

Stereo Review's

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14270

STEREO DIRECTORY & BUYING GUIDE 1977

OVER 2000 MODELS * LATEST PRICES * FULL SPECIFICATIONS
COMPLETE FEATURES * PHOTOS * COMPONENT BUYING TIPS

EXTRA!

BEFORE BUYING: HOW TO MATCH STEREO COMPONENTS

AFTER BUYING: SETTING UP YOUR SYSTEM AT HOME





KR-5600



KR-460C



KR-3600



KA-5500



KA-350C



KT-8300



KX-720



KX-620



KD-1033



LS-405



LS-403



KENWOOD

15777 S. Broadway, Gardena, CA 90248 • 72-02 Fifty-first Ave., Woodside, N.Y.



KR-9600



KR-7600



KR-6600



KR-2600



KA-8300



KA-7300



KT-7300



KT-5300



KX-920



KD-2055



KD-3055



LS-406

WE'D LIKE YOU TO PUT DOWN OUR COMPETITION.

This guide is loaded with every claim and spec in the book. So brace yourself for dB's, THD's, wow's, flutters, and soforths.

But, before you dive in, consider this:

Kenwood can take the competition. That right-out-in-front chart over there is our way of proving it. For example, we've listed costs, specs and features of all Kenwood receivers, amplifiers and tuners.

Check out our competition. Then flip back to mark our chart. After awhile, you'll see what we're up to.

Simply said, when you add everything up, Kenwood stands up to competition very, very well.

Weigh watts-per-dollar, low distortion, sensitivity, special advanced features, whatever. Add to that our reputation for rock-solid dependability, good looks, and top value.

Then go to your stereo store and take a listen across the Kenwood line. You'll really see what we're up to.

Just like we can take the competition, we can also face the music.



KENWOOD

RECEIVERS

	Cost*	RMS watts/ch 8 ohms/ 20-20k Hz	Total Harmonic Distortion (%)	Pure Complementary Amplifier Circuit	Signal-to-Noise/ PHONO (dB)	Mid-Frequency Control	Tape-to-Tape Dubbing	MIC Injection Circuit	FM Sensitivity (μV)	Selectivity (dB)	Capture Ratio (dB)	Stereo Separation, 50-10k Hz (dB)	Dolby** 25μ Sec. Sw.
KR-9600	\$749	160	0.08	Yes	75	Yes	Yes	Yes	1.6	85	1.0	37	Yes
KR-7600	\$529	80	0.3	Yes	75	Yes	Yes	Yes	1.7	80	1.5	35	Yes
KR-6600	\$449	60	0.3	Yes	75	Yes	Yes	Yes	1.7	80	1.5	35	Yes
KR-5600	\$359	40	0.5	Yes	70	—	Yes	—	1.8	80	1.5	35	Yes
KR-4600	\$299	30	0.5	Yes	70	—	Yes	—	1.8	80	1.5	35	—
KR-3600	\$249	22	0.8	Yes	70	—	—	—	2.3	60	2.0	35	—
KR-2600	\$189	15	0.8	Yes	70	—	—	—	2.5	50	2.5	25	—

AMPLIFIERS

KA-8300	\$449	80	0.1	Yes	72	Yes	Yes	—	/	/	/	/	/
KA-7300	\$329	65	0.1	Yes	76	Yes	Yes	—	/	/	/	/	/
KA-5500	\$249	55	0.1	Yes	76	—	Yes	—	/	/	/	/	/
KA-3500	\$159	40	0.2	Yes	76	—	Yes	—	/	/	/	/	/

TUNERS

KT-8300	\$379	/	/	/	/	/	/	/	1.6	110	1.0	35	Yes
KT-7300	\$259	/	/	/	/	/	/	/	1.8	80	1.0	35	Yes
KT-5300	\$129	/	/	/	/	/	/	/	1.9	60	1.0	30	—

*For informational purposes only

**Dolby is a trademark of Dolby Laboratories, Inc.

**The turntable
nobody had heard of
two years ago is
now Number One.
The most popular
turntable in America.
It's called a
"bee eye cee."
It's built five ways.
And it's imported.
From Michigan.**



Five ways means five models. And all five are belt drive turntables, with low speed (300 rpm) motor, program system, superior tone arm, and excellent performance characteristics. For more information pick up our "5 Turntables" folder at high-fidelity dealers or write to British Industries Co., Westbury, N.Y. 11590.

Model 920 about \$79 - 940 about \$109 - 960 about \$159 - 980 about \$199 - 1000 about \$279. Model 980 shown. ©1976 British Industries Co. A Division of Avnet Inc.

5 Turntables B I C

CIRCLE NO. 14 ON READER SERVICE CARD

Stereo Review's

STEREO DIRECTORY & BUYING GUIDE 1977

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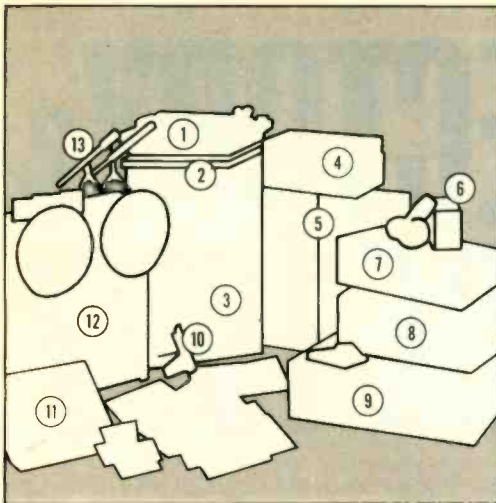
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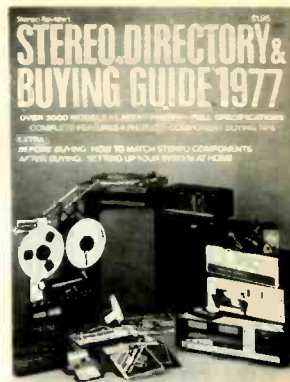
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THE COVER:

1. Dual CS 721 Turntable
 2. Acousti-Mount Turntable Isolation System
 3. Avid Model 103 Speaker
 4. Lux MB-3045 Mono Power Amplifier
 5. Sansui LM 110 Speakers
 6. Stax SRX/SDR Headphones/Power Module
 7. Crown IC-150A Preamplifier
 8. Sony from Superscope Elcaset
 9. JVC JR-S600 AM-FM Stereo Receiver
 10. Zerostat Anti-Static Record Cleaner
 11. Yamaha 800 Cassette Deck
 12. Teac A-2340SX Stereo Tape Deck
 13. Sennheiser Electret Condenser Microphone System
- Tapes from: BASF, Capitol, Maxell, Scotch, TDK
Records from: Columbia, DG, Phillips, RCA, Vox



Cover Photo: Waltern Bebirian
See left for product identification.

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STEREO DIRECTORY & BUYING GUIDE

Free details on a different kind of record club

offering... BACH, BEETHOVEN, BRAHMS, CHICAGO, JOHN DENVER, EARTH-WIND & FIRE, C.W. McCALL, FREDDY FENDER, LINDA RONSTADT, GROVER WASHINGTON JR., DONALD BYRD and every other composer and artist in print

You can now own every record or tape that you may ever want... at tremendous savings and with no continuing purchase obligations. You can get valuable free dividend certificates, you can get quick service and all the 100% iron-clad guarantees you want.

Now you can stop price increases that leave you with less music for your record and tape budget. You can guarantee yourself more music for less money through membership in Discount Music Club.

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DISCOUNTS OF 43% TO 73% off mfg. suggested list... special catalog features hundreds of titles and artists.

ALL LABELS AVAILABLE including most imports through special custom ordering service. If we don't stock it we'll get it for you.

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NEWSLETTERS. Happenings in the world of music; concerts, critiques, new releases... special super-sale discounts of up to 73%.

DISCOUNT ACCESSORY GUIDE. Diamond needles, cloths, tape cleaners, etc. Discount Music Club is your complete one stop music and accessory buying service.

QUICK SERVICE. Same day shipping on many orders... rarely later than the next several days. Partial shipments always made in the event of unforeseen delay... all at no extra cost to you.

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Discount Music Club is a no-obligation membership club that guarantees tremendous discounts on all stereo records and tapes and lets you buy what you want...when you want...or not at all if you choose.

These are just a few of the money-saving reasons to write for free details. You can't lose so why not fill out and mail the coupon for immediate information.

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CIRCLE NO. 23 ON READER SERVICE CARD

Power Plus.

The Scott R336 Receiver.



Power is important. But power alone is not enough. That's why the popular Scott R336 gives you all the power you need. Plus the performance features you expect.

The Scott R336 provides 42 watts minimum continuous RMS power output per channel. More than enough for most listeners. And both channels are driven into 8 ohms from 20 Hz to 20 kHz with no more than 0.3% total harmonic distortion.

Power? Sure. But check these important performance features many other receivers in this medium price range have sacrificed.

IM distortion (lower than 0.15%). Far below the average. Provides cleaner sound and eliminates listening fatigue.

Signal strength and center channel tuning meters. Provide simultaneous visual indication of correct tuning and optimum signal strength. **Phase locked loop multiplex section.** Maintains superior stereo separation. Remains in alignment for the life of the receiver.

FET RF stage. Assures higher sensitivity and overload immunity.

Log-linear taper volume control with detents. Spreads out volume levels. Provides finer control at low-to-moderate levels.

Clutched bass and treble controls with detents.

Allow altering the frequency response of one channel without affecting the other. Systems can be "custom balanced" to compensate for room acoustics, decor or speaker placement.

Separate high-frequency noise filter. Permits cleaning up of noisy tapes, discs or broadcasts.

Three position FM de-emphasis switch. Permits proper reception of domestic, Dolbyized or European broadcasts.

Two completely independent tape monitors. Allow two tape recorders to be used simultaneously for direct tape-to-tape copying without passing through the receiver's electronics. **FM Muting.** Silences interstation hiss while the tuner scans the frequency spectrum.

Pretuned LC notch filters in the multiplex.

Reduce interference to a minimum.

Signal strength meter circuit. Employs two point sampling for wider dynamic range.

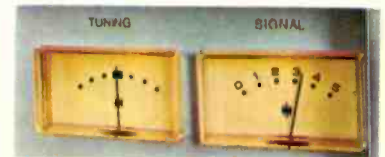
Over 120 db IF gain. Assures better limiting and better AM rejection.

Instantaneous electronic protection circuit in the output stage. Employs voltage/current sensing to prevent output transistor failure and speaker damage.

AM section designed around a tuned RF amplifier using J-FET. Improves signal-to-noise ratio.



Clutched bass and treble controls with detents.



Signal strength and center channel tuning meters.



Two completely independent tape monitors.

And the Scott R336 is backed by a three-year, parts and labor limited warranty. Another very important plus.

For specifications on our complete line of audio components, write or call H.H. Scott, Inc. Corporate Headquarters: 20 Commerce Way, Woburn, MA 01801, (617) 933-8800. In Canada: Paco Electronics, Ltd., 45 Stinson Street, Montreal, H4N2E1, Canada. In Europe: Syma International S.A., 419 avenue Louise, Brussels, Belgium.

 **SCOTT**
The Name to listen to.

Receivers/Tuners/Amplifiers/Turtables/Speakers
CIRCLE NO. 100 ON READER SERVICE CARD

Blueprint for Flat Frequency Response

In the graph below, frequency response was measured using the CBS 100 Test Record, which sweeps from 20-20,000 Hz. The vertical tracking force was set at one gram. Nominal system capacitance was calibrated to be 300 picofarads and the standard 47K ohm resistance was maintained throughout testing. The upper curves represent the frequency response of the right (red) and left (green) channels. The distance between the upper and lower curves represents separation between the channels in decibels. The inset oscilloscope photo exhibits the cartridge's response to a recorded 1000 Hz square wave indicating its resonant and transient response.

Smooth, flat response from 20-20,000 Hz is the most distinct advantage of Empire's new stereo cartridge, the 2000Z.

The extreme accuracy of its reproduction allows you the luxury of fine-tuning your audio system exactly the way you want it. With the 2000Z, you can exaggerate highs, accentuate lows or leave it flat. You can make your own adjustments without being tied to the dips and peaks characteristic of most other cartridges.

For a great many people, this alone is reason for owning the Z. However, we engineered this cartridge to give you more. And it does. Tight channel balance, wide separation, low tracking force and excellent tracking ability combine to give you total performance.

See for yourself in the specifications below, then go to your audio dealer for a demonstration you won't soon forget.

The Empire 2000Z.

Already your system sounds better.

Frequency Response—20 to 20K Hz ± 1 db using CBS 100 test record
Recommended Tracking Force— $\frac{3}{4}$ to $1\frac{1}{4}$ grams
(specification given using 1 gram VTF)

Separation—20 db 20 Hz to 500 Hz
 30 db 500 Hz to 15K Hz
 25 db 15K Hz to 20K Hz

I.M. Distortion—(RCA 12-5-105) less than .08% .2KHz to 20KHz @ 3.54 cm/sec

Stylus—0.2 x 0.7 mil diamond

Effective Tip Mass—0.2 mg.

Compliance—lateral 30×10^{-6} cm/dyne
 vertical 30×10^{-6} cm/dyne

Tracking Ability—0.9 grams for 38 cm per sec @ 1000 Hz
 0.8 grams for 30 cm per sec @ 400 Hz

Channel Balance—within $\frac{1}{2}$ db @ 1 kHz

Tracking Angle—20°

Recommended Load—47 K Ohms

Nominal Total System Capacitance required 300 pF

Output—3mv @ 3.5 cm per sec using CBS 100 test record

D.C. Resistance—1100 Ohms

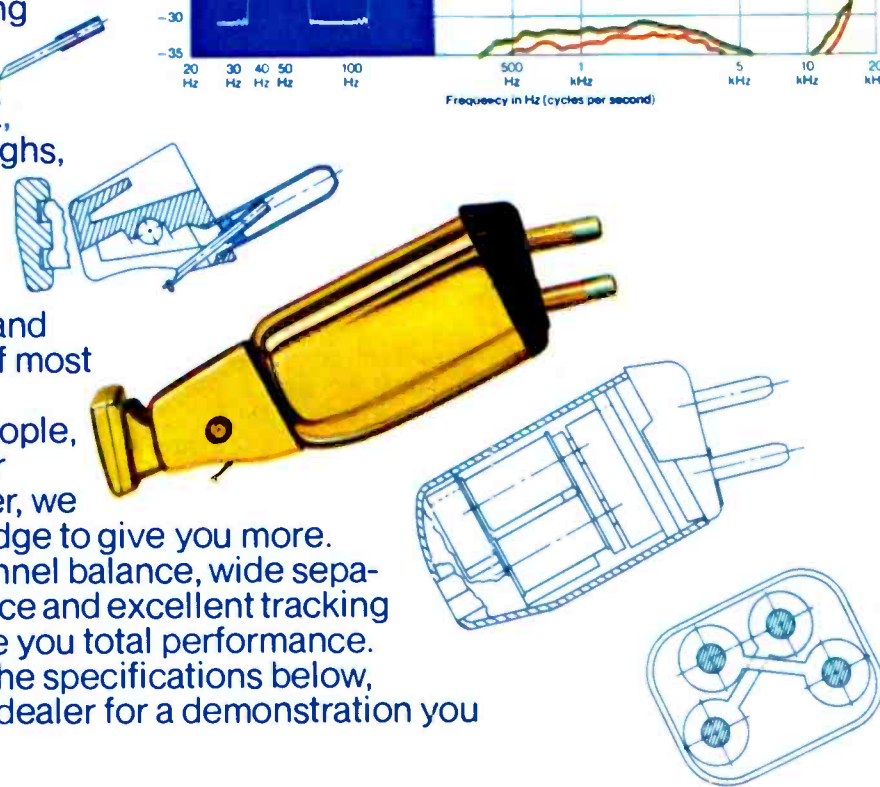
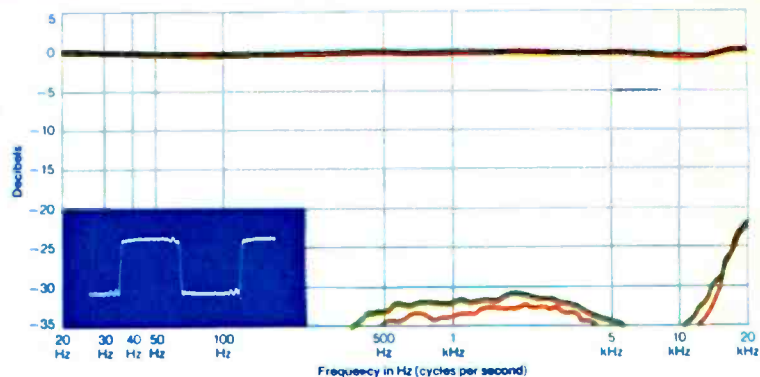
Inductance—675 mH

Number and Type of Poles—16 Laminations in a 4 pole configuration

Number of Coils—4 (1 pair/channel—hum cancelling)

Number of Magnets—3 positioned to eliminate microphonics

Type of Cartridge—Fully shielded, moving iron



Before You Buy

HOW TO MATCH

HI-FI

COMPONENTS

Price tags serve as a good guide to apportioning dollars for each component.

MATCHING hi-fi components of a stereo or four-channel system means that each component chosen must operate compatibly with every other one.

For example, your loudspeakers should be efficient enough to deliver satisfactory sound levels—especially in the low bass region—when driven by the amplifier or receiver of your choice. Yet, they should have sufficient power-handling capacity to avoid damage if driven by too much power.

In another sense, compatibility also means that one component should not have substantially better performance than another component in the system. It would be foolish, for example, to have a \$300 single-play turntable, \$800 receiver, and two speaker systems

at \$500 each and then add a \$19.95 phono cartridge. The latter's electrical/mechanical performance would be well below that of the other components in the system. As a result, one would not get the full performance capability inherent in the better components. Remember that the final reproduced audio will sound only as good as the weakest component link in the system.

One can often ignore electrical and mechanical considerations at the onset of rounding up your choices, however, by viewing compatibility in terms of each component's price tag. Thanks to the competitiveness of manufacturers, the quality of each type of component varies almost directly in relation to its price (although exceptions can always be found to

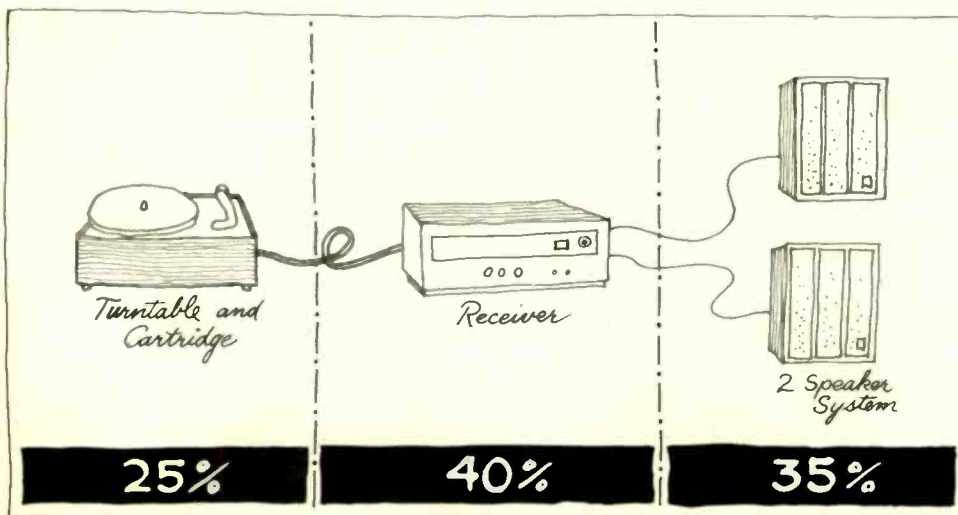


Fig. 1. Apportioning dollars to a stereo receiver/turntable/speaker system.

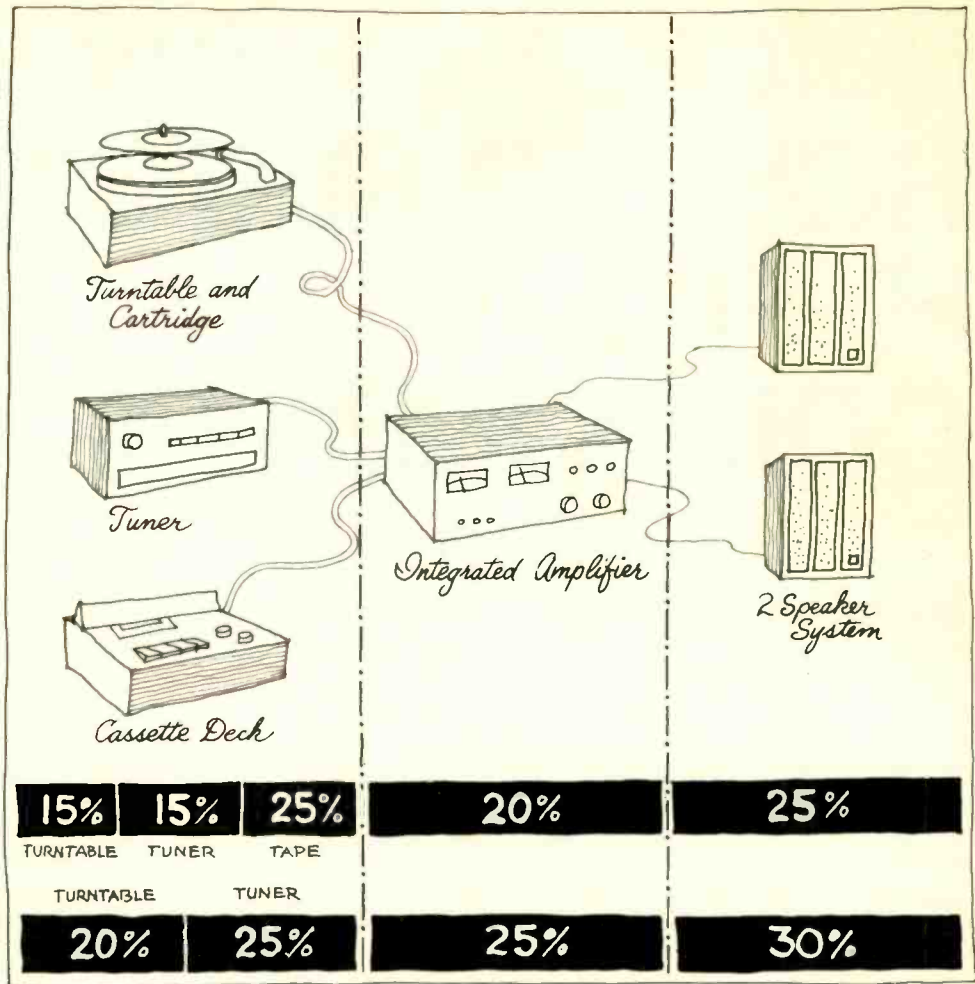


Fig. 2. Apportioning dollars to a component system including tuner and cassette deck.

virtually any generalization).

Most newcomers to component hi-fi (and some experienced audiophiles, too) have little or no idea of how to apportion their dollars to the various components they plan to buy.

Many audio dealers try to simplify this problem by "assembling" pre-selected components into a complete system. Such systems usually bear a single price tag and usually afford significant savings over the price of the individual components added together. There are both advantages and disadvantages in choosing such a dealer-selected system. Certainly, if the dealer is knowledgeable and reputable, you are at least assured that the components which have been put together in this way will work compatibly with each other—and the savings in making a single purchase from one source are often worthwhile. On the other hand, you may have different ideas about which components you think sound better with which other components. Consequently, your dream system may not be represented by any of the pre-selected groupings offered by the dealer.

In addition, it is common practice for some dealers (but not all) to have loudspeaker systems "custom designed" by local manufacturers who are essentially cabinet makers rather than speaker system designers.

Since such speakers are rarely advertised nationally, almost any "suggested retail price" can be assigned to them. In such instances, the "savings" shown in the final system price tag may actually be the result of reducing these speaker prices to more realistic levels. (This practice is not universal, of course.) What we are suggesting is that each component in such systems be analyzed and evaluated for its own merits and performance—for that is the essence of component high-fidelity shopping.

APPORIONING HI-FI DOLLARS

By far the greatest number of high-fidelity stereo component systems consist of an all-in-one receiver, a turntable system (either single-play or multiple-play) and a pair of loudspeaker systems. This basic system is shown in Fig. 1. Below it is a typical cost breakdown in percentages of available dollars. As an example, if you have \$500 to spend on such a basic system, you might consider a turntable (including the phono cartridge, which is usually purchased separately) selling for approximately \$125, a \$200 receiver and two speakers for about \$87.50 each. There are, of course, no hard-and-fast rules; these are simply rough guidelines. In the system shown, any tape equipment would

be considered extra and is not included in the initial percentage breakdown.

Suppose that you decided to include a cassette deck as part of your initial hi-fi investment, and that you prefer to have a separate tuner and an integrated amplifier (preamplifier-amplifier combination) instead of a receiver. Your system might then look something like that shown in Fig. 2, with the percentages spent for each component given below. Since such a system is necessarily more expensive than the simpler, 4-piece arrangement, let's start with a budget of \$1000. You might spend \$150 for a turntable and cartridge,

deck and a stereo cassette unit) your dollars might be apportioned as follows: \$600 for the open-reel deck, \$300 for the cassette deck and a similar amount for the turntable/cartridge combination (you will need a cartridge designed to play CD-4 records this time), \$750 for the 4-channel receiver and \$262.50 for each of the four speakers in the system. If you were to omit the tape decks and had only \$2000 to spend, the lower percentage table in Fig. 3 suggests that you might spend \$800 on the 4-channel receiver, \$200 for each of the four speakers needed, and up to \$400 for the turntable/ cartridge combination.

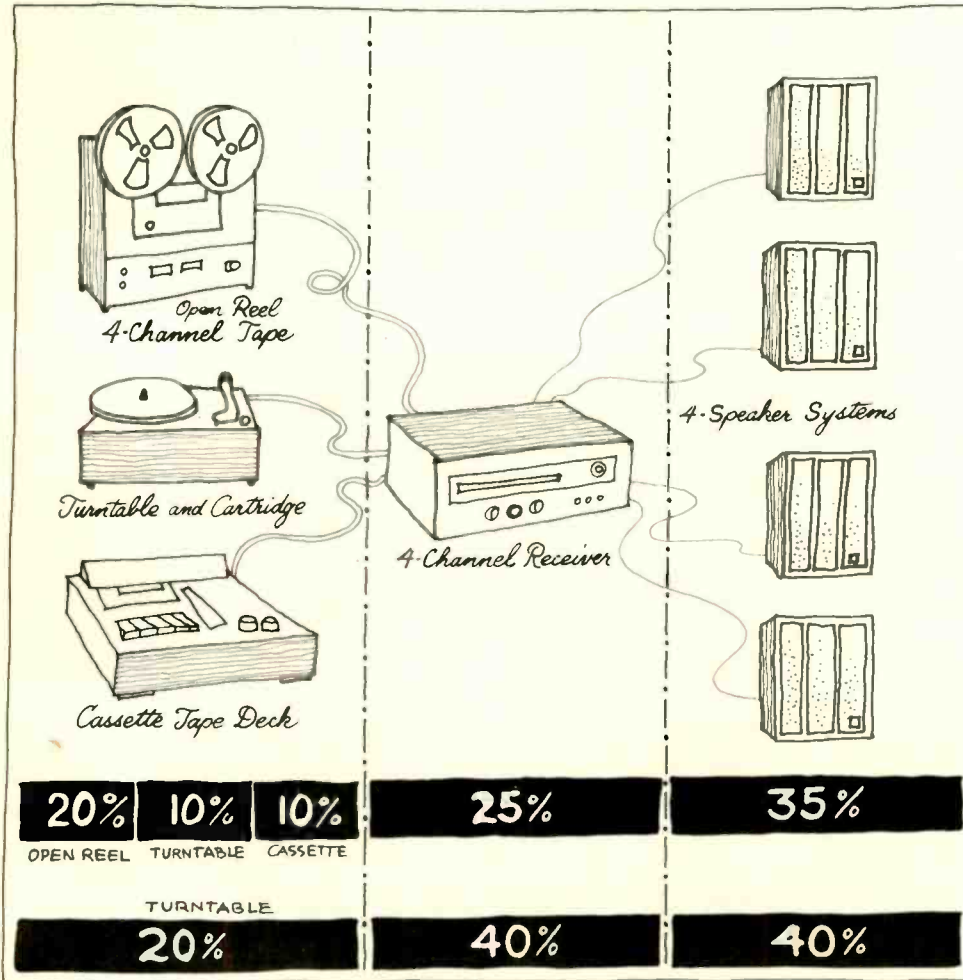


Fig. 3. Apportioning dollars to a four-channel system with open-reel and cassette decks.

\$150 or so for a separate FM/AM tuner, \$250 for a cassette deck with Dolby, \$200 for an integrated amplifier and perhaps \$125 for each of your two speaker systems. If the tape deck is eliminated for the moment, percentages could be reassigned as shown in the lower percentage table.

Quadrasonic systems necessarily cost more than stereo systems of equal quality. In Fig. 3 we have represented a typical quadrasonic system centered around a 4-channel receiver. Again, percentages are shown below for each element of the system. If we assume that you are prepared to spend \$3000 for such a system (note that it includes both an open-reel tape

SPECS TO EXPECT

Each category of component listed in the product directory section that follows is preceded by an informative introductory section which, among other things, explains some of the major specifications which must be considered in purchasing the specific component. Although specifications are certainly not the only criterion involved in making an intelligent choice, they certainly have a bearing on the type of performance you can expect from each component. The specifications which apply to loudspeakers (and, for that matter, headphones) are not easily related to

the kind of sound you can expect to hear. Aside from making certain that the speakers you select are efficient enough to provide adequate sound levels when matched with the electronics of your choice, and also rugged enough to handle maximum input power available, choosing loudspeakers is a wholly subjective exercise. The specifications of other components, such as tuners, amplifiers (or receivers, which combine both tuner and amplifier sections), turntable system, and even tape decks are related to their prices. Table I lists specification ranges that you can expect to find in low-, medium-, and high-priced electronic components, tape decks, and turntable systems. First, let's categorize these components in terms of actual 1976-1977 dollars.

	Low Price	Medium Price	High Price
Tuners	up to \$150	\$150-350	Over \$350
Integrated Amplifiers	up to \$200	\$200-400	Over \$400
Receivers	up to \$250	\$250-500	Over \$500
Turntables			
(Less Cartridge)	up to \$125	\$125-250	Over \$250

Cassette Decks	up to \$200	\$200-400	Over \$400
Open-Reel Tape Decks	up to \$400	\$400-800	Over \$800

Now, keeping these price ranges in mind, refer to Table I for a general idea of the major specifications you can expect to find for components in each of the price categories. Only the major specifications have been listed, and they are by no means the only ones that should be considered. Remember, too, that you are likely to find that some specifications are better than others for a given product in a given price category. Your evaluation process should take these differences into account, along with your own particular needs. For example, what appears to be a superb tuner in its price class may otherwise have less-than-superb selectivity. If you live in an area where there are only a few FM stations on the dial, this may be of little significance to you, whereas greater sensitivity or 50 dB quieting may be more important. Conversely, if you live close-in to strong signals and are surrounded by a great many nearby stations, selectivity could be more important than sensitivity. □

TABLE I. TYPICAL SPECIFICATIONS OF SOME COMPONENTS

	LOW PRICE	MEDIUM PRICE	HIGH PRICE
TUNER (OR TUNER SECTION OF RECEIVER)			
IHF Sensitivity μV (dBf) (mono)	3.0 (14.7) or lower	2.0 (11.2) or lower	1.8 (10.3) or lower
50 dB quieting sensitivity μV (dBf), mono/stereo	10(25.2)/50(39.1)	5(19.2)/40(37.2)	3(14.7)/30(34.7)
S/N (dB); mono; stereo	60/50	68/60	70/65
Selectivity (dB)	50 or more	60 or more	80 or more
Capture Ratio (dB)	3.0 or less	2.0 or less	1.3 or less
THD (%) (1 kHz, mono/stereo)	1.0/1.5 or less	0.5/0.8 or less	0.2/0.3 or less
Stereo Separation (dB, 1 kHz)	30 or more	35 or more	40 or more
AM Suppression	40 or more	50 or more	60 or more
AMPLIFIER (OR RECEIVER AMP SECTION)			
Power Out/Channel (Continuous watts)	10-30	30-100	over 100
Rated THD (at full output) (%)	1.0 or less	0.5 or less	0.2 or less
Rated IM Distortion (%)	1.0 or less	0.5 or less	0.2 or less
Damping factor	10 or more	30 or more	50 or more
Phono Hum (dB below 10 mV input)	60 or more	65 or more	70 or more
Aux Hum (below rated output)	70 or more	75 or more	80 or more
TURNTABLE SYSTEMS			
Wow-and Flutter (% Wrms)	0.15 or less	0.10 or less	0.05 or less
Rumble (dB, per DIN B)	55 or more	60 or more	70 or more
CASSETTE DECKS			
Frequency Response (Hz ± 3 dB)	50-12,000	30-15,000	20-18,000
Wow-and Flutter (% Wrms)	0.2 or less	0.12 or less	0.1 or less
S/N (dB, less Dolby)	45 or more	48 or more	50 or more
OPEN-REEL DECKS			
Highest Speed (ips)	7½	7½	15
Freq. Response at highest speed (Hz ± 3 dB)	40-15,000	30-20,000	20-21,000
S/N	50 or more	55 or more	60 or more
Wow and Flutter	0.15 or less	0.1 or less	0.07 or less

After You Buy

TIPS ON SETTING UP YOUR SYSTEM AT HOME

How to interconnect stereo components fast and correctly.

INTERCONNECTING hi-fi components is an easy, if bothersome, chore. But you shouldn't hesitate to do it yourself. You'll save money, of course, but equally important is the experience you'll acquire which will be useful when you upgrade or add components at a later date.

Happily, setting up a modern hi-fi component system requires no knowledge of electronics, soldering, circuit tracing, or complexities of any sort. The information needed to set up components in a hi-fi system is supplied by each manufacturer. Unfortunately, many people don't read the instructions carefully and, in some instances, the instructions are confusing. Consequently, a lot of time is wasted when connecting one component to another. Even more frustrating are connection errors that cause inferior performance, such as speaker systems out-of-phase.

Here are tips on how to assemble audio components into a working stereo system quickly and correctly once the components are out of the cartons in your home.

THE PHONO CARTRIDGE

Since most phono cartridges are purchased as separate items, your first important task is to properly mount the cartridge in the tonearm of your turntable system. Most modern tonearms on all but the least expensive record players are equipped with removable shells or cartridge holders. Consequently, you don't have to handle the entire tonearm while installing the cartridge. Often, there will be a duplication of hardware (tiny screws, washers, spacers for positioning the cartridge, etc.), since both turntable maker and cartridge manufacturer are likely to supply such items. Choose the hardware that works best with the combination of tonearm and cartridge that you have selected, and don't worry about the leftover parts. They may come in handy if you purchase a second cartridge later, or if you drop one of the tiny screws supplied by either manufacturer. Better cartridges are also supplied with a tiny screwdriver, making assembly easier.

Once you have figured out which hardware to use, always mount the cartridge into the tonearm shell *before* affixing the four delicate wires from the tonearm to terminals on the rear of the cartridge. That way, a slip of your hand or accidental pulls and tugs will not tear off the tiny lugs soldered to those wires. If the cartridge is equipped with a removable stylus assembly (most are), remove the stylus at the outset and set it aside, with stylus tip facing up so that it is not damaged or bent. If the stylus assembly is not removable, but the cartridge comes with a stylus guard (either

L = LEFT = White
R = RIGHT = Red
LG = LEFT GROUND = Blue
RG = RIGHT GROUND = Green

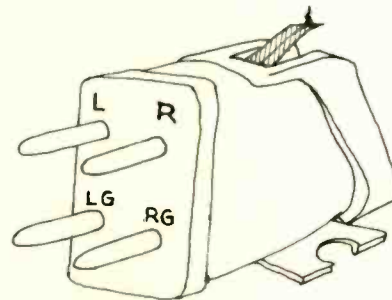


Fig. 1. Standard color-coding of cartridge connecting wires. Position of terminals at rear of cartridge may vary from model to model.

removable or an integral part of the stylus assembly that can be pivoted down to cover the actual stylus tip), make sure the guard is in its protecting position before you handle the cartridge body itself.

The color coding of the four wires leading from the tonearm to the cartridge terminals has been standardized by the industry, but not every cartridge manufacturer color codes the terminals themselves in the same way. Fig. 1 shows a typical cartridge terminal layout at the rear of the cartridge, together with colors used for the "hot" and "ground" wires for left and right channels.

After the cartridge body has been permanently and securely installed in the tonearm shell, use a small pair of long-nose pliers to slide the terminal pins soldered to the ends of those color-coded wires onto the cartridge terminals. If, by chance, one of those tiny pins tears loose from a wire during the process (and it has been known to happen), *never* try to solder the wire back to the pin while the pin is pushed onto the cartridge terminal. Heat from the soldering iron could melt the plastic case of the cartridge and otherwise damage it.

Final positioning of the stylus tip in relation to the tonearm shell should be done in accordance with instructions supplied by the turntable system maker, who often supplies a plastic gauge for this purpose. Misalignment of the stylus tip can result in poor groove tracking and less-than-perfect reproduction of sound when playing records.

Although most record players come equipped with audio shielded cables terminated in familiar phono-tip plugs, the length of those cables may or may not be optimum for the phono cartridge you have chosen. Cartridge manufacturers will usually recommend optimum "load impedances" into which their products work best and deliver most uniform frequency response. The "load impedance" into which a cartridge is connected consists of resistance, measured in ohms or kilohms (thousands of ohms) and capacitance. Most stereo cartridges work best when the resistive component of this impedance is 47,000 ohms or so, while CD-4 (4-channel discrete) cartridges work best into 100,000 ohms of resistance. Since these two values are fairly standard, manufacturers of amplifiers, preamplifier, and receivers generally design the input circuits of their products with these resistance values "built-in." It is a good idea to check the specification (phono input impedance) of the phono section on your amplifier or receiver, however, just to make sure.

Capacitance, on the other hand, is determined largely by the shielded audio wires (plus the internal wiring of the tonearm) supplied with your turntable system. Increasing the length of these wires increases the loading capacitance. Typically, shielded wire adds between 25 and 50 picofarads of capacitance per foot of length. There are some audio cables available, however, that have "low capacitance" characteristics and are especially useful for CD-4 cartridges (which generally require no more than 100 picofarads of loading capacitance for best results). Check the capacitance of cables supplied either by consulting the record player owner's manual or by having your dealer find it out for you. Too much capacitance for a given cartridge can cause attenuation of high (treble) frequencies, while too little loading capacitance can cause pronounced "peaks" in response at specific high frequencies in the audio spectrum. If necessary, substitute audio cables of a different length or capacitance per foot to meet the optimum requirements of the cartridge you have selected.

PHONO INPUT LEVELS

Most magnetic phono cartridges deliver a signal level of around 2 to 3 millivolts when tracking a record-groove signal of average intensity. The majority of amplifiers and receivers are designed so that this level of signal will produce full power output from the amplifier when the volume control is turned fully up. However, records do not contain only "average" signal levels. Loud passages of music, recorded in the grooves of a modern record, can cause the cartridge to deliver signal levels 10, 20 or more times greater than the "nominal" outputs listed in the cartridge specification sheets. It is important, therefore, that the phono input circuits of your amplifier or receiver be able to handle such high signal levels without introducing distortion in early stages of amplification. Amplifier and receiver manufacturers list this specification as "phono overload," and it should be around 100 millivolts or higher for most cartridges. If you have selected a cartridge with higher-than-average nominal output characteristics, even higher overload capability may be required for the phono section of your amplifier or receiver. Some amplifiers offer alternative input sensitivities for cartridges. You should connect the audio cables from your turntable system to those inputs which result in mid-settings of your volume control for loud sound levels if such choice is offered.

The extra green or black wire supplied with most turntable systems should be connected to a convenient "chassis ground" point on your receiver or amplifier. Most amplifiers and receivers provide a special terminal for this purpose. Failure to connect this extra wire to the chassis may result in higher-than-normal hum levels when playing phonograph records through your system. In some instances, reversing the line cord (power cord) of the turntable system can reduce hum levels still further. The best way to check

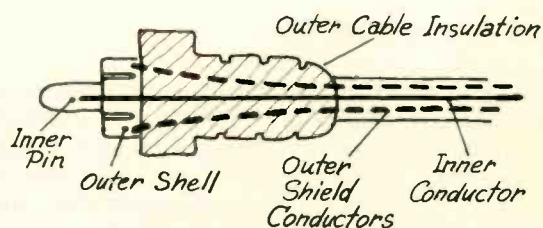


Fig. 2. X-ray view of audio shielded cable and phono-tip plug used to interconnect most hi-fi components.

for residual hum is to turn up the volume somewhat beyond the point at which you normally listen and, with the selector switch on a receiver set to phono and the tonearm at rest (not engaging record grooves), listen to the hum level. Sometimes, positioning the turntable system too close to the receiver or amplifier will increase the hum levels. This is especially true if the tonearm is positioned close to the power transformer located inside the receiver or amplifier chassis. If the two are positioned side by side, try reversing them if unusually high hum levels are perceived.

