.50

TEAC

AN-180 Outboard Dolby System

Record/playback control center with Dolby noise-reduction system. Recording section contains microphone & line preamps plus Dolby recording circuitry. Playback section has playback line preamps & Dolby playback circuitry. Can be used with any good tape deck. Has separate input level controls for mike and line inputs for each stereo channel, two VU meters, internal test-tone oscillator, Dolby level standard tapes, source/tape monitor switch. A multiplex filter prevents recording interference from pilot tone frequencies or unsuppressed multiplex carrier by the FM tuner $329.50

AN-80 Outboard Dolby System

Less elaborate version of AN-180. Input mixing feature omitted and only one Dolby circuit per channel. Circuit operates for recording, then playback, but not together. Increased (S + N)/N 10 dB at 10,000 Hz. $169.50

TRACKER

HC-1 Recorder Care Kit

Contains head-cleaning solution, rubber-renewer solution for restoring rubber drive wheels, a supply of 5-inch cleaning and polishing swabs. $5.95

RC-1 Record Care Kit

Contains 8-oz bottle of record-care solution, RC-1 "Preener," and spray applicator... $7.95

UHER

Stereo Mix 500 Mixing Console

Will handle up to five sound sources simultaneously in mono mode (five mikes or radio, tuner, record player, tape recorder, mikes) or two stereo sound sources and one mono. Each input has separate all-transistor amplifier channel. Has five studio-type slider controls calibrated for accurate cross-fading; built-in level tone generator. Frequency range 20-20,000 Hz; dynamic range 60 dB; output voltage 2 × 30 mV + 2 × 500 mV. Powered by 9-volt battery. $179.95

WATTS, C. E.

Dust Bug Record Cleaner

An easy-mounting record cleaner which tracks over the grooves. Supplied with anti-static agent $7.95

Record Care Equipment

PR Disc Preener $4.95
PA-MK4 Hi-Fi Parastat $16.50
PA-MK11A Manual Parastat $19.95
NF Anti-Static Formula Fluid $3.00

ZEROSTAT

Record-Cleaning System

Total anti-static system which emits millions of (+) ions upon trigger squeeze and equal number of (−) ions on trigger release; never needs element replacement. $29.95

the Classic

KENWOOD 700 Series

KENWOOD introduces three components of unsurpassed sophistication, created in the KENWOOD tradition of engineering excellence. The incomparable 700 Series carries state-of-the-art to a new plateau of performance in man's continuing endeavor to recreate the living sound of music. The 700 Series... a classic in its own time.

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700C–Preamplifier-Control
700M–Power Amplifier

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D'STAT: Audible static reduction turntable mat. Europe's runaway best seller. $10.00.

ZEROSTAT: The ultimate antistatic instrument. Positive and negative ion neutralization for records, film, dust covers or any surface. Nothing to replace. $29.95.

dII FLUID: 16 oz. bottle, the most effective, safest record cleaning fluid known. Recommended for use with SC-1.

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