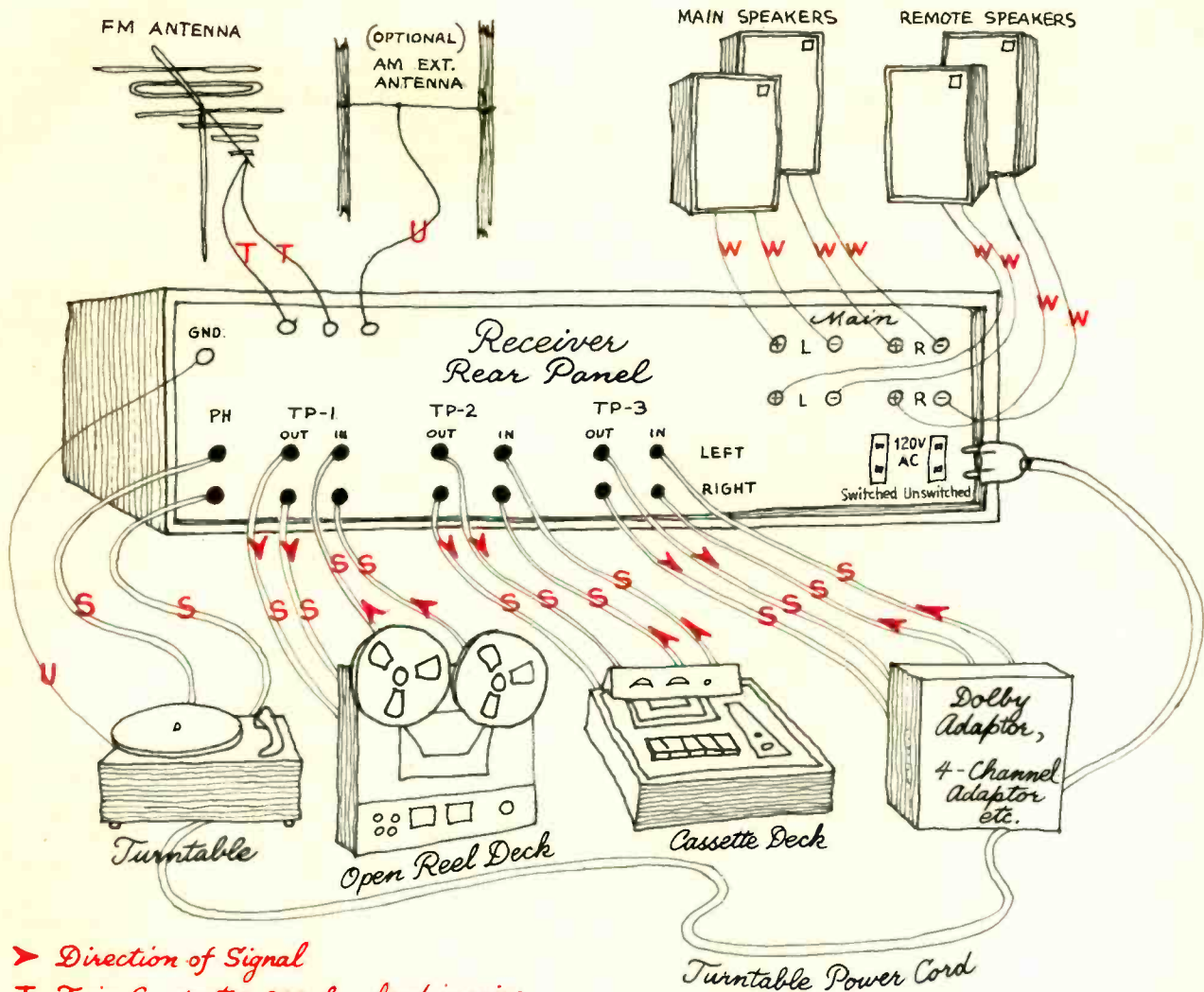


Fig. 3. Hook-up of components in a stereo system.

- *Direction of Signal*
- T Twin Conductor 300ohm lead-in wire*
- U Single Conductor wire*
- S Shielded audio cable with plugs*
- W Twin Conductor "lamp wire"*

OTHER PROGRAM SOURCE INTERCONNECTIONS

Connection from other program sources (such as a tape deck, or a separate tuner) to the amplifier sections of your system are also made by means of shielded audio cables. The lengths of these cables are not terribly critical, since most of these program source devices have "low impedance" outputs and can deliver signals to "high impedance inputs" (found on amplifiers and receivers for Aux, Tuner and Tape input circuits) over fairly long cable distances. Whereas professional audio equipment uses more sophisticated forms of connectors between components, home hi-fi equipment has settled for the simpler phono-tip plug illustrated in Fig. 2. Although less bulky, these tiny plugs often develop "open circuits" or shorts, especially if they are inserted and pulled from their sockets repeatedly. If neither hum nor music is heard from any connected program source, the first

thing to do is substitute a new audio cable for one that may have an internal short at the pin plug. If hum is superimposed on the music, the outer shell of the tiny plug may not be making good contact with the receptacle, either because it has not been fully inserted or because the outer shell metal has been "sprung" or spread too far apart to make good electrical contact. Investigate both of these possibilities before assuming that the equipment itself is at fault.

Tape decks are usually equipped with "line input" and "line output" jacks, both sets of which require the same sort of pin-to-pin shielded audio cables which we have been discussing. The line input jacks on your tape deck are connected to the "Record Output" jacks (sometimes labelled "Tape Out") on your amplifier or receiver, while the "Line Output" jacks on the tape deck connect to the "Tape," "Monitor" or "Tape Play" jacks on the amplifier or receiver. This arrangement permits you to record any program source from your

system directly onto tape without requiring any intermediate devices, such as microphones. In the case of three-headed tape decks (equipped with separate record and playback heads and associated electronics), this connection scheme also permits you to "monitor" recorded results through your speakers or headphones a fraction of a second after the recording has actually been applied to the tape. To do this, you set the front panel monitor switch on your amplifier or receiver to the appropriate "Monitor" position.

This same tape monitor circuitry is also responsible for a great many needless service calls! If you are *not* using your tape recorder in the manner just described (or if you don't even have a recorder plugged into your system) and the tape monitor switch of your receiver or amplifier is inadvertently thrown to the "Monitor" position, you will hear *nothing* from your loudspeakers no matter what program source you have chosen by means of your main program selector switch. Be sure to check the tape monitor switch first if, after hurriedly connecting all your new components, you fail to hear the glorious music you had hoped for.

A modern integrated amplifier/preamplifier or all-in-one receiver can accommodate a variety of basic and accessory high-fidelity component equipment. A typical interconnection diagram (showing the type of cables to use) for a moderately elaborate system is illustrated in Fig. 3. Note that two tape decks are shown connected to this receiver, which happens to be equipped with two full sets of "Tape Out/Tape In" jacks. Some amplifiers or receivers have even more Tape In and Out jacks, so that additional accessory devices such as graphic equalizers (elaborate tone-control devices which offer added system flexibility), noise-reduction accessories, 4-channel decoders and other add-on devices can also be connected via these handy "circuit interruption" points.

SPEAKER SYSTEM CONNECTIONS

The speaker outputs from the power amplifier section of your system is high in level and is derived from a very low impedance source. Thus, it is not necessary (or advisable) to use *shielded* audio cables in making connections from outputs of the receiver or amplifier to the loudspeakers themselves. Instead, ordinary twin-conductor appliance wire (sometimes called lamp-wire or "zip cord"), available in most hardware stores, should be used. Although pre-packaged lengths of so-called "speaker wire" are available in audio shops and other places, most of this wire is too thin in gauge for use if you plan to run more than a few feet of it from electronics to loudspeakers.

All wire has some resistance or impedance, and the thinner the wire, the greater its resistance to the flow of electrical current per unit length. Since loudspeakers themselves have a relatively low impedance (usually 4 or 8 ohms, nominally), if the wire used to connect them introduces additional resistance which is a significant percentage of the speaker's own imped-

ance, some of the costly power you have paid for will be dissipated as heat (rather than sound) in the wire itself. For example, if you use 4-ohm speakers, and a length of wire used to connect them has 1 ohm of resistance total (half an ohm for each of the two conductors), a 50 watt/channel amplifier could deliver no more than 40 watts of audio power to the speakers; the remaining 10 watts would be dissipated in the wires themselves.

For runs of up to 20 or 25 feet between amplifier and speakers, #18 gauge wires should be used, whereas for longer runs (say, between rooms in your home), even #16 gauge wires should be considered.

PHASING YOUR SPEAKERS

The speaker terminals on most amplifiers and receivers are labelled with "+" and "-" signs or with notations such as "hot" and "common" (or "ground"). Speaker system connection terminals are similarly marked, and it is important that both speakers of a stereo system (or all four in a 4-channel system) be connected "in-phase." With proper connections made, the speaker cones will move in the same direction at the same time when similar signals reach both speakers (as in the case of a monophonic program, for example). If connections are reversed, some of the sound (particularly low bass tones) will tend to cancel each other out (one speaker is pushing air while the other is pulling) and the apparent location of instruments on your home "sound stage" will be vague and unnatural.

Following the notations on speakers and amplifier output terminals carefully will ensure correct phasing. If, however, it is difficult to trace the conductors of your speaker cables (especially if you are running the wire over long distances), it is easy to check for proper phasing using a simple listening test. Switch the "Mode" switch on your receiver or amplifier to "Mono" and play any program source (even FM radio will do) while you stand between the two loudspeakers of your stereo system. All sounds should seem to come from a point between the speakers, and the apparent source of sound should be well defined. If this is not the case, reverse the connections to *one* of the two speakers and repeat the experiment. If there now seems to be more apparent bass response and sound location is clearly defined, your first connection was an "out-of-phase" one as far as the speakers are concerned.

FUSING YOUR SPEAKERS

Although the importance of "matching" speakers to an amplifier or receiver in terms of the power-handling capability and power output of each has been noted, situations can arise where speakers are unable to handle full power output.

For example, suppose you purchased your amplifier or receiver knowing that at some time it will be called

upon to deliver power to more than one set of speakers simultaneously (say, for a main listening room and another room). The second set of speaker systems would be connected to the "Remote Output" terminals of the receiver. Under such circumstances, power divides between the two pairs of speakers and, if each speaker can handle 50 watts, you may have selected a 100 watts per channel receiver to take care of that situation. At other times, however, you may have only one pair operating, in which case the full 100 watts per channel would be available. This might exceed the rating of the single speaker (per channel) being operated. If one of your speakers were damaged or destroyed under these circumstances, you could hardly blame either the maker of the speaker or the manufacturer of the receiver or amplifier.

One protective measure that you can take is to fuse your speaker systems. Some speaker manufacturers have begun to incorporate protective fuses in their designs, but if yours have not been safeguarded this way, Fig. 4 shows how these tiny fuses can be installed in one conductor of each cable leading to a speaker. Table 1 offers a guide to the fuse ratings that should be selected for a wide range of speaker power handling values. Consult the instructions or specifications supplied with your particular speaker systems to determine what size fuse is best for them. Use fuses of the "slow-blow" type. These can handle the current rating specified for brief peri-

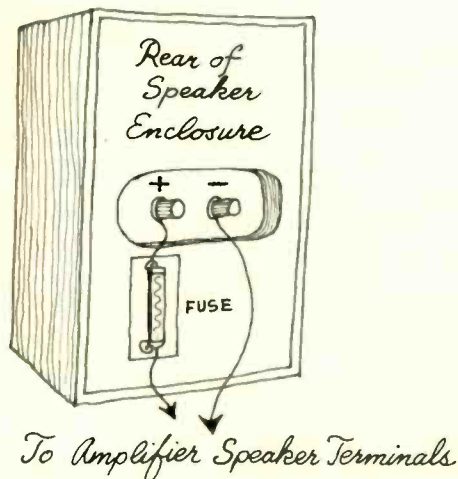


Fig. 4. Fuseholder with fuse of appropriate value can be mounted on rear of speaker enclosure, in "series" with positive (+) speaker wire.

ods (you don't want the speaker fuse blowing if just a short, loud musical crescendo happens to come along in the program), but will open up if that current value is sustained for more than a second or two.

The hi-fi installation tips discussed here are primarily intended to get you from your audio store to the enjoyment of music at home in the least possible amount of time. They are largely in the form of positive "do's." A few general "don't's" are worth mentioning, too. For example, *don't* position your ampli-

SPEAKER POWER RATINGS	4-OHM SPEAKER	8-OHM SPEAKER
25	2.5	2.0
50	3-3.5	2.5
75	4-4.5	3.0
100	5	3.5
150	6	4-4.5
200	8	5.0

Table 1. Fuse ratings (amperes) for speakers having maximum power ratings as shown.

fier or receiver near an external source of heat, such as a radiator or in direct sunlight. Transistorized circuits are designed to work in reasonable ambient temperatures of the sort normally found in a home environment, but pushing up the surrounding temperature in the ways just mentioned can seriously reduce the life of transistors and other parts in your system.

Don't connect the power cord of your turntable system to a "switched" convenience receptacle on the back of your receiver or amplifier. Use an "unswitched" a.c. receptacle instead, so that if you or someone else turns off the receiver while a record is playing, the turntable will complete playing the record and shut itself off with all parts in their "neutral" or disengaged positions.

Don't connect *any* power cords of any hi-fi equipment unless you are sure that the equipment is designed to work from the voltage source and frequency supplied by your local power company. Some foreign-made equipment is designed to operate at other voltages (such as 220 volts, 50 Hz), as well as at the U.S. standard voltage of 120 volts, 60 Hz. Such equipment often incorporates a switch or a connector which must be shifted to change from one operating voltage to another.

Don't operate electronic equipment outdoors if there is any danger of the equipment becoming wet from unexpected rainstorms. Moisture can damage electrical parts inside the equipment and, in some circumstances, can create a shock hazard.

Don't operate your FM tuner or the FM section of your receiver without connecting an FM antenna to the appropriate terminals. Unlike AM (and like TV) reception of noise-free FM signals depends upon the use of a good FM antenna. Even the flexible wire antennas often included with tuners and receivers are minimal in their ability to pick up strong, interference-free signals. An outdoor directional FM antenna, mounted as high above ground as possible, will provide significant reception improvement (particularly when listening to stereo FM) over the poorer types.

All that remains now is for you to read the introductory sections covering each component category, study the many products listed in this directory, choose several in each category that you think you'd like to consider and visit the audio dealer of your choice. Before very long you will be joining the millions of others who have discovered the joys of high-fidelity sound. □

DIRECTORY OF HI-FI MANUFACTURERS

If you have any additional questions about products described in this Guide, write direct to the company.

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Introduction to AMPLIFIERS

THE amplifier has been called the "heart" of a hi-fi system, but it would be more accurate to think of it as the "muscles" and "brains." There are actually two distinctly different amplifier functions. The *control center*, or *preamplifier*, selects one of several program sources, modifies its frequency and amplitude characteristics as required, and delivers an output signal to the power amplifier. The *power amplifier*, in turn, boosts the preamplifier's output to the power level required to drive loudspeakers.

When the preamplifier and power amplifier are combined on a single chassis, it is known as an *integrated amplifier*. (If a tuner section is also included, the combination is called a *receiver*.)

Most of the weight and bulk of an amplifier is in its power amplifier section. Powerful amplifiers are not only large and heavy, but must dissipate considerable heat (sometimes requiring cooling fans). For this reason, "separates" are most popular in the higher-power brackets, while integrated amplifiers predominate in the medium- and low-powered categories. Separate components also give one the option of increasing amplifier power without purchasing a new preamplifier.

Every preamplifier has inputs for a stereo magnetic phono cartridge, stereo tuner or other high-level stereo source ("high level" in this context means about 1 volt across an impedance of several thousand ohms), and a stereo tape recorder. It also supplies the selected program to the tape deck's recording amplifiers. A *tape monitor* switch allows the playback signal from the tape deck to be heard while a recording is being made.

Higher priced control units usually offer greater flexibility. There may be inputs for two phono cartridges, two or three high-level sources, and tape-monitoring facilities for two or even three tape decks. With some amplifiers, tapes can be copied from one tape deck to another, often without interrupting the selected input program. It is desirable to have at least one more tape monitor circuit than will be required for tape recording, since this is usually the most convenient place to connect signal-processing accessories such as noise reducers and equalizers.

Tone controls are a part of most preamplifiers (paradoxically, a few high-priced units omit all tone controls). As a minimum, there are separate controls for bass and treble frequencies. Tone controls are useful only for modifying the frequency balance of the program. Most loudspeaker response deficiencies cannot be corrected with conventional tone controls.

Some amplifiers feature more elaborate tone-control systems. They may include a third "mid-range" control, or switches that change the *turnover frequencies* at which the regular controls begin to take effect. On some models, separate controls are provided for the lowest and highest frequencies, in addition to the normal bass and treble controls. Another variation is the "graphic equalizer," which allows separate adjustment of response in several different frequency ranges. Five-band equalizers are used in some models, and even more elaborate types are available as system accessories.

Almost every amplifier has a "loudness" switch that modifies the volume-control circuit to emphasize low frequencies (and sometimes

high frequencies as well) as the volume is reduced. The intent of *loudness compensation* is to correct for the reduced low-volume sensitivity of the human ear at the frequency extremes. Many loudness compensation circuits are excessive in their action (a clear case of the cure being worse than the disease), but a few are quite effective.

Except in the lowest-priced models, amplifiers usually have one or more *filters*, intended to reduce unwanted noise with a minimum effect on the sound of the program. A "low" filter should be able to remove rumble, while a "high" filter reduces hiss from records, tape, or weak FM stations. For either one to be effective, it should reduce the amplifier response sharply beyond its *cutoff* frequency. A slope, or attenuation rate, of at least 12-dB-per-octave of frequency is highly desirable, but is rarely found except in the higher priced amplifiers. The more usual 6-dB-per-octave slope removes too much program content to be really useful (tone controls are likely to be at least as effective).

Convenience features such as headphone and microphone jacks, and the ability to switch the amplifier outputs to two or three different sets of speakers, are found on many amplifiers. These features may be useful, or even necessary, for some people, but of no interest to others.

Amplifier features are relatively easy to understand, but understanding "performance" is more challenging. The electrical performance of an amplifier is usually defined in terms of its power output, distortion, frequency response, sensitivity, and noise level. Deciding how much power your system should have can be difficult and confusing. The required amplifier power is a function of the efficiency of the speakers you choose, the size and acoustic treatment of the room, and your listening preferences, both as to volume and type of music. A typical home living room, equipped with some medium priced "bookshelf" speakers, can be filled with a very comfortable listening volume (too loud for normal conversation) with less than one watt of electrical power to each speaker. Allowing a reasonable margin for musical peaks, and occasional listening at higher volume, a 20-watt amplifier should be adequate. The recommendations of the speaker manufacturer should be heeded, since they will usually give a minimum recommended amplifier power rating, as well as the maximum allowable power for the speakers.

Higher amplifier power capability does not mean louder sound, although it does make that possible. Momentary peaks can reach many times the average program level, and an amplifier capable of delivering 50 or 100 watts will often sound cleaner and more "open" than a less powerful amplifier, even if both are operating at an average level of a watt or two. It is unwise, however, to pair an amplifier and speaker whose power ratings are grossly different, unless the speaker is protected by a fast-acting fuse.

The audibility of *distortion* depends, not only on its magnitude, but on the nature of the program and its level. If the amplifier distortion rating is under 1%, and it is operated within its power ratings, one is not likely to hear amplifier distortion in any obvious form. Nevertheless, it

is generally felt that lower distortion percentages contribute to the "ease" and unstrained quality of the sound, as well as lessening long-term listening fatigue. Many amplifiers have less than 0.1% distortion at normal listening levels, which effectively guarantees that any audible distortion originates elsewhere in the system or in the program material itself. Some very fine (and expensive) amplifiers have much lower distortion ratings, down to 0.002% or even less. This can be taken as evidence of their overall quality, but does not, per se, contribute to their audible performance.

The frequency response of an amplifier is the range of frequencies over which its amplification does not change by more than a specified amount. A typical specification of 20 to 20,000 Hz \pm 1 dB means that the output will not vary more than 2 dB overall as a constant level input signal is tuned from 20 to 20,000 Hz. Such deviation is barely discernible, and the response is perfectly satisfactory for any music system; most amplifiers meet or surpass this specification easily.

The sensitivity of an amplifier is the input voltage needed to drive it to its rated output, or to some reference output such as 1 watt or 10 watts. It is useful chiefly as a guide to system compatibility, since a program source (phono cartridge or tuner) should be able to supply enough signal voltage to the preamplifier to develop its rated output voltage, which in turn should be sufficient to drive the power amplifier to its rated power. A related specification is the phono input overload level. Although most phono preamplifiers require only a millivolt or two to produce rated output, it is possible for distortion to be generated if they cannot cope with the very high peak voltages generated when playing some heavily recorded discs. A phono overload limit of at least 50 millivolts is desirable, and many amplifiers can withstand more than 100 millivolts input without distortion. There is considerable latitude in matching signal levels throughout a system, since most control amplifiers have ample reserve gain, and a power amplifier is rarely called upon to deliver its full output.

The *noise* (hiss, hum, or a combination of the two) should not be audible in the absence of a signal, with the amplifier gain set for the loudest expected listening volume. Noise is usually expressed relative to the rated output of the amplifier, as a *decibel* figure (dB). This is sometimes referred to as the signal-to-noise ratio (S/N) of the amplifier, and should exceed 65 dB on the high-level inputs and 55 dB on the phono inputs. Higher numbers are better, of course, and some amplifiers boast better than 80 dB S/N for high-level sources and better than 75 dB on phono.

Amplifier performance is usually specified on a "per channel" basis, since in most cases the operation of one channel does not affect the others. An exception is the power output rating, which is required by the Federal Trade Commission (FTC) to be made in a specific manner with all channels operating. A stereo amplifier normally consists of two identical channels, although most of their operating controls may be ganged for simultaneous operation. A switch is usually provided to parallel the two channels for mono listening, and a balance control matches the program levels on the two channels.

Four-channel, or quadraphonic, amplifiers are essentially two stereo amplifiers in a single unit. There are several methods of balancing four channel levels, including the use of individual level controls, or separate balance controls for front and back channels, plus a third for front-back balance, and in some models a single lever "joystick" that adjusts four controls through a mechanical linkage.

Special decoding or demodulating circuits are necessary for four-channel operation. These are rarely included in a four-channel amplifier, except in their most basic form, but the tape monitoring system (now in quadruplicate) can be used to insert an accessory decoder.

Introduction to TUNERS

THE "radio" portion of a high-fidelity system is called the tuner. Most tuners cover both the AM and FM broadcast bands, but the quality of the AM sound is rarely up to high-fidelity standards.

A "tuner" may be a separate component or combined with amplifiers, where the entire unit is called a receiver.

A full definition of FM tuner performance consists of some 25 specification ratings, mostly of minor interest to the average consumer. The most important performance ratings include: sensitivity, distortion, noise (or S/N ratio), capture ratio, AM suppression, selectivity, and rejection of out-of-band signals, such as image and i.f. responses.

Not all of the above are equally important to any single listener but, in general, higher-priced tuners are superior across the board. Sensitivity, although a highly publicized characteristic, is probably less important than most people think. The IHF Usable Sensitivity, specified separately for mono and stereo operation, is now expressed in terms of the power required at the tuner's antenna terminals to give 3% combined noise and distortion (-30 dB THD) in the audio output. Formerly, signal levels were expressed in microvolts, but in the new IHF tuner measurement standard, r.f. levels are expressed in decibels relative to 10^{-15} watts, or one femtowatt. This is abbreviated to dBf, and the relationship between the dBf ratings and the former microvolt ratings is shown in the accompanying graph.

Since a signal with 3% distortion, or a -30 dB noise level, is not really "usable" for serious listening, the Usable Sensitivity rating is a misnomer. Much more meaningful is the new 50 dB quieting sensitivity, also rated separately for mono and stereo. This is the input power that gives a 50 dB S/N ratio, which is acceptable to most listeners, although not yet of full hi-fi quality. Most tuners can be expected to have 50 dB quieting sensitivity ratings between 15 and 20 dBf in mono, and about 35 dBf in stereo.

The distortion of even a low-priced FM tuner should be less than 0.5% in mono and 0.8% in stereo, in medium-priced units, these figures may be halved, and the finest tuners achieve distortion levels under 0.1% in mono and 0.15% in stereo. In practice, even the higher values will rarely be audible, since the distortion in the transmitted program material, from records or tape, is likely to exceed that contributed by the tuner. Also, many tuners must be adjusted very critically to the exact frequency of the station being received in order to realize minimum distortion. Since this is often not practical without using laboratory instruments, normal tuning tolerances may overshadow the minor differences in rated distortion among various models of tuners.

The signal-to-noise ratio (S/N) at 65 dBf, or 1000 microvolts input, is one of the more important specifications, since its effects can be readily heard by anyone. Hiss is very audible, especially during pauses in the program, and a tuner with a low rated noise level can be unmistakably better than one with less effective "quieting." The better tuners should have a S/N of 70 dB or better in mono, and close to 70 dB in stereo, while less expensive models may have noise levels 5 to 10 dB higher.

Capture ratio is the measure of a tuner's ability to respond only to the stronger of two signals on the same channel. This property of FM tuners is largely responsible for their interference-free reception, as compared to AM. A

low number is better, with values of 2 dB or less being common among moderately priced tuners, and less than 1 dB claimed for a few of the finest. A related specification is AM suppression, the degree to which an FM tuner does not respond to amplitude modulation. An ideal tuner would give no output from an AM signal, but acceptable ratings are 50 dB or better; some of the best tuners reject AM by 75 dB or more.

To the FM listener, the real significance of capture ratio and AM suppression is the immunity they provide to the effects of multipath reception, which is the major source of distortion in FM receivers. The best cure is to use a good directional antenna, which can be rotated to receive a signal from only one direction. Lacking such an antenna (and sometimes even with one), it is highly desirable that the tuner respond only to the strongest signal component reaching its antenna terminals, and to suppress the AM created within its own circuits by the multipath signals (this AM is the cause of the audible distortion).

In a given geographical area, FM stations are assigned frequencies spaced at least 400 kHz apart, so the alternate channel (400 kHz) selectivity of a tuner is the critical specification for getting interference-free reception from a weak station only 400 kHz away from a much stronger local signal. If listening is confined to major local stations, their spacing is likely to be at least 800 kHz, and selectivity is relatively unimportant. Even a 40 dB selectivity rating (about the minimum for a component-grade tuner) would be acceptable in that case. Even in a busy urban area, the 55- to 65-dB rating of most tuners should be adequate. For difficult receiving situations, as much as 95-dB selectivity is available in some tuners.

Another aspect of selectivity is the ability to reject interference from strong signals far removed in frequency from the desired station. For example, FM tuners are susceptible to image interference from stations in the 110- to 130-MHz band used by commercial aircraft for air-to-ground communication. If you have ever

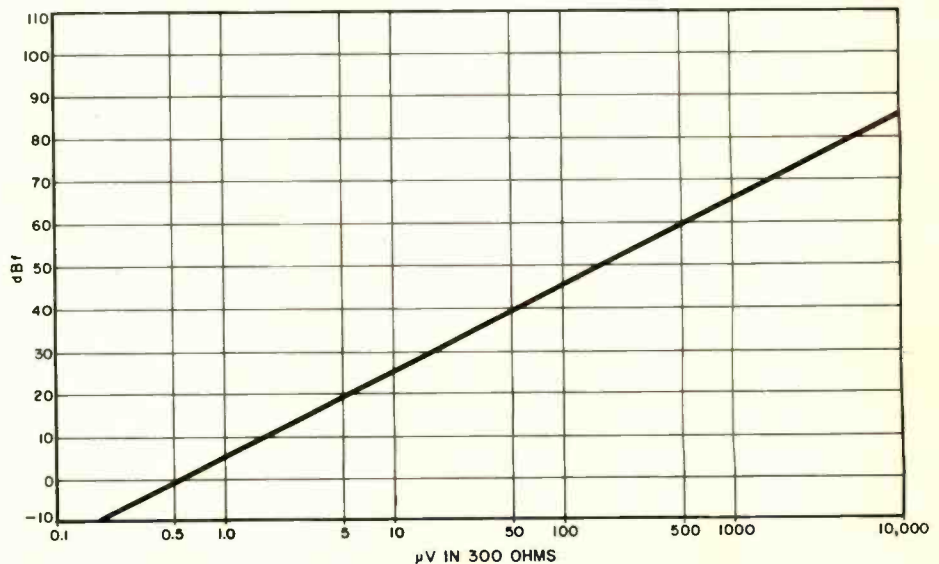
heard an FM signal suddenly obliterated by a transmission from a plane passing overhead, you can appreciate the importance of good image rejection. In most cases, a 60- to 70-dB rating is more than adequate. But under some circumstances, the 100 to 110 dB offered by a few deluxe tuners may be necessary.

Almost every tuner has a *squelch* or muting system to silence the hiss normally heard between stations. These muting circuits vary widely in effectiveness (some introduce transient noises that can be more disturbing than the hiss), so listen for yourself to judge their worth. Meters serve as tuning aids in most tuners (lights can be equally effective). The center-channel tuning meter is preferable to the signal strength indicators used on lower-priced tuners, but many tuners have both types of meters.

A few expensive tuners use frequency synthesizers instead of conventionally tuned oscillators for station selection. The chief advantage of synthesized tuning is high tuning accuracy, and in some cases rapid access to a pre-selected channel. Other performance parameters are not affected by its use.

With a growing number of FM broadcasters using Dolby "B" encoding, a few tuners have appeared with built-in Dolby decoders to take advantage of its noise-reducing capabilities. Proper operation of the FM Dolby system requires that the standard de-emphasis of 75 microseconds in the tuner be changed to 25 microseconds. This is done automatically in tuners with built-in Dolby circuits, but many more tuners are designed for use with external Dolby adapters, such as those in tape recorders or sold as add-on accessories. These tuners usually have switches marked "Dolby NR" or with some equivalent identification, which change the de-emphasis as required but do not supply the noise reduction. In any case, Dolbyized FM transmissions can be received with good frequency balance, although without noise reduction, on any standard tuner with 75 microsecond de-emphasis.

The only four-channel FM broadcasts at present use one of the matrix systems (SQ or QS), and can be received by an unmodified stereo tuner (with an external decoder). In anticipation of FCC approval of a discrete four-channel broadcasting system, many tuners have an output identified as "4 CH OUT." This carries the detected signal, before multiplex decoding. It is expected that external decoders compatible with this output will become available when (and if) a system is approved.



FM tuner sensitivity conversion from the former IHF (μV) into the new IHF designation in dBf (dB re 10^{-15} W, femtowatt).

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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 x 17 1/2" W x 14" D
 \$850.00
 AWC-1. Walnut case \$45.00

C-200 Stereo Preamp

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 x 17 1/2" W x 14" D \$700.00
 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 x 18" W x 14" D \$800.00
 AWC-2. Walnut case \$45.00

P-20 Stereo Power Amplifier

70 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD (100 W/ch into 4 ohms, 35 W/ch into



16 ohms); hum & noise 100 dB below rated output; frequency response 20-20,000 Hz (+0/-0.2 dB at rated output); output load imp. 4, 8, and 16 ohms; subsonic filter 18 dB/octave; cutoff freq. 17 Hz; features two independent power supplies, screw-type speaker terminals, front-panel stereo headphone jack, dual mounting handles; 19" W x 13 3/4" D x 6" H. . . \$750.00

ACE AUDIO

Basic Stereo Preamplifier

Audio control center; high-level inputs (FM,

1977 EDITION

Aux. 1 & Aux. 2): sensitivity 0.1 V for 1 V out; input 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 ±0.5 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. \$142.00
 Kit version \$89.75

"Zero-Distortion" Preamplifier

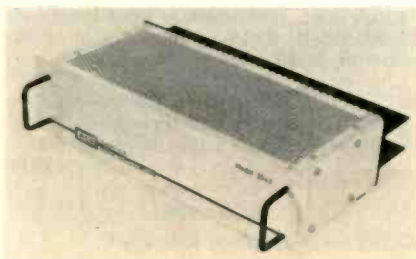
Similar to Basic Stereo Preamp; designed as building block for use with multi-band frequency balancers, electronic crossovers, and 4-channel sound systems; has no high-level amplifiers; no tone controls; phono input: 10 mV for 1-V out; input imp. 47,000 ohms; HD 0.05% midband at 5 V output level; hum & 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; black anodized front panel; Canadian maple end caps \$112.75
 Kit (with conversion sheet) \$89.75

35 x 2 Bi-Amp/Crossover

Same amplifiers as in Model 35 x 2 combined with electronic crossover; 12 dB/octave slope; three sets switch-selected crossover frequencies (250,500,1000 Hz or 750,1500,3000 Hz or 2000,4000,8000 Hz); two switch positions on front panel provide normal stereo amp (no crossover) and mono (no crossover); high-freq. level control; freq. range specified by purchaser \$259.50

35 x 2 Stereo Power Amplifier

35 W rms/ch into 4 or 8 ohms (20-20,000 Hz) at 0.1% THD; sensitivity 1 V for rated output; IM dist. 0.1% a full output (20-20,000 Hz), 0.05% at 1 W; response 20-20,000 Hz ±0.2 dB at 1 W;

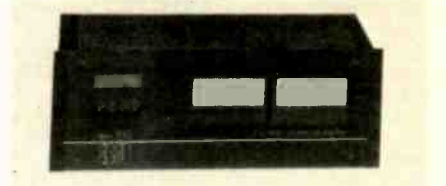


hum & noise 90 dB below 35 W; features extruded rear-panel heatsink; perforated covers for cooling; handles for rack mount configuration; 14" W x 8 1/2" D x 3 7/16" H \$204.25
 Kit version \$149.50

ACOUSTIQUE 3a

Alphas 300 Stereo Power Amp

110 W rms/ch into 8 ohms (20-20,000 Hz) at 0.08% THD; IM 0.03% at rated power output;



power bandwidth 5-100,000 Hz +0, -1 dB, frequency response 5-350,000 Hz ±1.5 dB; S/N 100 dB (phono input); damping factor 150; rise time 1 μs; separate power supply per channel; 19" x 12" x 6" \$1099.00

Arpege 300 Stereo Preamp

Stereo preamp; 1.55 V rated output; THD 0.03% at rated output; IM 0.02% at rated output; frequency response 5-400,000 Hz ±1.5 dB; S/N 72 dB (phono input); high-level input sensitivity 200 mV; phono sensitivity 5 mV; tape monitor input imp. 100,000 ohms; includes 10-band frequency equalizer; delta constant-all electronic touch tune switching; 19" x 12" x 6" \$1099.00

AUDIO INTERNATIONAL

CM912a Stereo Power Amplifier

150 W rms/ch (20-20,000 Hz) into 8 ohms at 0.1% THD with both channels driven; IM dist. 0.1% up to rated power (SMPT standard); frequency response 20-20,000 Hz ±0.1 dB at full power, 5-130,000 Hz ±0.25 dB at 10 W; damping factor 50 at 8 ohms; hum & noise 100 dB below 225 W rms; will drive all types of reactive loads up to 6 μF from 20-20,000 Hz; sensitivity: 1 V for full output; gain 60 dB (open loop), 30 dB ±1 dB (closed loop); forced-air cooling; two peak-reading meters; 100, 120, 200, 220, or 240 V, 50/60 Hz (internally adjustable); bronze anodized aluminum finish; 19" (rack mount) x 17 1/2" D (15 5/8" behind panel) x 5 1/4" H. \$799.00

CM914 Stereo Power Amplifier

100 W rms/ch (20-20,000 Hz) into 8 ohms at 0.1% THD; IM 0.1% up to rated power (SMPT standard); frequency response 20-20,000 Hz ±0.1 dB at full power, 5-130,000 Hz ±0.25 dB at 10 W; damping factor 50 at 8 ohms; hum & noise 100 dB below 150 W rms; will drive all types of reactive loads up to 6 μF (20-20,000 Hz); sensitivity: 1 V input for full output; gain: 60 dB (open loop), 30 dB ±1 dB (closed loop); universal power supply; bronze anodized aluminum finish; 19" (rack mount) x 10" D x 5" H. . . \$399.00

1

Amplifiers

- CM914-1. Handle/side panel kit \$50.00
 CM914-2. Peak-reading meter kit \$99.00

CM300 Preamplifier

Response 5-20,000 Hz ± 0.1 dB at rated output into IHF load (high level), 2-8,000 Hz ± 0.5 dB at rated output into IHF load; output: 2 V rms into 100,000 ohm/1000 pF, 1 V rms into 600 ohms, max. 10 V rms into IHF load, 5 V rms into 600 ohms; THD 0.05% (20-20,000 Hz) at rated output into IHF load; IM 0.02% (SMPTE) at rated output into IHF load; channel separation 70 dB (1 kHz), 50 dB (20 kHz); features two separate phono inputs, two tape recorder inputs, adjustable phono gain, defeatable tone controls, high & low filters, front-panel jack for driving hi-Z phones; 120 V/240 V a.c., 50/60 Hz; 17 1/2" W (rack mount) x 17" D (15 1/8" behind panel) x 5 1/4" H \$449.00

AUDIONICS

PZ3-II Stereo Power Amp

100 W rms/ch (20-20,000 Hz) into 8 ohms with both channels driven at 0.03% THD; frequency response 20-20,000 Hz $\pm 1/2$ dB, -3 dB at 5 Hz & 70,000 Hz; input sensitivity 1 V for rated output; input imp. 20,000 ohms below 20,000 Hz; damping factor 50 at 8 ohms (1 kHz); output imp. 4 ohms to infinity; hum & noise 95 dB below rated output; complementary/symmetry circuit; direct-coupled output; can be used with electrostatic speakers; 19" W (rack mount) x 15" D x 6" H \$429.00
PZ3-HP. Same as above but with input level controls and peak-reading VU meters \$529.00

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. 15 5/8" x 5 1/2" H x 12 1/2" D. \$795.00

D150 Basic Power Amplifier

150 W rms/ch into 8 ohms (20-15,000 Hz) at 1.0% THD; IM dist. 0.5% at rated power; vacuum-tube unit; imp. 4, 8, or 16 ohms. 19" (rack mount) x 10 1/2" W x 16 1/2" D. ... \$2685.00
D76A. Similar to D150 except 75 W/ch at 1.0



THD; IM dist. 0.5% at rated power. 19" (rack mount) x 7" x 12 1/4" D. \$1195.00
D51. Similar to D76A but 50 W/ch. \$695.00

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 x 7" H x 17" D \$1499.00

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-



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 x 7" H x 12" D. ... \$879.00

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; 126 W/ch into 4 ohms-25-15,000 Hz at 0.15%. Features front-panel mounted rocker-style bridging switch; LED pilot lamp; mono/stereo selector 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 x 5 1/4" H x 11 1/4" D \$529.00

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 5-20,000 Hz at a THD of 0.1%; 340 W/ch driving 4-ohm loads over a power band from 20-10,000 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 x 7" H x 12" D. \$1029.00

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-amplifier; 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. \$599.00

201. Same as 202 but without tone controls; for use in systems which are either equalized externally or require no additional equalization. \$499.00

4-CHANNEL

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 $\pm 2\%$ 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 x 7" H x 17" D. \$1649.00

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 x 18" W x 18 1/2" D including knobs. Brushed aluminum control panel; black out display panel; black anodized heat sink and case. \$986.00

4-CHANNEL

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 x 18" W x 13 1/8" D. \$599.00
 SQ matrix decoder with full logic \$74.95
 Cabinet \$34.95

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);

The Sherwood HP 2000: It adds a new high to performance.

If power and versatility are the essential elements of high performance, the HP 2000 is unquestionably the high performance amplifier you've been waiting for.

This new top-of-the-line Sherwood amplifier puts you in full command of your sound system.

Consider the credentials:

Power: 120 watts per channel (minimum RMS at 8 ohms from 20-20,000 Hz) with no more than 0.08% Total Harmonic Distortion.

This rating is ensured by massive 16,000 μ f filter capacitors, backed by a zener regulated dual secondary power supply. The full complementary direct-coupled OCL output circuitry employs output transistors with the largest S.O.A. (safe operating area) of any consumer device currently available. Dual power meters (which feature selectable sensitivity: normal, or

-10dB) and LED power limiting indicators precisely monitor power output at all times. And rear-panel switching permits the independent operation of the pre-amp and power amplifier sections.

Precision: The film resistor step Loudness [Volume] control features 22 accurately calibrated positions [both channels matched within 0.5dB in all steps]. Eleven position Variable Loudness Contour. Bass, Treble and Midrange controls have 11 detented positions each. Resetting to your exact acoustic preferences is never a matter of guesswork.

Master Tone Defeat, High and Low filters, and -20dB Audio Muting are controlled by convenient front panel switches.

Operational Flexibility: The HP 2000 can accommodate two turntables (Phono inputs are selected with IC analog

switching, and feature a front panel level control); two tape decks [tape-to-tape duplication is accomplished with the Tape-1, Tape-2 Monitor circuits]; and a pair of professional caliber microphones [mixing level determined by a separate front panel control]. Additional source capabilities include a Tuner; two Auxiliary components; and a 4-Channel Adaptor (which also serves as a third Tape Monitor if needed).

All Sources and Functions are activated by front panel push switches ["Or" position is indicated by color change.

The highest quality componentry: The HP 2000 has been meticulously engineered for durability, consistent performance standards, and ease of servicing: the mark of Sherwood design for over 20 years. All componentry

has been selected to meet or exceed posted specifications. The P.C. boards and inter-board ribbon cable connectors plug into a "mother-board," for reliable operation.

The HP 2000 is the first in a new, highly sophisticated line of tuners and amplifiers from Sherwood Electronics.

Other units in this new High Performance Series will be available soon.

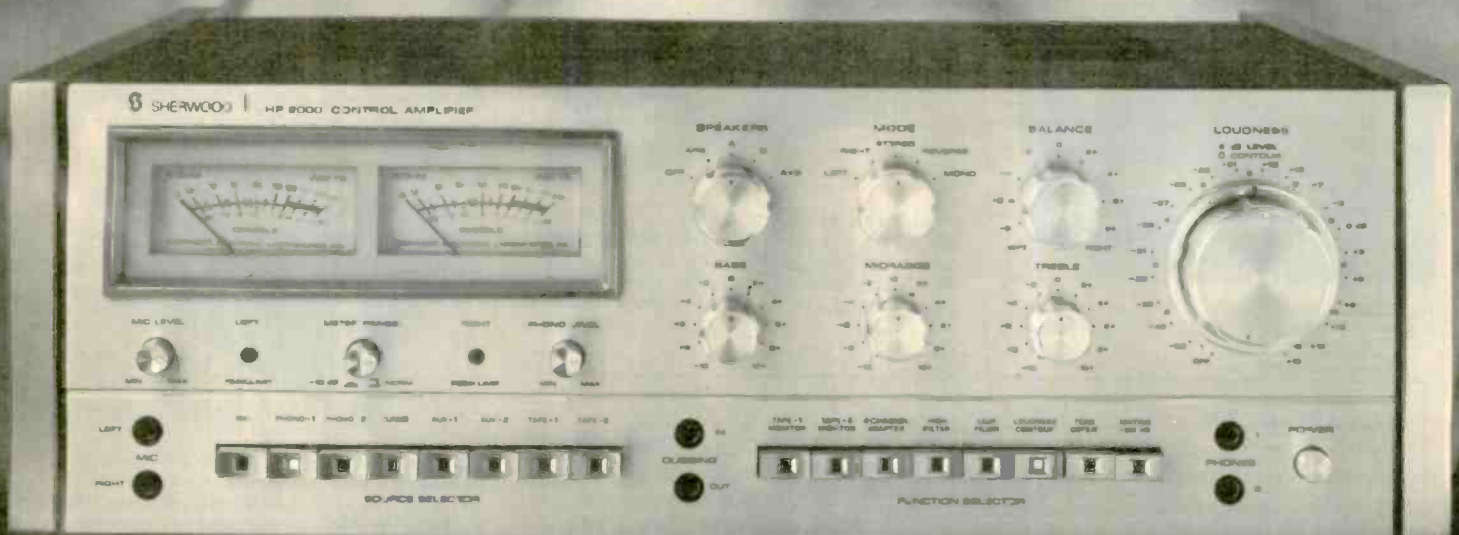
See the HP 2000 soon. And treat yourself to performance that's as high as your expectations have always been.



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Sherwood Electronic Laboratories, Inc.
4300 N. California Ave.
Chicago, IL 60618



CIRCLE NO. 60 ON READER SERVICE CARD

1

Amplifiers

two power meters; matte black front panel; walnut veneer enclosure optional extra. 7" H x 17 3/4" W x 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 x 17 3/4" W x 10 5/8" D. \$797.00

949 Integrated Amplifier

Preamp section same as 909, power amp section same as 939; preamp out/power amp in jacks; matte black front panel; walnut veneer enclosure optional extra. \$889.50

939 Audio Power Amplifier

65 W/ch continuous sine wave into 8 ohms (20-20,000 Hz) at 0.2% THD; frequency response 20-20,000 Hz +0, -0.2 dB; S/N (unweighted) 90 dB; subsonic switch; damping factor 100; input level controls 32 dB gain; black front panel; walnut veneer enclosure optional extra \$479.50

909 Preamplifier

Features plug-in circuits; all-silicon circuitry; active filter; switchable tape outputs: flat or equalized; inputs: phono #1 & 2, tuner, aux, tape monitor #1 & #2; controls: bass & treble for each channel, balance, volume, lo/hi filters, EQ defeat, stereo/mono, tape dubbing; frequency response 20-20,000 Hz ± 0.25 dB; dist. 0.1% IM & HD; S/N (unweighted) 74 dB (phono), hi-level 80 dB (unweighted); 12 V output into 200 ohms. \$450.00

CERWIN-VEGA

A-3000I Stereo Power Amplifier

365 W rms/ch into 8 ohms with both channels driven 5-60,000 Hz +0, -1 dB; power band-



width 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) x 8" H x 11 1/2" D \$1200.00

A-1800M 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-3000I \$700.00

CROWN INTERNATIONAL

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:



1.71 V $\pm 2\%$ at rated output. 7" H x 19" W x 9 3/4" D. \$799.00
 7R cabinet \$55.00

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 $\pm 2\%$ at rated output with front-panel adjustment. 5 1/4" H x 17" W x 8 3/4" D \$489.00
 5R cabinet \$45.00

D-60 Power Amplifier

32 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 $\pm 2\%$ at rated output with front-panel adjustments; stereo headphone output. 1 3/4" H x 17" W x 8 3/4" D \$289.00

IC-150A Preamplifier

IM 0.002% at rated output with IHF load; THD 0.0005% at 1 kHz; max. 0.05% (20-20,000 Hz) at rated output with IHF load; hum & noise 20-20,000 Hz inputs shorted: hi-level 95 dB below rated output; "A" weighted noise 105 dB; phono noise 85 dB below 10 mV; equiv. phono input noise 0.3 μ V; inputs: six high-level (tuner, 3 aux., 2 tape), two equalized phonos, front-panel jacks for Aux. 3; input imp. 100,000 ohms; volume control: precision switched attenuator of 58 dB in 2 dB steps with calibrated tracking; tracking between channels 0.2 dB; output attenuation 10 dB switched; a.c. outlets: five switched (25 A switch), one unswitched; reed-relay muter; front-panel stereo monitor jack; 19" (rack mount) x 17" W (8 1/8" behind panel); x 5 1/2" H \$399.00
 Walnut cabinet \$45.00

DB SYSTEMS

DB-1 Preamplifier

Frequency response: (phono) 5-20,000 Hz ± 0.25 dB, (high level) 2-50,000 Hz +0, -1 dB,



10-20,000 Hz +0, -0.25 dB; filters: (low cut) flat, 18 Hz, 36 Hz at 6 dB/octave (phono only), (high cut) flat, 5000 Hz, 10,000 Hz at 6 dB/octave; output imp. 1000 ohms; max. output voltage 6 V into 10,000 ohms; max. load for rated dist. 10,000 ohms/3000 pF; input sensitivity for 1 V output: phono 2.0 mV into 50,000 ohms/100 pF, high level 120 mV into 50,000 ohms; controls: selector, balance, volume, low cut, high cut, tape monitor (includes "mute" position); requires separate regulated power supply; 8.5" x 3.2" x 7" \$350.00
DB-2. Power supply; wired for 120 V or 240 V operation; supplies up to 300 mA at 33 V (includes protective current limiter); 6.3" x 3.2" x 4.2" \$75.00
DBP-3. Solid walnut case for DB-1 \$29.95

DB-4 Pre-Preamp

Low-distortion pre-preamp for use with moving-coil cartridges; gain selectable with internal switch to handle all available cartridges; requires DB-2 power supply if not used with DB-1 preamplifier \$150.00

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 profes-

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.

sional VU meters; 2-speed cooling fan. 19" W x 7" H x 15" D. Uncased rack mount . . \$1500.00
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 x 7" H x 12" D. Uncased rack mount \$875.00
Genuine walnut-veneer case \$60.00
250. Same as Model 500 except 125 W/ch into 8 ohms; 200 W/ch into 4 ohms \$675.00
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 x 3 1/2" H x 12" D \$675.00
Genuine walnut-veneer cabinet \$40.00

DYNACO

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" x 14" D x 7" H Kit \$499.00
Assembled \$725.00
Assembled with meters (ST-400M) . . . \$799.00
MC-4. Output meter accessory kit . . . \$85.00
FAN-1. Cooling fan kit \$30.00
PBK-400. Rack-mount brackets \$29.95
MB1-400. Permits mono operation. . . . \$17.95

Stereo 300 Power Amplifier

150 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.25% THD with both channels driven (FTC pre-conditioning); d.c. coupled circuitry after input; complementary output stage; may be internally rewired to power lower imp. loads; can be used as 4 x 75 W with internal wiring changes; frequency response 10-40,000 Hz +0, -1 dB at 1 W into 8 ohms; inputs: phono jacks; outputs: color-coded 3-way binding posts with standard 3/4" spacing; comes with walnut veneer end panels; 18 1/2" W x 15" D x 7 1/2" H. Kit \$489.00
Assembled \$699.00

Mark VI Disco Mono Power Amp

100 W into 4, 8, or 16 ohms (20-20,000 Hz) at 1% THD; tube-type circuitry; 95 dB S/N; illuminated power output/bias adjust meter; front-panel speaker fuse holder; XLR connector input option/low filter input option; black panel with handles; 19" rack mount x 12" W x 8 3/4" H. Kit \$425.00
Assembled Kit \$649.00

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; fits PBK-400 rack mounts; 17" x 15" x 8" D. Kit \$399.00

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. 14 1/2" x 13 3/4" x 6 5/8" D.
Kit \$269.00
Assembled \$399.00

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. 4 1/4"

H x 13 1/2" W x 10 1/2" D Kit \$209.00
Assembled \$289.00

SCA-80Q Stereo Power Amplifier

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



ing 4-ch information from 2 channels. Preamp

Could the ultimate system be all Crown?



It depends on how you define "ultimate." But Crown may be the only top-quality, state-of-the-art manufacturer whose components could build a complete, ultimate hi-fi system.

For instance: A CX-824 tape deck, world-renowned for reliable performance. Connected to an IC-150 pre-amp. With the signal amplified by a DC-300A power amp, proved in many thousands of hours of professional use. Output controlled, monitored and switched by an OC-150. Possibly a VFX-2 for personal control of crossover points. And sound faithfully reproduced by ES-212 electrostatic speakers.

All Crown. We think that system would be somebody's ultimate. Certainly ours. Maybe yours.

Your own system, ultimate or not, might include one of the Crown product alternatives. The D-150A and D-60 amps offer the same low distortion as the DC-300A, with less power. All Crown recorders have the same quality sound, but you select the transport, electronics, accessories, heads or tracks you need.

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CROWN

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BG-2

CIRCLE NO. 19 ON READER SERVICE CARD

1

Amplifiers

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. 13 1/2" x 10" x 4 1/4" Kit \$199.00
Assembled \$325.00

Mark III Power Amplifier

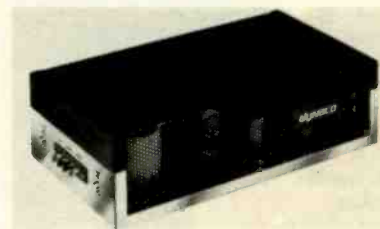
Vacuum-tube mono power amplifier. 50 W continuous power into 4, 8, or 16 ohms from 50-10,000 Hz at less than 1% THD, with FTC pre-conditioning. Response 6-60,000 Hz ± 0.5 dB (1 W output). IM 0.5% at rated output. Sensitivity: 1.6 V for rated output. 6 1/4" H x 9" W x 9" D. Kit \$169.00
Assembled \$225.00
With additional 70.7 V-output. Kit \$179.00
With 125- or 500-ohm output only. Kit \$189.00

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. 6 1/2" H x 13" W x 19 1/2" D. Kit \$169.00

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. 4 1/4" H x 13 1/2" W x 9" D. Kit \$149.00



Assembled \$224.00

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. 13 1/2" W x 4 1/2" H x 11 1/4" D. Kit \$239.00
PAT-5/A. Assembled \$399.00

PAS-3X Preamplifier

Vacuum-tube preamp with loudness compensation, independent tone controls, a stereo blend

control, and tape monitoring facilities. 4 1/4" H x 13 1/2" W x 9" D. Kit \$159.00

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. 4 1/4" H x 13 1/2" W x 9" D. Kit \$139.00
Assembled \$229.00
All power and integrated amplifiers were measured with a continuous sine wave and on stereo designs both channels were driven.

4-CHANNEL

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. 18 1/2" x 15 1/2" x 8" H. Kit \$489.00



QSA-300M/A. Assembled, supplied with four illuminated output meters. \$799.00

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. 18 1/2" W x 12 1/2" D x 7 1/2" 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 1/4 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 4 1/2" meters; pushbutton meter-range selectors; A-B speaker selector switches; remote ac power control permits turn-on by a tuner or preamp without surge \$845.00
500A. Same except capable of being converted by addition of fan package; 19" W x 13" D x 7 1/8" H. \$998.00
1004A. Fan package conversion of 500A; 500 W/ch continuous power, both channels driven, into 4 ohm load at 0.25% THD from 1/4 W to full rated power 20-20,000 Hz 19" W x 15 1/2" D x 7 1/8" H. \$1095.00

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 ampli-



fier/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

CA2300 Integrated Stereo Amplifier

35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.15% THD; IM dist. 0.2%; switchable amplifier/preamp separation; complementary push-pull main amplifier stages; switchable hi/lo filters & audio muting; loudness contour control; clickstop bass & treble controls; 5-pos mode switch; 5-pos. function selector; dual phono inputs; bi-directional tape dubbing; 16 1/2" W x 13 1/2" D x 5 3/4" H. \$279.95

CA2100 Integrated Stereo Amplifier

12 W rms/ch into 8 ohms (40-20,000 Hz) at 0.8% THD; separate bass & treble controls; switchable loudness contour & hi/lo filters; 4-pos. speaker selector; mic mixing selector; dual tape inputs; separate mic amplifier; 13 1/8" W x 11 3/4" D x 4 3/4" H. \$149.95

HARMAN/KARDON

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. 9 1/4" H x 19" W x 14" D complete with metal cage \$795.00

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

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);

Some of the rather special adjectives the test labs have been using to describe LUX.

Unless this is the first high fidelity publication you have read, you know that equipment reviews are almost always favorable. We don't suggest that the reviews are inaccurate or that they don't reflect the editors' sincere judgments. Rather, we understand that the publications prefer to use their limited space for equipment that they can recommend to their readers.

Thus, the problem for the discerning reader is to distinguish between the adequate, the good and the truly superb. As of this date, four LUX products have been the subject of test reports in high fidelity magazines. Aside from confirming excellent specifications and exceptional sonic performance, the reviewers left little doubt as to which descriptive category they meant to apply.

For an apt example, the Hirsch-Houck report (in *Stereo Review*) on the Luxman L-100 integrated amplifier concluded: "Obviously the performance and operating characteristics of the Luxman L-100 require the use of superlatives for an adequate description... Externally, internally and in respect to performance, (it) must be considered a simply beautiful product. The harmonic distortion (THD) at 1,000 Hz and 10 watts output was 0.0087 per cent and it remained at that figure up to the rated 110 watts..." (Our claimed THD at rated power, 20 to 20,000 Hz, is 0.08 per cent).

Radio-Electronics "heard a clarity and effortless power capability that is hard to describe in words but definitely is audible."

Audio magazine's test of our T-310 tuner led

to this observation: "...most of our results were far superior to those claimed... distortion in mono and stereo was the lowest we have ever read for any tuner at any price." Also, "LUX's conservatism extends to some of the 'lesser' FM specs as well. We measured a capture ratio of 1.2 dB (1.5 dB claimed) and alternate channel selectivity turned out to be 76 dB (70 dB claimed)... The (variable) AM muting feature has to be heard to be believed."

High Fidelity magazine's report was on the C-1000 preamplifier. They found "the performance... virtually impeccable. Clipping occurs at 13 volts. The data from the CBS Technology Center shows that, at a more reasonable 2 volts, THD is less than 0.0064% for all conditions, and intermodulation distortion is 0.002% or less." *High Fidelity's* conclusion: "It is more a Rolls-Royce than a Ferrari. But if you are a sybaritic audiophile with a budget to match, the C-1000 will pamper you as few preamps can."

FM Guide reported on the Luxman T-110 tuner, also with unequivocal conclusions: "...the FM purist's tuner... emphasis is totally on absolutely top FM performance... in most of our listening tests we were being limited by the quality of broadcast signals... without a doubt, the best performing tuner we have ever seen at this price."

If you would like to see and hear the equipment that prompted these superlatives from the reviewers, visit one of the select LUX dealers for a demonstration. Chances are the next superlatives you hear will be your own.



The Luxman
C-1000.



The Luxman
L-100.

The Luxman C-1000. "If you are a sybaritic audiophile with a budget to match, the C-1000 will pamper you as few preamps can." *High Fidelity*

The Luxman T-110. "It was obvious in most of our listening tests that we were being limited by the quality of broadcast signals and not by the capabilities of this superb tuner." *FM Guide*

The Luxman L-100. "Lux seems to have found some of the answers... about what makes one amplifier sound better than another." *Radio Electronics*

The Luxman T-310. "...a stunningly executed product that should appeal to the FM buff who seeks the finest FM reception." *Audio*



The Luxman
T-110.



The Luxman
T-310.

LUX Audio of America, Ltd.

200 Aerial Way, Syosset, New York 11791

In Canada: White Electronics Development Corp. Ontario

1

Amplifiers

damping factor 30; features tape monitor facilities; multi-speaker operation; connections for two pairs of stereo phones. 13" W x 5 1/4" H x 10 3/4" D. \$185.00

Citation 11 Stereo Preamp

Response 1-250,000 Hz \pm 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

HEATH

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 x 7 1/4" H x 18" D. (kit) \$439.95
Optional meters (kit) \$69.95

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-1506 Stereo Power Amplifier

60 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; hum & noise -95 dB; styled to match Modulus AN-2016 tuner/preamp; includes input level controls; main/remote speaker switches, plug-in polarized speaker connectors; 14 7/32" W x 8" D x 5 5/8" H.

Kit \$179.95

AA-1505. Same as AA-1506 except 35 W rms/ch \$129.95

AP-1615 Stereo Preamplifier

Basic preamp; THD & IM dist. 0.05%; -65 dB hum & noise (phono); frequency response 20-20,000 Hz +0, -0.2 dB; phono input: 100 dB dynamic range; built-in subsonic filter; tape dubbing facilities; hi & lo filters; power on/off relay; solid walnut end panels; 17 1/2" W x 8" D x 4 7/32" H (kit) \$129.95

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. 3 7/8" H x 12 3/4" W x 12" D. Kit \$109.95

4-CHANNEL

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 \pm 1 dB at 1W, 5-70,000 Hz \pm 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. 4 7/8" H x 19 3/4" W x 10" D. Walnut-stained veneer end panels. Kit \$139.95

HITACHI

HA/1100 Integrated Stereo Amplifier

100 W/ch continuous power output into 8 ohms (20-20,000 Hz) at 0.1% THD; THD & IM dist. 0.03% at 1 W output; power bandwidth 6-50,000 Hz; frequency response 6-60,000 Hz \pm 0.5 dB (phono), \pm 1 dB (aux.); OCL pure complementary circuit; bass & treble tone controls; high & low filters; loudness control; input sensitivity: phono #1 2 mV/50 k, phono #2 1.6 mV-6 mV/50 k, tuner, aux, tape 100 mV/100 k, main input 1.0 V/70 k; output level: tape 100 mV/1 k, tape (DIN) 30 mV/80 k, preamp out



1.0 V (rated input/28 ohms; hum & noise 75 dB phono, aux. 90 dB; mode selector, speaker, and tape monitor switches; 18 1/8" W x 15 1/4" D x 5 3/8" H \$599.95

HA/610 Integrated Stereo Amplifier

60 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.3% THD; power bandwidth 10-50,000 Hz; frequency response 10-30,000 Hz \pm 0.5 dB (phono), +0, -1 dB (aux.); THD & IM dist. 0.05% at 1 W output; hum & noise 75 dB (phono), 90 dB (aux.); two phono, two aux., and two tape inputs (one DIN in/out); three independent gain-control selectors; mode selector, speaker, tape monitors switches; electronic power protection circuitry; 17 1/8" W x 15 1/4" D x 5 3/4" H \$399.95

INFINITY

DSP Switching Amplifier

250 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; class-D amplification; frequency response 10-100,000 Hz at 1 V; power bandwidth 20-20,000 Hz; delay time 300 ns; damping ratio 100; max. power handling 2000 W, 25 W min.; unit consists of three sections: regulated 2000 W power supply; switching amplifier modules (analog pulse-width converter, switching section, and smoothing & averaging

section); DSP hybrid digital chip which controls entire function; controls: left & right volume; sensitivity 2.2 V input for 250 W output; hum & noise 100 dB below 250 W; input imp. 100 k; operates at any a.c. voltage from 100-240 V/50-400 Hz; d.c. 160 V min/240 V; 19" W x 15" D x 4 1/2" H \$2000.00

FET Preamplifier

Designed to be used with company's DSP Switching Amplifier; frequency response \pm 0.02 dB of RIAA equalization curve (phono), -3 dB at 3 Hz & 50,000 Hz (phono with moving coil engaged), line 20-100,000 Hz \pm 1 dB, 1-230,000 Hz -3 dB; HD & IM dist. at 2 V out: phono & line 0.05%, 0.07% (phono with moving coil engaged); S/N -82 dBV (phono), -70 dBV (phono with moving coil), -90 dBV (line); max. output 7 V into 10 k; min. load imp. 10 k; power supply +40 V at 500 mA, 1% regulated; full complement of inputs/outputs; 18 1/2" W x 15" D x 4 1/2" H \$1000.00

JVC

JA-S71 Integrated Stereo Amplifier

80 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; frequency response 10-70,000 Hz



+0 dB, -1 dB; S/N 100 dB; direct-coupled parallel push-pull pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (33 k/47 k/100k/330, 100, 0 pF), tuner, aux., tape play 180 mV (50 k); output level: tape rec. 180 mV, DIN rec 30 mV; S/N 65 dB (phono), 85 dB (aux.), 85 dB (tape play); inputs: phono #1 & 2, tuner, aux. #1 & 2, tape play #1, 2, 3, main in; outputs: tape rec #1, 2, 3, speaker #1, 2, headphone, pre out; independent tape dubbing, tone defeat & loudness, subsonic/high filters; -20 dB audio muting; negative-feedback tone controls; 16 5/8" W x 15 1/32" D x 6 3/8" H \$399.95

JA-S31 Integrated Stereo Amplifier

40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; frequency response 20-50,000 Hz +0, -1 dB; direct-coupled pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (47k), tuner, aux., tape play 160 mV (50 k); output level 160 mV (tape rec.); S/N 65 dB phono, 85 dB (tuner, aux., tape play); inputs: phono, tuner, aux., tape play #1 & 2; outputs: tape rec. #1 & 2, speaker #1 & 2, headphone; master volume control with 19 click stops; loudness/balance switches; tuner/phono/ aux. selector; phones jack; 15 1/32" W x 13" D x 5 1/8" H \$249.95

4-CHANNEL

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. 10 3/8" x 5 1/8" x 14" D \$129.95

KENWOOD

700-M Power Amplifier

170 W rms/ch into 8 ohms (20-20,000 Hz) at

0.1% THD; S/N 120 dB (HF); 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 Darling-ton 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. 17¹/₁₆" x 7⁷/₁₆" x 14¹³/₁₆" \$749.95

600 Integrated Stereo Amplifier

130 W rms/ch into 8 ohms (20-20,000 Hz) at 0.08% THD; independent power supply for



each channel; ASO protection circuit; all-FET direct-coupled preamp; max. input level 220 mV; dual-level attenuation before and after control preamp section; negative-feedback tone controls; selectable turnover points at 150, 400, 3000, 6000 Hz; 2-pos. presence control; defeat switch; 4-pos. loudness control; high/low steep-slope filters; dual tape provision; "tape-through" circuit; cartridge imp. selection; provision for 2 phono, 2 aux., tuner, 3 speaker systems \$749.95
500. Same as 600 except 100 W rms/ch \$599.95

KA-8300 Integrated Stereo Amplifier

80 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; Darling-ton power block; ASO pro-



tection circuit; direct-coupled equalizer section; max. input level 260 mV; dual level-attenuation before and after control preamp section; negative-feedback tone controls; turnover selection at 150, 400, 3000, 6000 Hz; loudness & presence controls; two VU output meters adjustable for 30 mW-100 W and 10 mW-3 W; high/low filters; dual tape provision; "tape-through" circuit; inputs for tuner, aux. phono #1 & #2, outputs for 3 speaker systems; 16¹/₁₆" W x 14¹³/₁₆" D x 5⁷/₁₆" H \$449.95
KA-7300. Similar to above but 65 W rms/ch; independent power supply each channel; max. input level 200 mV; 12 dB/octave filters 18, 40, 8000 Hz \$329.95

KA-5500 Integrated Stereo Amplifier

55 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; direct-coupled differential amplifier; direct-coupled pure complementary output circuitry; max. input level 200 mV; negative-feedback tone controls; defeat switch; two VU meters; dual tape provision; "tape-through" circuit; low filter; inputs: tuner, phono, aux.; output: 2 speaker systems; 15" W x 10" D x 5¹/₂" H \$249.95
KA-3500. Similar to above except 35 W rms/ch; high filter \$159.95

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-



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. 17¹/₂" x 5³/₄" W x 11⁷/₁₆" D . . . \$649.95

LAFAYETTE

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" x 3⁷/₁₆" x 9⁷/₃₂" D \$149.95

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. 12¹/₄" x 4⁷/₁₆" x 10¹/₄" D \$99.95

4-CHANNEL

LA-84 4-Channel Amplifier

Features full-logic wave-matching plus variable 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. 15¹/₂" W x 4¹/₂" H x 12³/₄" D \$199.95
CD-4 Demodulator package \$69.95

LEAK

2200 Integrated Amplifier

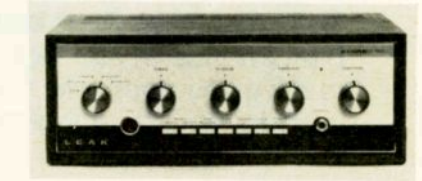
50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; frequency response 20-50,000 Hz



-2 dB; hum & noise -90 dB; crosstalk -50 dB at 10,000 Hz; sensitivity: phono 2.5 mV or 6.5 mV at 1 kHz, tape/cassette/tuner 150 mV, mic 2.4 mV; features 120 W single-channel mode, twin power output meters, illuminated function indicators, separate tape & cassette inputs, p.a. mic facility; 4-ch matrix switch; teak finished cabinet; 16.3" W x 12.5" D x 5.3" H \$650.00

2100 Integrated Amplifier

Solid-state integrated stereo amplifier. 35 W/ch at 8 ohms. Response 20-30,000 Hz. THD 0.1%



at rated output; IM 0.1% at rated output. Hum & noise -66 dB (at aux. input). Sensitivity: mag. phono 2.0 or 6.0 mV; aux. 400 mV; tuner 140 mV, 60 mV. Has hi & lo cut filters, matrix decoder for simulated 4-ch sound, ganged tone controls, multiple speaker switching, headphone output, and tape monitoring facilities. 16.3" W x 12.5" D x 5.3" H \$495.00

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 x 8¹/₁₆" H x 16³/₄" 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. 19¹/₁₆" W x 6⁷/₁₆" H x 15³/₁₆" D \$1495.00
M-2000. Similar to M-6000 except 120 W/ch; input sensitivity 1 V; residual hum & noise -100 dB; VU meter for power indication . . . \$995.00

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-85V Integrated Stereo Amplifier

80 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.05% THD; IM dist. 0.05% at rated output; frequency response 10-50,000

How to mix power

The power of your amplifier is one of the most important elements in the performance of your high fidelity system. It gives your amplifier sufficient power to drive your speakers. And you need well engineered power to give you the instantaneous burst that music may require.

The pleasure of your tuner is fullest when properly matched with its power supply; when it is sensitive and highly selective, and offers noise- and distortion-free sound. In short, an instrument attuned to your musical pleasure.

Sansui Amplifiers and Tuners: Our newly expanded complete line of powerful amplifiers and beautifully designed tuners are engineered and matched to give you the full pleasure of power. From the fabulous AU 20000 with a striking 170 watts per channel, min. RMS, both channels driven into 4 and



AU-11000

AU-20000

...with pleasure.

8 ohms, from 20 to 20000 Hz with no more than 0.05% total harmonic distortion at about \$1000* to the AU 3900 with 22 watts per channel, min. RMS, both channels driven into 8 ohms, from 40 Hz to 20 kHz, with no more than 0.15% total harmonic distortion at less than \$160*, every AU amplifier is loaded with features designed for creative listening. The fully matched TU tuners from less than \$160* to about \$450* all feature appropriately low distortion, fine sensitivity and high selectivity. For example, the TU 3900: sensitivity, 11.2 dBf (2.0 μ V); selectivity better than 60 dB (at 400 kHz). TU 9900: sensitivity, 8.8 dBf (1.5 μ V); selectivity from 20 dB at 200 kHz to 90 dB at 400 kHz. The TU 9900 offers a choice of wide and narrow bandwidths for selection of individual stations even in crowded areas.

Your nearest franchised Sansui dealer will be happy to demonstrate any in this fine series to you. Your powerful pleasure awaits.

* Approximate nationally advertised value. The actual retail price will be set by the individual dealer at his option.

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CIRCLE NO. 57 ON READER SERVICE CARD

1

Amplifiers

Hz -1 dB; input sensitivity: phono #1 & #2 2.5 mV, tuner, aux #1 & #2 200 mV; input imp. 50k; S/N 62 dB phono, 84 dB tuner, aux.; NF tone control with six rolloff points: 150, 300, 600, 1500, 3000 & 6000 Hz; has high & low filters, loudness & low-boost circuit, attenuator, linear equalizer, tape dubbing circuit, tape monitor circuit, input level setter for tuner; 17 $\frac{1}{4}$ " W x 12 $\frac{1}{16}$ " D x 6 $\frac{1}{16}$ " H..... \$765.00

M-1500 Stereo Power Amplifier

75 W/ch continuous 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..... \$695.00

MB3045 Mono Power Amplifier

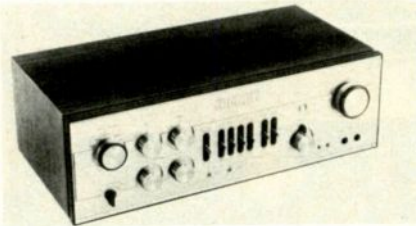
50 W into 4/8/16 ohms (20-20,000 Hz) at 0.3% THD; IM 0.3% at rated output; frequency response 10-40,000 Hz -1 dB input sensitivity: 700 mV; damping factor 16 (8 ohms, 1 kHz); residual hum & noise -95 dB; two 8045G output triodes, two 6240G pre-drivers, one 12AU7, one 12AX7; 14 $\frac{1}{16}$ " W x 9 $\frac{1}{16}$ " D x 6 $\frac{1}{16}$ " H.... \$495.00

L-80V Integrated Stereo Amplifier

80 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.05% THD; IM dist. 0.05% at rated output; frequency response 5-50,000 Hz -1 dB; input sensitivity: phono #1 & #2 2.5 mV; tuner, aux. #1 & #2 120 mV; S/N 65 dB (phono #1 & #2); 80 dB (tuner, aux. #1 & #2, monitor #1 & #2); tone control with turnover frequency selector (150, 300, defeat, 3000, 6000 Hz, defeat); has low-boost & loudness switch, tape monitor circuit, tape dubbing switch, tape connector (DIN), mode selector switch, speaker selector switch, headphone jack, a.c. outlet (1 switched); 17 $\frac{3}{16}$ " W x 11 $\frac{1}{16}$ " D x 6 $\frac{1}{16}$ " H..... \$475.00

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 x 9 $\frac{1}{2}$ " H x 6 $\frac{1}{8}$ " D..... \$895.00

CL35/III Stereo Control Center

Tube-type preamp/control unit; frequency response 15-40,000 Hz -1 dB; THD 0.06% (rated output 2 V); input sensitivity: phono #1 & #2 1.4 mV, aux #1 & #3 140 mV variable, aux #2 140 mV, mic 0.5 mV; S/N 64 dB phono, 77 dB aux, 60 dB mic; RIAA equalizer; NF tone control with defeat 150, 300, 600, 1500, 3000, 6000 Hz; low cut/high cut filters; attenuator -20 dB; has tape monitor circuit, phono input imp. selector, socket for step-up transformer,

headphone circuit; uses six 12AX7's & one 12AU7; wooden cabinet with silver smoked front panel; 19 $\frac{1}{2}$ " W x 11" D x 7 $\frac{1}{2}$ " H..... \$745.00

CL-350 Stereo Preamplifier

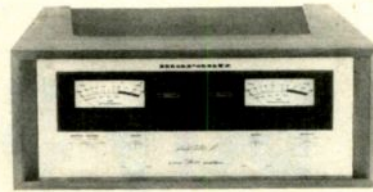


Features six pairs of inputs: two sets of phono inputs & jacks for stereo microphones; one pair of phono inputs adjustable from 30,000 to 100,000 ohms in three steps; negative-feedback tone controls for each channel; choice of turnover points for bass & treble; low- and high-frequency filters; three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

MARANTZ

510 Power Amplifier

256 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz \pm 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

250M Power Amplifier

126 W/ch rms at 8 ohms; response 20-20,000 Hz \pm 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. 6 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 9 $\frac{1}{2}$ " D..... \$599.95

240 Power Amplifier

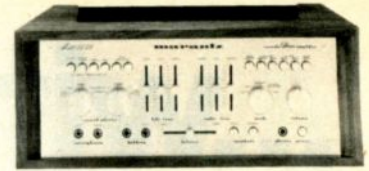
126 W/ch continuous power into 8 ohms and at 0.1% THD with both channels driven into 8 ohms; IM 0.1% at rated output; hum & noise -106 dB. Input sensitivity 1.5 V at rated output. Damping factor 100. 6 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 9 $\frac{1}{2}$ " D. Has no meters..... \$399.95

140 Power Amplifier

75 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.1% THD; IM 0.1% at rated output; input sensitivity: 1.0 V at 30 k; damping factor 60; includes two illuminated output level meters; peak LED indicators; left/right channel gain controls; 14 $\frac{1}{8}$ " W x 10 $\frac{1}{4}$ " D x 4 $\frac{3}{4}$ " H..... \$349.95

1250 Integrated Amplifier

125 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; IM 0.1%; has phono & mic inputs; main/remote speaker switching; graphic tone controls for bass, treble, midrange; high/low filters; independent tape input selectors for two tape decks; 15 $\frac{1}{8}$ " W x 14" D x 5 $\frac{1}{4}$ " H.....



\$699.95

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. 15 $\frac{1}{8}$ " x 5 $\frac{1}{4}$ " x 14" D. Gold anodized front panel..... \$397.95
1150D. Same except includes Dolby noise-reduction circuitry..... \$499.95

1060 Integrated Amplifier

30 W/ch rms at 8 ohms. Power bandwidth 15-40,000 Hz; response 15-40,000 Hz \pm 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. 4 $\frac{1}{4}$ " H x 12" W x 14 $\frac{1}{2}$ " D..... \$239.95

1070. Same as Model 1060 except 35 W/ch; IM & HD 0.3%..... \$299.95

1030 Integrated Amplifier

15 W/ch rms at 8 ohms. Power bandwidth 15-40,000 Hz; response 20-40,000 Hz \pm 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. 4 $\frac{3}{4}$ " H x 14 $\frac{1}{2}$ " W x 12" D..... \$179.95
1040. Same as Model 1030 except 20 W/ch; IM & THD 0.3%..... \$199.95

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 \pm 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 \pm 0.05 dB; THD 0.05% at rated output; output level 3 V; imp. 600 ohms..... \$219.95

4-CHANNEL

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. 15 $\frac{1}{8}$ " x 5 $\frac{1}{4}$ " x 14 $\frac{1}{2}$ " D..... \$549.95

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. 14 1/4" x 4 3/4" x 12" D Gold anodized front panel. \$299.95

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

MODULAR SOUND

Dyna Double Stereo 400 Amp

230 W rms/ch into 8 ohms (20-20,000 Hz) at 0.06% 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 wired \$900.00
Meters \$100.00

FET-5 MK II Stereo Preamplifier

Major rebuild of Dyna PAT-5 preamp; distortion off scale (less than 0.0033%) on H-P 3580A analyzer; features use of 1% metal film resistors, solid tantalum and silver mica capacitors, new super-fast hybrid FET IC's, low-noise transistors, improved power supply; wired version. \$389.00

FET-5. Conversion of wired PAT-5 ... \$150.00

NAKAMICHI

620 Stereo Power Amplifier

100 W/ch continuous sine wave into 8 ohms (20-20,000 Hz) at 0.01% THD; THD 0.002% up



to 1 kHz, 0.005% up to 10 kHz; IM dist. 0.002% (60/7000 Hz 4:1) into 8 ohms, 100 W output; frequency response 5-100,000 Hz ± 0.5 dB; S/N 117 dB (IHF-A); features class-B operation with "tetra-linear differential amplifier" circuitry; complete speaker & power transistor protection; peak indicating lamps with selectable "on" points; 15 3/4" W x 9 3/8" D x 6 3/4" H. \$600.00

610 Stereo Control Preamplifier

Combines preamp circuitry with test circuitry plus mixing facilities; 19 different inputs with full dubbing and 5 in/2 out mixing; built-in sine-wave tones plus pink noise, phase check and invert capabilities; remote speaker/power amp selection; mic input attenuators; frequency response: mic 30-100,000 Hz ± 0.75 %, aux 20-100,000 Hz ± 0.75 %; phono (RIAA) deviation within 0.3 dB; S/N (IHF-A standard): mic 65 dB (15 dB attenuation), phono 90 dB re

3 mV, aux. 93 dB; THD: mic 0.01%, phono & aux 0.005%; sine-wave oscillator: 1000, 3160, 4160, 10,000, 11,000, 13,160, 14,160 Hz at 0.2% dist.; pink noise 50-15,000 Hz ± 2 dB (1/3 octave) \$550.00

610B. Same except in matte black finish. \$570.00

RM-610. Optional remote-control unit permits switching of up to 3 speaker pairs or power amps from front-panel controls on preamp. \$75.00

NIKKO

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 x 6" H x 13 1/2" D \$379.95

ONKYO

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. 16 3/8" W x 5 3/8" H x 14 3/4" D. Walnut-grained vinyl on Luan plywood. \$359.95

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. 16 3/8" W x 5 3/8" H x 14 1/8" D. Walnut grained vinyl on Luan plywood. \$239.95

PEACETIME COMMUNICATIONS

SJ80 Integrated Amplifier

35 W rms/ch into 8 ohms; power bandwidth 10-80,000 Hz; frequency response 15-50,000 Hz; THD 0.15% at 1 kHz; 0.40% at 100% mod. full bandwidth; equalization: bass 15 dB at 50 Hz, treble 17 dB at 10 kHz; loudness 12 dB at 50 Hz, 7 dB at 7 kHz; low filter 8 dB at 70 Hz, high filter 5 dB at 5 kHz, 10 dB at 10 kHz; stereo separation 65 dB; S/N 80 dB (aux.), 60 dB (rec.), 78 dB (FM), 65 dB (mag. phono) ... \$269.00

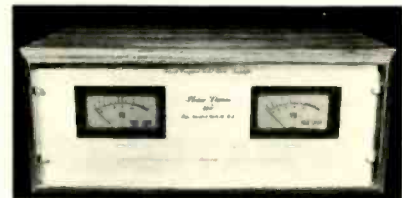
PHASE LINEAR

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

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,



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

200 Power Amplifier

105 W/ch minimum rms into 8 ohms (20-20,000 Hz) at 0.25% THD max; hum & noise 95 dB below rated output; damping ratio 100:1; phase shift lagging 12 degrees at 20 kHz; sensitivity 1.5 V; input impedance 18,000 ohms; features dual peak-responding meter system using LED displays; current-limiting amplifier protection; relay protection for speakers; rear-apron switch permits reduction in current feedback. 19" W x 8 3/4" D x 5 1/2" H. \$389.00

Walnut cabinet \$37.00

4000 Stereo Preamplifier

Features single-pass noise-reduction and dynamic-range-recovery systems capable of increasing dynamic range and removing noise from records, tapes and FM without pre-encoding. 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 unlimited 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 x 7" H x 10" D \$599.00
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; 5 1/2" H x 19" W x 6" D \$299.00
Walnut cabinet \$37.00

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 black-out panel. Walnut veneer wood enclosure

\$259.90

PIONEER

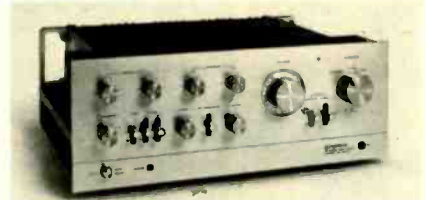
SPEC-2 Stereo Power Amplifier

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 $\frac{1}{16}$ " W x 6 $\frac{7}{8}$ " H x 13 $\frac{3}{16}$ " D

\$900.00

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. 16 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " H x 15 $\frac{7}{8}$ " D

\$750.00

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 $\frac{3}{16}$ " W x 6 $\frac{7}{8}$ " H x 16 $\frac{3}{16}$ " D

\$500.00

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. 16 $\frac{1}{2}$ " W x 5 $\frac{13}{16}$ " H x 13 $\frac{3}{8}$ " D; walnut case

optional extra \$300.00

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 \$400.00

SA-9500. Similar to SA-8500 except 80 W rms/ch at 0.1% THD 16 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " H x 15 $\frac{7}{8}$ " D \$500.00

SA-6500. Similar to SA-7500 except 25 W rms/ch at 0.1% THD; response: tuner, aux., tape PB 10-40,000 Hz +0/-1 dB; 15" W x 12 $\frac{1}{16}$ " D x 5 $\frac{1}{2}$ " H; walnut case optional extra . . \$175.00

PLANAR

SA2100 Integrated Stereo Amplifier

65 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD; built-in 4-channel



speaker matrixing; two peak VU meters monitor power level; two fast-acting fuses/ch; preamp section: bass, treble & balance control; volume & loudness controls; high filter; tape dubbing switch; source/monitor switch; source selector; dubbing in/out; source, tape & stereo indicator lights; phono sensitivity 2 mV/47 k; high-level 100 mV/100 k; preamp output 1.0 V/1 k; walnut veneer cabinet, polymeric grille; 19 $\frac{3}{8}$ " W x 14 $\frac{7}{8}$ " D x 6 $\frac{1}{2}$ " H \$399.95

RADIO SHACK

SA-2000 Integrated Stereo Amplifier

55 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; IM dist. 0.3% at 50 W; frequency



response 20-20,000 Hz ± 1.5 dB; S/N 60 dB (phono), 75 dB (aux); phono sensitivity 3 mV; phono overload capability 160 mV; tuner, aux, two mag. phono inputs; recording outputs; dubbing & monitor facilities for two tape decks; coupled gain & volume controls; selectable crossover frequencies for bass & treble controls; all 3 tone controls can be switched out of circuit; "Quatravox" 4-channel synthesizer; direct-reading power meters; headphone jack; stereo/mono switch; main/remote speaker switching; hi & low filters; walnut-veneer case; 16" W x 12 $\frac{1}{8}$ " D x 4 $\frac{3}{8}$ " H \$259.95

SA-1000 Integrated Stereo Amplifier

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; IM dist. 0.2% at 15 W; frequency response 20-70,000 Hz ± 2 dB at 1 W; S/N 60 dB (phono), 75 dB (aux); phono sensitivity 2.5 mV; phono overload capacity 150 mV; inputs: mag. phono, tuner, two aux.; record outputs; tape monitor button; "Quatravox" synthesizer for simulated 4-channel sound from stereo sources; headphone jack; stereo/mono switch; switching for two speaker pairs; switched & unswitched a.c. convenience outlets; walnut-veneer case; 15 $\frac{1}{4}$ " W x 11 $\frac{1}{2}$ " D x 4 $\frac{3}{8}$ " H \$159.95

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. 16 $\frac{3}{8}$ " W x 6 $\frac{1}{4}$ " H x 9 $\frac{3}{8}$ " D . . \$563.00

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-1412 Integrated Amplifier

110 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.1% THD; rack-mountable; direct-reading power meters; 2-stage differential, 3-stage parallel push-pull OCL complementary circuitry; 2-dB-per-step bass & treble switches; volume attenuator; bass & treble roll-off; two-position loudness control; two-position audio muting; mode control; full tape dubbing; mic input; will handle three pairs of speaker systems, two record players, two aux; 21 $\frac{1}{2}$ " W x 17" D x 7 $\frac{1}{4}$ " H . . \$780.00

RA-812 Integrated Amplifier

45 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.3% THD; direct-reading power meters; subsonic, low & high filters; loudness control; tone defeat; audio muting; will handle two phono, two aux; cabinet included, 17" W x 13" D x 5 $\frac{1}{2}$ " H \$370.00

RA-412 Integrated Amplifier

25 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD; full tape dubbing 1-2, 2-1; high & low filters; audio muting, loudness control; two phono inputs for magnetic cartridge; has full complement of controls and inputs/outputs; cabinet included; 15 $\frac{3}{4}$ " W x 9 $\frac{3}{8}$ " D x 4 $\frac{1}{2}$ " H \$200.00

RA-312 Integrated Amplifier

18 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 1% THD; low & high filters; loudness control; tape dubbing; 4-channel simulation; magnetic & crystal cartridge inputs; has full complement of inputs/outputs and controls, cabinet included; 15 $\frac{3}{4}$ " W x 9 $\frac{3}{8}$ " D x 4 $\frac{1}{2}$ " H \$170.00

SAE

Mark 2500 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 x 7" H x 15.75" D \$1250.00

In the Black



Suggest Retail of System shown—Mark VIII(\$650.00), Mark IXB(\$400.00), 2200(\$450.00)—Total System \$1500.00

They say that you can't judge a book by its cover; that's true, but what a cover. What was, and is the most beautiful look in the professional field is now the most daring look in general audio. BUT looks are not the whole story, in fact, not even the best part. Inside—that's where you find true SAE quality and performance. Here are just a few highlights of this SAE system:

MARK VIII FM DIGITAL TUNER—A 5-gang tuning cap., Dual MOSFET front-end, Linear-Phase IF filters with 7-stage limiter and PLL MPX. IHF Sen.—1.6uV, Stereo Sen.(-50dB)—30uV, mono THD—less than 0.15%, stereo THD—less than 0.2%.

MARK IXB PRE-AMPLIFIER EQUALIZER—Low noise phono circuits, 7-band equalizer with precision wound toroid inductors THD and IM—less than 0.02%, Phono S/N(10mV ref.)—75dB, Aux. S/N—95dB.

2200 STEREO POWER AMPLIFIER—Fully complementary circuitry, LED Power Display, Relay Protection, 100 WATTS RMS/CHANNEL (both channels driven) from 20Hz to 20kHz at less than 0.05% Total Harmonic Distortion.

This system combines beauty performance, quality and because its SAE a FREE 5 YEAR Service Contract. Compare and you'll find this is another great value by the people who make "Components for the Connoisseur."

SAE

Scientific Audio Electronics, Inc.

P.O. Box 60271, Terminal Annex

Los Angeles, Ca. 90060

Please send more information on the MkVIII, MkIXB, and 2200.

NAME _____

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CITY _____ STATE _____ ZIP _____

1

Amplifiers

Mark 2600. Same as Mark 2500 except 400 W rms/ch into 8 ohms; 600 W rms/ch into 4 ohms. \$1750.00

Mark 2400 Stereo Power Amplifier
200 W rms/ch continuous power output (20-20,000 Hz) with both channels driven; 0.05% 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" x 5 3/4" x 13 1/2" \$750.00

Mark 2200 Stereo Power Amplifier
100 W rms/ch continuous power output (20-20,000 Hz) with both channels driven; 0.05% THD from 250 mW to full rated power; IM 0.05% 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 x 5 3/4" H x 13 3/4" D. LED display. Walnut cabinet \$450.00

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 x 4 3/4" H x 8" D \$250.00

CHEAP

—but not dirty



60 Watts—4.0 or 8.0 Ohms minimum sine wave continuous average power from 20 Hz to 20 kHz with less than .05% total harmonic distortion.

Our power amplifiers are some of the best available. Our prices are some of the most reasonable available. You may not be familiar with our products since we sell only by direct mail and don't advertise a great deal.

We would like to send you our new 1975 catalog showing all of our fine audio products and test report information on our famous "Tiger .01" shown above. You might be pleasantly surprised at how little clean power actually costs.

#207 Complete Kit \$ 77.50 PPd

#207-A Assembled Amplifier....\$110.00 PPd



Southwest Technical Products
219 W. Rhapsody
San Antonio, Texas 78216

CIRCLE NO. 64 ON READER SERVICE CARD

Mark 2100 Stereo Preamplifier

Combines preamp circuitry with parametric & dynamic equalizer; frequency range 6-100,000 Hz ± 0.02 dB; adjustable phono input level; full complement inputs & outputs and controls; stepped volume control; 0.01% THD & IM dist.; 19" W x 7" D x 6" H \$900.00

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 x 10 1/2" D x 5 3/4" H \$825.00

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 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" x 7" x 5.75" H \$400.00

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 x 4 3/4" H x 8" D \$200.00

SANSUI

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 x 8 3/4" H x 18 1/2" D \$1300.00

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; 18 7/8" W x 7" H x 15 3/4" D \$900.00

AU20000 Integrated Stereo Amplifier

170 W rms/ch into 8 ohms both channels driven (20-20,000 Hz) at 0.05% THD; power bandwidth 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. 18 1/8" W x 7" H x 15 3/4" D \$1000.00

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 \$750.00

AU9900. Similar to AU11000 except 80 W rms/ch; frequency response (at 1 W) 10-50,000 Hz +0 dB, -1 dB; \$600.00

AU7900 Integrated Stereo Amplifier

75 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; IM dist. 0.1% (aux) at rated min.



rms power output; frequency response 10-50,000 Hz +0, -1.5 dB (aux); hum & noise 75 dB (phono), 90 dB (aux); controls: bass, mid-range & treble tone; bass, treble tone selector; low boost, high & low boost loudness; low & high filter; dual power supply; separable control/power section; two-deck dubbing/play provisions; two phono inputs; three a.c. outlets (one switched) \$400.00

AU5900. Similar to AU7900 except 45 W rms/ch; loudness & audio muting switches; 16 3/16" W x 12 3/16" D x 5 1/4" H \$260.00

AU4900 Integrated Stereo Amplifier

35 W rms/ch into 8 ohms (40-20,000 Hz) at 0.15% THD; IM dist. 0.2% at rated rms min. power output; frequency response 10-40,000 Hz +0.5 dB, -1.5 dB; hum & noise 75 dB (phono), 90 dB (aux); bass & treble tone controls; low/high filter; tape monitor; mic mixing; speaker switch for A, B, A + B and off (phones only); phones jack; two a.c. outlets (one switched); 15 3/4" W x 9 1/2" D x 4 3/4" H \$200.00

AU3900. Similar to AU4900 except 22 W rms/ch; hi filter only \$160.00

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). 18 1/8" W x 7 1/8" H x 14 1/16" D \$700.00

SCOTT H. H.

A436 Integrated Stereo Amplifier

42 W rms/ch into 8 ohms (20-20,000 Hz) at

STEREO DIRECTORY & BUYING GUIDE

0.3% THD; pushbutton selector for phono, tuner & aux.; volume/loudness compensation; tape monitor facility; connections & switching for two sets of speakers; front-panel head-phone jack; rotary selector with two phono inputs; separate linear-motion treble & bass controls for each channel with detents; hi/lo filters; individual channel power meters cali-



brated in % of full output; electronic protection circuitry; 16 1/2" W x 13" D x 5 5/8" H... \$299.95

A426 Integrated Stereo Amplifier

30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; pushbutton selector for phono, tuner & aux.; individual function lights; log linear-taper volume control with detents; front-panel stereo mic inputs; -20 dB muting switch; preamp/amp bridge jacks for onboard accessory use; switched and unswitched power outlets on rear panel; rack-type handles; 16 1/2" W x 13" D x 5 5/8" H... \$249.95

A416 Integrated Stereo Amplifier

20 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phono, mic, aux inputs; two separate tape monitors; vertical linear-motion tone controls with detents; direct-coupled power output stage; speaker line fuses; convenience power outlet; 14 1/2" W x 12" D x 5" H... \$199.95

A406 Integrated Stereo Amplifier

15 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; pushbutton selector for phono, tuner & aux.; volume/loudness compensation; tape monitor facility; connections and switching for two sets of speakers; front-panel head-phone jack; 14 1/2" W x 12" D x 5" H... \$149.95

SHERWOOD

HP-2000 Integrated Stereo Amplifier

120 W rms/ch into 8 ohms (20-20,000 Hz) at 0.08% THD; IM dist. 0.08%; S/N 83 dB (phono input at 10 mV); dual power meters with LED peak indicators; 22-position detented volume controls; 11-position variable loudness contour; hi & lo filters; -20 dB audio muting; switching for independent use of preamp/power amp sections; six convenience outlets; solid walnut end panels available... \$700.00

HP-1000. Same as HP-2000 except 60 W rms/ch; S/N 73 dB (phono input at 10 mV)... \$500.00

SONY

TA-5650 Integrated Stereo Amplifier

50 W/ch (20-20,000 Hz) at 0.1% THD; true complementary push-pull V-FET output; has inputs for tuner, two phono, three aux., two tape decks, plus two external adapters... \$500.00

TA-3650 Integrated Stereo Amplifier

55 W rms/ch into 8 ohms (20-20,000 Hz) at



0.1% THD; has full complement of inputs & outputs... \$300.00

TA-2650 Integrated Stereo Amplifier

45 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; has full complement of inputs & outputs... \$220.00

TAN-5550 Stereo Power Amplifier

50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; features vertical FET output amplifier stage with complementary parallel push-pull circuit... \$450.00

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. 5 7/8" H x 15 3/4" W x 12 3/4" D... \$400.00

TAE-5450 Stereo Preamplifier

Direct-coupled FET differential amplifiers & buffer amplifiers in phono equalizer and tone-control stages; connections for tuner, two phono, three aux. sources, two tape decks; two external adapters... \$450.00

SPECTRO ACOUSTICS

202 Power Amplifier

Stereo power amp rated at 100 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD & IM; power at clipping 200 W/ch typical; input sensitivity 1 V rms for 100 W output into 8 ohms; features peak-level indicators, class AB design... \$375.00

101B Preamp-Equalizer

Five-band "shelving" type graphic equalizer with oil-damped slide controls and hybrid gyrator/coil design that can be "pushbutton patched" into line or tape outputs, or bypassed for EQ in/out comparisons; dual taping facilities include twin monitor circuits, low-impedance buffered outputs, bi-directional "bypass" copying and simultaneous recording from any selected source, with optional EQ inserted before, between or after the tape machines; features dual slide controls for level; function pushbuttons for mode, equalizer in/out, monitor, record, source selection. Equalizer range: ±15 dB in five bands from below 20 Hz to beyond 20 kHz; THD 0.05% from 20-20,000 Hz; IM 0.005% 60 & 7000 Hz mixed 4:1; (S + N)/N 81 dB phono, 95 dB high-level; dynamic range 95 dB phono, 108 dB high-level. 15" W x 7" D x 6" H... \$335.00

217 Preamplifier

Straightline design with no tone controls or equalization, for ultra-linear output response; front-panel-accessible cartridge-loading adjustments with 16 combinations to match and load most magnetic phono cartridges; high-level switching section permits choice of source, bidirectional-bypass copying in the tape-monitor section and stereo or mono operation; response: phono, 20-20,000 Hz, ±0.5 dB; high-level, 10-100,000 Hz ±0.25, 2-250,000 Hz ±3 dB; dist. 0.05% THD 0.01% IM at rated output. 17" W x 6 3/4" D x 3 1/2" H... \$250.00

STAX

DA-300 Stereo Power Amplifier

150 W/ch continuous power (20-20,000 Hz)

into 8 ohms at 0.03% THD; IM 0.033%; response 3-500,000 Hz; damping factor 800 at 1 kHz; residual hum & noise 97 dB; input sensitivity 1.7 V rms; protection circuits for d.c. input and output, input and output overload, thermal; class-A amplification; d.c. coupling; dual VU meters... \$3600.00

SWTP

207-A Mono 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. 4 1/4" W x 5" H x 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. 4 1/4" x 4 3/4" x 13" D. Kit... \$69.50

275 Mono 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. 4 1/4" W x 5" H x 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

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

TECHNICS BY PANASONIC

SU-9600P 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

1 Amplifiers

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. $6\frac{3}{16}$ " H \times $17\frac{3}{4}$ " W \times $13\frac{3}{4}$ " D... \$629.95

SE-9600P 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. $7\frac{5}{16}$ " \times $17\frac{3}{4}$ " W \times $13\frac{3}{4}$ " D... \$799.95

SU-8600 Integrated Amplifier

73 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 0.08% THD; response 20-20,000 Hz $+0/-0.2$ dB. IM 0.08%; hum & noise 0.3 mV; sensitivity: phono 2.0 mV; tuner, aux. & tape 150 mV; power bandwidth 5-70,000 Hz -3 dB; two turnover frequencies for bass & treble controls; main volume control with 26 click stops; extremely steep cut-off in low and high filters; provisions for two stereo tape decks with monitor circuits for tape-to-tape dubbing in both directions... \$349.95

YAMAHA

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

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... \$250.00

B-2 Power Amplifier

100 W rms/ch into 8 ohms (20-20,000 Hz) at 0.08% THD; IM dist. at rated power 0.3%;

response 10-100,000 Hz $+0/-1$ dB at 1 W; power bandwidth 5-100,000 Hz; peak reading meters calibrated in dB and watts output; inputs: #1, #2; outputs: A, B;... \$850.00

C-2 Preamp

Features all-FET circuitry; response: phono (RIAA) 30-15,000 Hz ± 0.2 dB; tuner, aux., tape 5-100,000 Hz $+0/-1.5$ dB; head amplifier for moving-coil cartridges; precise bass, treble and four-gang volume-balance controls; sub-sonic filter; inputs: phono #1, #2, #3, tuner, aux., tape #1, #2; outputs: pre-out #1, #2, rec-out A, B;... \$650.00

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%, 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

1 Tuners

ACCUPHASE

T-100 AM-FM Stereo Tuner

FM sensitivity 2.0 μ V; 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. $6\frac{1}{2}$ " H \times $17\frac{1}{2}$ " W \times $14\frac{1}{2}$ " D... \$750.00
AWC-1. Walnut case... \$45.00

T-101 FM Stereo Tuner

FM sensitivity 2.0 μ V; capture ratio 2.0 dB; S/N 70 dB; THD 0.1% at 1000 Hz; stereo separation 45 dB at 1000 Hz; response 20-15,000 Hz $+0$, -1 dB. $6\frac{1}{2}$ " H \times $18\frac{1}{2}$ " W \times $14\frac{1}{2}$ " D... \$500.00
AWC-2. Walnut case... \$45.00

DYMEK

AM7 International AM Tuner

AM-only (150-300 kHz & 540-1600 kHz) solid-state tuner; sensitivity: 3 μ V medium-wave, 6 μ V long-wave at 10 dB S+N; -6 dB r.f. bandwidth ± 4 kHz (narrow), ± 7.5 kHz (wide); -50 dB r.f. bandwidth ± 10 kHz (narrow), ± 14 kHz (wide); THD (30% mod, 1 kHz) 0.5%, (80% mod, 1 kHz) 1.5%; audio output 1 V rms 5000 ohms, $+2$ dBm 600 ohm optional; tuning meter; 110/220 V, 60 Hz; $17.5\frac{1}{2}$ " W \times $10\frac{1}{2}$ " D \times $3.5\frac{1}{2}$ " H... \$320.00

AM5 AM Tuner

AM-only solid-state tuner; sensitivity 3 μ V for 10 dB S/N; bandwidth -6 dB r.f.: narrow mode



± 4 kHz, wide mode ± 10 kHz; modulation response -3 dB at 15 Hz & 9 kHz; THD (30% mod, 1 kHz) 0.5%; 80% modulation 1.5%; front-mounted slide volume control. $3.5\frac{1}{2}$ " H \times $17.5\frac{1}{2}$ " W \times $10\frac{1}{2}$ " D (option 19" rack-mount hardware). Designed to be used with active directional antenna (Dymek DA3 & DA4)... \$295.00

DYNACO

FM-5 FM Stereo Tuner

Response 20-15,000 Hz ± 1 dB. 40 dB stereo separation at 1000 Hz. FM sensitivity 10.2 dBf

STEREO DIRECTORY & BUYING GUIDE

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1

Tuners



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 Dynatune automatic tuning for exact center-of-channel. 4 1/2" H x 13 1/2" W x 9" D Kit \$199.00 Assembled \$319.00

AF-6 AM-FM Stereo Tuner

The FM section is similar to that used in the Model FM-5 Kit \$269.00 Assembled \$395.00

FISHER

FM2400 AM-FM Stereo Tuner

FM usable sensitivity 1.8 μ V; 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 \$299.95

FM2300 AM-FM Stereo Tuner

FM usable sensitivity 1.9 μ V; 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

FM2100 AM-FM Stereo Tuner

FM usable sensitivity 2.0 μ V; 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

HEATH

AN-2016 Modulus Tuner/Preamp



For stereo or 4-channel; combines preamp with built-in digital-readout AM-FM tuner; THD or IM dist. 0.05% (preamp); hum & noise -75 dB (phono); Baxandall tone controls; peak-responding output meters; FM tuner: 1.7 μ V sensitivity (3.5 μ V for 50 dB quieting); 100 dB selectivity; 40 dB stereo separation; optional plug-in circuit boards add Dolby FM, CD-4, and full-logic SQ; 19" W x 14 1/2" D x 6 1/2" H (kit) \$599.95

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 readouts. 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 μ V IHF. Response 20-15,000 Hz \pm 1 dB. Channel separation 40 dB at mid-frequencies.

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

AJ-29 AM-FM Tuner

Stereo design. Same tuner circuitry as AR-29 receiver. Pre-assembled, factory aligned FM front-end provides 1.8 μ V 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-



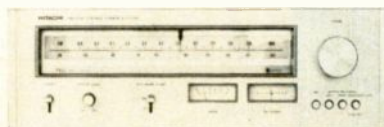
ternal FM antenna. Solid-state circuitry; pre-assembled and aligned FM tuning unit; FM sensitivity 2 μ V; selectivity 60 dB; 40 dB typical channel separation; distortion 0.5%. 3 7/8" H x 12 3/4" W x 13" D. Includes walnut-stained veneer end panels.

Kit \$109.95

HITACHI

FT/920 AM-FM Stereo Tuner

FM usable sensitivity 28 dBf (14 μ V); 50 dB quieting sensitivity 36 dBf (34 μ V); S/N 68 dB (at 65 dBf); frequency response 30-15,000 \pm 1 dB; capture ratio 1.0 dB; alternate channel selectivity 80 dB; spurious response ratio 100 dB; stereo separation 45 dB at 1000 Hz; PLL circuitry; two (signal/multipath & FM tuning) meters; auto-lock a.f.c. circuit; a.g.c.; 17 1/8" W x 15 1/4" D x 5 3/4" H. \$299.95
FT/520. Similar to FT/920 except 50 dB quiet-



ing sensitivity 37 dBf (39 μ V); single output level control; signal/FM tuning meter \$239.95

JVC

JT-V71 AM/FM Stereo Tuner

FM sensitivity 1.8 μ V (10.3 dBf); frequency response 20-20,000 Hz +0.2 dB, -1.0 dB; 50 dB



quieting sensitivity 38 μ V stereo; S/N 68 dB stereo; capture ratio 1.0 dB; alternate channel selectivity 75 dB; stereo separation 45 dB (100 Hz), 50 dB (1 kHz), 40 dB (10 kHz); features single-unit 4-resonator ceramic filter combined with 4-pole phase-linear LC filter; FM stereo PLL circuit; subsonic filter; 2-step hi-blend; 2-step FM muting; twin tuning meters; 16 1/8" W x 14 7/32" D x 6 3/8" H. \$269.95

JT-V31 AM/FM Stereo Tuner

FM sensitivity 1.9 μ V (10.77 dBf); frequency response 30-15,000 Hz +0.5 dB, -2.5 dB; 50 dB quieting sensitivity 40 dB stereo; S/N 50 dB stereo; capture ratio 1.2 dB; alternate channel selectivity 60 dB; stereo separation 40 dB (100 Hz), 45 dB (1 kHz), 35 dB (10 kHz); features 4-resonator single-unit ceramic filter; FM stereo PLL circuit; twin tuning meters; 15 1/32" W x 14 3/32" D x 6" H. \$169.95

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 multipath detection meter. FM usable sensitivity (IHF) 2.0 μ V; quieting slope 4.0 μ V, S/N 50 dB; response 20-15,000 Hz \pm 10 dB, 50-10,000 Hz \pm 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. 17 1/4" W x 5 3/4" H x 11 7/8" D \$749.95

KT-8300 AM-FM Stereo Tuner

FM sensitivity 9.3 dBf (1.6 μ V at 75 ohms); 50 dB quieting sensitivity 14.2 dBf (2.8 μ V at 75 ohms) mono, 34.8 dBf (30 μ V) stereo; S/N at 65 dBf 78 dB mono, 75 dB stereo; capture ratio



1.0 dB (wideband), 1.5 dB (narrow band); alternate channel selectivity 40 dB (wide), 110 dB (narrow); stereo separation (50-10,000 Hz) 45 dB (wide), 35 dB (narrow); spurious response 110 dB; 17" W x 14 3/4" D x 5 7/8" H. . . . \$379.95

KT-7300 AM-FM Stereo Tuner

FM sensitivity 10.3 dBf (1.8 μ V at 75 ohms); 50 dB quieting sensitivity 16.8 dBf (3.8 μ V at 75 ohms) mono, 38.3 dBf (45 μ V) stereo; S/N at 65 dBf 73 dB mono, 68 dB stereo; capture ratio 1.0 dB; alternate channel selectivity 80 dB; stereo separation (50-10,000 Hz) 35 dB; spurious response 90 dB; 17" W x 14 3/4" D x 5 7/8" H. . . . \$259.95

KT-5300 AM-FM Stereo Tuner

FM sensitivity 10.8 dBf (1.9 μ V at 75 ohms); 50 dB quieting sensitivity 19.2 dBf (5.0 μ V at 75 ohms) mono; capture ratio 1.0 dB; alternate channel selectivity 60 dB; stereo separation (50-10,000 Hz) 30 dB; spurious response 70 dB; 15" W x 11 3/8" D x 5 7/8" H. . . . \$129.95

LAFAYETTE

LT-D10 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.65 μ V; 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. 15 3/8" x 11 7/8" x 4 1/2" (less knobs). . . . \$269.95

LT-825 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.2 μ V; 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. 12 3/8" x 3 7/8" x 9 1/4" \$149.95

LEAK

2300 AM-FM Stereo Tuner

Designed to be used with the company's 2100 or 2200 amplifier; frequency response 40-

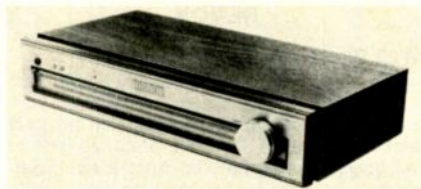


14,000 Hz \pm 1.5 dB; sensitivity for 30 dB S/N 1.6 μ V; HD 0.5% at 1 kHz stereo; hum & noise -65 dB; alternate channel rejection 50 dB; capture ratio 1.5 dB; channel separation 35 dB at 1 kHz, 30 dB at 10,000 Hz; quasi stereo separation 20 dB at 1 kHz, 4 dB at 10 kHz; features tuning meter, stereo beacon, adjustable mute level control, and quasi stereo (for reducing background noise on distant stereo programs without losing stereo effect); teak finish; 16.3" W x 12.2" D x 5.3" H. . . . \$495.00

LUXMAN

T-110 FM Stereo Tuner

FM sensitivity 1.6 μ V (9.3 dBf) 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-300 AM-FM Stereo Tuner

IHF FM sensitivity 1.7 μ V (9.8 dBf); 2.2 μ V (12.0 dBf) for 50 dB quieting; four-gang tuning capacitor; MOSFET front-end; five-pole phase-compensated filter 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 μ sec to 25 μ sec 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-88 V AM-FM Stereo Tuner

Designed to match the L-80 series integrated amplifiers; IHF usable sensitivity 11.2 dBf (2 μ V) at 1 kHz, 100% mod.; 50-dB sensitivity 15.6 dBf (3.3 μ V) at 50 μ s; capture ratio 1.8 dB; S/N 68 dB (1 kHz); frequency response 50-10,000 Hz \pm 0.5 dB, 20-15,000 Hz +0.5 dB, -2.0 dB; THD 0.3% at 100 Hz, 0.4% at 6000 Hz; stereo separation 43 dB (1 mV, 1 kHz); has FM high blend circuit, FM muting, multi-path detector circuit, output level setter; 17 2/32" W x 11 1/16" D x 6 3/16" H. . . . \$345.00

MARANTZ

150 AM-FM Stereo Tuner

FM usable sensitivity 1.7 μ V (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 μ sec Dolby de-emphasis switch. 5 3/4" H x 14 3/8" W x 12" D. . . . \$599.95

125 AM-FM Stereo Tuner

FM usable sensitivity 1.8 μ V (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 μ sec Dolby de-emphasis switch. . . \$339.95

112 AM-FM Stereo Tuner

FM usable sensitivity 2.2 μ V (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 μ sec Dolby de-emphasis switch. 4 3/4" H x 14 1/4" W x 12" D. . . . \$219.95

104 AM-FM Stereo Tuner

FM sensitivity 3.0 μ V for 30 dB quieting; capture ratio 3 dB; image rejection -50 dB; features inter-station muting; signal-strength tuning meter. 1 1/4" W x 4 3/4" H x 12" D. . \$169.95

NIKKO

FAM-800 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.8 μ V; 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 x 6" H x 14 1/2" D. . . . \$259.95

FAM-500 AM-FM Stereo Tuner

FM sensitivity (IHF) 2.0 μ V; 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 x 12 3/8" D x 8 7/8" H. Has blackout linear-scale dial and needle illumination. . . . \$179.95

ONKYO

T-4055 AM-FM Stereo Tuner

FM sensitivity 1.7 μ V; frequency 20-15,000 Hz \pm 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 Luan plywood cabinet. 16 3/8" W x 14" D x 5 7/8" H. . . . \$219.95

PEACETIME COMMUNICATIONS

FM-Stereo Digital Tuner

All-solid-state FM-only digital tuner; automatic scanning with controllable sweep speed & stopping time; digital readout; computer-type keyboard for programming; memory functions; fixed or variable audio output; frequency response (discriminator) 10-70,000 Hz \pm 0.5 dB, (audio) 20-15,000 Hz \pm 1 dB; sensitivity: 95 dB; capture ratio 1.2 dB; HD 0.2%; IM dist. 0.1%; image rejection 90 dB; S/N (100% mod.) 65 dB; channel frequency accuracy 0.005%; channel separation; 1000 Hz at -40 dB, -30 dB at 80 Hz, -30 dB at 10,000 Hz, -25 dB at 15,000 Hz; audio output voltage 1 V rms; 105/125 or 210/250 V a.c. 50/60 Hz. . . . \$995.00

1

Tuners

FM8 FM-Stereo Tuner

Companion unit to the company's SJ80 integrated amplifier; frequency response 15-20,000 Hz; IM dist. 0.4%; THD 0.2%; sensitivity 1.8 μ V; capture ratio 1.3 dB; image rejection 70 dB; selectivity 80 dB; i.f. rejection 95 dB; AM suppression 50 dB; S/N 63 dB. \$299.00

PILOT

211 AM-FM Stereo Tuner

FM sensitivity 1.8 μ V for 30 dB (S + N)/N; selectivity 65 dB. Response 20-15,000 Hz \pm 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 x 5 $\frac{1}{8}$ " H x 11 $\frac{1}{2}$ " D. \$199.90

PIONEER

TX-9500 AM-FM Stereo Tuner

FM sensitivity 1.5 μ V (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 (\pm 400 kHz); response 20-15,000 Hz \pm 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. 16 $\frac{1}{2}$ " W x 5 $\frac{7}{8}$ " H x 14 $\frac{3}{8}$ " D. \$400.00

TX-7500 AM-FM Stereo Tuner

FM sensitivity 1.9 μ V (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 (\pm 400 kHz); response 20-15,000 Hz \pm 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; 16 $\frac{1}{2}$ " W x 5 $\frac{7}{8}$ " H x 14 $\frac{3}{8}$ " D. \$250.00

TX-6500 AM-FM Stereo Tuner

FM sensitivity 1.9 μ V (IHF); S/N 68 dB stereo; THD (stereo, at 65 dBf) 0.3% at 100 Hz, 0.3% at 1 kHz, 0.4% at 6 kHz; capture ratio 1 dB; selectivity 60 dB; response 30-15,000 Hz \pm 0.2/-1.5%; separation 40 dB (1 kHz); image rejection 60 dB; i.f. rejection; 90 dB; spurious rejection 75 dB; subcarrier suppression 62 dB; antenna input 300 ohms balanced, 75 ohms unbalanced; 15" W x 12 $\frac{1}{16}$ " D x 5 $\frac{1}{2}$ " H. \$175.00

RADIO SHACK

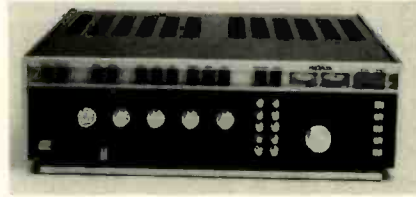
TM-1000 AM-FM Stereo Tuner

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 μ V; 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. 4 $\frac{3}{8}$ " x 15 $\frac{1}{4}$ " x 11 $\frac{1}{2}$ ". \$159.95

REVOX

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 \pm 40 kHz deviation; response 30-15,000 Hz \pm 1 dB; distortion 0.2% at 1000 Hz & \pm 40 kHz deviation; quartz-stabilized frequency synthesizer; five-digit frequency display; signal-strength & center-channel tuning meters; remote-control facility. \$1665.00

A76 FM Stereo Tuner

Sensitivity 1 μ V 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. 16 $\frac{3}{8}$ " W x 6 $\frac{1}{4}$ " H x 9 $\frac{5}{8}$ " D. \$750.00

ROTEL

RT-1024 Dolbyized AM-FM Stereo Tuner

FM sensitivity 1.6 μ V (IHF), 9 dBf; stereo separation 40 dB at 1 kHz, 35 dB from 100 to



10,000 Hz; four meters; signal-strength, center-tuning, multi-path, Dolby; 3-pos. muting; high blend; multi-path switch; headphone jack with volume control; rack-mountable. \$570.00

RT-824 AM-FM Stereo Tuner

FM sensitivity 1.6 μ V (IHF); signal-strength & center-tuning meters; high-blend; FM muting; 4-channel FM-detector output; headphone jack with volume control; 17" W x 13" D x 5 $\frac{1}{2}$ " H. \$320.00

RT-324 AM-FM Stereo Tuner

FM sensitivity 1.9 μ V; S/N 65 dB; dual-purpose signal-strength/center-channel tuning meter; cabinet included; 15 $\frac{3}{4}$ " W x 9 $\frac{1}{2}$ " D x 4 $\frac{1}{2}$ " H. \$170.00

RT-224 AM-FM Stereo Tuner

FM sensitivity 4 μ V; S/N 60 dB; phase-locked-loop in FM circuit; linear FM dial scale; cabinet included; 13" W x 9 $\frac{1}{2}$ " D x 4 $\frac{1}{2}$ " H. \$130.00

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 μ V for 30 dB quieting. Capture ratio 1.9 dB. Response 20-15,000 Hz \pm 0.5 dB. A 14-pole Butterworth-type toroid phase-linear i.f. filter provides 75 dB selectivity. 17" W x 10 $\frac{1}{2}$ " x 5 $\frac{3}{8}$ ". \$1250.00
Optional walnut cabinet \$44.00

Mark VIII FM Digital Tuner

Includes 5-gang dual-gate FET front-end with 1.6 μ V 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 x 5.75" H x 10.5" D. \$650.00

SANSUI

TU-9900 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.5 μ V; 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 \pm 0.5 dB, -0.8 dB; S/N 76 dB (stereo); spurious rejection 100 dB (98 MHz). 18 $\frac{1}{8}$ " W x 6 $\frac{1}{8}$ " H x 12 $\frac{1}{4}$ " D. \$450.00

TU-7900 AM-FM Stereo Tuner

FM sensitivity 9.8 dBf (1.7 μ V); 50 dB quieting sensitivity 35 dBf (stereo); THD 0.35% stereo;



S/N 65 dB stereo; stereo separation 40 dB at 1 kHz; capture ratio 1.5 dB; automatic noise canceller; frequency-linear FM dial scale; twin tuning meters; multi-path detector; FM muting switch; output level control; Dolby 25- μ s de-emphasis plus back panel terminals for connecting Dolby unit to decode FM broadcasts; a.c. outlet; 16 $\frac{1}{16}$ " W x 9 $\frac{1}{16}$ " D x 5 $\frac{1}{4}$ " H. \$300.00

TU-5900 AM-FM Stereo Tuner

FM sensitivity 10.3 dBf (1.8 μ V); 50 dB quieting sensitivity 38 dBf stereo; S/N 60 dB stereo; THD 0.35% stereo; capture ratio 2.0 dB; stereo separation 40 dB at 1 kHz; PLL multiplex demodulator; frequency-linear FM dial scale; twin tuning meters; Dolby FM facilities; facilities for reproducing Sansui QS broadcasts (using 4-channel amplifier and QS decoder); universal de-emphasis 50/75 μ s plus 25 μ s; 16 $\frac{1}{16}$ " W x 9 $\frac{1}{16}$ " D x 5 $\frac{1}{4}$ " H. \$230.00

TU-3900. Similar to TU-5900 except FM sensitivity 11.2 dBf (2.0 μ V); THD 0.4% stereo; S/N

70 dB mono; signal-strength & center-of-channel meters; antenna attenuator button; 15 $\frac{3}{4}$ " W x 9 $\frac{1}{2}$ " D x 4 $\frac{1}{4}$ " H. \$160.00

SCOTT, H. H

T33S Digital FM Stereo Tuner

Sensitivity 1.8 μ V 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 x 17 $\frac{5}{8}$ " W x 13" D. \$999.50

T526 AM-FM Stereo Tuner

FM sensitivity 3.5 μ V; 10 dBf for 50 dB S/N; response 30-15,000 Hz \pm 2 dB; stereo separa-



tion 40 dB; capture ratio 1.5 dB; HD 0.3%; S/N 68 dB; LED stereo indicator; signal-strength and center-channel tuning meters; interstation muting; multiplex switchable filter; AM noise suppression circuitry; front-panel Dolby de-emphasis switch; 16 $\frac{1}{2}$ " W x 12" D x 5 $\frac{3}{8}$ " H. \$249.95

T516. Similar to T526 except does not include switchable filter, center-channel tuning meter, or Dolby de-emphasis switch; 14 $\frac{1}{2}$ " W x 12" D x 5" H. \$149.95

SEQUERRA

Model I FM-Stereo Tuner/Monitor

Features instrumentation functions and oscilloscope display, including analysis of: signals being transmitted; signal delivered from antenna; signal as tuned; internal vector separation; stereo and quad signals from external sources; for total system checks. Additional features include: discrete digital frequency readout; Dolby-B system for FM; variable muting; interstation noise muting; inter-stereo muting for mono; hi-blend. Muting threshold 12.2 dBf (variable); capture ratio 0.75 dB; alternate channel selectivity better than 100 dB; usable sensitivity 15.5 dBf (3.2 μ V) stereo; 50-dB quieting sensitivity 35.8 dBf (34.0 μ V); S/N at 65 dBf (977 μ V) 70 dB; THD at 50-dB quieting (100 Hz, 1 kHz, 6 kHz) 0.4%; IM distortion 0.5%; stereo separation 51 dB at 100 Hz, 52 dB at 1 kHz, 38 dB at 10 kHz. 19" W x 14 $\frac{1}{4}$ " D x 7" H. \$2995.00
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

Model II FM-Stereo Tuner

Same as Model I, without oscilloscope monitor; features pre-selection of up to three stations; variable selectivity; connections for separate display unit; 17" W x 14" D x 3 $\frac{1}{2}$ " H. \$1600.00

SHERWOOD

Micro/CPU 100 FM Stereo Tuner

FM sensitivity 1.7 μ V for 30 dB S/N; stereo distortion 0.15% at 100% mod.; spurious rejection 120 dB; stereo separation 50 dB (1000 Hz); digitally synthesized tuner controlled by cpu with a wide and narrow i.f. system; 6-section varactor front end; advance digital detection system; PLL multiplex; LED dial scale; digital station readout; station call-letter readout; auto scan and memory tuning. \$2000.00

HP-5500 AM-FM Stereo Tuner

FM sensitivity 1.7 μ V for 30 dB; distortion (stereo) 0.2% at 100% mod.; separation 50 dB at 1000 Hz; capture ratio 1 dB; 6-section front end; digital detection system; PLL multiplex; switchable de-emphasis; walnut end panels included. \$400.00

HP-5000 AM-FM Stereo Tuner

FM sensitivity 1.7 μ V for 30 dB; distortion 0.2% at 100% mod.; separation 45 dB at 1000 Hz; capture ratio 1 dB; digital detection system; PLL multiplex; switchable de-emphasis; walnut end panels included. \$300.00

SONY

ST-5950SD AM-FM Stereo Tuner

Built-in Dolby noise-reduction system; "uniphase" i.f. filters for improved selectivity and lower distortion; balanced dual FET mixer circuit with buffered local oscillator; MOSFET r.f. amplifier. \$450.00

ST-3950SD AM-FM Stereo Tuner

Built-in Dolby noise-reduction system; full complement of tuning & control facilities. \$300.00

ST-2950SD AM-FM Stereo Tuner

Built-in Dolby noise-reduction system; PLL FM multiplex decoder; full complement of controls. \$220.00

TECHNICS BY PANASONIC

ST-8600 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.9 μ V (10.8 dBf); response 20-18,000 Hz +0.2/-0.8 dB; capture ratio 1.0 dB; THD 0.25% (stereo); S/N 72 dB (stereo); image rejection 95 dB (98 MHz); i.f. rejection 105 dB (98 MHz); selectivity 85 dB; has full complement of controls and outputs, including built-in pink-noise generator; signal-strength & center-tuning meters. \$329.95

ST-7600 AM-FM Stereo Tuner

FM sensitivity (IHF) 1.9 μ V (10.8 dBf); response 15-20,000 Hz -0.2/-0.8 dB; capture ratio 1.0 dB; THD 0.4% (stereo); S/N 75 dB; selectivity 25 dB; image rejection 50 dB (98 MHz); i.f. rejection 83 dB (98 MHz); selectivity 75 dB (normal), 90 dB (narrow); has full complement of controls and outputs; signal-strength & center-tuning meters. \$179.95

TOSHIBA

ST-910 FM Digital Synthesizer Tuner

FM sensitivity 1.5 μ V 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
CT7000BL. Same as CT7000 except black metal finish. \$1200.00

CT800 AM-FM Stereo Tuner

FM sensitivity 1.7 μ V; 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. 17 $\frac{1}{4}$ " x 5 $\frac{3}{4}$ " H x 12 $\frac{3}{4}$ " D. \$370.00

CT600. Similar to CT800 except 2.0 μ V 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 μ V (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. 17 $\frac{1}{4}$ " W x 5 $\frac{3}{4}$ " H x 11 $\frac{3}{4}$ " D. \$210.00



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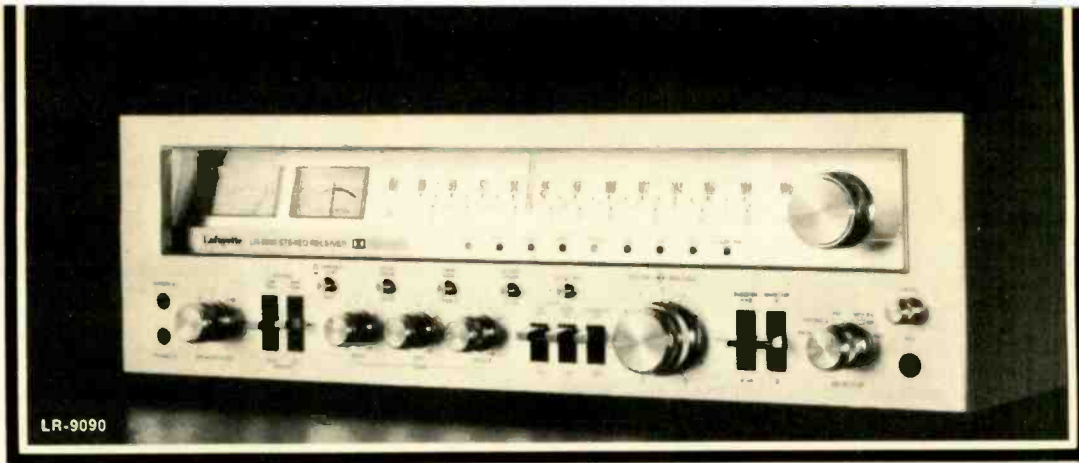
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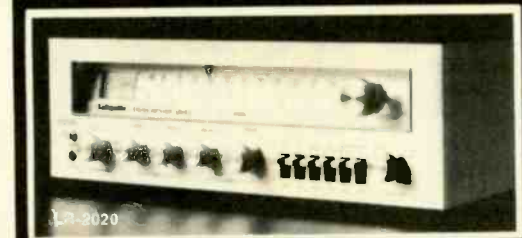
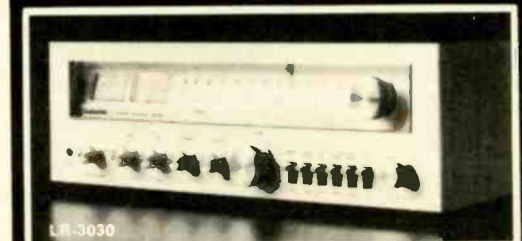
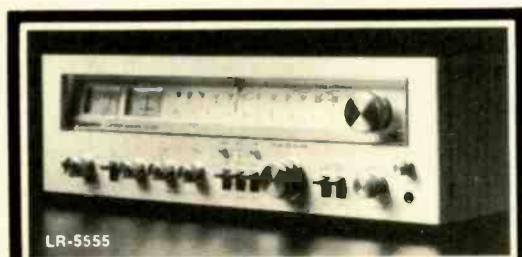
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Total Harmonic Distortion (Less Than)	0.1%	0.5%	0.5%	0.6%	0.7%
Input Sensitivity: phono/Aux/Mike mV	2.5/150/6	2.5/150/6	3.5/150/	4.0/150/	4.0/150/
Tone	Bass/Mid/Treble	Bass/Mid/Treble	Bass/Mid/Treble	Bass/Treble	Bass/Treble
Speakers	A, B, C	A, B, C	A, B, 4/ch	A, B, 4/ch	A, B, 4/ch
FM Sensitivity (Stereo)	21.0 dBf (1.8 μV)**	21.0 dBf (1.6 μV)**	23.0 dBf (2.0 μV)**	23.0 dBf (2.0 μV)**	25.0 dBf (2.2 μV)**
Selectivity	80dB	80dB	70dB	70dB	60dB
Capture Ratio	1.25 dB	1.25 dB	1.5 dB	1.5 dB	2.0 dB
Price	\$599.95	\$399.95	\$299.95	\$249.95	\$199.95

* @ 40-20,000 Hz ** IHF ('58) Sensitivity (Mono)

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CIRCLE NO. 39 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE

2

RECEIVERS

THE receiver is a combination of an integrated amplifier and a tuner, constructed on a single chassis, and sharing the same power supply and cabinet. The elimination of duplicate cabinets and power supplies results in a product somewhat less expensive than the separate components. Another advantage of the receiver is the elimination of most of the interconnecting cabling, which is a major cause of unreliable operation in a high-fidelity system.

For many years, it was accepted as axiomatic that a receiver lacked the power, exceptional operating versatility, and the low distortion and noise levels commonly associated with good separate components. In spite of this, the convenience and economy of receivers have made them the choice of most people assembling hi-fi systems.

Today, even those objections are no longer valid. While it is true that some preamplifiers have a few more signal inputs or tape recording circuits than most receivers, and some power amplifiers have more power or lower distortion than any receiver, some deluxe receivers are the equal of many separate components.

It was once assumed that power outputs exceeding about 100 watts per channel were not practical in the receiver format, if for no other reason than the sheer size and weight involved. Now, however, there are a number of receivers rated at 110 to 120 watts per channel, at least two capable of some 160 watts per channel, and rumors of a 180 watt unit on the way! Furthermore, the distortion levels and power bandwidths of these behemoths, as well as most of their other specifications, are fully comparable to those of the finest separate amplifiers. Due to immutable physical laws, these super-power receivers are large and heavy, but they are still much more compact, as well as less expensive, than a combination of separate components.

The most important objection that can still be leveled against receivers is the fact that they do not lend themselves to piecemeal updating. On the other hand, the better ones (and many moderate-priced units as well) are so good that it is unlikely that they will be superseded by any major technological advance in the foreseeable future. Because of its multiple tape monitor circuits, and separate preamplifier and power

amplifier sections, a modern receiver's capabilities can be expanded almost without limit by add-on accessories.

A variant of the receiver concept, which has received little attention but is still available from several manufacturers, is the *tuner/preamplifier*. As the name suggests, it is essentially a receiver without built-in power amplifiers. The user therefore has the option of using almost any amount of audio power, while retaining the self-contained control flexibility of the receiver (and without the penalty of excessive size and weight).

In the area of four-channel components, the receiver is supreme. Very few separate amplifiers, or integrated amplifiers, have been produced with a full four-channel capability. In contrast, there are a number of excellent four-channel receivers, many of them with full performance decoders for all major quadraphonic disc systems and the ability to interface with four-channel tape recorders and a host of other accessories. Thus, for anyone planning a four-channel system, the receiver is almost the *only* way to go.

ADVENT

300 FM-Stereo Receiver

Combines Holman phono preamp circuit, FM multiplex tuner, and 30-W power amplifier; FM



sensitivity 2.5 μ V; frequency response 20-20,000 Hz; power bandwidth 40-20,000 Hz; 15 W/ch rms (20-20,000 Hz) at 0.5% THD; stereo separation 35 dB; S/N 82 dB (phono); capture ratio 1.2 dB; spurious rejection 95 dB; inputs: phono, tape, aux.; controls: volume, balance, bass, treble, loudness, tape monitor, mono/stereo; front-panel headphone jack; black metal enclosure; 15 $\frac{7}{8}$ " W \times 9" D (plus 1 $\frac{3}{4}$ " for knob clearance) \times 3 $\frac{1}{2}$ " H . . . \$259.95 Unit with switching mode power supply for use on 12-V d.c. available at slight additional cost.

AIWA

AX-7500 FM/AM-FM Stereo Receiver

30 W rms/ch at 8 ohms (20-20,000 Hz) at 0.2% THD; OCL complementary power amp with SEPP circuit; power bandwidth 10-50,000 Hz (IHF); frequency response 30-15,000 Hz \pm 0.3 dB (phono), 10-70,000 Hz \pm 0, -1 dB (aux., tape # & #2, DIN); damping factor 50; controls: bass, treble, loudness; FM tuner sensitivity 1.8 μ V (IHF); capture ratio 1.0 dB; spurious rejection 75 dB; frequency response 30-15,000 Hz; HD 0.25% (mono), 0.4% (stereo); S/N 70 dB; stereo separation 43 dB at 1000 Hz; pushbutton program selectors; a.l.c.; rumble filter; signal & tuning meters; 120-V, 60 Hz

operation; 17 $\frac{1}{16}$ " W \times 14 $\frac{3}{16}$ " D \times 6 $\frac{3}{16}$ " H . . . \$360.00

AKAI

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 μ V; 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

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 μ V; 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-1010DB AM-FM Stereo Receiver

14 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 μ V; 60 dB FM selectivity; 1.5 dB capture ratio; Dolby tone for adjusting external tape machine to 0 VU level. \$299.95

AA-1010 AM-FM Stereo Receiver

14 W/ch min. rms at 8 ohms 40-20,000 Hz at 0.8% THD; SEPP power amp; phase-locked-loop multiplex section; tape monitoring; loudness control; multiple speaker switching; FM sensitivity 2.0 μ V; FM selectivity 60 dB at 98 MHz; FM stereo separation 40 dB at 1000 Hz; S/N 65 dB; 17.3" W \times 10.4" D \times 4.9" H \$200.00

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 \pm 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 μ V; HD 0.8% stereo; S/N 70 dB; full complement of controls. 20.8" W \times 4.2" H \times 11.7" D. \$199.95
AA-810DB. Same except includes Dolby circuit for recording and playback with tape recorder or deck. \$249.95

4-CHANNEL

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 μ V; 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

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 μ V; 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 inputs 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

BANG & OLUFSEN

Beomaster 4000 FM Stereo Receiver

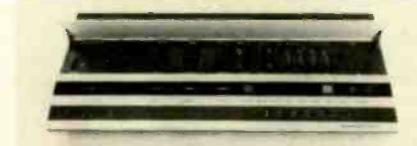
40 W/ch continuous power at 8 ohms (60 W/ch at 4 ohms). Power bandwidth 10-35,000 Hz. THD less than 0.1%. Darlington-coupled output



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. 3 $\frac{3}{4}$ " x 23" x 10 $\frac{3}{8}$ ". Will fit standard bookshelf \$595.00

Beomaster 1900 FM Stereo Receiver

30 W/ch continuous power at 8 ohms (50 W/ch at 4 ohms); power bandwidth 10-40,000 Hz at



1% dist.; frequency range 20-40,000 Hz \pm 1.5 dB; FM sensitivity (40 dB stereo) 30 μ V/75 ohms; S/N 60 dB; frequency range 20-15,000 Hz \pm 1.5 dB; channel separation 35 dB; features five pre-tuned FM settings, dual indicator light, loudness control; outputs: tape recorder, headphones, two sets stereo speaker jacks; universal power supply; 62 W x 25 D x 6 H cm \$495.00

CONCORD

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 μ V; 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. 18 $\frac{1}{2}$ " W x 5 $\frac{1}{2}$ " H x 13 $\frac{1}{4}$ " D. \$269.95

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 μ V; 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. 16 $\frac{1}{8}$ " W x 5 $\frac{1}{4}$ " H x 12 $\frac{1}{4}$ " D. \$219.95

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 μ V; 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. 15 $\frac{1}{2}$ " W x 5" H x 11 $\frac{1}{2}$ " D. \$164.95

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 μ V; 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. 16 $\frac{1}{8}$ " W x 4 $\frac{1}{4}$ " H x 11 $\frac{1}{2}$ " D. \$129.95

DYMEK

AM8 AM Receiver

AM-only solid-state receiver (540-1600 Hz); 10 dB S + N/N sensitivity 3 μ V; -6 dB r.f. band-



width \pm 4 kHz (narrow), \pm 10 kHz (wide); -50 dB r.f. bandwidth \pm 10 kHz (narrow), \pm 25 kHz (wide); mod. response -3 dB at 15 Hz & 9 kHz; THD (30% mod, 1 kHz) 0.5%, (80% mod, 1 kHz) 1.5%; audio output 20 W rms into 8 ohms (20-20,000 Hz) at 0.5% THD; tuning indicator; 110/120 V a.c., 60 Hz; 17.5" W x 10" D x 3.5" H. \$320.00

FISHER

RS1030 AM-FM Stereo Receiver

30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; input sensitivity & imp: phono 2 mV/50 k, phono max. input 100 mV; tape monitor & aux. 150 mV/50 k; FM sensitivity 4.8 μ V (18.9 dBf); capture ratio 1.2 dB; alternate channel selectivity 65 dB; stereo separation (1 kHz) 40 dB, (10 kHz) 30 dB; feedback-type Baxandall tone controls; tape monitor; 4-pos. speaker selector; FM muting; linear FM dial; bass, treble & balance controls; function selector switch; two illuminated tuning meters; 2 a.c. outlets;



19 $\frac{1}{8}$ " W x 13 $\frac{1}{8}$ " D x 6 $\frac{1}{16}$ " H \$329.95
RS1020. Similar to RS1030 except 20 W rms/ch \$249.95
RS1015. Similar to RS1030 except 15 W rms/ch \$229.95

GTE

2600 AM-FM Stereo Receiver

80 W rms/ch into 4-8 ohms (20-20,000 Hz) at 0.1% THD; IM dist. (60/7000 4:1) 0.1%; fre-



quency response (tape input) 20-20,000 Hz \pm 1 dB; high & low filters -20 dB, 12 dB/octave at 20,000 Hz; loudness contour +8 dB at 100 Hz, 0 dB at 1000 Hz; Baxandall tone controls: bass \pm 10 dB at 100 Hz, mid \pm 6 dB at 1000 Hz, treble \pm 10 dB at 10,000 Hz; input sensitivity: power amp. 1.5 V, Tape #1, #2, Aux. 250 mV, phono & mic 2.5 mV; output level: tape 250 mV, pre-amp 1.5 V; FM usable sensitivity 10.3 dBf (1.8 μ V); 50 dB quieting sensitivity 14.8 dB, (3.0 μ V); S/N (100% mod.) 70 dB; capture ratio 1.5 dB; full limiting (1 dB) 6.8 dBf (1.2 μ V); alternate channel rejection 67 dB; THD stereo 0.3%; stereo separation 40 dB at 1 kHz, 30 dB at 50 Hz & 10,000 Hz; features direct-coupled power amplifier, LED amplifier clipping indicators, PLL stereo decoder, current limiting, thermal sensors, a.c. overload circuit breakers, speaker protection; 18 $\frac{1}{8}$ " W x 15 $\frac{1}{2}$ " D x 6 $\frac{1}{8}$ " H \$529.95

2400 AM-FM Stereo Receiver

55 W rms/ch into 4-8 ohms (20-20,000 Hz) at 0.1%; Baxandall bass & treble tone controls (\pm 10 dB at 100 Hz, \pm 10 dB at 10,000 Hz); other specs same as 2600 except has no LED amplifier clipping indicators \$399.95

2300 AM-FM Stereo Receiver

20 W rms/ch into 4-8 ohms (20-20,000 Hz) at 0.5% THD; frequency response (tape input)



20-20,000 Hz \pm 1 dB; loudness contour (at -25 dB) +8 dB at 100 Hz, 0 dB at 1000 Hz; Baxandall bass & treble controls (\pm 10 dB at 100 Hz & 10,000 Hz); input sensitivity: tape & aux. 150 mV, phono 2.5 mV; output level: tape 150 mV; FM usable sensitivity 12 dBf (2.2 μ V); 50 dB quieting sensitivity 14.8 dBf (3 μ V); S/N 70 dB (100% mod.); capture ratio 1.5 dB; alternate channel rejection 55 dB; stereo separation 40 dB at 1000 Hz, 30 dB at 50 Hz & 10,000 Hz; features direct-coupled power amplifier, selector switch for mag or ceramic phono cartridges, electronic mute circuit, high-cut filter, PLL stereo decoder, electronic current limiting, thermal sensor, amplifier & a.c. overload circuit breakers, speaker protection; 18 $\frac{1}{8}$ " W x 13 $\frac{3}{4}$ " D x 6" H \$269.95

HARMAN/KARDON

730 AM-FM Stereo Receiver

40 W rms/ch into 8 ohms (20-20,000 Hz) at

The new Sherwood S9910. Everything you hear is true.

It has all the power you need [at the lowest achievable level of distortion]: 100 watts per channel [minimum RMS at 8 ohms from 20-20,000 Hz] with no more than 0.1% Total Harmonic Distortion. The componentry used to achieve this rating features exceptional stability characteristics: a paralleled OCL direct-coupled output configuration... twin 15,000 μf filter capacitors... and a zener regulated secondary power supply.

It has all the controls you need for fully flexible centralized operation: 5-position Mode switch, 6-position Selector switch, 8-position Speaker switch. Two Tape Monitor circuits [with a two-way, inter-deck dubbing capability]. Front-panel Mic Input and Mixing, with a frequency response suitable for use with a professional caliber microphone. And a Main-In/Pre-Out switch, which allows independent usage of the main amplifier section. The S9910 can accommodate three speaker groupings, two turntables, three tape decks and any auxiliary equipment.

It has State-of-the-Art tuner specs: an IHF FM Sensitivity rating of 9.84 dBf

[1.7 μV]. A four-ganged tuning capacitor and dual-gate MOS FET's provide superior image rejection and spurious response rejection with minimal cross modulation. The newly developed digital detector system utilizes no tuned circuits and never requires alignment.

The Ceramic FM IF Filters are matched for optimal phase linearity. The Phase Lock Loop integrated circuitry in the multiplex decoder improves separation and SCA rejection, while limiting distortion.

It has all the features you need for the purest sound: Loudness Compensation, Hi-Filter and Subsonic Filter; precision detented Bass, Midrange and Treble controls [each with exceptional variance characteristics]; and a master Tone Defeat switch, for instant reference to flat response. Switchable FM Stereo Only and FM Muting. Dual Tuning Meters. And a Positune™ Indicator LED, which visually signals perfect tuning.

It has switchable FM Deemphasis [25 $\mu\text{sec.}$ and 75 $\mu\text{sec.}$], to accommodate an outboard noise reduction unit. A built-in Ambience Retrieval System [A.R.S.] which recovers and

utilizes the frequently "hidden" ambient material found in conventional stereo recordings and derives an effective 4-channel sound from any stereo source.

It has plug-in driver boards [to facilitate servicing], which feature an I.C. differential amplifier input for stable operation.

It has relay speaker protection circuitry which automatically disengages your speakers if a potentially damaging situation arises.

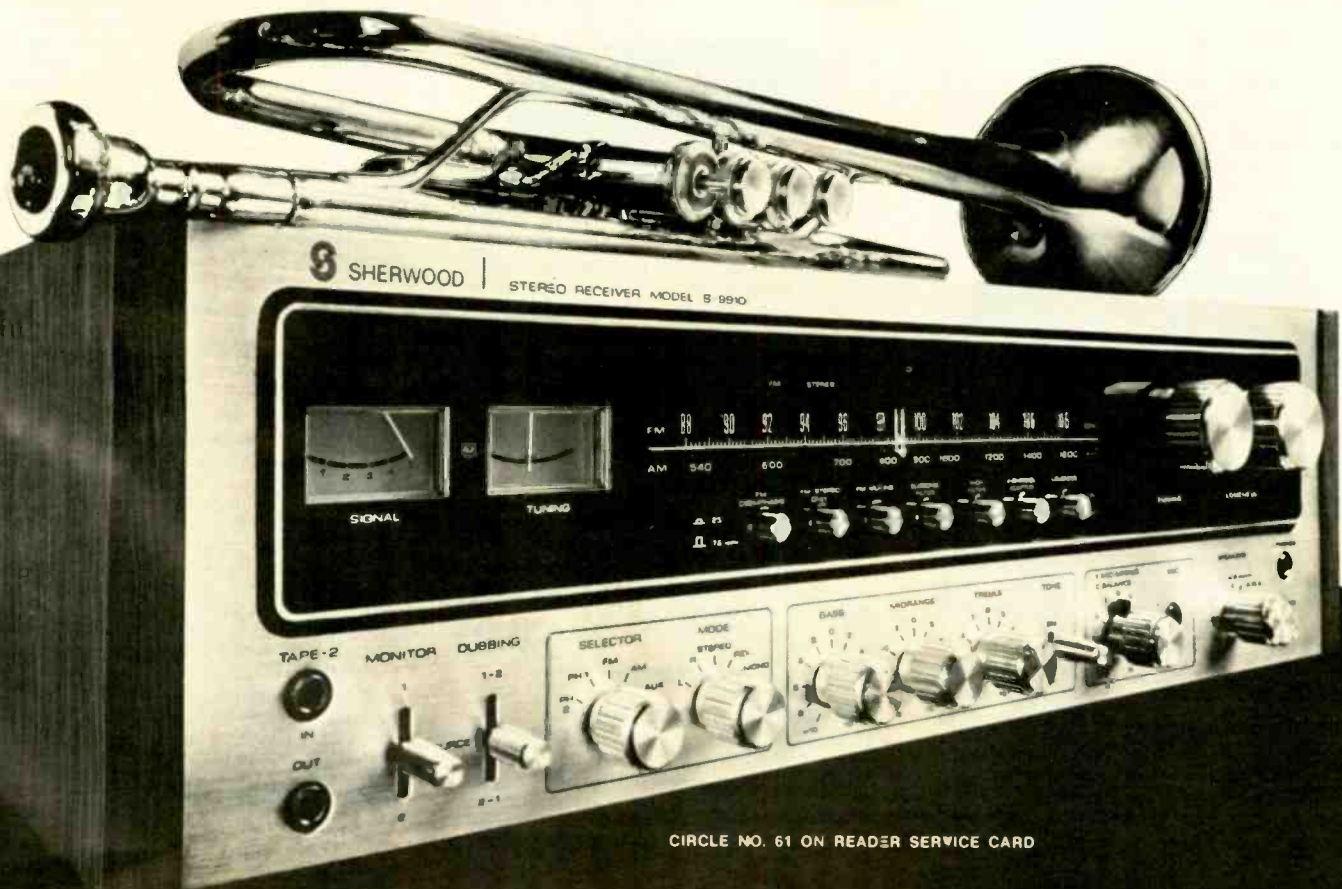
It has everything we've mentioned. It has some features we haven't mentioned.

Best of all, it has a price of less than \$700.*

Sherwood Electronic Laboratories, Inc.
4300 North California Avenue
Chicago, Illinois 60618

 **SHERWOOD**
Everything you hear is true.

*The value shown is for informational purposes only. The actual resale price will be set by the individual Sherwood Dealer at his option. The cabinet shown is constructed of select plywood with a walnut veneer covering.



CIRCLE NO. 61 ON READER SERVICE CARD



0.1% THD; power bandwidth 10-40,000 Hz into 8 ohms with both channels driven simultaneously at 20 W/ch at 0.1% THD; frequency response 4-130,000 Hz ± 0.5 dB; IM dist. 0.12% (40 W SMPTE), 0.15% (1 W); hum & noise 60 dB below rated output (unweighted); preamp input sensitivity: 150 mV/30 k tape monitor & aux.; 2.5 mV/47 k phono; FM sensitivity 1.9 μ V; capture ratio 2 dB; image rejection -70 dB; spurious response rejection -80 dB; alternate channel selectivity 80 dB; stereo separation 80 dB (1 kHz); features "quieting meter" which measures S/N of incoming signal; switching for two pairs of speaker systems & two tape recorders, headphones; two circuits for turntable/changer; 8 pairs receptacles on back panel; preamp/main amp separable for insertion of equalizers and other accessories; 17" W \times 14 1/2" D \times 5 1/2" H \$419.95

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 μ V; 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 \times 5 1/2" H \times 14 1/2" D \$319.95

330c AM-FM Stereo Receiver

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



± 0.5 dB; power bandwidth 10-37,000 Hz into 8 ohms at 0.5% THD both channels driven simultaneously at 10 W/ch; IM dist. 0.3% at rated power; hum & noise 75 dB (phono), 85 dB (aux); input sensitivity/imp: 2.8 mV/47 k phono; 200 mV/20 k (aux); tuner section: 1.8 dB capture ratio; 50 dB image rejection; 75 dB spurious response rejection; 60 dB alternate channel selectivity; FM distortion 1.0% stereo; 15 3/8" W \times 13" D \times 4 1/2" H \$219.95

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 μ V for 30 dB



quieting. Capture ratio 1.5 dB. 18 1/2" \times 5 1/8" \times 13 3/8" D.

Kit \$399.95
ARA-1500-1 Walnut-stained veneer case \$24.95

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 μ V 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. 16 3/4" \times 5 1/8" \times 14 1/2" D.

Kit \$329.95
Pecan-stained veneer case \$21.95

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 μ V 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. 16 3/4" \times 5 1/8" \times 14 1/2" D.

Kit \$279.95
Pecan-stained veneer case \$21.95

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 μ V sensitivity;



2 dB capture ratio. Features pre-assembled FM tuning section; Black Magic panel lighting; fly-wheel tuning; stereo indicator light; headphone jack; speaker "on-off" button; complete tape monitor facilities. Has full complement of inputs and outputs. 3 7/8" H \times 17" W \times 13" D. Includes walnut-stained veneer end panels. Kit \$199.95

AC-1118 AM-FM Stereo Receiver

4 1/2 W/ch min. rms into 8 ohms at 1.0% THD from 50-15,000 Hz; FM tuner sensitivity 5 μ V; 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 \times 4" H \times 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 \times 4" H \times 15" D.

Kit \$179.95

4-CHANNEL

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

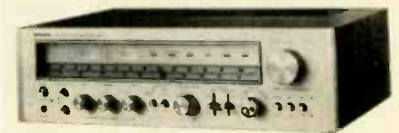
volume, individual output level, front & back bass and treble controls; power, speaker, source (4 positions), and mode (4 positions) switches. Outputs: 4 speaker; headphones (1 pr. each front & back); one tape feed; 4-channel tape. Tuner section 2 μ V (IHF) FM sensitivity, capture ratio 2 dB, HD 0.5%, 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. 4 3/4" H \times 19 3/4" W \times 14" D. Walnut-stained veneer end panels included.

Kit \$269.95

HITACHI

SR/903 Series "E" Stereo Receiver

AM-FM stereo receiver; FM usable sensitivity 28 dBf (14 μ V); 50 dB quieting sensitivity 36



dBf (34 μ V); S/N 68 dB (at 65 dBf); frequency response 30-15,000 Hz ± 1 dB; capture ratio 1.0 dB; alternate channel selectivity 80 dB; spurious response ratio 100 dB; image rejection 85 dB; stereo separation 45 dB at 1 kHz; 75 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.3% THD; IHF power bandwidth 10-50,000 Hz; frequency response 30-15,000 Hz ± 0.5 dB (phono), 10-30,000 Hz ± 0.5 dB (aux.); high & low filters; loudness, bass, treble, midrange controls; tape monitor; speaker switch; two tuning meters; two sets of speaker connectors for multi-speaker arrangements; 19 1/4" W \times 15 3/4" D \times 5 5/8" H \$499.95

SR/803. Similar to SR/903 except 50 W/ch continuous power at 0.4% THD; frequency response 10-40,000 Hz ± 0.5 dB; power bandwidth 10-40,000 Hz; full complement of inputs/outputs & controls \$399.95

SR/703. Similar to SR/803 except 40 W/ch continuous power at 0.5% THD; frequency response 10-30,000 Hz ± 1 dB; power bandwidth 20-30,000 Hz; full complement of inputs/outputs & controls \$349.95

SR/502R. Similar to SR/703 except 20 W/ch continuous power at 0.8% THD; power bandwidth 20-40,000 Hz; FM S/N 66 dB stereo; frequency response 30-10,000 Hz ± 0.2 , -2 dB; capture ratio 1.2 dB; 17 1/2" W \times 13 1/8" D \times 5 3/8" H \$249.95

SR/302R. Similar to SR/502R except 15 W/ch continuous power (40-20,000 Hz) at 0.8% THD; power bandwidth 20-40,000 Hz \$199.95

JVC

JR-S600 AM/FM-Stereo Receiver

110 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; 120 W/ch into 8 ohms (1 kHz) at 0.1% THD; IM dist. 0.1% at rated output; damping factor 50 at 8 ohms; S/N (IHF short-circuit A network) phono 70 dB, aux & tape 95 dB; recording output 180 mV (PIN), 30 mV, 80 kohms (DIN); S.E.A./tone control section center frequencies 40, 250, 1000, 5000 & 15,000 Hz; S.E.A. control range ± 12 dB; FM tuner section: usable sensitivity 1.7 μ V (9.8 dBf); 50 dB quieting sensitivity 38 μ V (36.8 dBf) stereo; stereo separation 50 dB (1 kHz), 35 dB (10 kHz); stereo dist. 0.25% (100 Hz), 0.25% (1 kHz), 0.4% (6 kHz); S/N 65 dB stereo; capture ratio 1 dB; features power & tuning meters, two phono & two tape inputs; mode switch, FM muting, two speaker terminals; dubbing switch, monitor/playback controls; two a.c. outlets; 22 1/8" W \times 17" D \times 6 1/8" H \$749.95

JR-S400 AM/FM-Stereo Receiver

70 W rms/ch into 8 ohms (20-20,000 Hz) at

We told the truth. Almost.



We erred on the side of modesty when we published the specifications and performance data of our Quartz Locked AM/FM Stereo Receiver.

Then Hirsch-Houck, a famous independent audio testing lab*, put our TX-4500 through the mill on their own. You know who they are . . . possibly the best known in the business. They said and we quote:

" . . . virtually impossible to incorrectly tune in an FM station."

" . . . sound quality in FM reception with the TX-4500 will be determined only by the quality of the broadcast program."

" . . . when playing records the sound had a definition and clarity that were unmistakable."

In fact, they compared the TX-4500 favorably with component tuners and amplifiers, and we didn't lose. While we claimed the TX-4500 would deliver 55 watts per channel, minimum RMS at 8 ohms, both channels driven, from 20 Hz to 20 kHz with no more than 0.1% Total Harmonic Distortion, they found Total Harmonic Distortion less than 0.02% at middle frequencies; 0.09% at 20 Hz, and 0.04% at 20 kHz.

We said IM distortion was 0.1% at 1 watt. They found it between 0.01% and 0.02% at most power levels from 1 to 40 watts.

You should also know about our FET/4-gang variable capacitor front end. Our circuitry with 70

transistors, 8 IC's and 59 diodes, plus the FET. About provision for three sets of speakers and three tape recorder circuits, each controlled by its own pushbutton.

You might also be interested in detented tone controls and center detent balance control. Phase Locked Loop Multiplex.

But mostly, you have to see what Quartz Locked tuning does, verified by the lab that the system invariably resulted in the lowest possible distortion and noise and best stereo separation the receiver is capable of.

There's no way we can tell you everything about our "Studio on a Shelf". There's too much, and we're too modest. But, you can find out at your Onkyo dealer. He may even have a copy of the lab report. If not, write us for a copy.



While you're at it, look into the TX-2500 also. It costs a little less than the TX-4500 and performs almost as well. Instead of Quartz Locked

tuning, the TX-2500 features Servo Locked tuning. In our own modest way we have to say it's pretty good.

So, if you can't go for the top of our line, you can come pretty close. And the best place to start is with an Onkyo dealer.

*Popular Electronics, August, 1976.

ONKYO®

ONKYO U.S.A. CORPORATION Eastern Office: 42-07 20th Ave., Long Island City, N.Y. 11105, 212-729-2323

Midwest Office: 935 Sivert Drive, Wood Dale, Ill. 60191, 312-595-2970 Canada: Sole Distributor, TriTel Associates Ltd., Willowdale, Ontario, Canada M2H 2S5

2 Receivers



0.3% THD; 80 W/ch into 8 ohms (1 kHz) at 0.3% THD; IM dist. 0.3% at rated output; damping factor 50 at 8 ohms; load imp. 4-16 ohms (System 1 or 2), 8-16 ohms (System 1 + 2); input sensitivity/imp. phono 2.5 mV/50,000 ohms, aux. & tape play 220 mV/70,000 ohms; S/N phono 70 dB, aux. & tape 95 dB; recording output 150 mV (PIN), 30 mV/80,000 ohms (DIN); S.E.A. center frequencies 40, 250, 1000, 5000, & 15,000 Hz; S.E.A. control range ± 12 dB; features low-cut & high-cut filters, loudness control; FM tuner sensitivity 1.8 μ V; stereo sensitivity for 50 dB S/N 40 μ V; THD stereo 0.4%; stereo separation 45 dB (1 kHz), 30 dB (10 kHz); S/N stereo 65 dB; features OCL circuit, PLL circuit for FM stereo detection, S.E.A. graphic equalizer tone-control system, twin power meters, signal-strength & center tuning meters; 22 $\frac{1}{16}$ " W \times 17" D \times 6 $\frac{1}{16}$ " H. . . \$499.95

JR-S300 AM/FM-Stereo Receiver

Similar to JR-S400 except 50 W rms/ch, 50 W/ch into 8 ohms (1 kHz) at 0.3% THD; load imp. 4-16 ohms; input sensitivity/imp. 2.5 mV/50 k phono, 150 mV/70 k aux. & tape play; S/N 70 dB phono, 76 dB aux., 96 dB tape; FM tuner sensitivity 1.9 μ V; 19 $\frac{1}{16}$ " W \times 13 $\frac{3}{16}$ " \times 6 $\frac{1}{16}$ " H. . . \$399.95

JR-S200 AM/FM-Stereo Receiver

35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; 38 W/ch into 8 ohms (1 kHz) at 0.5% THD; IM dist. 0.5% at rated output; damping factor 40 at 8 ohms; load imp. 4-16 ohms; input sensitivity/imp. phono 2.5 mV/50 k, aux. & tape 150 mV/70 k; S/N phono 70 dB, aux. & tape 95 dB; recording output 150 mV (PIN), 30 mV/80 k (DIN); tone controls: bass ± 10 dB at 100 Hz, treble ± 10 dB at 10,000 Hz; loudness +12 dB at 50 Hz; FM tuner sensitivity 2.0 μ V; stereo sensitivity for 50 dB S/N 40 μ V; stereo separation 45 dB (1 kHz), 30 dB (10 kHz); capture ratio 1.2 dB; 19 $\frac{1}{16}$ " W \times 13 $\frac{3}{16}$ " D \times 6 $\frac{1}{16}$ " H. . . \$299.95

JR-S100. Similar to JR-S200 except 20 W rms/ch into 8 ohms (40-20,000 Hz) at 0.5% THD; aux. & tape S/N 96 dB; FM sensitivity 2.2 μ V; stereo sensitivity for 50 dB S/N 45 μ V; stereo separation 35 dB (1 kHz); capture ratio 2.5 dB; . . . \$199.95

4-CHANNEL

4VR-5406 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 μ V. 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), built-in CD-4 discrete 4-ch record demodulator, automatic 4 ch/2 ch switching. 5 $\frac{5}{8}$ " \times 19" \times 13 $\frac{3}{8}$ " . . . \$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 μ V; 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 . . . \$549.95

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 . . . \$649.95

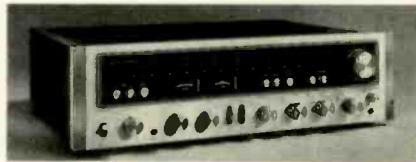
4VR-5456 4-Channel AM-FM Receiver

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 μ V; FM capture ratio 1.5 dB; image rejection 90 dB; FM stereo separation 38 dB. Has 7-position speaker switch. . . \$799.95

KENWOOD

KR-7600 AM-FM Stereo Receiver

80 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; FM sensitivity 9.8 dBf (1.7 μ V at



75 ohms); 50 dB quieting 14.8 dBf (3.0 μ V) mono, 36.6 dBf (37 μ V) stereo; capture ratio 1.5 dB; alternate channel selectivity 80 dB; stereo separation (50-10,000 Hz) 35 dB; "tape-through" circuit; acoustic boost 3 or 6 dB at 50 & 800 Hz; injection circuit; 25 μ s de-emphasis switch; 20 $\frac{5}{8}$ " W \times 14 $\frac{3}{8}$ " D \times 6" H. . . \$529.95

KR-6600. Similar to above except 60 W rms/ch; acoustic boost 6 dB at 50 & 800 Hz. . \$449.95

KR-5600 AM-FM Stereo Receiver

40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity 10.3 dBf (1.8 μ V at 75 ohms); 50 dB quieting 14.8 dBf (3.0 μ V) mono, 36.6 dBf (37 μ V) stereo; S/N 75 dB (mono), 70 dB (stereo); capture ratio 1.5 dB; alternate channel selectivity 80 dB; stereo separation (50-10,000 Hz) 35 dB; "tape-through" circuit; 25 μ s de-emphasis switch; 19 $\frac{3}{4}$ " W \times 13 $\frac{1}{16}$ " D \times 5 $\frac{1}{2}$ " W. . . \$359.95

KR-4600. Similar to above but 30 W rms/ch. . . \$299.95

KR-3600 AM-FM Stereo Receiver

22 W rms/ch into 8 ohms (20-20,000 Hz) at 0.8% THD; FM sensitivity 12.5 dBf (2.3 μ V at 75 ohms); 50 dB quieting 17.3 dBf (4.0 μ V) mono, 38.7 dBf (47 μ V) stereo; S/N 73 dB mono, 68 dB stereo; capture ratio 2.0 dB; alternate channel selectivity 60 dB; stereo separation (50-10,000 Hz) 35 dB; 19 $\frac{3}{4}$ " W \times 11 $\frac{7}{8}$ " D \times 5 $\frac{1}{2}$ " H. . . \$249.95

KR-2600 AM-FM Stereo Receiver

15 W rms/ch into 8 ohms (20-20,000 Hz) at 0.8% THD; FM sensitivity 13.2 dBf (2.5 μ V at 75 ohms); 50 dB quieting 18.3 dBf (4.5 μ V) mono, 40 dBf (50 μ V) stereo; S/N 70 dB mono, 64 dB stereo; capture ratio 2.5 dB; alternate channel selectivity 50 dB; stereo separation 33 dB at 1 kHz; provision for phono, aux, tape; 17 $\frac{1}{4}$ " W \times 11 $\frac{3}{16}$ " D \times 5 $\frac{1}{16}$ " H. . . \$189.95

4-CHANNEL

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 μ V; 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 $\frac{1}{16}$ " W \times 6 $\frac{1}{8}$ " H \times 14 $\frac{1}{4}$ " D. . . \$974.95

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 μ V 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 \times 5 $\frac{1}{4}$ " H \times 11 $\frac{1}{2}$ " 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 μ V 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 $\frac{1}{2}$ " W \times 5 $\frac{1}{4}$ " H \times 12 $\frac{1}{4}$ " D. Walnut grained cabinet . . . \$259.95

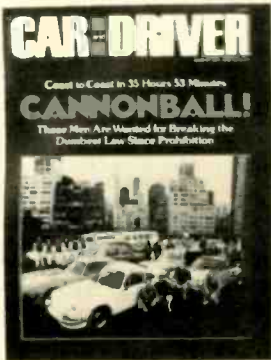
LAFAYETTE

LR-9090 AM-FM Stereo Receiver

90 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; THD 0.1% at rated output; Dolby FM circuitry; mic mixing; hum & noise: aux. -80 dB; tape play -80 dB; mag phono -65 dB; (low sensitivity), -60 dB (high sensitivity); input sensitivity: mag phono 2.5 mV (hi), 5.0 mV (low); aux. 150 mV; tape play A & B 150 mV; mic \times 26 mV; FM usable sensitivity 21.0 dBf stereo; 50 dB quieting sensitivity 39.3 dBf stereo; frequency response 30-15,000 Hz ± 0.5 dB, -1.5 dB; stereo separation 40 dB at 1 kHz; FM dist. 0.4% at 1 kHz; 75 ohm unbalanced antenna & 300 ohms balanced input for external antenna; full complement of inputs & outputs . . . \$599.95

LR-5555 AM-FM Stereo Receiver

55 W rms/ch into 8 ohms (20-20,000 Hz) at



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Regular rate: 12 issues for \$7.98
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Skiing (09) YOU
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PAY ONLY \$3.49

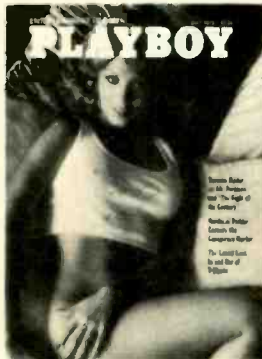


Cycle (03) YOU
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PAY ONLY \$3.99

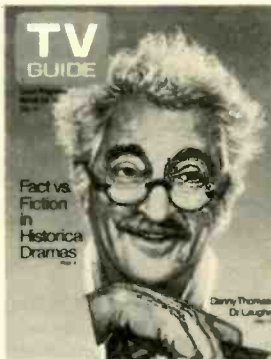
LIMIT: 4 SUBSCRIPTIONS



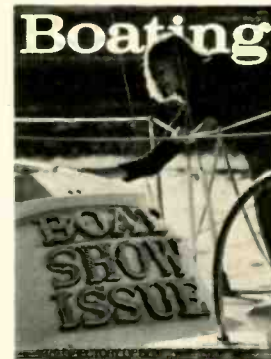
Flying (04) YOU
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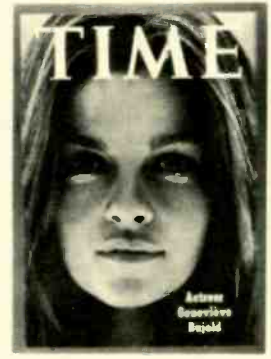
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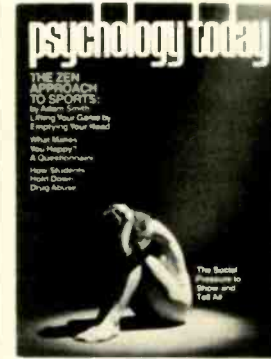
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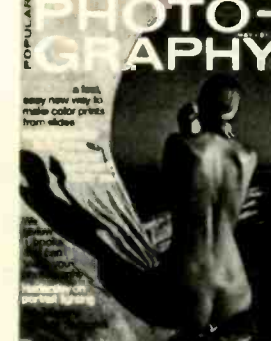
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0.5% THD; PLL circuitry; dual tuning meters; stereo program indicator; amplifier specs same as LR-9090; FM usable sensitivity 21.0 dBf; 50 dB quieting sensitivity 39.0 dBf; capture ratio 1.25 dB; S/N 67 dB stereo; stereo separation 40 dB at 1 kHz; mic mixing; dual tape monitors for dubbing; full complement of inputs & outputs \$399.95

LR-3030 AM-FM Stereo Receiver

30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; hum & noise: aux. & tape play -75 dB; mag phono -60 dB; input sensitivity: mag. phono 3.5 mV (hi), 7 mV (low); aux, tape play A & B 150 mV; FM usable sensitivity 23.0 dBf stereo; 50 dB quieting sensitivity 39.0 dBf; capture ratio 1.5 dB; FM dist. 0.5% stereo; S/N 65 dB; PLL circuitry; dual tape monitors; dual tuning meters; full complement of inputs & outputs \$299.95

LR-2020. Similar to LR-3030 except 20 W rms/ch at 0.6% THD; tape monitor; dual-purpose tuning meter; FM usable sensitivity 23 dBf stereo; 50 dB quieting sensitivity 39.0 dBf stereo; FM mute switch; FM stereo indicator. \$249.95

4-CHANNEL

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 μ V; capture ratio 1.5 dB; stereo separation 40 dB; has self-resetting power overload circuit. 21" W x 5 1/2" H x 15" D \$379.95
CD-4 Demodulator package \$69.95

LR-3000 AM-FM 4-Channel Receiver

Features full-logic wave-matching plus vari-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 μ V; capture ratio 2.5 dB; stereo separation 35 dB. 17 1/2" W x 4 7/8" H x 14" D \$249.95
CD-4 Demodulator package \$69.95

LEAK

2000 AM-FM Stereo Receiver

30 W/ch sine wave power at 1 kHz, 0.5% THD with both channels driven into 8 ohms; THD at



all powers up to 30 W, 1 kHz 0.1%; IM dist. 0.1% (70 Hz & 5000 Hz 4:1). FM tuner sensitivity 1.6 μ V for 30 dB quieting; stereo dist. at 1 kHz 0.5%; channel separation: 1 kHz 35 dB minimum; 10,000 Hz 30 dB; image rejection 45 dB; i.f. rejection 60 dB; alternate channel rejection 50 dB; capture ratio 1.5 dB; has full

complement of controls and input; two AM tuner ranges (150-350 kHz & 510-1650 kHz). \$750.00

MARANTZ

2215B AM-FM Stereo Receiver

15 W/ch continuous power into 8 ohms (40-20,000 Hz) at 0.8% THD; FM sensitivity 2.2 μ V for 30 dB quieting; THD 0.8% stereo; capture ratio 3.0 dB; stereo separation 38 dB at 1 kHz; has provisions for mag. phono, tape deck, headphones; 17 3/16" W x 11 1/2" D x 5 3/8" H. \$249.95

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 μ V for 30 dB quieting; THD 0.5% stereo; capture ratio 2.5 dB; stereo separation 40 dB at 1 kHz; Has provisions for magnetic phono, tape decks, phones. Features bass, treble, and mid-range tone controls; 25 μ sec Dolby de-emphasis switch \$329.95

2225 AM-FM Stereo Receiver

25 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity 2.0 μ V for 30 dB quieting; THD 0.5% stereo; capture ratio 2.5 dB; stereo separation 40 dB at 1 kHz; has provisions for mag. phono, tape decks, phones; features bass, treble & mid-range controls; 25 μ sec Dolby de-emphasis switch; 17 3/16" W x 14 3/8" D x 5 3/8" H. \$369.95

2235B AM-FM Stereo Receiver

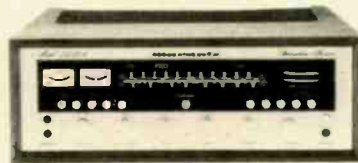
35 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD. FM sensitivity 1.9 μ V for 30 dB quieting; capture ratio 1.5 (IHF). THD 0.4% stereo; stereo separation 40 dB at 1000 Hz. Has provisions for magnetic phono, two tape decks, phones. Features bass, treble, and mid-range tone controls; 25 μ sec FM Dolby de-emphasis switch. 16 7/8" x 5" x 14" D \$449.95
Walnut cabinet optional extra.

2240B AM-FM Stereo Receiver

40 W/ch continuous into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD. FM sensitivity 1.9 μ V 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 μ sec FM Dolby de-emphasis switch \$499.95
Walnut cabinet optional extra.

2250B 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 μ V 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 μ sec FM Dolby de-emphasis switch \$549.95

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 \pm 0.25 dB; power bandwidth 7-70,000 Hz (IHF) with both channels driven; FM sensitivity 1.9 μ V; 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 \pm 0.25 dB; power bandwidth 5-70,000 Hz (IHF) with both channels driven; FM sensitivity 1.8 μ V; 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

4-CHANNEL

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 \pm 0.25 dB; power bandwidth 7-70,000 Hz (IHF); FM sensitivity 1.8 μ V; 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. \$1349.95
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 Quadrantal 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 μ V (IHF); THD 0.3% stereo; capture ratio 1.5 dB; spurious rejection 90 dB. Amp response 20-20,000 \pm 0.25 dB (high-level input); power bandwidth 7-70,000 Hz \$949.95
4270. Similar to Model 4300 but 25 W/ch; 0.3% THD & IM. Response 20-20,000 Hz \pm 0.5 dB; power bandwidth 8-60,000 Hz \$749.95
4240. Similar to Model 4300 but 17 W/ch; 0.5% THD & IM. Response 20-20,000 Hz \pm 1.0 dB; power bandwidth 10-60,000 Hz \$649.95

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 μ V. Response 20-20,000 Hz \pm 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 \$549.95

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 Quadrantal receivers. \$79.95

CD-400B 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

The Great Sansui



The Sansui 9090

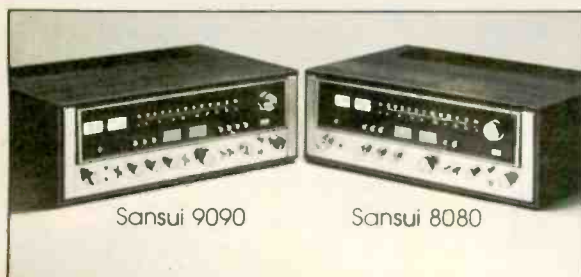
Powerhouse.

The Sansui Model 9090 receiver is that rare combination of power, exciting features and outstanding specs. Such as the twin power meters which permit continuous monitoring of both output channels. Such as sensitivity of 9.8 dBf (1.7 μ V) to receive even weak and distant stations, and a selectivity of better than 85 dB to assure clarity without interference. Such as triple tone controls for creative listening. Such as mic mixing capability.

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Sansui 9090

Sansui 8080

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Sansui

MIIDA

3140 AM-FM Stereo Receiver

43 W rms/ch into 8 ohms; THD & IM dist. 0.4%; power bandwidth 20-30,000 Hz; frequency response 10-30,000 Hz ± 1 dB; S/N 70 dB; phono input sensitivity 2.5 mV, aux. 200 mV; FM sensitivity 1.8 μ V; S/N 72 dB; capture ratio 1.5 dB; selectivity 60 dB; THD 0.3% stereo; AM suppression 56 dB; channel separation 40 dB at 100 Hz; SCA rejection 65 dB; full complement inputs/outputs; detented balance, loudness & treble controls; two signal-strength & one LED malfunction indicator; wood-grained vinyl on wood cabinet; 19" W x 14" D x 5 1/2" H. \$349.95

3125 AM-FM Stereo Receiver

22 W rms/ch into 8 ohms; THD & HD dist. 0.5%; frequency response 20-20,000 Hz ± 2 dB; S/N 70 dB; input sensitivity: 2.5 mV phono, 200 mV aux.; FM sensitivity 2.5 μ V; S/N 70 dB; capture ratio 3 dB; selectivity 50 dB; THD 0.5% stereo; AM suppression 40 dB; channel separation 30 dB at 100 Hz; full complement inputs/outputs; tuning & signal-strength meters; stereo indicator; wood-grained vinyl on wood; 19 1/4" W x 14" D x 5 1/2" H. \$249.95
3120. Similar to 3125 except 17 W rms/ch into 8 ohms (30-15,000 Hz) at 0.5% THD; IM dist. 0.75% combined tuning/signal-strength meter; 19 1/4" W x 13 1/2" D x 5 1/2" H. \$219.95
3100. Similar to 3120 except 8 W rms/ch into 8 ohms (40-20,000 Hz) at 0.9% THD; \$179.95

MX

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 μ V; 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 x 19" W x 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

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 μ V; 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. 5 1/2" H x 17 3/4" W x 12 3/4" D. \$239.95
1143. Similar to 1142 except 20 W rms/ch; FM sensitivity 2.1 μ V; selectivity 65 dB. . \$299.95

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 μ V; 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 μ V; 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 μ V; selectivity 65 dB; capture ratio 1.3 dB. \$399.95
8085. Similar to 7075 except 45 W rms/ch. \$449.95

ONKYO

TX-4500 AM-FM Stereo Receiver

55 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; frequency response 15-30,000 Hz



± 1 dB. FM sensitivity 19.2 dBf (5 μ V); capture ratio 1.5 dB; image rejection 70 dB; S/N 65 dB; HD 0.4% stereo; frequency response 30-15,000 Hz $+0.5/-2$ dB; features center-tuning and signal-strength meters; linear FM-dial scale, FM muting, quartz locked tuning system, Accutouch control for optimum FM tuning, 3 tape monitors with tape-to-tape dubbing, outputs for 3 speaker systems, full complement of input/output terminals; walnut-grained vinyl over Luan plywood. 21 1/8" W x 16 1/8" D x 6 7/16" H. \$450.00

TX-2500 AM-FM Stereo Receiver

27 W rms/ch into 8 ohms (40-20,000 Hz) at 0.5% THD; frequency response 20-30,000 Hz ± 1 dB. FM sensitivity 19.2 dBf (5 μ V); capture ratio 2 dB; image rejection 45 dB; S/N 60 dB; HD 0.4% stereo; frequency response 30-15,000 Hz $+0.5/-2$ dB; features linear FM-dial scale, two tuning meters (signal-strength and center tuning), FM muting, servo locked tuning system, Accutouch control for optimum FM tuning, 2 tape monitors with tape-to-tape dubbing, two a.c. outlets, full complement of input/output terminals; walnut-grained vinyl over Luan plywood. 19 1/4" W x 16 1/8" D x 6 7/16" H. \$300.00

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 μ V (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 Luan plywood. 16 5/8" W x 13 3/4" D x 5 5/8" H. \$219.95

4-CHANNEL

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 μ V (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

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. 18 1/2" W x 6 1/2" H x 17 1/2" D. \$549.90

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 μ V (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

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" x 5 1/8" x 13 1/2" D. \$389.90

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 μ V; 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

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 μ V 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" x 5 1/8" x 13 1/2" D. \$309.90

4-CHANNEL

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 μ V 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. 18 1/2" x 7" W x 17 1/2" D. \$579.90

The Miida Stereo System

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Start with the Miida 3140 AM/FM Stereo Receiver. You get 43 watts per channel minimum RMS, both channels driven at 8 ohms, from 20Hz to 20kHz with no more than 0.4% total harmonic distortion.

Tie it into the Miida T3115 Direct Drive Turntable. It gives you such consistent rotation that wow, flutter and rumble are virtually eliminated.

To complete this remarkable system, connect a pair of Miida SP3150 4-way Speakers for a dynamically balanced stereo system that delivers sound with stunning brilliance and clarity.

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Miida 3140—AM/FM STEREO RECEIVER Phase locked loop multiplex; IHF sensitivity: 2.0; Capture ratio: 1.5 dB; IF rejection: 70 dB

Miida T3115—DIRECT DRIVE TURNTABLE Stroboscope allows you to adjust speed with pinpoint accuracy; 2-speed adjustments; 13½" turntable; 6-pole electronic motor; S-shaped tone arm with anti-skate

Miida SP3150—4-WAY SPEAKER SYSTEM Overall frequency response: 25 Hz to 22 kHz \pm 5 dB; Impedance: 8 ohms; Built-in crossover: 750Hz-1800Hz, 7.5kHz, 12kHz; Power handling capability 55 watts maximum music power



Miida ...the stereo specialist.

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 \pm 1 dB. Input sensitivity: mag. phono 2.5 to 4.5 mV; aux. 250 mV; tape output 250 mV. FM sensitivity 2.2 μ V 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. 18 $\frac{1}{2}$ " x 7" H x 17 $\frac{1}{2}$ " D. . . \$439.90

PIONEER**SX-1250 AM-FM Stereo Receiver**

160 W rms/ch into 8 ohms (20-20,000 Hz); THD & IM dist. 0.1%; frequency response 5-100,000 Hz; FM tuner sensitivity 2.9 μ V (14.5 dBf); capture ratio 1 dB; selectivity 83 dB; S/N 74 dB; image and spurious rejection 110 dB; i.f. rejection 120 dB; stereo HD 0.25% at 100 Hz (65 dBf), 0.2% at 1 kHz, 0.3% at 6 kHz; frequency response 30-15,000 Hz +0.3/-1.0 dB; stereo separation 50 dB (1 kHz), 35 dB (30-15,000 Hz); has full complement of inputs, outputs, switches; signal-strength & tuning meters; 21 $\frac{1}{8}$ " W x 18 $\frac{3}{4}$ " D x 7 $\frac{3}{8}$ " H. . . . \$900.00

SX-1050 AM-FM Stereo Receiver

120 W rms/ch into 8 ohms (20-20,000 Hz); THD & IM dist. 0.1%; frequency response 7-90,000 Hz; FM tuner sensitivity 15.7 dBf; capture ratio 1 dB; selectivity 80 dB; S/N 73 dB; i.f. and spurious rejection 100 dB; image rejection 85 dB; stereo HD 0.25% at 100 Hz (65 dBf), 0.25% at 1 kHz, 0.4% at 6 kHz; has full complement of inputs, outputs, switches; signal-strength & tuning meters; 20 $\frac{3}{4}$ " W x 17 $\frac{3}{8}$ " D x 6 $\frac{1}{2}$ " H. . . . \$700.00

SX-950 AM-FM Stereo Receiver

85 W rms/ch into 8 ohms (20-20,000 Hz); THD & IM dist. 0.1%; frequency response 7-90,000 Hz; FM tuner sensitivity 7.1 μ V (22.2 dBf); capture ratio 1 dB; selectivity 80 dB; S/N 67 dB; i.f. and spurious rejection 100 dB; image rejection 85 dB; stereo HD 0.3% at 100 Hz (65 dBf), 0.3% at 1 kHz, 0.4% at 6 kHz; has full complement of inputs, outputs, switches; signal-strength & tuning meters; 20 $\frac{3}{4}$ " W x 16 $\frac{3}{16}$ " D x 6 $\frac{1}{2}$ " H. . . . \$600.00

SX-850. Same as SX-950 except has 65 rms W/ch. . . . \$500.00

SX-750 AM-FM Stereo Receiver

50 rms W/ch into 8 ohms (20-20,000 Hz); THD & IM dist. 0.1%; FM tuner sensitivity 4.9 μ V



(19.0 dBf); capture ratio 1 dB; selectivity 80 dB; S/N 67 dB; spurious rejection 90 dB; i.f. rejection 100 dB; image rejection 80 dB; stereo HD 0.3% at 100 Hz (65 dBf), 0.3% at 1 kHz, 0.4% at 6 kHz; has full complement of inputs, outputs, switches, signal-strength & tuning meters; overall size 18 $\frac{1}{16}$ " W x 14 $\frac{5}{8}$ " D x 5 $\frac{1}{8}$ " H. . . . \$400.00

SX-650 AM-FM Stereo Receiver

35 rms W/ch into 8 ohms (20-20,000 Hz); THD & IM dist. 0.3%; FM tuner sensitivity 4.9 μ V (18.2 dBf); capture ratio 1 dB; selectivity 60 dB; S/N 65 dB; spurious rejection 75 dB; i.f.

rejection 90 dB; image rejection 65 dB; stereo HD 0.3% at 100 Hz (65 dBf), 0.3% at 1 kHz, 0.4% at 6 kHz; has full complement of inputs, outputs, switches; signal-strength & tuning meters; 18 $\frac{1}{16}$ " W x 14 $\frac{5}{8}$ " D x 5 $\frac{1}{8}$ " H. . . \$300.00

SX-550. Similar to SX-650 except has 20 rms W/ch; FM tuner sensitivity 5.5 μ V (20.0 dBf); AM-FM tuning meter; 17 $\frac{1}{16}$ " W x 12 $\frac{3}{32}$ " D x 5 $\frac{1}{16}$ " H. . . . \$250.00

SX-450. Similar to SX-650 except has 15 rms W/ch; i.f. rejection 85 dB; AM-FM tuning meter; 17 $\frac{1}{16}$ " W x 12 $\frac{3}{32}$ " D x 5 $\frac{1}{16}$ " H. . . . \$200.00

4-CHANNEL**QX-949A 4-Ch. Stereo Receiver**

Includes built-in CD-4 demodulator and decoders for regular matrix and SQ sources; full logic included. Continuous power output 40 W x 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 \pm 1 dB. FM usable (IHF) sensitivity 1.8 μ V; 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. . . . \$750.00

PLANAR**SR2100 AM-FM Stereo Receiver**

65 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD; built-in 4-channel



speaker matrixing; FM sensitivity 1.5 μ V for 30 dB quieting; S/N 74 dB; THD (50-15,000 Hz) 0.3% stereo; stereo separation 40 dB at 1 kHz; bass, treble, balance & volume controls; loudness control; source/monitor switch; source selector; dubbing in/out; dual-function tuning meter; twin VU meters; phono sensitivity 2 mV/47 k; high level sensitivity 100 mV/150 k; preamp level 1.0 V/1 k; Dolby 25 μ s de-emphasis switch; walnut veneer cabinet with polymeric grille; 19 $\frac{3}{8}$ " W x 14 $\frac{1}{8}$ " D x 6 $\frac{1}{2}$ " H. . . . \$529.95

SR2040 AM-FM Stereo Receiver

22 W/ch continuous power into 8 ohms (20-20,000 Hz) at 0.5% THD; built-in 4-channel speaker matrixing; FM sensitivity 1.9 μ V for 30 dB quieting; THD (50-15,000 Hz) 0.4% stereo; stereo separation 40 dB at 1 kHz; phono sensitivity 2.5 mV/47 k; high level sensitivity 150 mV/110 k; preamp output 200 mV at rated output; full complement of controls & switches; wood-grain vinyl veneer cabinet; 17 $\frac{1}{8}$ " W x 15" D x 5 $\frac{1}{8}$ " H. . . . \$269.95

RADIO SHACK**STA-2000 AM-FM Stereo Receiver**

75 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD; frequency response 15-25,000 Hz \pm 2 dB; at 5 W; IM dist. 0.1% at 50 W; S/N 70 dB (phono), 75 dB (aux); FM tuner sensitivity 1.7 μ V; capture ratio 1.5 dB at 1 kHz; alternate channel rejection 1.7 dB; stereo separation 48 dB at 1 kHz; THD 0.15% stereo; S/N 70 dB; DIN and phono-type tape in/out jacks for two decks; tone controls with 11 click-stops; push-buttons for power on/off, A-B speaker pairs, stereo/mono, FM muting, volume attenuation; switched and unswitched a.c. convenience outlets; edge-lighted dial; signal-strength & power meters; brushed aluminum front panel; 19 $\frac{1}{2}$ " W x 16 $\frac{1}{2}$ " D x 6 $\frac{1}{4}$ " H. . . . \$499.95

STA-90 AM-FM Stereo Receiver

45 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 20-20,000 Hz \pm 2 dB; S/N 60 dB (phono), 85 dB (aux); FM tuner sensitivity 2.0 μ V; capture ratio 2 dB; alternate channel selectivity 70 dB; stereo separation 35 dB at 1 kHz; THD 0.7% stereo; S/N 65 dB; front & rear dubbing outputs; two pairs of tape in/out jacks; main, remote, main + remote speaker switch; blackout dial; signal-strength & center-channel meters; Quatravox for simulated 4-channel sound; 19 $\frac{1}{4}$ " x 14 $\frac{1}{2}$ " D x 5 $\frac{1}{8}$ " H. . . . \$359.95

STA-84 AM-FM Stereo Receiver

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.7% THD; power bandwidth 15-45,000 Hz; frequency response 20-20,000 Hz \pm 2 dB; IM dist. 0.1% at 15 W; input sensitivity: mag. phono 3 mV, aux 250 mV; hum & noise phono -60 dB, aux -75 dB; FM tuner sensitivity 2.0 μ V; capture ratio 2 dB; S/N 65 dB; stereo separation 35 dB at 1 kHz; THD 0.7% stereo; alternate channel rejection 60 dB; "Auto-Magic" control for fine-tuning FM station; combined volume/balance controls; Quatravox 4-channel simulator; signal-strength meter; 19 $\frac{1}{8}$ " W x 15" D x 5 $\frac{1}{4}$ " H. . . . \$299.95

STA-77A AM-FM Stereo Receiver

18 W rms/ch into 8 ohms (20-20,000 Hz) at 0.8% THD; frequency response 15-25,000 Hz \pm 2 dB; S/N 60 dB (phono), 70 dB (aux); FM tuner sensitivity 2.0 μ V; capture ratio 2 dB; alternate channel selectivity 55 dB; stereo separation 35 dB at 1 kHz; THD 0.5% stereo; S/N 65 dB; has PLL demodulation; center-detent balance control; pushbuttons for muting, mono, tape monitor, loudness, and power; signal-strength meter; DIN and phono-type tape in/out jacks; 18 $\frac{1}{2}$ " W x 14" D x 5 $\frac{1}{4}$ " H. . . . \$259.95

STA-64 AM-FM Stereo Receiver

16 W rms/ch into 8 ohms (20-20,000 Hz) at 0.8% THD; frequency response 15-30,000 Hz \pm 2 dB; S/N 60 dB (phono), 70 dB (aux); FM tuner sensitivity 2.2 μ V; capture ratio 2 dB; alternate channel selectivity 70 dB; stereo separation 38 dB at 1 kHz; THD 0.6% stereo; S/N 65 dB; DIN & phono-type tape in/out jacks; signal-strength meter; Quatravox circuitry; 18 $\frac{1}{2}$ " W x 14" D x 5 $\frac{1}{4}$ " H. . . . \$239.95

STA-52 AM-FM Stereo Receiver

12 W rms/ch into 8 ohms (20-20,000 Hz) at 0.9% THD; frequency response 15-30,000 Hz \pm 2 dB; S/N 60 dB (phono), 65 dB (aux); FM tuner sensitivity 2.5 μ V; capture ratio 2 dB; alternate channel rejection 70 dB; stereo separation 34 dB at 1 kHz; THD 0.6% stereo; PLL demodulator; signal-strength meter; a.c. convenience outlet; Quatravox circuitry; 17 $\frac{3}{8}$ " W x 11 $\frac{1}{4}$ " D x 5 $\frac{1}{8}$ " H. . . . \$199.95

STA-21. Similar to STA-52 but 7 W rms/ch; FM tuner sensitivity 2.8 μ V; capture ratio 3 dB; 16 $\frac{1}{4}$ " x 11 $\frac{1}{8}$ " D x 5 $\frac{1}{8}$ " H. . . . \$159.95

STA-16. Similar to STA-21 except 3 $\frac{1}{2}$ W rms/ch; frequency response 30-22,000 Hz \pm 2 dB; FM sensitivity 3.0 μ V; capture ratio 3.5 dB; 16 $\frac{1}{4}$ " W x 10 $\frac{1}{4}$ " D x 4 $\frac{1}{2}$ " H. . . . \$119.95

ROTEL

Company has six 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-802. 50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; FM sensitivity 1.6 μ V; split power supply; full tape dubbing; tone defeat; high & low filter; dual ganged bass & treble controls; audio & FM muting; mode & loudness controls; phase-locked-loop in FM circuit; signal-strength & center-tuning meters. . . . \$500.00

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. \$360.00

RX-402. 25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phase lock loop circuit; 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 μ V; FM muting, hi-filter, loudness controls. \$300.00

RX-202 Mk II. 20 W rms/ch into 8 ohms (40-20,000 Hz) at 1% THD; FM sensitivity 2.5 μ V; 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. \$230.00

RX-152 Mk II. 15 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. \$200.00

RX-102 Mk II. 10 W rms/ch into 8 ohms (50-20,000 Hz) at 1% THD; magnetic and crystal cartridge inputs; loudness control; tape monitor; speaker system switching 1 & 2. . . \$170.00

4-CHANNEL

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 μ V 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. 17 $\frac{1}{4}$ " x 5" x 12 $\frac{1}{2}$ " D. Walnut cabinet. \$479.95

SANSUI

9090 AM-FM Stereo Receiver

100 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; IM dist. (70:7000 Hz, 4:1) 0.2% at



rated power output; power bandwidth 20-20,000 Hz; imp. 8 ohms; frequency response 10-30,000 Hz \pm 1 dB at 1 W; channel separation (at 1000 Hz): 50 dB phono, aux & tape monitor; hum & noise: 70 dB phono, 80 dB aux. & tape monitor; FM sensitivity 1.7 μ V; THD 0.3% stereo; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; frequency response 30-15,000 Hz \pm 0.5, -2 dB; features triple tone controls (bass 150 or 300 Hz), (treble 1500 or 3000 Hz), midrange, and defeat; two stereo sets of tape terminals; 7-pos. tape monitor and dubbing switch; controls: mono/stereo, loudness, hi/lo filters, source selector, audio muting, mic mixing; signal-strength/multi-path meters; Dolby adapter/4-ch adapter circuit with switch; FM muting; 25 μ s de-emphasis circuit; separable preamp & power amp; two stereo headphone jacks; twin power meters; a.c. outlets (one

switched); 21 $\frac{1}{8}$ " W x 15 $\frac{1}{16}$ " D x 7 $\frac{3}{16}$ " H. \$750.00

8080. Similar to 9090 except 80 W rms/ch. \$650.00

7070. Similar to 8080 except 60 W rms/ch at 0.3% THD; frequency response 20-30,000 Hz \pm 1 dB; FM sensitivity 1.8 μ V; 19 $\frac{3}{4}$ " W x 14 $\frac{5}{8}$ " D x 6 $\frac{1}{2}$ " H. \$520.00

6060 AM-FM Stereo Receiver

40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.4% THD; frequency response 20-30,000 Hz \pm 1.5 dB; controls: bass/treble, low/high filter, loudness; FM sensitivity 1.9 μ V; THD 0.5%



stereo; capture ratio 2.2 dB; stereo separation 40 dB at 1000 Hz; tape monitor circuit; speaker selector; twin tuning meters; mode switch; FM muting switch; -20 dB audio muting switch; mic mixing facilities; 18 $\frac{1}{4}$ " W x 11 $\frac{1}{2}$ " D x 5 $\frac{3}{4}$ " H. \$420.00

5050. Same as 6060 except 30 W rms/ch at 0.5% THD; FM sensitivity 2.0 μ V. . . . \$320.00

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 μ V (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. \$260.00

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 \pm 2.0 dB, -3.0 dB (at 1 W); complete input/output facilities for tape recording & playback; FM sensitivity (IHF) 2.5 μ V; stereo separation 35 dB at 1000 Hz; frequency response 30-12,000 Hz \pm 1 dB, -3 dB; inputs for phono; will drive two pairs of speaker systems. 16 $\frac{3}{4}$ " W x 4 $\frac{1}{8}$ " H x 10 $\frac{1}{2}$ " D. \$200.00

221. Similar to 331 except 8 W rms/ch. \$180.00

4-CHANNEL

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 μ V (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. \$760.00

QRX-7001. Similar to QRX-6001 except 35 W rms/ch; THD & IM dist. 0.4%; FM sensitivity 1.9 μ V. \$880.00

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 μ V; selectivity 60 dB; capture ratio (IHF) 2.5 dB; stereo separation 40 dB (1000 Hz); frequency response 30-15,000 Hz \pm 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 $\frac{1}{8}$ " W x 5 $\frac{3}{8}$ " H x 12 $\frac{1}{8}$ " D. \$600.00

SCOTT, H. H.

R306 AM-FM Stereo Receiver

15 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; sensitivity 2.2 μ V (6.2 dBf); frequency response 30-15,000 Hz \pm 2 dB; capture ratio 1.5 dB; selectivity 52 dB; stereo separation 40 dB; S/N 68 dB (at 65 dBf); FM interstation muting; tape monitor; front-panel headphone jack; signal-strength meter; stepped bass & treble controls with detents; connection for two sets of speakers; walnut vinyl finished plywood case; 16 $\frac{1}{2}$ " W x 11 $\frac{1}{2}$ " D x 5" H. \$249.95

R316. Similar to R306 except 20 W rms/ch; three-position FM de-emphasis switch; multiplex switchable sub-channel filter; hi filter; front-panel mic input jack; direct-coupled power output stage; electronic circuit protection; 18 $\frac{1}{2}$ " W x 15 $\frac{1}{4}$ " D x 5 $\frac{3}{8}$ " H. . . . \$299.95

R236. Similar to R316 except 30 W rms/ch; includes separate signal-strength and center-channel tuning meters; click-stop volume control with detents & log linear slope; two tape monitor facilities; low filter; \$349.95

R336. Similar to R236 except 42 W rms/ch at 0.3% THD; includes separate clutched bass &



treble controls with detents; direct tape-to-tape copying without going through receiver. \$399.95

R376 AM-FM Stereo Receiver

75 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; FM sensitivity 1.8 μ V (4.9 dBf); sensitivity for 50 dB S/N 3.6 μ V (10 dBf); capture ratio 1.2 dB; selectivity 70 dB; S/N 68 dB at 65 dBf; image rejection 70 dB; spurious response rejection 85 dB; individual tone controls for bass, midrange, treble with click-stop detents; full complement of inputs, switching, and controls; direct fiber optic dial lighting; direct tape-to-tape copying; LED function lamps; front-panel mic jack; two separate tape monitors; 19 $\frac{1}{2}$ " W x 16" D x 5 $\frac{3}{4}$ " H. . . \$549.95

SHERWOOD

S-9910 AM-FM Stereo Receiver

100 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; IM dist. 0.1% at rated output (0.03% at 20 W); FM sensitivity 1.7 μ V; S/N 70 dB; capture ratio 1.0 dB; stereo separation 45 dB at 1000 Hz; dual tuning meters with positive indicators; PLL multiplex circuitry; digital detection system; subsonic & high filter; FM de-emphasis & FM-stereo-only switch; mic mixing; wide-range bass, midrange & treble controls with tone defeat switch; ARS circuit to recover 4-channel information from stereo program material; provision for 3 sets of speakers; front-panel dubbing jack; comes with case; 21 $\frac{1}{4}$ " W x 15 $\frac{1}{8}$ " D x 5 $\frac{3}{8}$ " H. \$700.00

S-7910 AM-FM Stereo Receiver

60 W rms/ch into 8 ohms (20-20,000 Hz) at

0.1% THD; IM dist. 0.1% at rated output (0.03% at 20 W); FM sensitivity 1.7 μ V; S/N 70 dB; capture ratio 1.0 dB; stereo separation 45 dB at 1000 Hz; dual tuning meters with positive indicators; PLL multiplex circuitry; digital detection system; high filter; FM de-emphasis & FM-stereo-only switch; wide-range detented bass & treble controls with tone defeat switch; ARS circuit to recover 4-channel information from stereo program material; provision for 2 sets of speakers; 21 $\frac{1}{4}$ " W x 15 $\frac{1}{8}$ " D x 7 $\frac{1}{8}$ " H \$500.00
S-8910. Same as S-7910 except FM-stereo only \$475.00

S-7310A AM-FM Stereo/Dynaquad

40 W rms/ch into 8 ohms (30-20,000 Hz) at 0.3% THD; IM dist. 0.3% into 8 ohms at rated



output (0.15% at 10 W); FM tuner sensitivity 1.8 μ V; S/N 70 dB; capture ratio 1.2 dB; stereo separation 40 dB at 1000 Hz; features built-in ARS circuit to recover 4-channel information from stereo program material; center-tune meter; PLL multiplex; FM muting; provision for two sets of speakers; provision for future 4-channel FM broadcasts, 4-channel adapter; wide-range detented bass & treble controls; high-frequency filter; front-panel tape dubbing jack; comes with case. 17 $\frac{1}{2}$ " W x 5 $\frac{1}{4}$ " H x 13 $\frac{1}{4}$ " D. \$400.00

S-7210A AM-FM Stereo/Dynaquad

30 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; IM dist. 0.5% into 8 ohms at rated output (0.2% at 10 W); direct-coupled power amplifier; FM tuner sensitivity 1.9 μ V; S/N 70 dB; capture ratio 1.4 dB; hum & noise 85 dB; features signal-strength meter; PLL multiplex; 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 ARS 4-channel circuit; wide-range detented bass & treble controls; comes with case. 17 $\frac{1}{2}$ " W x 5 $\frac{1}{4}$ " H x 13 $\frac{1}{4}$ " D. \$300.00

S-7110B AM Stereo Receiver

20 W rms/ch into 8 ohms (20-20,000 Hz) at 0.7% THD; IM dist. 0.7% into 8 ohms at rated output (0.2% at 10 W); direct-coupled amplifier; FM sensitivity 2.0 μ V; S/N 70 dB; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; features switchable FM muting; signal-strength meter; PLL multiplex; provision for switching two sets of speakers; wide-range bass & treble controls; comes with case. 17 $\frac{1}{2}$ " W x 5 $\frac{1}{4}$ " H x 15 $\frac{1}{4}$ " D. \$239.95

S-7010A AM-FM Stereo Receiver

12 W rms/ch into 8 ohms (40-20,000 Hz) at 0.8% THD; IM dist. 0.8% into 8 ohms at rated output (0.35% at 5 W); FM sensitivity 2.5 μ V; S/N 65 dB; capture ratio 4.0 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. 17 $\frac{1}{2}$ " W x 5 $\frac{1}{4}$ " H x 13 $\frac{1}{4}$ " D. \$200.00

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 μ V; capture ratio 1; full complement of controls & outputs. Black enclosure. 17" W x 4" H x 14" D. \$465.00

SONY

STR-6800SD AM-FM Stereo Receiver

80 W rms/ch into 8 ohms (20-20,000 Hz) at 0.15% THD; MOSFET r.f. front-end; FET mixer



circuit & buffered local oscillator; two stages of "uni-phase" i.f. filters for high phase linearity i.f. signal transfer; PLL IC stereo multiplex stage; built-in Dolby noise-reduction system; complementary Darlington coupled power output stage \$600.00

STR-5800SD. Same as STR-6800SD except 55 W rms/ch at 0.2% THD \$500.00

STR-4800SD. Same as STR-5800SD except 35 W rms/ch at 0.2% THD; FET r.f. amplifier stage plus uni-phase filters \$400.00

SOUNDCRAFTSMEN

3000B AM-FM Stereo Receiver

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; IM 0.1% at rated output; frequency



response 10-75,000 Hz \pm 3 dB; input sensitivity: mag. phono 2.4 mV/60 k, aux & tape monitor 140 mV/40 k; hum & noise -65 dB (phono), -80 dB (aux.); FM section: sensitivity 1.9 μ V; S/N 67 dB; capture ratio 2.0 dB; THD 0.2%; spurious response rejection 70 dB; stereo separation 35 dB; SCA suppression 70 dB; de-emphasis 75 μ s \$329.50

2000B AM-FM Stereo Receiver

18 W rms/ch into 8 ohms (50-20,000 Hz) at 0.8% THD; IM 0.2% at rated output; frequency response 20-60,000 Hz \pm 3 dB; input sensitivity: mag. phono 2.4 mV/45 k, ceramic phono 140 mV/100 k, aux. & tape monitor 120 mV/40 k; hum & noise -65 dB (phono), -80 dB (aux.); FM section: sensitivity 2.5 μ V; S/N 65 dB; capture ratio 3 dB; THD 0.2%; spurious response rejection 70 dB; stereo separation 35 dB; SCA suppression 60 dB; de-emphasis 75 μ s \$259.50

SUPERSCOPE

R-1270 AM-FM Stereo Receiver



35 W/ch continuous power into 8 ohms (40-20,000 Hz) at 1% THD; illuminated signal-strength/tuning meter; Quadrphase circuitry for simulated 4-channel sound from standard stereo sources with addition of two speakers; straight-line balance control with center detent; detented bass & treble controls; magnetic phono input; pushbutton speaker terminals \$299.95

R-1240. Similar to R-1270 except 20 W/ch \$239.95

R-1220. Similar to R-1270 except 10 W/ch \$179.95

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 \pm 1 dB); FM sensitivity 1.8 μ V; 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 x 17 $\frac{3}{4}$ " W x 15" D. \$479.95

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 \pm 1 dB); FM sensitivity 1.9 μ V; 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 x 5 $\frac{3}{4}$ " H x 13 $\frac{3}{4}$ " D. \$279.95

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 \pm 2 dB); FM sensitivity 1.9 μ V; 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 x 5 $\frac{3}{4}$ " H x 13 $\frac{3}{4}$ " D. \$119.95

4-CHANNEL

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 $\frac{7}{8}$ " H x 21 $\frac{1}{4}$ " W x 15" D. \$699.95

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 spe-



cial 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 \pm 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 μ V; capture ratio 1.5 dB; image rejection 60 dB. Walnut veneer cabinet with extruded aluminum control panel. 6 $\frac{7}{8}$ " H x 21 $\frac{1}{4}$ " W x 15" D \$599.95

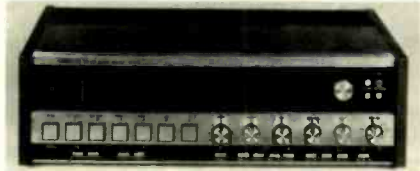
RQ4746 4-Channel Receiver

Similar to RQ4747 except 15 W rms/ch into 8 ohms with four channels driven (20-20,000 Hz) at 1% THD; FM sensitivity 2.3 μ V; S/N 67 dB; AM and FM meters. 6" H x 17 $\frac{3}{4}$ " W x 15" D \$479.95

TANDBERG

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 \$1099.00

TR-2055. Same as TR-2075 except 55 W rms/ch; dist. 0.15% \$749.00

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 μ V (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. 17 $\frac{3}{4}$ " W x 5 $\frac{7}{16}$ " H x 12 $\frac{1}{4}$ " D + $\frac{3}{4}$ " knobs \$699.00

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 μ V (into 75 ohms), 1.6 μ V (into 300 ohms); S/N 66 dB; other features same as TR-1055 \$599.00

TECHNICS BY PANASONIC

SA-5760 AM-FM Stereo Receiver

165 W rms/ch into 8 ohms (20-20,000 Hz) at 0.08% THD; IM dist. 0.1%; FM sensitivity (IHF) 1.8 μ V (10.3 dBf); FM THD 0.1% (mono), 0.15% (stereo); capture ratio 1.0 dB; features two phono inputs with impedance selection, detented volume attenuator, variable-turnover click-stop tone controls, steep-slope high and low filters, two tape monitors, multiple protection circuits, main/remote speaker facilities, center-channel & signal-strength meters, phase-locked loop in FM stereo. 21 $\frac{2}{32}$ " W x 19 $\frac{3}{32}$ " D x 6 $\frac{7}{8}$ " H \$799.95

SA-5560 AM-FM Stereo Receiver

85 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; 90 W rms/ch into 4 ohms; IM dist. 0.1%; FM sensitivity (IHF) 1.8 μ V (10.3 dBf); FM THD 0.15% (mono), 0.25% (stereo); cap-

ture ratio 1.5 dB; features 41-position click-stop volume control, multiple circuit/speaker protection, click-stop tone controls, high-cut and low-cut filters, loudness switch, two tape monitors, main/remote speaker facilities, center-channel and signal-strength meters, phase-locked loop in FM stereo. 19 $\frac{1}{16}$ " W x 16 $\frac{1}{32}$ " D x 5 $\frac{29}{32}$ " H \$499.95

SA-5460. Same as SA-5560 except 65 W rms/ch into 8 ohms; 72 W rms/ch into 4 ohms \$399.95

SA-5360 AM-FM Stereo Receiver

38 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; 42 W rms/ch into 4 ohms; IM dist. 0.5%; FM sensitivity (IHF) 1.9 μ V (10.8 dBf); FM THD 0.15% (mono), 0.3% (stereo); capture ratio 1.5 dB; features phase-locked loop in FM stereo, click-stop volume and tone controls, multiple circuit/speaker protection, center-channel & signal-strength meters, FM muting switch. 16 $\frac{17}{32}$ " W x 13 $\frac{31}{32}$ " D x 5 $\frac{19}{32}$ " H \$299.95

SA-5160 AM-FM Stereo Receiver

25 W rms/ch into 8 ohms (30-20,000 Hz) at 0.5% THD; 25 W rms/ch into 4 ohms; IM dist. 0.7%; FM sensitivity (IHF) 1.9 μ V (10.8 dBf); FM S/N 73 dB; capture ratio 1.5 dB; features phase-locked loop in FM stereo, tuning meter, outputs for two sets of speakers. 16 $\frac{17}{32}$ " W x 13 $\frac{31}{32}$ " D x 5 $\frac{19}{32}$ " H \$229.95

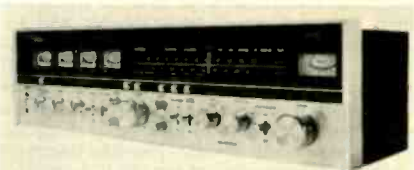
SA-5060 AM-FM Stereo Receiver

12 W rms/ch into 8 ohms (40-20,000 Hz) at 0.9% THD; 13 W rms/ch into 4 ohms; IM dist. 0.9%; FM sensitivity (IHF) 2.0 μ V (11.2 dBf); FM S/N 70 dB; capture ratio 1.5 dB; features phase-locked loop in FM stereo, tuning meter, tape monitor switch. 16 $\frac{17}{32}$ " W x 12 $\frac{13}{32}$ " D x 5 $\frac{1}{2}$ " H \$169.95

4-CHANNEL

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 μ V for 30 dB quieting; FM THD 0.4% stereo; separation 40 dB at 1000 Hz. Walnut cabinet included. 6 $\frac{1}{8}$ " H x 21 $\frac{3}{8}$ " W x 15 $\frac{9}{16}$ " 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 $\frac{3}{32}$ " H x 19 $\frac{3}{4}$ " W x 15 $\frac{1}{16}$ " D... \$649.95

TOSHIBA

SA-620 AM-FM Stereo Receiver

50 W rms/ch into 8 ohms (20-20,000 Hz) at 0.4% THD; frequency response 20-15,000 Hz; S/N 70 dB phono, 90 dB aux.; FM sensitivity 1.8 μ V; THD 0.4% stereo; capture ratio 1 dB;

selectivity 65 dB; FM muting; loudness control; high & low filters; Dolby circuit; two phono, aux. & two tape inputs; 20 $\frac{7}{8}$ " W x 17 $\frac{1}{8}$ " D x 6 $\frac{3}{8}$ " H. \$449.95

SA-520. Same as SA-620 except 35 W rms/ch. \$349.95

SA-420 AM-FM Stereo Receiver

20 W rms/ch into 8 ohms (20-20,000 Hz) at 0.4% THD; frequency response 20-15,000 Hz; S/N 70 dB phono, 90 dB aux.; FM sensitivity 1.9 μ V; THD 0.4% stereo; capture ratio 1 dB; selectivity 60 dB; FM muting; loudness control; high & low filters; phono, aux. & two tape in-19 $\frac{7}{8}$ " W x 17 $\frac{1}{8}$ " D x 6 $\frac{1}{8}$ " H \$249.95

SA-320. Similar to SA-420 except 14 W rms/ch at 0.8% THD; high filter only; one tape input. \$199.95

SA-220C. Similar to SA-320 except 7 W rms/ch (40-20,000 Hz); FM sensitivity 2.3 μ V; capture ratio 3 dB; loudness control; mic mixing with level control; mic input. \$179.95

4-CHANNEL

SA-514 AM-FM Stereo/4-CH Receiver

15 W rms/ch into 8 ohms (20-20,000 Hz) with all channels driven at 0.4% THD; built-in CD-4 demodulator; 40 W rms/ch BTL mode; FM muting; loudness control; BTL switch; condenser phono cartridge equalizer built in; two phono, aux. & two tape inputs; 19 $\frac{1}{2}$ " W x 15" D x 5" H. \$599.95

YAMAHA

CR-1000 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 μ V (mono); capture ratio 1.0 dB; selectivity 80 dB; S/N 72 dB; frequency response 50-10,000 Hz \pm 0.5 dB, 20-15,000 Hz \pm 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 x 6 $\frac{3}{4}$ " H x 13 $\frac{1}{4}$ " 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 μ V (mono); capture ratio 1.0 dB; selectivity 75 dB; S/N 72 dB; stereo separation 45 dB; frequency response 50-10,000 Hz \pm 0.5 dB, 20-15,000 Hz \pm 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; 18 $\frac{3}{4}$ " W x 6 $\frac{1}{4}$ " H x 11 $\frac{3}{4}$ " D \$580.00

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

CR-450 AM-FM Stereo Receiver

25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; response 20-20,000 Hz +0.5/-1 dB; channel separation 65 dB (at rated power, 1000 Hz); FM sensitivity 2.0 μ V (mono); capture ratio 1.5 dB; selectivity 60 dB; S/N 66 dB; stereo separation 40 dB; response 50,000 Hz \pm 1.0 dB; dual meters; one switched, one unswitched a.c. outlets; 18 $\frac{1}{4}$ " W x 13 $\frac{1}{4}$ " D x 6 $\frac{1}{4}$ " H \$390.00

CR-400 AM-FM Stereo Receiver

16 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; response 20-50,000 Hz +0.5/-3 dB; channel separation 50 dB (at rated power, 1000 Hz); FM sensitivity 2.5 μ V (mono); capture ratio 2.0 dB; selectivity 65 dB; S/N 66 dB; stereo separation 40 dB; response 50-10,000 Hz; 17 $\frac{1}{4}$ " W x 11 $\frac{3}{4}$ " D x 6 $\frac{1}{4}$ " H \$330.00

Introduction to RECORD PLAYERS AND PHONO CARTRIDGES

A record player consists of a turntable, a tonearm, and a phono cartridge. Sometimes these components are integrated into a single unit, but more often the turntable and tonearm are from one manufacturer, and the cartridge from another. Occasionally, all three are from different sources.

Turntables: The turntable is required to rotate the phonograph record at a constant speed of 33 $\frac{1}{3}$ or 45 revolutions per minute (rpm). The disc is supported on, and turned by, a *platter*, which is usually covered with a ribbed rubber mat that contacts only a minimum portion of the record surface.

Three basic drive systems are in use to turn the platter. *Idler* drive uses a rubber wheel that contacts the rapidly revolving motor shaft and the inside of the platter rim. *Belt* drive uses a flexible fabric or rubber belt that wraps around a smaller inner diameter of the platter, and around the motor shaft. Some turntables use a combination of idler and belt drive, with the idler shaft revolving at a slower speed than the motor, and in turn driving the platter through the belt. With either an idler or a belt drive, record speed is changed by mechanically shifting the belt or idler wheel to a different diameter of the driving shaft. The third system, *direct drive*,

requires a special motor that turns at the record speed of 33 $\frac{1}{3}$ or 45 rpm, controlled by electronic circuits. The platter rests directly on the rotor shaft (sometimes the rotor is actually a part of the platter itself). The elimination of all intermediate mechanical systems from the drive system results in reduced vibration and speed fluctuations, as well as offering potentially improved reliability.

The two most important properties of a turntable are its speed constancy and freedom from mechanical vibration. Not only must the platter rotate at the correct, unvarying speed, but it must be free of short term speed fluctuations. These can cause the effect known as *flutter*, which can impart a harsh, muddy quality to the reproduced sound. If the flutter occurs at a low rate (less than 10 Hz) it may be heard as a wavering of pitch, or "wow." Mechanical vibration from the motor or other moving parts, if allowed to reach the tonearm or pickup cartridge, can be heard as a low hum, or *rumble*, when playing a record. Both rumble and flutter can be minimized by precise mechanical construction and balancing of all rotating parts.

Direct-drive turntables (and some belt-driven units) are electronically controlled, unlike most others whose motors are driven directly from the commercial power line. An electronic turntable uses amplifier circuits and a stable frequency or voltage reference to maintain constant motor speed in spite of variations in power-line voltage or frequency. A vernier speed adjustment, varying the nominal speed of the turntable over a range of a few percent, is made electronically on these models, and mechanically on idler or conventional belt drive units. Both methods are equally satisfactory in their performance. The speed of a turntable can be verified by *stroboscope* markings on or beneath the platter, viewed by a light source that flashes on and off at the power-line frequency of 60 Hz. At the correct speed, the dot pattern is stationary, while a speed error causes it to rotate slowly.

Tonearms: The *tonearm* supports the cartridge as it plays the record. Ideally, the cartridge should be parallel to the record surface, with its front-rear axis tangent to the record groove. Because of the very low vertical tracking forces used with modern cartridges, low friction arm pivots are necessary.

Conventional tonearms are pivoted at one end, with the cartridge mounted at the other, usually in a removable plastic slide or shell. A pivoted arm can be tangent to the groove at only one point on the record. By offsetting the cartridge at an angle to the arm axis, and positioning it so that it extends slightly beyond the turntable center (both the angle and the overhang distance are critical) it is possible to have tangency at two points and a low *tracking error* elsewhere on the record surface.

An undesirable effect on the offset angle is a side thrust on the stylus (often called the "skating effect") that tends to drive the arm toward the center of the record. This puts unequal tracking forces on the two groove walls, sometimes leading to distortion on the right channel (outer groove wall) when playing heavily recorded stereo records. Almost all tonearms have some form of *anti-skating* system that applies an equal and opposite force to the arm to equalize the forces on the two groove walls. Springs, levers, hanging weights, and magnets have been used for this purpose, with equal ef-

fectiveness (the actual skating force is somewhat unpredictable, being a function of tracking force, stylus dimensions, record material, and even recorded modulation level).

Some tonearms, known as straight-line tracking, or *radial* arms, carry the cartridge inward along a radius of the record, always tangent to the groove. Having no offset angle, radial arms are free of the skating effect, as well as having no inherent tracking error. Since the forces exerted by the groove wall on the stylus are not sufficient to move the arm unaided, radial arms are *servo-driven* by a motor, responding to any tracking error by moving the arm along a track to reduce that error. Radial arms are usually integrated with the design of the turntable, and tend to be rather expensive.

Almost every record player today has some degree of automation, relieving the user from the need to place the pickup on the record manually or to return it to its rest after playing. Single-play automatic turntables usually have a single control that starts the motor, causes the arm to move to the lead-in diameter of the record, and lowers it gently to the record surface. At the end of play, the process is reversed, and the player shuts off automatically.

Some single-play units are only automated to the extent that picking up the arm starts the motor, although at the end of the record the motor shuts off and the arm is lifted from the record (and sometimes returns to its rest). At the other extreme of sophistication, is a single-play turntable that goes into operation as soon as a record is placed on the platter, selects the correct speed and indexing diameter, and shuts off after playing. Beyond this is a digital, programmable turntable that can be programmed to play up to 13 separate recorded bands on one side of a record, in any sequence and as often as desired, up to a total of 24 programmed operations!

Most tonearms are equipped with a finger lift for manual cueing, or positioning of the cartridge at the desired playing point. Delicate cartridges require great care to avoid damaging them when cueing, and almost every good-quality record player nowadays has a *cueing device* that gently lifts and lowers the pickup by operating a lever or button. Almost all have damped descent, lowering the pickup at a rate independent of the manner in which the control is operated, and on the better players the lift is also damped.

To most people, an automatic record player is synonymous with "record changer." Once limited to lower-priced equipment, and looked upon with disfavor by purist audiophiles, the modern "top quality" record changer is often more expensive than an equivalent single-play unit, and can be as accurate and gentle in its handling of records and in many other aspects of its performance. Greater stylus tracking force is required, of course. Since all record changers can also be operated as single play, or manual units, their "changing" function can be considered as an extra convenience that need not be used unless desired.

For many years, all record changers used idler drive, which was able to supply the extra torque needed to operate their record dropping mechanisms. By using a low-speed, high-torque motor, some record-changer manufacturers have been able to make belt-driven record changers (including one with electronic motor control).

The vast majority of record players are integrated combinations of turntable and tonearm. For those who prefer to make their own choice in each category, there are a few separate turntables and tonearms, all in the higher price brackets.

Four-Channel: The only special requirement for a four channel record player is that its tonearm and signal cable wiring have a low capacitance (preferably not more than 100 picofarads) if a CD-4 cartridge is to be used. Recognizing this need, almost all tonearm and record-player manufacturers have switched to low capaci-

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tance arm wiring, and many supply low capacitance signal cables as standard equipment. Others still ship their products with normal capacitance wiring, which is preferable for most stereo cartridges, but in most cases it can be easily replaced with the low capacitance variety at any later time.

THE phono cartridge is a *transducer* whose *jewel stylus* tracks the undulations of a modulated spiral groove on a vinyl record, and generates an electrical voltage whose waveform corresponds to that of the original program. Each wall of the V-shaped groove carries the information for one of the stereo channels. A stereo cartridge contains two separate generating systems, each of whose outputs should correspond only to the information stored in one of the groove walls. In practice, the *channel separation* is not infinite, but the 20 to 30 dB obtained over most of the audible frequency range is sufficient for a full stereo effect.

The contours of the stereo record groove were designed to be traced by a conical (spherical) tipped stylus with a radius of 0.7 mils (.0007 inch, or 18 microns). However, the recorded wavelength, especially near the record center and at high frequencies, is so small that a 0.7-mil stylus cannot reproduce it accurately. One solution to this problem is to use an elliptical stylus, whose larger radius (across the groove width) is usually 0.7 mil, but whose smaller radius (which follows the groove wall modulation) is typically 0.2 to 0.3 mil. The elliptical stylus is generally considered to give superior reproduction of the highest frequencies at small record diameters. The stylus is mounted on the end of a *cantilever*, which must be short, light, and rigid. The opposite end of the cantilever is pivoted to allow freedom of movement, and is usually *damped* to reduce the effect of mechanical resonances.

Almost all high-quality cartridges operate on magnetic principles. The variation of magnetic flux through a coil of wire generates a voltage in the coil. The flux can be varied in one of several ways: by moving a magnet relative to iron pole pieces passing through the coils, by moving a small piece of magnetic material in an air gap to modulate the flux from a fixed magnet in the cartridge, and by moving a small coil in a powerful fixed magnetic field. Each type of construction has its advantages and disadvantages, but all are capable of full high-fidelity performance.

The great majority of cartridges use fixed coils, and either the moving-magnet or moving-iron principle, or one of their variants. As a rule, the stylus assembly slips off easily for replacement. There are a few high-priced moving-coil cartridges, thought by some to deliver superior performance. However, the output of a moving-coil cartridge is extremely low, and usually requires a step-up transformer or a "pre-pre-amplifier" to boost it to a level suitable for ordinary phono preamplifier inputs. Also, the stylus of a moving-coil cartridge is rarely user-replaceable.

Magnetic cartridges of all types are *velocity-responding* devices, whose output voltage is proportional to the velocity with which the stylus moves as it follows the groove modulation. High-fidelity phono preamplifiers are designed to equalize the output of a magnetic cartridge to deliver a "flat" response from records recorded to commercial standards. Some other types of cartridges are *amplitude responding*, and are not suitable for direct connection to most amplifier phono inputs. Among these are *piezoelectric* cartridges which generate a voltage when their elements are squeezed or flexed by the stylus motion, and strain-gage cartridges whose resistance is altered by the stylus deflection.

No ceramic cartridges (the most widely used piezoelectric type) sold in this country are capable of top-quality performance. Cartridges from one manufacturer are inherently amplitude responsive, but have internal circuits that con-

vert their voltage output and frequency response to the equivalent of a magnetic cartridge. They employ *electret* elements which generate an output voltage proportional to their deflection by the stylus system. Another manufacturer markets a strain-gage pickup that's used for both stereo and CD-4 records. Being resistive in nature, both the strain-gage and electret cartridges are immune to magnetic hum pickup and do not affect preamplifier equalization at high frequencies.

The *compliance* and *tip mass* of a phono cartridge stylus are the major factors determining the required *tracking force*. Compliance should be high for successful operation at low forces, but not so high as to resonate with the tonearm mass at an undesirably low frequency (less than 6 or 7 Hz). The compliance of a high-fidelity stylus usually lies between 10 and 50 micro-centimeters per dyne, with 30 being a typical value for most high-ranking cartridges. Tip mass should be as low as possible for best tracking of very high frequencies. Since this requires a thin, fragile stylus cantilever, very low tip mass implies a certain delicacy—and fragility—in the cartridge construction. Typical values range from about 1 milligram to less than 0.25 milligram in the finest cartridges.

Each manufacturer recommends a range of tracking forces within which proper performance can be expected from his cartridge. The consumer can judge, in a rough sense, the overall quality of a cartridge from the recommended tracking force. Some inexpensive cartridges are designed to operate between 3 and 5 grams (undesirably high for a high-quality music system), but a large number of medium-priced models perform well between 2 and 3 grams. At higher prices, the tracking force range is often from 1 to 1½ grams, and the most compliant cartridges are sometimes rated at ½ to 1¼ grams. However, no cartridge presently sold can function with full effectiveness at ½ gram, usually requiring at least ¾ gram to track the highest recorded velocities. In general, any

cartridge will operate at its best at or near its maximum rated force. If the stylus is elliptical, or a conical tip with a smaller than usual radius, such as 0.5 mil, the tracking force should not exceed 2 grams for low record wear.

Four Channels: Matrixed four-channel records, encoded with the SQ or QS systems, can be played with any stereo cartridge. However, discrete CD-4 four-channel records require a special cartridge whose frequency response extends to 45 kHz. Almost all CD-4 cartridges have specially shaped styli, able to trace the exceedingly short recorded wavelengths found on these records, and to produce less wear on the record than would be possible with a conical or elliptical stylus. These styli are sometimes named after their inventors (Shibata, Pramanik), or may be given a proprietary name by their manufacturers. Even though they often operate at a higher force than one would use with a top-ranking stereo cartridge (1.5 to 2 grams is typical), these special styli cause less record wear than an elliptical stylus operating at half the force. This is because they distribute the force over a larger contact area along the groove wall. A few CD-4 cartridges can operate with full effectiveness at only 1 gram, with extremely low record wear. A CD-4 record can be played in stereo with any stereo cartridge. However, this will soon erase or impair the high frequencies needed for four-channel reproduction, so it is advisable to play them with a CD-4 cartridge, even for stereo listening.

To assist in achieving their extended high-frequency response, most magnetic CD-4 cartridges have less winding inductance than typical stereo cartridges, and should be terminated in a load of 100K ohms and not more than 100 picofarads (as compared to the 47K ohms and 300 picofarads commonly recommended for stereo cartridges). Special low-capacitance cables are supplied with, or are available for, record players that are to be used for CD-4 reproduction, and CD-4 demodulators normally have the required high input impedance.



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*Mr. Feldman, reporting in *Tape Deck Quarterly*, Spring, 1975 noted that the AT-706 response varied no more than \pm 2 dB from 20 to 22,000 Hz. He also stated, "What we heard corresponded with what we had plotted..." Hear the incredible new AT-706 headphones at Audio-Technica dealers everywhere.



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The lower mass tone arm, electronic cueing, quieting circuitry and automatic arm lift are all very new.

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The new 698 arm moves effortlessly on 32 jeweled, sapphire bearings. Vertical and horizontal bearing friction is a mere 0.001 gram, 4 times less than it would be on conventional steel bearings. It is impervious to drag. Only the calibrated anti-skating and tracking force you select control its movement.

The new aluminum tubular arm, dramatically reduced in mass, responds instantly to the slightest variation of a record's movement. Even the abrupt changes of a warped disc are quickly absorbed.

The Motor

A self-cooling, hysteresis synchronous motor drives the platter with

enough torque to reach full speed in one third of a revolution. It contributes to the almost immeasurable 0.04% average wow and flutter value in our specifications. More important, it's built to last.

The Drive Belt

Every turntable is approved only when zero error is achieved in its speed accuracy. To prevent any variations of speed we grind each belt to within one ten thousandth of an inch thickness.

The Platter

Every two piece, 7 lb., 3 inch thick, die cast aluminum platter is dynamically balanced. Once in motion, it acts as a massive flywheel to assure specified wow and flutter value even with the voltage varied from 105 to 127 volts AC.

The Main Bearing

The stainless steel shaft extending from the platter is aged, by alternate exposures to extreme high and low temperatures preventing it from ever warping. The tip is

then precision ground and polished before lapping it into two oilite, self-lubricating bearings, reducing friction and reducing rumble to one of the lowest figures ever measured in a professional turntable; -68 dB CBS ARLI.

The Controls

Electronic cueing has been added to the 698 to raise and lower the tone arm at your slightest touch. Simple plug-in integrated circuitry raises the tone arm automatically when power is turned off.

A see-through anti skating adjustment provides the necessary force for the horizontal plane. It is micrometer calibrated to eliminate channel imbalance and unnecessary record wear.

Stylus force is dialed using a see-through calibrated clock mainspring more accurate than any commercially available stylus pressure gauge.

A new silicon photocell sensor has been added to automatically lift the arm at the end of a record.

New quieting circuitry has also been added. Now, even with the amplifier volume turned up, you can switch the 698 on or off without a "pop" sound to blow out your woofers.

At Empire we make only one model turntable, the 698. With proper maintenance and care the chances are very good it will be the only one you'll ever need.

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The Empire 698 Turntable

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3

RECORD PLAYERS

ACOUSTIC RESEARCH

AR-XB Single-Play/Manual

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. 12 $\frac{3}{4}$ " x 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " walnut-grained vinyl finish \$129.00
XAU/Universal. Same except for 110-220, 50-60 Hz operation \$137.00
AR-XA-91. Same as AR-XA but with Shure M91ED cartridge premounted \$183.95

AR-XB Single-Play/Manual

Two-speed (33 & 45 rpm) manual turntable. Features permanent-magnet synchronous mo-



tor, belt drive, 4-lb platter, viscous-damped cueing, and removable cartridge shell. Comes complete with base, dust cover, and tonearm. 12 $\frac{3}{4}$ " x 16 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ "; walnut-grained vinyl finish \$145.00
AR-XB-91 Same as AR-XB but with Shure M91ED premounted \$199.95

ADC PROFESSIONAL PRODUCTS

"Accutrac" 4000 Computerized

Two-speed (33 & 45 rpm) single-play automatic direct-drive turntable with electronic track selection, remote control, and computerized memory bank; front-panel & remote push-buttons for track selection (any sequence), repeat, cue, and reject; dual pitch controls with lighted strobe; 13 track-selector buttons plus 24-selection memory bank for programmed repeats; comes with S-shaped balanced tonearm, ADC LMA-1 electro-optical magnetic cartridge, base, dust cover, remote receiver and transmitter; 18 $\frac{1}{2}$ " W x 17 $\frac{1}{8}$ " D x 6" H (inc. dust cover) \$499.95

BANG & OLUFSEN

Beogram 1900 Automatic Turntable

Two-speed (33 & 45 rpm) automatic turntable; single master control for all operations; automatic arm lift & shutoff; belt-driven with Eddy brake regulator; asynchronous motor; speed adjustment +3%; speed deviation 0.1%; wow & flutter less than $\pm 0.035\%$ rumble (DIN un-



weighted) 42 dB, 62 dB (weighted); tracking error 0.126%/cm; comes equipped the magnesium alloy tonearm and MMC4000 stereo cartridge, hinged dust cover (records can be played with cover closed), rosewood veneer base (oak, teak or white lacquer finishes available on special order) \$325.00

4-CHANNEL

Beogram 4002 4-Ch. Automatic

Two-speed (33 & 45 rpm, electronic selection), belt-driven turntable; slow-speed, 16-pole synchronous motor controlled by electronic circuit; wow & flutter $\pm 0.025\%$; rumble 65 dB; anti-skating 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" x 19 $\frac{1}{4}$ " x 15" \$740.00
MMC6000. Cartridge with Pramanik stylus (multiradial diamond) \$125.00

B•I•C

1000 Electronic Changer/Single Play

Record changing turntable with belt drive; two motors: 24-pole, 300 rpm, synchronous drives



turntable, second motor controls cue and change cycle; PC board controls cue and cycle operations; electronic touch buttons initiate all actions; LED readouts; machined strobe markings on platter; strobe light with built-in speed control; optional remote control duplicates all functions; low-mass-cartridge skeletal head shell; plug-in record support post; electronic speed control; tonearm system with CD-4 position in its anti-skating control . . . \$279.95

960 Changer/Single Play

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 $\pm 3\%$ 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; gimballed 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
 Solid oiled-walnut base, matte black molded base, or contemporary wood base with front-hinged storage compartment, hinged dust cover or low-profile dust cover for use with record-support posts unplugged (960, 980, and 1000 models) available extra.

940 Changer/Single Play

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

920 Changer/Single Play

Belt-driven system; 24-pole synchronous motor; tonearm with offset weight that sets stylus force after arm is zero-balanced; damped cueing up and down; programmed play in which six records can be repeated in any combination; 10 $\frac{1}{2}$ " platter \$79.95

BSR MCDONALD

200BAX Changer/Single-Play

Two-speed (33 & 45 rpm) automatic record

Every Dual turntable, from the 1225 to the new CS721, is designed with one concept: to provide more precision than you are ever likely to need. How well groove modulations are converted into music is significantly influenced by each aspect of tonearm design: geometry, balance, mass, resonance, bearing friction and the application of stylus pressure and anti-skating. The life of one's records is also determined.

All these considerations have been thoroughly fulfilled in every Dual. Thus,

There have never been so many ways to enjoy Dual precision.

if basic excellence in record playback meets your requirements, we would suggest the lowest-priced model. However, if you demand a tonearm that does more to optimize tracking than any other tonearm ever made, nothing less than the top-of-the-line CS721 or CS704 will satisfy you.

All component parts of every Dual turntable are built to the highest standards of precision. For example, the rotor of every motor is dynamically balanced in every plane of motion. Uniformity is checked to within four millionths of an inch; just one of the reasons for the virtual absence of vibration, the primary source of rumble.

Dual turntables are rugged. They need not be babied—by you or anyone else in your family. Chances are that your Dual—any Dual—will outlast all your other components, so you should carefully consider which Dual you want.

There are eight Dual models; some semi-automatic, some fully automatic, some with the option of multiple play. However, there's no need to decide on a specific Dual model right now. You can do that best at your United Audio dealer where he can demonstrate all the differences that Dual precision makes.



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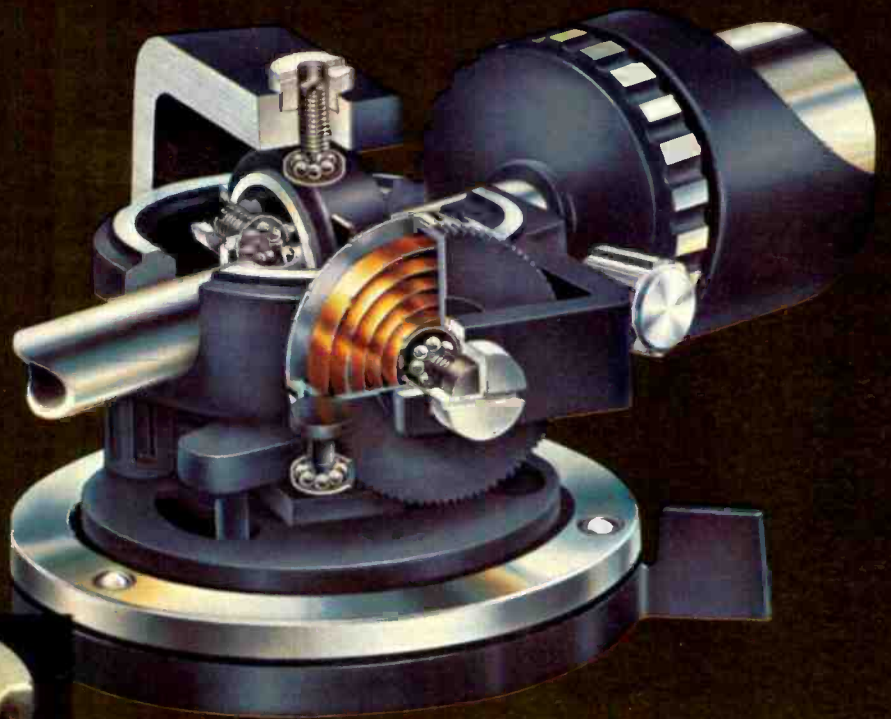


The Dual 1225.



The Dual 1249.

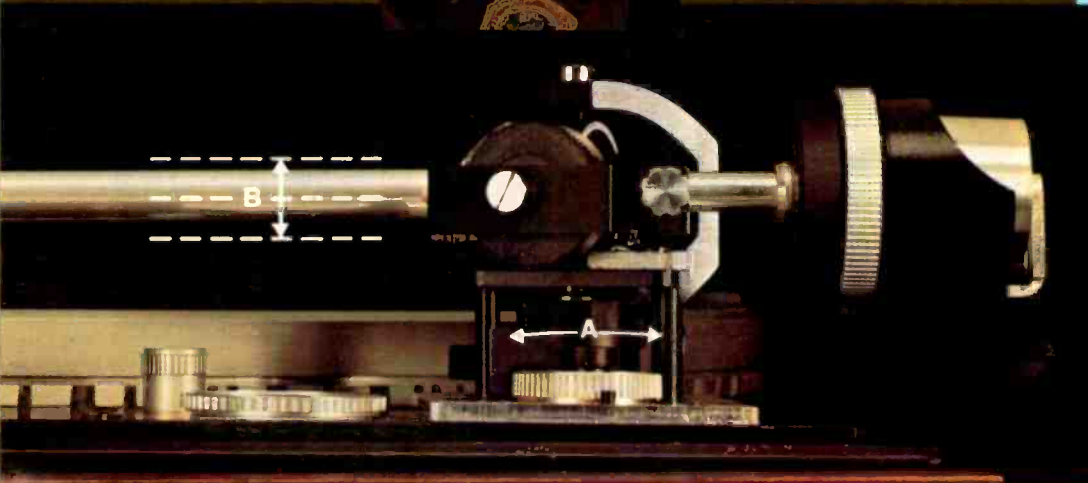
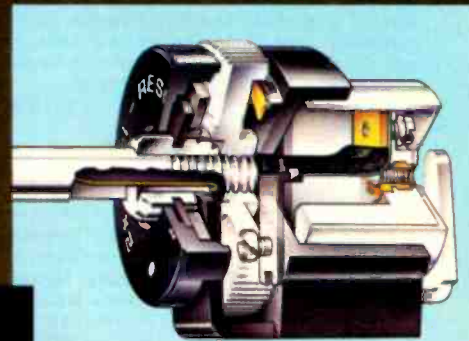
True, four-point gimbal centers and pivots the tonearm mass at its intersection of horizontal and vertical axes. Tonearm is dynamically balanced in all planes. The four needle-point pivots are first hardened, then honed, a process which produces microscopically smooth surfaces. The precision ball-bearing races are only 0.157 inch diameter.



Unique Vario-pulley used in Dual's three belt-drive models is precision-machined for perfect concentricity and balance. Speeds are adjusted by expansion and contraction of pulley circumference; belt is never twisted or distorted.



The unique counterbalance used in Dual's two direct-drive models contains two mechanical anti-resonance filters. These are separately tuned to absorb energy in the resonance-frequency ranges of the tonearm/cartridge system and chassis to minimize acoustic feedback.



(A) Vertical Tonearm Control used in Dual's two direct-drive models sets and locks tonearm height at any point over an 8mm range (B). Tonearm thus exactly parallels the record with any size cartridge. Result: accurate vertical tracking without the added mass of cartridge spacers.



The Dual CS721.

The Dual 1225. Fully automatic, single-play/multi-play. Viscous-damped cue-control, pitch control. Less than \$140. **Dual 1226,** with cast platter, rotating single-play spindle. Less than \$170. **Dual 1228,** with gimballed tonearm, synchronous motor, illuminated strobe, variable tracking angle, less than \$200.

The Dual 1249. Fully automatic, single-play/multi-play. Belt-drive. 12" dynamically balanced platter. Less than \$280. Other full-size belt-drive models include: **Dual 502,** semi-automatic. Less than \$160. **Dual 510,** semi-automatic, with lead-in groove sensor, less than \$200.

The Dual CS721. Fully automatic, single-play. DC, brushless, electronic, direct-drive motor. Vertical Tonearm Control adjustable cue-control height and descent speed, electronic pitch control with illuminated strobe. Less than \$400, including base and cover. **Dual CS704,** similar, but with semi-automatic tonearm. Less than \$310, including base and cover.

3

Record Players

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 \$139.95
100BAX. Similar to 200 BAX except has adjustable counterweighted tonearm; no stylus wear indicator. Comes with ADC K8E magnetic cartridge \$109.95
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 ... \$99.95
20BP. Identical to 20BPX except without cartridge \$89.95

CONCORD

BD-7000 Single-Play/Automatic

Two-speed (33 & 45 rpm) single-play semi-automatic turntable, will handle 7", 10", 12" records; wow & flutter 0.04%; rumble 65 dB; anti-skate feature; static-balanced 8 1/2" tonearm; servo-controlled motor; auto return and shut-off; pitch control; strobe indicator; friction-hinged dust cover. 17 3/8" W x 14" D x 17 1/4" H \$219.95

BA-600 Single-Play/Automatic

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 8 1/2" 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. 17 3/8" W x 14" D x 7 1/4" H \$159.95

BA-300 Single-Play/Automatic

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 8 1/2" tonearm; auto return and shut-off; viscous-damped cueing; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17 3/8" W x 14" D x 7 1/4" H \$129.95

BD-1000 Single-Play/Manual

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 8 1/2" tonearm; viscous-damped cueing; anti-skate feature; low-mass cartridge head; hinged dust cover. 17 3/8" W x 14" D x 7 1/4" H \$99.95

CONNOISSEUR

BD2/Mark IV Single-Play/Automatic

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 10 1/4" aluminum platter. 13 3/4" x 15 1/2" x 4 1/2" H (including dust cover). Comes with arm, base, dust cover but without cartridge \$144.95
SAU2. Tonearm with head shell \$54.95
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.

1225 Single/Multi-Play Turntable

Additional features include: tracking as low as



1 gram. 3 3/4-lb platter. 12 4/5" x 10 3/4". 5" above and 2 3/4" below mounting board \$139.95

1226 Single/Multi-Play Turntable

Additional features include: tracking as low as 3/4 g. 4-lb one-piece die-cast platter. Rotating single-play spindle. 12 4/5" x 10 3/4". 5" above 2 3/4" 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 1/2 gram. Damped counterbalance with coarse and fine adjustments. Synchronous/hi-torque motor, 4-lb one-piece

die-cast platter; illuminated strobe. 13" x 10 3/4" plus 1" at rear and right for tonearm overhang. 5" above and 2 3/4" 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 1/4 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. 14 1/2" x 12" plus 1" at rear and right for tonearm overhang. 5" above, 3" clearance below mounting board \$279.95

510 Single-Play/Semi-Automatic

Single-play; 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
502. Similar to 510 except does not have mechanical sensor, pitch control, or illuminated strobe \$160.00

Accessories for 1249, 510, 502

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

CS721 Single-Play/Automatic

All-electronic direct-drive brushless d.c. motor with regulated power supply. An exclusive over-



lapping coil design provides gapless rotating magnetic field. Two Hall-effect generators for electronic self-regulating speed monitoring. Motor rotates at actual record speed: 33 1/3 or 45 rpm; top of shaft functions as record spindle. Separate 10% 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 8 1/2" tonearm. Vertical tonearm control varies height over 8-mm range; parallels tonearm to record for accurate vertical tracking without need for cartridge spacers; variable cue control height & descent speed; continuous automatic repeat. 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" x 14.4" x 5.8". With base and dust cover \$400.00
CS704. Similar to CS721, except does not have variable cue control height or descent speed. \$310.00

ELAC/MIRACORD

50H Mark II Changer/Automatic

Three speeds (33, 45, & 78 rpm); rumble -63 dB (DIN B); wow & flutter 0.06%. Stylus force



adjustable 0 to 6 1/2 g ±0.1 g. Mounting clearance 5 1/2" above board, 2 7/8" below. Has hysteresis motor and anti-skating device, cueing lever, and built-in lighted stroboscope. 14 1/8" W x 12 1/8" D. Without base or cartridge .. \$249.95

760 Changer/Automatic

Features 4-pole induction motor. Operates at 78, 45, and 33 rpm. Will handle 7", 10", or 12" records. Rumble 60 dB (DIN B); wow & flutter 0.08%. Tracking error less than 0.4 degree per inch. Stylus force adjustment calibrated 0-6 1/2 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. 14 1/8" W x 12 1/8" D x 5 1/2" above motorboard, 2 7/8" below. \$199.95

825 Changer/Automatic

Features 4-pole asynchronous motor; two-speed (33, 45 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; tracing as low as 0.8 gr; heavy pressure-formed platter. Less base and cartridge. \$129.95

EMPIRE

698 Manual Turntable

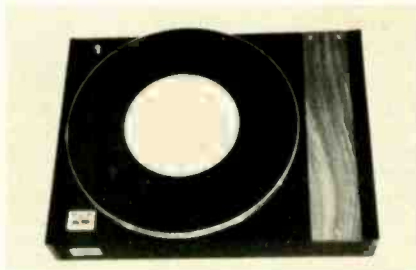
Two-speed (33 & 45 rpm); speed accuracy 0.25% (90 to 130 V); rumble 68 dB below 3.54 cm/sec at 1000 Hz; average wow & flutter (weighted) 0.04%; hysteresis synchronous motor; startup time 1/3 revolution; aluminum tonearm mounted on 32 jeweled sapphire bearings; vertical & horizontal bearing friction 0.001 g; 12" aluminum platter; belt drive; tracking force range 0-4 g (1/2 g per div.); cartridge weight handling range 4-10 g; low-capacitance cable 70 pF, standard-capacitance cable 180 pF (both including arm); 17 1/2" W x 15 1/8" D x 8 3/16" H \$400.00



ERA

mk 6 Manual Turntable

Belt-driven, two-speed turntable; 48-pole synchronous motor; wow & flutter 0.08%; speed



accuracy within 0.1%; mounting board supplied uncut or precut (on request) for Grace, SME, or Formula Four tonearms \$170.00
mk 7. Similar to mk 6 but with special base design with unique material which cancels acoustic feedback \$199.00
3035. Similar to mk 6 but supplied with decorator base with hinged cover and integral low-mass, low-friction gimbal tonearm; universal headshell with cueing and auto off ... \$299.00

FISHER

MT6130 Automatic Turntable

Two-speed (33 & 45 rpm); d.c. servo-controlled direct-drive motor; wow & flutter 0.03% W rms;



rumble 60 dB; electrical speed selection; adjustable tracking force (0.5-3 g); reject button; variable anti-skate control; viscous damped cueing and pause control; "S" shaped statically balanced tonearm; plug-in cartridge head; adjustable pitch control; built-in strobe; automatic start & stop; comes with full-size hinged dust cover & two low-capacitance shielded patch cords; 18 1/2" W x 15 1/4" D x 6" H. \$199.95

MT6120. Similar to MT6130 except 4-pole a.c. synchronous belt-drive system; wow & flutter 0.08% W rms; rumble 55 dB; speed variable ±0.4%; 17 7/8" W x 14 1/2" D x 6 5/8" H ... \$149.95

FONS

CQ30 Single Play/Automatic

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 rosewood or walnut base and hinged smoke plexiglass dust cover and SME tonearm. 6" H x 17 1/2" W x 13 1/2" D \$465.00
 Same unit but without arm \$300.00

GALE

GT2101 Single-Play/Automatic

Electronic, d.c., brushless, direct-drive motor with continuously variable speeds from 10 to 99 rpm; plus lock-on control for 33 1/3 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

GT55 Changer/Single-Play

Two-speed (33 & 45 rpm); 1000 rpm d.c. servo-controlled motor; electronic variable speed



control; belt drive; rumble -66 dB (DIN B standard); wow & flutter 0.5%; low-mass magnesium tonearm; adjustable counterweight; magnetic anti-skating adjustment with CD-4/elliptical calibration; adjustable rate cue control with main cam damped in both directions; will handle up to 6 records; two-point stack support; illuminated strobe; low-capacitance tonearm leads & audio cables; 15 1/8" W x 14 1/8" D x 4 3/8" above motorboard, 1 7/8" below. \$249.95

DD75 Single-Play/Automatic

Two-speed (33 & 45 rpm); 8-pole brushless d.c. servo-controlled motor; variable speed control permits ±3% change; illuminated strobe; S-shaped low-mass tonearm; tonearm resonance below 10 Hz; anti-skate control calibrated for both elliptical and CD-4 styli; two-way viscous-damped cue control; photoelectric monitor senses end of record and actuates solenoid to lift arm and shut off motor; rumble -70 dB (DIN B standard); wow & flutter 0.04%; low-capacitance tonearm leads & audio cables; genuine teak veneer base, shock-absorbent feet, tinted dust cover included; 17 1/4" W x 14 3/4" D x 6 1/4" H \$229.95

990B Changer/Single-Play

Two-speed (33 & 45 rpm); Synchro-Lab motor; belt-idler drive; mechanical speed control;



rumble -64 dB; wow & flutter 0.06%; low-mass "S" tubular aluminum tonearm; adjustable counterweight; anti-skating adjustment: sliding weight with CD-4/elliptical calibration; viscous-damped cue control for both lowering & lifting; will handle up to 6 records; 15 1/8"

3 Record Players

W x 14¹/₈" D x 4³/₈" above motorboard, 2¹/₁₆" below; \$169.95
8W30. Base \$15.95
D30. Dust cover \$9.95
LRS100. 45 rpm automatic spindle \$5.95

775M Changer/Single-Play

Three-speed (33, 45 & 78 rpm); Synchro-Lab motor; idler wheel drive; rumble -57 dB; wow & flutter 0.08%; low-mass "J" tubular aluminum tonearm; adjustable counterweight; calibrated spring for CD-4/elliptical anti-skating adjustment; viscous-damped cue control; will handle 6 records; fixed single-play spindle; 16" W x 15" D x 8¹/₂" H including base & cover; comes with Shure M93E magnetic cartridge. \$119.95

125SB Changer/Single-Play

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. 14³/₈" W x 12¹/₂" D. \$109.95

440M Changer/Single-Play

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. 16¹/₂" W x 8¹/₂" H (including cover & base) x 15" D. \$79.95
440C. Same as 440M except supplied with ceramic cartridge \$69.95
400. Same as 440C except does not have cartridge \$59.95
F45. 45 rpm spindle for either model. \$3.95

GLENBURN

2160B Changer/Single Play

Three-speed (33, 45 & 78 rpm) multi-play unit for 7", 10" & 12" records; multi-pole synchronous motor; counterweighted tonearm; viscous-damped cue/pause control; dual-range anti-skate control; swing-away control arm for manual play; slide-in cartridge head; comes with ADC K7E elliptical magnetic cartridge, walnut-grained base, dust cover \$89.95

2110B Changer/Single Play

Three-speed (33, 45 & 78 rpm) multi-play unit for 7", 10" & 12" records; 4-pole motor; cue/pause control; anti-skate control; swing-away control arm for manual play; comes with ADC K8 magnetic cartridge, walnut-grained base, dust cover \$64.95
1115B. Similar to 2110B but with ceramic cartridge \$54.95

HARMAN/KARDON

ST-6 Single-Play/Manual

Two-speed (33 & 45 rpm); synchronous a.c. motor with precision ground belt; tracking error 0 degrees; skating force 0; comes with Rabco straight-line-tracking arm; effective tonearm mass 6 g; wow & flutter 0.04% (NAB W rms), 0.09% (DIN B); hum -70 dB (DIN 45544); speed constancy ±0.3%; overall size 16¹/₂" W x 16¹/₄" D x 6³/₄" H (inc. dust cover) \$325.00

HITACHI

PS/48 Single-Play/Semi-Automatic

Two-speed (33 & 45 rpm), direct-drive brushless d.c. servo motor; wow & flutter 0.025% W rms; speed adjust ±2.5%; direct-readout stylus pressure gauge; stroboscope; individual pitch control knobs; automatic cut/arm return; static balanced "S" shaped pipe tonearm; stylus pressure adjust 0-3 g; cartridge weight 4-10 g; walnut-grain vinyl base; detachable smoke plastic dustcover with full stop hinge; 18³/₄" W x 14¹/₂" D x 6¹/₂" H \$239.95
PS/38. Similar to PS/48 except manual operation; wow & flutter 0.04% W rms; tonearm with anti-skating; direct-readout of stylus pressure; strobe and neon lamp; detachable dustcover. \$199.95

PS/15 Single-Play/Automatic

Two-speed (33 & 45 rpm), 16-pole synchronous hysteresis motor; automatic tonearm return, repeat, cut; S/N 50 dB; wow & flutter 0.07% W rms; static balance "S" shaped pipe tonearm with oil-damped arm lifter; anti-skating; tracking force range 0-3 g; cartridge weight 4-10 g; walnut-grain vinyl base; hinged dust cover; 18³/₄" W x 14¹/₂" D x 6¹/₁₆" H \$169.95
PS/10. Similar to PS/15 except wow & flutter 0.1%; tracking force range 0-4 g; cartridge weight 4-12 g; 18³/₄" W x 14³/₄" D x 7¹/₄" H. \$129.95

JVC

JL-F35 Single-Play/Automatic

4-pole synchronous motor; belt drive; two speed (33 & 45 rpm); wow & flutter 0.07% W rms; 12" die-cast aluminum platter; statically balanced S-shaped tubular arm with gimbal support on TH (Tracing Hold) system; tracking force 0-3 g; mountable cartridge weight 15-23 g; memory repeat lever allows presetting of 1 to 6 replays or infinite repeat; auto-return mechanism returns tonearm and shuts off power; oil-damped cueing mechanism operates tonearm; specially designed counterweight; direct-readout tracking force dial; anti-skate system; manual override by moving tonearm by hand; low-capacitance output cables permits use of CD-4 cartridges; comes with clear dust cover but without cartridge; 17²/₃₂" W x 13²/₃₂" D x 5¹/₈" H \$159.95

4-CHANNEL

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. 7⁷/₈" x 15³/₄" x 17¹/₄" D. \$199.95

KENWOOD

KD-500 Single-Play/Automatic

Two-speed (33 & 45 rpm); direct-drive d.c. servo motor with frequency generator control;



ARCB anti-resonance base; strobe check for precise speed adjustment; wow & flutter 0.03% W rms; acrylic dust cover with flush-back hinge, friction clutches; comes without tonearm \$199.95
KD-550. Same as KD-500 but with tonearm. \$249.95

KD-3055 Single-Play/Automatic

Two-speed (33 & 45 rpm); 4-pole synchronous belt-drive motor; automatic operation including lead-in of stylus, auto cueing, and repeat play; ARCB anti-resonance base; precision drive system; statically balance "S"-shaped tonearm; anti-skate adjustment; pause control; rumble 65 dB; wow & flutter 0.06% W rms. \$179.95
KD-2055. Similar to KD-3055 but auto return only \$139.95

KD-1033 Single-Play/Manual

Two-speed (33 & 45 rpm); 4-pole synchronous motor; belt-drive; 12" platter; statically balance "S"-shaped tonearm; anti-skate adjustment; wow & flutter 0.06% W rms. \$89.95

LAFAYETTE

T-6000 Single-Play/Automatic

Two-speed (33 & 45 rpm); 72-pole a.c. frequency generator motor; wow & flutter 0.03%; rumble -65 dB; speed adjustment ±4%; direct-drive; vertical needle bearing; calibrated balance stylus force adj.; anti-skating adjustment; stylus force range 1-3 g; dual electronic servo; speed regulation independent of power-line frequency; cue/pause control; interchangeable head shell; illuminated strobe; low-capacitance (CD-4) wiring; comes with base & dust cover; 19³/₈" x 16¹/₄" x 7" H. \$229.95

T-4000 Single-Play/Automatic

Two-speed (33 & 45 rpm); d.c. servo motor; wow & flutter 0.08%; rumble -45 dB; speed adjust. ±2.5%; calibrated balance stylus force adj.; anti-skating adjustment; stylus force range 1.5-3 g; auto return & shutoff; detachable shell; illuminated strobe; low-capacitance cables; semi-automatic cueing; comes with base & dust cover; 18¹/₂" x 14¹/₄" x 6¹/₄" \$179.95

T-2000. Similar to T-4000 except wow & flutter 0.1%; rumble -40 dB (DIN B); hysteresis synchronous motor; speed adj. ±1.3%; 17¹/₄" x 13³/₈" x 6" \$129.95

LENCO

L-90 Single-Play/Automatic

Two-speed (33 & 45 rpm); electronic belt-drive mechanism; 16-pole synchronous motor;



illuminated strobe; spiral spring anti-skating device; fine speed adj +7%, -3%; IC controls automatic switch-off, electronic friction-type lifting of tonearm, and speed adj feature; wow & flutter 0.08%; rumble -63 dB (DIN); viscous damped tonearm lift; comes with base & friction-hinge dust cover \$299.95

L-84. Similar to L-90; automatic tonearm lift/rest; anti-skating device adjustable for elliptical & spherical styli; rumble -60 dB (DIN) \$195.50

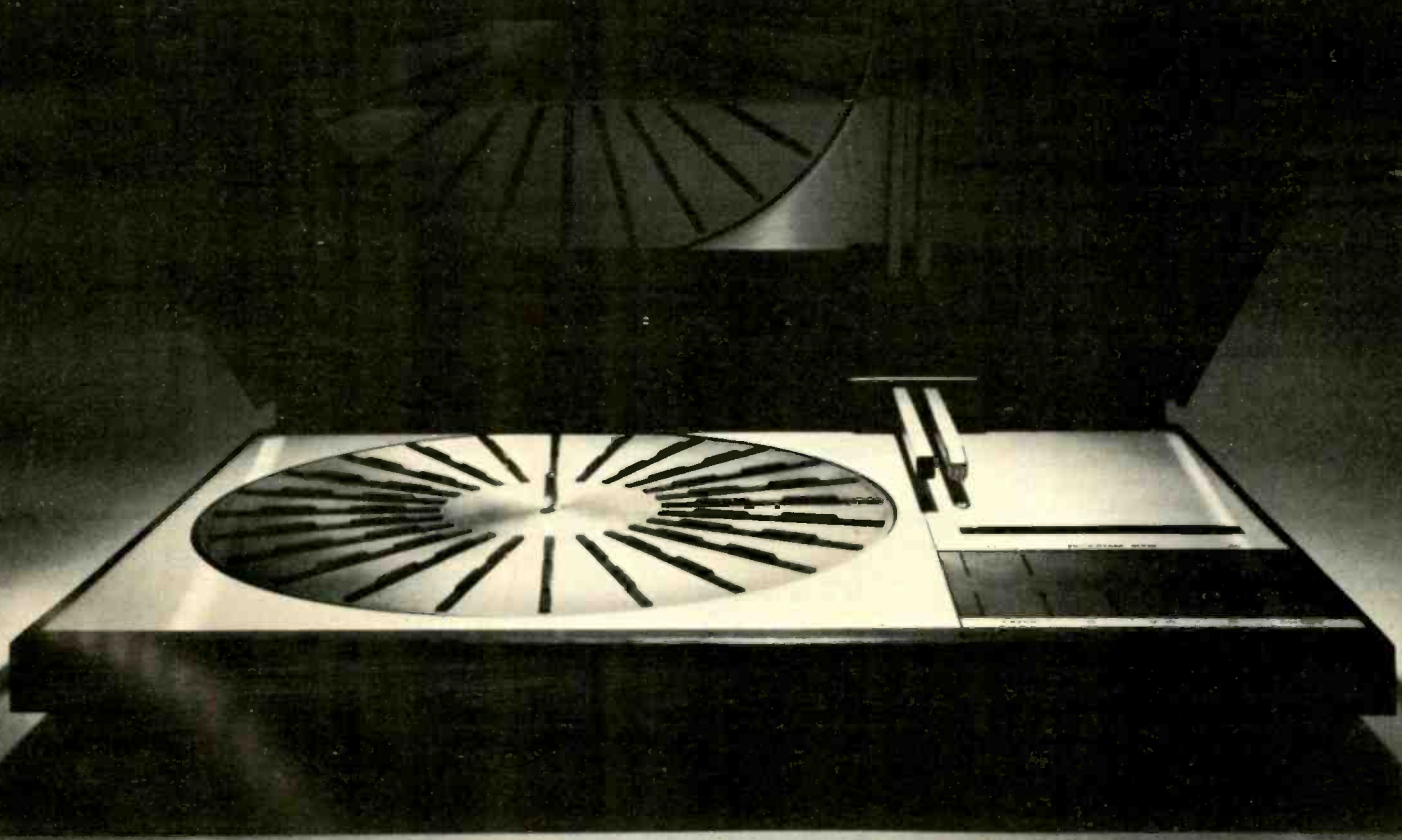
The Beogram[®] 4002. If music in your home is important to you, it should begin here.

The Beogram 4002 is a fully automatic turntable which exhibits a level of creativity and engineering skill unequalled in the field of audio components. Its tangential tracking permits the record to be played back in exactly the same manner that the master disc was cut. Electronic logic circuits, activated by a single light touch on the control panel, automatically select the record size and correct

speed, cue the stylus, and turn off the unit when the selection is finished. Furnished with Bang & Olufsen's finest cartridge, in itself an acknowledged masterpiece of audio engineering.

Request our product brochure and the name of your local Bang & Olufsen dealer. For our detailed, full color catalog, please enclose one dollar to cover postage and handling (available free at your local Bang & Olufsen dealer).

Rarely has technology
served music so well.



Bang & Olufsen

Bang & Olufsen of America, Inc., Dept. 12E, 515 Busse Road, Elk Grove Village, Illinois 60007
CIRCLE NO. 12 ON READER SERVICE CARD

L-82. Similar to L-84 with S-shaped tonearm; mechanical switchoff & tonearm lift; . \$160.50
L-80. Similar to L-82 except manual operation. \$139.50

L-75/S. Rim drive turntable; variable speed adj. between 30 & 50 rpm \$165.50

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. 14 $\frac{3}{4}$ " W x 11 $\frac{7}{8}$ " x 5 $\frac{1}{4}$ " \$175.75

B-52. Same as B-55 but without base and cover. \$119.50

LINN SONDEK

LP12 Single-Play/Manual

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



zero-wear configuration; 9-lb platter machined to within 0.001"; kiln-dried Afrosia base; hinged dust cover; comes with base and cover but less arm \$359.00

LUXMAN

P-121 Single-Play/Manual



Direct-drive unit; two-speed (33 & 45 rpm); vernier controls for fine-tuning speed over range $\pm 4\%$; 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

MARANTZ

6300 Single-Play/Automatic

Two-speed (33 & 45 rpm); direct-drive d.c. servo motor; wow & flutter 0.04% W rms; speed



control range $\pm 3\%$; rumble (RRLL Wtd) -55 dB; (DIN Wtd) -60 dB; has opto-coupled auto-

matic lift & shutoff mechanism; cue control; acoustic-feedback design; comes with "S" shaped tonearm, strobe, base & dust cover; 17 $\frac{1}{8}$ " W x 14 $\frac{1}{16}$ " D x 7 $\frac{1}{32}$ " H \$269.95
6320. Same as 6300 but without arm & automatic circuitry \$229.95

6200 Single-Play/Automatic

Two-speed (33 & 45 rpm); belt-driven a.c. servo drive system; wow & flutter 0.06% W rms; rumble -60 dB (DIN); speed control range $\pm 3\%$; electronic speed control with strobe; total automatic operation; cue control; comes with "S" shaped tonearm, base & dust cover. \$199.95

6100 Single-Play/Manual

Two-speed (33 & 45 rpm); belt-driven a.c. synchronous motor; wow & flutter 0.08% W rms; rumble -60 dB (DIN); features automatic arm return; cue control; comes with "S" shaped tonearm, base & dust cover \$129.95

MESA

Model I Automatic Record Player

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. 17 $\frac{1}{8}$ " W x 8" H x 14 $\frac{1}{2}$ " 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 Record Player

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. 17 $\frac{1}{2}$ " W x 8" H x 14 $\frac{1}{2}$ " D . . . \$69.95
Model III. Same as Model II except with adjustable counterweight; Audio-Technica AT11E



magnetic cartridge. 17 $\frac{1}{8}$ " W x 8" H x 14 $\frac{1}{2}$ " D. \$89.95

4-CHANNEL

Model IV Automatic Record Player

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. 17 $\frac{1}{8}$ " W x 8" H x 14 $\frac{1}{2}$ " D. . \$139.95

MICRO SEIKI

DDX-1000 Single-Play/Automatic

Direct-drive, servo-controlled motor; will accept three tonearms because of special casting containing three separate modular pods; separate layers of cork & rubber for turntable mat; two-layer absorber system consisting of cushion rubber and insulator balls with built-in springs; turntable controls and power supply in separate unit for speed select, stop, power, and fine-speed adjustment; without tonearm or cartridge \$600.00
MA-505. Manual arm for DDX-1000 . . \$150.00

DD-40 Single-Play/Manual

Direct-drive; floating suspension system with tonearm & turntable assembly mounted on specially designed subchassis; cue control; all-wood base \$400.00
DD-30. Similar to DD-40 except with auto-return arm \$300.00
DD-20. Similar to DD-30 with manual arm and cue control \$200.00

MB-15 Single-Play/Semiautomatic

Direct-drive; automatic lift & cueing . . \$150.00
MB-10. Same as MB-15 except manual arm lift. \$100.00

MIIDA

T3115 Single-Play/Manual

Two-speed (33 & 45 rpm) direct-drive turntable; direct-coupled servo motor; speed selector;



fine-speed control; built-in strobe pattern; static-balanced S-shaped tonearm; anti-skating device; oil-damped arm lifter; cartridge weight 4.5-10.5 g (cartridge not included); adjustable stylus pressure 0-5 g; low-capacitance wiring; wow & flutter 0.03% W rms; shock-absorbing base; 19 $\frac{1}{8}$ " W x 15 $\frac{1}{8}$ " D x 6 $\frac{1}{2}$ " H \$199.95

T-3112 Single-Play/Manual

Two-speed (33 & 45 rpm) belt-drive turntable; 4-pole synchronous motor; lever speed selector; wow & flutter 0.06% W rms; rumble -55 dB; static balanced S-shaped tonearm with direct readout stylus pressure system; moving-magnet cartridge; output voltage 3 mV (at 1 kHz, 50 m/ms); channel balance 2.5 dB at 1 kHz; channel separation 20 dB; oil-damped tonearm lifter; auto-cut, auto-return tonearm mechanism; cartridge weight 5.5 g; 18 $\frac{3}{8}$ " W x 14 $\frac{1}{2}$ " D x 7" H \$129.95

PANASONIC

RD-3600 Single-Play/Automatic

Single-play, two-speed (33 & 45 rpm) belt-drive unit; features d.c. motor with servo control; 12" die-cast platter; wow & flutter 0.06% (W rms), rumble -65 dB; comes with static-balanced S-shaped tubular tonearm, base, detachable dust cover; direct-reading tracking-force adjustment (0-4 g); anti-skating control; stylus-pressure adjustment; viscous-damped cueing control; Audio Technica AT-12E cartridge. 16 $\frac{7}{8}$ " W x 13 $\frac{3}{4}$ " D x 5 $\frac{1}{16}$ " H . . . \$149.95

RD-3100 Record Changer/Manual

Three-speed (33, 45 & 78 rpm) unit with 4-pole induction motor; comes with low-mass tubular tonearm, base, detachable dust cover; anti-

skating adjustment; viscous-damped cueing control; stylus-pressure adjustment and gauge; Pickering V-15/AT2-NP cartridge. 17¹/₁₆" W x 14¹/₄" D x 7¹/₁₆" H \$99.95

PHILIPS

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 $\pm 3\%$; 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 tachogenerator; pickup arm lift touch-controlled, viscosity damped pickup arm lift; optional manual operation; photoelectric end-of-record switch-off system. 6¹/₂" H x 17¹/₁₆" W x 12¹/₄" D \$299.50

GA212 Single-Play/Manual

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 ($\pm 3\%$). Drift 0.2%; wow & flutter 0.07%; rumble -40 dB NAB unweighted. Stylus force range 0.5-4 g. Arm resonance 7 Hz. 11¹/₂" platter. 110 to 240 V, 50/60 Hz operation. 6¹/₂" x 13¹/₄" D x 15¹/₂" W. With dust cover & base \$169.50

GA427 Single-Play/Manual

Single-play, two-speed (33 & 45 rpm) unit; features damped cueing; tracking force adjust; anti-skating adjust; comes with integrated tonearm & hinged removable dust cover; arm accepts any phono cartridge with standard ¹/₂" mounting center \$99.50

PIONEER

PL-71 Single-Play/Manual

Two-speed (33 & 45 rpm), all-electronic, direct-



drive turntable with brushless d.c. servo motor; electronic speed change; speed control range $\pm 2\%$; wow & flutter 0.05% W rms; S/N 60 dB; 12¹/₄" 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. 18¹/₈" W x 7¹/₈" H x 16³/₈" D \$300.00

PL-530 Single-Play/Automatic

Two-speed (33 & 45 rpm), two-motor direct-drive system; brushless d.c. servo motor for platter, gear motor (for automatic functions); speed control range $\pm 2\%$; wow and flutter 0.03% W rms max.; S/N 70 dB; 13" aluminum alloy die-cast platter; static-balanced S-shaped pipe tonearm; usable cartridge weight 4 to 14.5 g; anti-skating; viscous-damped cueing device; stylus pressure direct-readout counterweight; lateral balancer; strobe-lighting (strobe on platter rim); plug-in headshell. 18³/₃₂" W x 15¹/₃₂" D x 6¹/₁₆" H \$250.00

PL-510 Single-Play/Manual

Two-speed (33 & 45 rpm), direct-drive system; brushless d.c. servo motor; speed control range $\pm 2\%$; wow and flutter 0.03% W rms max.; S/N 60 dB; 12" aluminum alloy die-cast platter; static-balanced S-shaped pipe tonearm; usable cartridge weight 4 to 10 g; anti-skating; viscous-damped cueing device; lateral balancer; strobe-lighting (strobe on platter rim); plug-in headshell. 17¹/₁₆" W x 14" D x 6¹/₄" H .. \$200.00

PL-117D Single-Play/Manual

Two-speed (33 & 45 rpm), belt-drive system; 4-pole synchronous motor; wow and flutter 0.07% W rms max.; S/N 50 dB; 12" aluminum alloy die-cast platter; static-balanced S-shaped pipe tonearm; usable cartridge weight 4 to 10 g; anti-skating; viscous-damped cueing device; lateral balancer; plug-in headshell. 17¹/₁₆" W x 14¹/₂" D x 6¹/₂" H \$175.00

PL-117SD. Similar to PL-117D except has only auto-return \$125.00

PL-112D. Similar to PL-117D except without automatic features \$100.00

RABCO

ST-7 Turntable/Arm Assembly

Two speed (33 & 45 rpm, adjustable $\pm 5.5\%$);



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 $\pm 0.3\%$; viscous-damped cueing control; tonearm mass 6 gr.; comes with straight-line tracking arm; dust cover. 6³/₄" H (with dust cover) x 16¹/₂" W x 16¹/₄" D \$430.00

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 \$199.95

Realistic LAB-300 Single-Play/Manual

Two-speed (33 & 45 rpm) manual player; 4-pole synchronous motor; wow & flutter 0.10%; rumble (DIN B) -60 dB; 11³/₄" cast platter; balanced S-shaped tonearm; elliptical stylus

pressure adjustable 0-4 g; vibration-isolation feature; walnut-grained vinyl veneer base; 17³/₈" W x 14" D x 7¹/₄" H \$159.95

Realistic LAB-100 Single-Play/Manual

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). 7¹/₂" x 16³/₄" x 14¹/₂" (with cover closed). Comes with base with storage compartment; simulated walnut-grain finish. \$99.95

Realistic LAB-50 Changer/Manual

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" x 16³/₈" x 14¹/₄" .. \$99.95
Smoke-tint dust cover \$6.95

SANSUI

SR929 Single-Play/Manual

Two-speed, quartz-servo direct-drive turntable; 20-pole, 30-slot d.c. brushless motor; quartz crystal-controlled direct spindle drive; wow & flutter 0.028%; rumble -74 dB (DIN-B); platter speed deviation 0.002%; fine-speed adj. $\pm 3.5\%$ (quartz-servo off); statically balanced S-shaped tonearm; min. tracking force setting 0.5 g; acceptable cartridge weight 2-11 g; anti-skating; universal headshell; dust cover with free stop hinges; 19¹/₁₆" W x 15" D x 6⁷/₈" H \$430.00

FR5080S Single-Play/Semi-Automatic

Two-speed, direct-drive turntable; 20-pole, 30-slot d.c. brushless motor for platter drive, 16-pole synchronous motor for automatic tonearm operation; wow & flutter 0.03%; S/N 62 dB; fine-speed adj. ± 3.5 dB; illuminated strobe; statically balanced S-shaped tonearm; min. tracking force setting 0.8 g; cartridge weight 4-10 g; comes with removable cover, low-capacitance output cables; 18³/₈" W x 14¹/₁₆" D x 6¹/₈" H \$260.00

SR525 Single-Play/Manual

Two-speed (33 & 45 rpm) turntable; direct-spindle drive with electronic servo control; wow & flutter 0.03% W rms; S/N 64 dB; rumble -72 dB; illuminated strobe markings; statically balanced S-shaped tonearm; min. tracking force 0.5 g; cartridge weight 4-11 g; 18¹/₂" W x 14¹/₁₆" D x 5¹/₁₆" H \$230.00

SR323 Single-Play/Manual

Two-speed turntable; 4-pole synchronous motor; wow & flutter 0.06%; S/N 57 dB; statically balanced S-shaped tonearm; min. tracking force 0.5 g; cartridge weight 4-11 g; removable cover; low-capacitance output cables; 18¹/₂" W x 14³/₈" D x 5¹/₁₆" H \$160.00

FR-1080 Single-Play/Manual

Two-speed belt-driven turntable; 4-pole syn-

chronous motor; wow & flutter 0.08% W rms; S/N 50 dB; rumble -58 dB; statically balanced S-shaped tonearm; min. tracking force 1.5 g; cartridge weight 4-8 g; free-stop hinged cover; low-capacitance cables; 17 $\frac{1}{16}$ " W x 14 $\frac{7}{16}$ " D x 6 $\frac{1}{8}$ " H \$140.00

SR-222 Single-Play/Manual

Two-speed belt-driven turntable; 4-pole synchronous motor; wow & flutter 0.07% W rms; S/N 54 dB; rumble -60 dB; S-shaped tonearm; min. tracking force 0.8 g; cartridge weight 4-10 g; 17 $\frac{1}{16}$ " W x 14 $\frac{3}{8}$ " D x 5 $\frac{1}{2}$ " H \$115.00

4-CHANNEL

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 $\frac{1}{16}$ " W x 6 $\frac{1}{2}$ " H x 14 $\frac{1}{16}$ " D \$200.00

SONY

PS-3750 Single-Play/Manual

Direct-drive system with brushless & slotless d.c. servo-controlled motor; built-in strobe;



resonance-reducing undercoating on platter; air-damped record mat \$230.00

PS-3300. Similar to PS-2750 except automatic tonearm return with reject button; S-shaped tonearm with viscous-damped cueing; anti-skating; lateral balanced weight \$200.00

STANTON

8004 "Gyropoise" Single-Play/Manual

Two-speed (33 & 45 rpm $\pm 0.3\%$) 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" x 14 $\frac{3}{4}$ " x 7" D.

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

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 x 0.7 mil elliptical stylus. \$199.95

8004-III. With TT680EE stereo cartridge; frequency response 20-20,000 Hz; channel separation 35 dB; output 0.82 mV/cm/sec ± 2 dB; $\frac{3}{4}$ -1 $\frac{1}{4}$ g tracking; 0.3 x 0.7-mil elliptical stylus \$179.95

8004-IIB. With TT600EE stereo cartridge; frequency response 20-20,000 Hz; channel separation 35 dB; output 1.0 mV/cm/sec ± 2 dB; 1-2 g tracking; 0.3 x 0.7-mil elliptical stylus. \$172.50

TECHNICS BY PANASONIC

SP-10 Mk II Single-Play/Manual

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 33 $\frac{1}{3}$ rpm; stop time (magnetic brake) within 30 degree rotation (0.3 sec); long-term speed stability $\pm 0.002\%$ (within ± 36 ms over 30-min. period, less than $\frac{3}{4}$ sec. in 10 hours); wow & flutter 0.025% W rms; rumble -70 dB; solenoid controls (including remote). 14.5" W x 3 $\frac{1}{2}$ " H x 14.5" D \$699.95

SL-1100A Single-Play/Manual

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, $\pm 5\%$, independently adjustable for each speed. Dynamically balanced turntable has 13 $\frac{1}{2}$ " platter, weighs 4.4 lbs. Wow & flutter 0.03% W rms; rumble -70 dB (DIN B). Build-up time within $\frac{1}{2}$ rotation. Tonearm is static-balanced low-mass tubular with 9 $\frac{1}{4}$ " 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-1300 Single-Play/Automatic

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 $\frac{1}{16}$ " 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 $\frac{1}{2}$ " H x 17 $\frac{3}{4}$ " W x 14 $\frac{3}{8}$ " 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 $\frac{3}{4}$ " W x 7 $\frac{3}{8}$ " H x 14 $\frac{3}{8}$ " D \$349.95

SL-1200 Single-Play/Manual

Similar to SL-1100A except has 13" diecast aluminum platter weighing 3.86 lbs and a 8 $\frac{1}{16}$ " 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-1400 Single-Play/Manual

Features direct-drive with one-chip IC for drive and control of motor; auto-return of tonearm; auto shut-off; strobe markings on tapered rim, with lamp; two speeds (33 & 45 rpm); pitch variable 10%, independently adjustable for each speed; 13" platter; wow & flutter 0.03% W rms; rumble -70 dB (DIN B); S-shaped tonearm static-balanced low-mass tubular type; features anti-skating, cueing; universal-type cartridge head shell; hinged detachable dust cover; low-capacitance cables. 17 $\frac{3}{4}$ " W x 14 $\frac{3}{8}$ " D x 5 $\frac{1}{2}$ " H \$249.95

SL-1500 Single-Play/Manual

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 $\frac{3}{4}$ " W x 5 $\frac{1}{2}$ " H x 14 $\frac{3}{8}$ " D \$199.95

THORENS

TD-126C Single-Play/Automatic

Three-speed (33, 45 & 78 rpm) single-play automatic turntable; 16-pole synchronous motor;



push-pull motor drive amplifier; solid-state DTL switching; motor-driven cue control for precision control; electronic sensor for automatic tonearm lift & motor shutoff; regulated power supply; override of electronic cueing for operation as manual unit; turntable rumble 50 dB (DIN 45 unweighted), 70 dB (weighted); wow & flutter 0.04%; comes with TP-16 tonearm, multi-position dustcover, deluxe walnut base; 19.8" D x 15.5" W x 6.8" H \$560.00

TD-145C Single-Play/Automatic

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 x 13 $\frac{1}{2}$ " W x 7 $\frac{3}{4}$ " H (with dust cover). \$299.95

TD-160C Single-Play/Manual

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"

The Sansui FR-5080S Direct Drive Fully Automatic.

Looks as good as it is.
Is as good as it looks.

The Sansui Model FR-5080S clearly bears the mark of Sansui. An advanced direct drive fully automatic turntable that is beautifully functional and gives you everything that a top notch turntable can give you. Versatility, completely even reproduction, smooth running with almost immediate take off, no incidental noises. Separate motor controls automatic functions.

And the Model FR-5080S, at an unexpectedly low cost of below \$260,* is only one in a series of equally distinguished turntables. Each a leader in its class; such as the Model FR-3080, FR-1030, SR-525 and the top of the line model SR-929.

All in all, if you want a turntable that will make you forget that you are not in the music hall, try any of them at your nearest Sansui franchised dealer.

*Approximate nationally advertised value. The actual retail price will be set by the individual dealer at his option.



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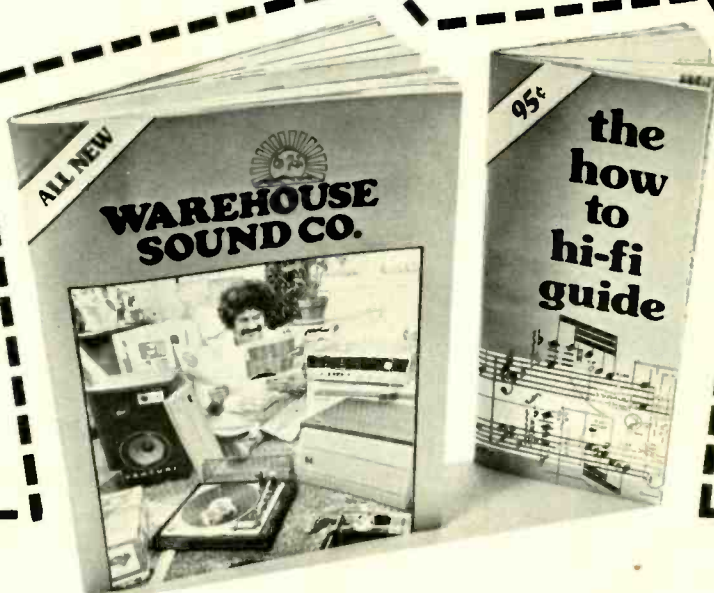
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CIRCLE NO. 72 ON READER SERVICE CARD

3

Record Players

adjustable. Comes with tonearm, walnut base and dust cover. 17" x 13 1/2" W x 7 3/4" H. \$249.95

TD-165 Single-Play/Manual

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 x 12 1/2" D x 7 3/4" with dust cover. \$169.95

TOSHIBA

SR-355 Single-Play/Manual

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 \$229.95

SR-255 Single-Play/Manual

Two-speed (33 & 45 rpm) direct-drive turntable; d.c. servo motor; static balanced S-shaped tonearm; tracking error ±1.5 degrees; wow & flutter 0.05% W rms; S/N 60 dB; vinyl on wood base; dust cover \$199.95

SR-305 Single-Play/Automatic

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 \$129.95

YAMAHA

YP-800 Single-Play/Manual

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 x 6.9" H x 14.6" D \$500.00
YP-800BL. Same as YP-800 except black metal finish \$500.00

YP-450 Single-Play/Manual

Two-speed (33 & 45 rpm), belt-drive; synchronous outer-rotor motor; wow & flutter 0.07%; S/N 48 dB; 12" aluminum platter; static-balanced S tonearm; stylus pressure 0-3 g; universal plug-in cartridge shell. Walnut cabinet with clear acrylic dust cover. 17 1/4" W x 15 1/4" D x 6" H \$160.00

ABOUT PRICES. . . .

With repeal of Fair Trade Laws, manufacturers are now providing "Suggested Retail" or "Fair Retail Value" figures for the guidance of their dealers and customers. Prices in this Directory are those provided by the manufacturers under these conditions.

If you can see a difference, imagine what you'll hear.



Magnified, you can see record vinyl wearing away.

With same magnification, record vinyl shows no wear.

You're looking at the solution to one of the oldest problems in audio—how to protect records from wear, while at the same time preserving full fidelity.

It's called Sound Guard,* and it's remarkable.

Independent tests show that discs treated with Sound

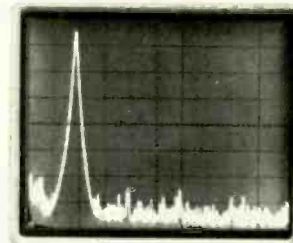
distortion as "mint condition" discs played once.

A by-product of dry lubricants developed for aerospace applications, Sound Guard preservative is so smooth it reduces friction, yet so thin (less than 0.000003") it leaves even the most fragile groove modulations unaffected.

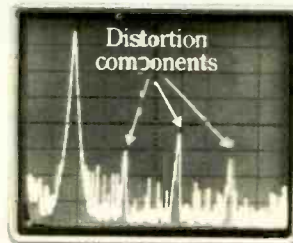
Len Feldman in Radio Electronics reports "At last! The long awaited record-care product has arrived.

It preserves frequency response

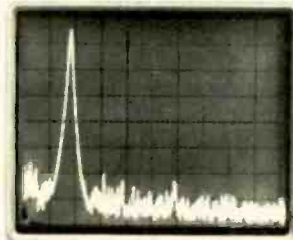
in a kit complete with a non-aerosol pump sprayer and



Test record played first time.



After 100 plays without Sound Guard.



Identical test record after 100 plays with Sound Guard.

Guard preservative played 100 times display the same full amplitude at all frequencies and the same absence of surface noise and harmonic

while reducing distortion and surface noise." It's effective and safe for all discs, from precious old 78's to the newest LP's.

Sound Guard preservative,

velvet buffing pad, is available in audio and record outlets.

Sound Guard™ keeps your good sounds sounding good.



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CIRCLE NO. 11 ON READER SERVICE CARD

WKLS, Atlanta, broadcasts 100% disc-to-air. That's why it uses Stanton's 681 series... exclusively.



Bob Helbush, Chief Engineer, making a quality control check using a 681 cartridge.

Top notch broadcasters who capture a large share of the listening audience, are critically aware of the necessity to achieve a superior quality of sound. Station WKLS is just such a station.

As Bob Helbush, chief engineer, states: "We broadcast 100% disc-to-air except for some commercials. So, for maximum quality sound and phase stability, we use the Stanton 681 SE for on-the-air use. We consider it the ideal answer for that application. And our program director uses Stanton's 681 Triple-E for auditioning new releases before we air them".

And Don Waterman, General Manager, added: "Today, every station in the SJR Communications group . . . all eight of them, all in Major Markets . . . use Stanton 681 cartridges on every turntable".

There are good reasons for this vast acceptance. Stanton's 681 Calibration Series cartridges offer improved track-

ing at all frequencies. They achieve perfectly flat frequency response to beyond 20 Kc. And the top-of-the-line, superb 681 Triple-E has an ultra miniaturized stylus assembly with substantially less mass than previously, yet it possesses even greater durability than had been thought possible to achieve.

Each 681 Series cartridge is guaranteed to meet its specifications within exacting limits and each one boasts the most meaningful warranty. An individually calibrated test result is packed with each unit.

Whether your usage involves recording, broadcasting or home entertainment, your choice should be the choice of the professionals... the STANTON 681.

Write today for further information to Stanton Magnetics, Terminal Drive, Plainview, N.Y. 11803.



This new Stanton advertisement will appear in major consumer publications.

CIRCLE NO. 44 ON READER SERVICE CARD

4

PHONO CARTRIDGES

ADC

XLM MKII Phono Cartridge

Sensitivity 0.9 mV/cm/sec; response 15-20,000 Hz ± 1.5 dB. Tracking force $\frac{3}{4}$ -1 $\frac{1}{2}$ g. Channel



separation 28 dB, elliptical 0.0007" \times 0.0003" stylus. Replacement stylus RXL \$100.00

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" \times 0.0003" stylus. Replacement stylus #RVL. . . . \$75.00

Q Series Stereo Cartridges

QLM-30 MK II. 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" spherical stylus tip; replacement stylus RQLM-30 \$34.95

QLM-32 MK II. 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" \times 0.0003" elliptical stylus tip; replacement stylus RQLM-32 \$44.95

QLM-36 MK II. Response 15-20,000 Hz ± 3 dB; tracking force range $\frac{3}{4}$ -1 $\frac{1}{2}$ g; output 5.5 mV at 5.5 cm/sec; channel separation 26 dB; 0.0007" \times 0.0003" elliptical stylus tip; replacement stylus RQLM-36 \$54.95

K Series Stereo Cartridges

Designed to be used with automatic turntables and changers.

K7E. Output at 5.5 cm/sec 5.5 mV; tracking force range 2-3 g; response 15-18,000 Hz ± 3 dB; channel separation 20 dB; 0.0007" \times 0.0003" elliptical stylus \$24.95

K8. Output at 5.5 cm/sec 5.5 mV; tracking force range 2-4 g; response 15-18,000 Hz ± 4 dB; channel separation 20 dB; 0.0007" spherical stylus \$14.95

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" \times 0.0003" stylus. \$19.95

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" \times 0.0003" stylus. \$29.95

K5E. Output 5 mV; tracking force range 1 $\frac{1}{2}$ -2 $\frac{1}{2}$

g; response 15-20,000 Hz ± 3 dB; channel separation 24 dB; 0.0007" \times 0.0003" elliptical stylus. \$34.95

K3E. Output 5 mV; tracking force range 1-2 g; response 15-20,000 Hz ± 3 dB; channel separation 24 dB; elliptical 0.0007" \times 0.0003" stylus. \$39.95

P Series Stereo Cartridges

Designed to be used with all types of automatic changers.

P30. Output at 5.5 cm/sec 5.5 mV; tracking force range 1-2 g; response 15-20,000 Hz ± 3 dB; channel separation 22 dB; 0.0007" spherical tip \$19.95

P32. Output at 5.5 cm/sec 5.5 mV; tracking force range 1-2 g; response 15-20,000 Hz ± 3 dB; channel separation 24 dB; 0.0007" \times 0.0003" elliptical tip \$29.95

4-CHANNEL

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 $\frac{3}{4}$ -1 $\frac{1}{2}$ g; frequency response 15-50,000 Hz ± 2 dB; channel separation 28 dB \$145.00

AKG

P8ES Stereo Cartridge

Features patented transversal stylus suspension; output 3.75 mV at 5 cm/sec; response 10-28,000 Hz; 0.0002" \times 0.0007" elliptical stylus; tracking force range 0.75-1.25 g; optimum tracking force 1 g; compliance 35 $\times 10^{-8}$ cm/dyne; channel separation 30 dB (1 kHz), 25 dB (10 kHz); channel balance 1 dB; imp. 860 ohms/280 mH; optimum load 47,000 ohms/470 pF; standard $\frac{1}{2}$ " mounting; 4 terminals; weight 5.86 g; supplied with individual response curve. \$115.00

P8E. Similar to P8ES except output 4 mV; response 10-23,000 Hz; stereo separation 20 dB (10 kHz) \$85.00

P7E Stereo Cartridge

Features patented transversal stylus suspension; output 4.5 mV at 5 cm/sec; response 10-21,500 Hz; 0.0003" \times 0.0007" elliptical stylus; tracking force range 1.25-2.50 g; optimum tracking force 1.5 g; compliance 25 $\times 10^{-6}$ cm/dyne; channel separation 25 dB (1 kHz), 18 dB (10 kHz); channel balance 2 dB; imp. 860 ohms/280 mH; optimum load 47,000 ohms/470 pF; standard $\frac{1}{2}$ " mounting; 4 terminals; weight 5.86 g \$60.00

P6E Stereo Cartridge

Features patented transversal stylus suspension; output 6.25 mV at 5 cm/sec; response 20-20,000 Hz; 0.0004" \times 0.0008" elliptical stylus; tracking force range 1.5-3.0 g; optimum tracking force 2.5 g; compliance 20 $\times 10^{-6}$ cm/dyne; channel separation 25 dB (1 kHz), 15 dB (10 kHz); imp. 860 ohms/280 mH; optimum load 47,000 ohms/470 pF; standard $\frac{1}{2}$ " mounting; 4 terminals; weight 5.86 g . . \$40.00

P6R. Similar to P6E except spherical 0.0007" stylus; tracking force range 2.0-4.0 g . . \$35.00

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 2 $\frac{1}{2}$ -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 \times 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 \times 0.7 mil elliptical stylus; tracking force 1 $\frac{1}{4}$ -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 \times 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.

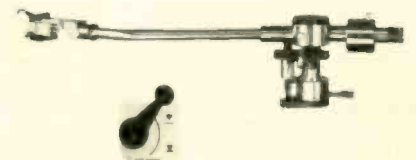
AT-1005 II Tonearm

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 con-

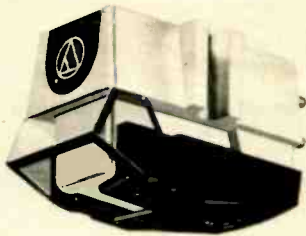
4 Phono Cartridges

venient 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 $\pm 2\frac{1}{2}$ 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

4-CHANNEL

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 0.75-1.75 g; comes with nude square-shank Shibata stylus mounted on low-mass tapered styli 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 0.75-1.75 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

MMC Series Phono Cartridges

Completely sealed, miniaturized cartridge line; non-replaceable styli; can be used for playing CD-4 discs.

MMC6000. Output 0.6 mV/cm/sec; response 20-15,000 Hz ± 1.5 dB, 15-45,000 Hz (Class A rating); channel separation 25 dB at 1000 Hz, 20 dB at 400-10,000 Hz; IM 1%; compliance 30×10^{-6} cm/dyne; effective tip mass 0.22 mg; load 100,000 ohms/100 pF; stylus pressure 1.0 g; radius of curvature CD-4 quadro; Pramanik diamond stylus \$125.00

MMC5000. Similar to 6000 except response 20-15,000 Hz ± 2 dB; effective tip mass 0.4 mg; load 47,000 ohms/200 pF; stylus pressure 1.5 g; Shibata diamond stylus \$100.00

MMC4000. Similar to 5000 except response 20-25,000 Hz ± 1.5 dB; stylus pressure 1.0 g; elliptical naked diamond stylus \$75.00

MMC3000. Similar to 5000 except response 16-25,000 Hz ± 3 dB, 20-16,000 Hz ± 2.5 dB; channel separation 20 dB at 1000 Hz, 15 dB at 400-10,000 Hz; effective tip mass 0.5 mg; stylus pressure 1.2 g; spherical diamond stylus. \$50.00

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 $1\frac{1}{2}$ g. 15-degree tracking angle. Channel separation 25 dB at 1000 Hz. Compliance 25×10^{-6} cm/dyne. Replacement stylus #5430 \$85.00

DECCA

London MKV1 Gold Elliptical

Moving-magnet type; frequency response 20-20,000 Hz; tracking force 1.5 g; output 5 mV at 5 cm/s; elliptical stylus; $0.0006'' \times 0.0003''$; weight 4 g \$149.50

MKV1 Plum. Similar except recommended tracking force 2 g; output 7.5 mV at 5 cm/s; spherical stylus; $0.0006/7''$ diamond; weight 4 g \$129.50

EMPIRE

2000 Series Stereo Cartridges

All 2000 Series cartridges are engineered for stereo and matrix 4-channel (SQ, QS, RM) playback.

2000Z. Frequency response 20-20,000 Hz ± 1 dB; tracking force range $\frac{3}{4}$ - $1\frac{1}{4}$ g; separation: 20-500 Hz 20 dB; 500-15,000 Hz 30 dB; 15,000-20,000 Hz 25 dB; IM dist. at 3.54 cm/sec 0.08% (2000-20,000 Hz); compliance 30×10^{-6} cm/dyne; channel balance within $\frac{3}{4}$ dB at 1000 Hz; input load 47 k/ch; total capacitance 300 pF/ch; output at 3.54 cm/sec 3 mV/ch; 0.2×0.7 mil elliptical stylus; effective tip mass 0.2 milligram; gold stylus \$100.00

2000E/III. Similar to 2000Z except response ± 2 dB; tracking force range $\frac{3}{4}$ - $1\frac{1}{2}$ g; separation 20 dB, 28 dB, 20 dB; IM dist. 0.1%; effective tip mass 0.6 mg; compliance 20×10^{-6} cm/dyne; channel balance within 1 dB at 1000 Hz; output 4.5 mV/ch; total capacitance 400-500 pF/ch; clear stylus \$70.00

2000E/II. Same as 2000E/III except separation 20 dB, 25 dB, 18 dB; IM dist. 0.15%; compliance 18×10^{-6} cm/dyne; channel balance within $1\frac{1}{4}$ dB; tracking ability 28 cm/sec at 1000 Hz at $1\frac{1}{4}$ g; blue stylus \$55.00

2000E/I. Similar to 2000E/II except response ± 3 dB; tracking force 1-2 g; separation 18 dB, 23 dB, 15 dB; IM dist. 0.2%; compliance 17×10^{-6} cm/dyne; tracking ability 23 cm/sec at 1000 Hz at $1\frac{1}{2}$ g; channel balance within $1\frac{1}{2}$ dB at 1000 Hz; output 7 mV/ch; green stylus \$45.00

2000E. Similar to 2000E/I except tracking force $1\frac{1}{4}$ - $2\frac{1}{2}$ g; stylus 0.2×0.7 mil elliptical; effective tip mass 0.6 mg; compliance 16×10^{-6} cm/dyne; red stylus \$40.00

2000. Similar to 2000E except tracking force $1\frac{1}{2}$ -3 g; stereo separation 16 dB, 21 dB, 13 dB; stylus 0.7 mil spherical; effective tip mass 1 mg; compliance 14×10^{-6} cm/dyne; smoke stylus \$30.00

4-CHANNEL

All 4000 Series cartridges are engineered for discrete 4-channel (CD-4), matrix 4-channel (SQ, QS, RM), as well as stereo.

4000D/III. Frequency response 10-50,000 Hz ± 3 dB; tracking force range $\frac{3}{4}$ - $1\frac{1}{4}$ g; separation: 28 dB 15-1000 Hz; 23 dB 1000-20,000 Hz; 15 dB 20-50,000 Hz; IM dist. at 3.54 cm/sec 0.2% 2000-20,000 Hz; stylus 0.2 mil bi-radial; effective tip mass 0.4 mg; compliance 30×10^{-6} cm/dyne; tracking ability 32 cm/sec at 1 kHz at 1 g; channel balance 1 dB at 1000 Hz; input load 100,000 ohms/ch; total capacitance 100 pF/ch; output at 3.54 cm/sec 3 mV/ch; white stylus \$150.00

4000D/II. Similar to 4000D/III except 15-50,000 Hz; tracking force range $\frac{3}{4}$ - $1\frac{1}{2}$ g; separation 26 dB, 21 dB, 15 dB; yellow stylus . . . \$125.00

4000D/I. Similar to 4000D/II except response 15-45,000 Hz; tracking force range $1\frac{1}{4}$ - $2\frac{1}{2}$ g; tracking ability 30 cm/sec at 1000 Hz at $1\frac{1}{2}$ g; channel balance $1\frac{1}{2}$ dB; black stylus . . . \$85.00

EMT

XSD-15 Stereo Cartridge

Professional stereo studio cartridge; moving-coil transducer; integrated cartridge and shell (designed for use with SME, Sony, Grace, Audio-Technica, etc. tonearms); spherical diamond stylus; requires high-gain preamp or accessory transformers (BV-347) \$300.00
 Transformers (two required) \$29.95 ea.

FORMULA 4

PLS4/D Tonearm

For mono, stereo, or 4-channel operation; effective length 224 mm, height adj. 45 mm, rear clearance required 65 mm; pivot friction 0.005 g at headshell; effective mass (as seen by stylus) 4.50 g nominal and variable; hardened steel needle pivot in concave jewel rondel surrounded by viscous silicone fluid; tracking force 0-3 g (adj. by means of cursor sliding along calibrated aluminum tube); bias compensation adjustable to correspond with tracking force; hydraulic lift & cueing device; fundamental resonance varies according to stylus compliance; skeletal headshell (non-detachable) with $\frac{1}{8}$ mm overhang adj. accepts all cartridges weighing 3-10 g with $\frac{1}{2}$ " fixed centers; supplied with low capacitance coax cable, instruction manual, mounting template, alignment protractor, silicone fluid, hardware, and arm-rest \$139.50

GH

228 "Super Arm"

Features detachable headshell; accepts all cartridges down to 3 g; can be used with Decca London cartridge with standard counterweight; weight assemblies interchangeable; silicone fluid damping; bias adj. by thread and weight; vernier tracking force adjust; single-hole mounting; overall length 11.40"; height 1.70" to 3.5"; pivot-stem length to top of arm 3.4"; pivot to stylus point 9.0"; pivot to center of turntable 8.38"; offset angle 23 degrees; 48" leads; alignment protractor included. \$150.00

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.

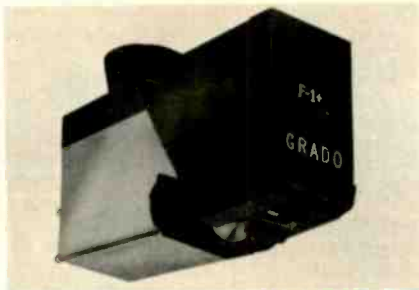
Professional. Designed for high output and stability under severe use; suitable for broadcast purposes. Frequency response 40 kHz and tracking capability 2-3 grams; for use with record changers and tonearms which will not track 1 gram.

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 $\frac{3}{4}$ -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

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 1.5-2 g \$69.95

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 1 1/2 gr; lead capacity core to screen 80 pF; color-coded phono plugs; lightweight drilled cartridge shell; lift lever \$149.95

MICRO/ACOUSTICS

2002-e Stereo Cartridge

Response 5-20,000 Hz ± 1.5 dB; tracking force 0.7-1.4 g; channel separation 30 dB at 1000 Hz, 15 dB at 10,000 Hz; output voltage 3.5 mV/ch at 5 cm/sec peak recorded velocity; load 10 k to 100 k; cartridge weight 4 g; 0.0002 \times 0.0007 elliptical diamond; cable capacitance 100 pF-1500 pF \$115.00

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 \times 0.0007 elliptical solid nude diamond \$95.00

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 \$85.00

4-CHANNEL

QDC-1qb CD-4 Phono Cartridge

Frequency response 5-50,000 Hz; tracking force 1.0-1.75 g; channel separation 30 dB at 1 kHz, 15 dB at 30 kHz; output voltage 3 mV/ch at 5 cm/sec peak recorded velocity; load 10 k to 100 k; cartridge weight 4 g; "Quadra-Point/CD-4 diamond stylus; cable capacitance 100 pF to 1000 pF \$150.00

Saving the best for last.

The chances are good that when you first bought a stereo system, it was a "package" that included a receiver, 2 speakers, and a record player with cartridge. But how much time was spent selecting the cartridge? Most probably it was just a minor element of the package. Even if it had a famous name, it probably was not a truly first-rank model.

Yet the cartridge is more important than that. It can limit the ability of the entire hi-fi chain to properly reproduce your records. It can affect how many times you will enjoy your favorite records without noise and distortion. And it can determine whether you can play and enjoy the new four-channel CD-4 records.

Consider the advantages of adding an Audio-Technica AT15Sa to your present system. You start with response from 5 to 45,000 Hz. Ruler flat in the audio range for stereo, with extended response that assures excellent CD-4 playback if desired. Tracking is superb at all frequencies and distortion is extremely low. The sound is balanced, transparent, effortless. Stereo separation is outstanding, even at 10kHz and higher where others fall short. Our Dual Magnet design* assures it.

And the AT15Sa has a genuine nude-mounted Shibata stylus. Which adds a host of advantages. Like longer record life. Better performance from many older, worn records. Exact tracing of high frequencies, especially at crowded inner grooves. And tracking capability—at a reasonable 1-2 grams—that outperforms and outlasts elliptical styli trying to track at less than a gram.

We're so certain that an AT15Sa will improve your present system that we'd like to challenge you. Take several of your favorite records to an Audio-Technica dealer. Have him compare the sound of your present cartridge (or any other) with the AT15Sa. Listen. We think you'll be impressed. And convinced.

*T.M. Audio-Technica Dual Magnet cartridges protected by U.S. Patent Nos. 3,720,796 and 3,761,647.

The AT15Sa. Very possibly the last phono cartridge you'll ever need.



audio-technica

INNOVATION □ PRECISION □ INTEGRITY

AUDIO-TECHNICA U.S., INC., Dept. 106SG, 33 Shiawassee Ave., Fairlawn, Ohio 44313
Available in Canada from Superlor Electronics, Inc.

NAKAMICHI

MC-1000 4-Ch. Reference Pickup

Moving-coil pickup with low-mass single-crystal beryllium cantilever assembly; direct-coupled one-point supported coil assembly; company's crystal permalloy laminated core; Shibata stylus; double-layer push/pull damper; mounted into SME-type shell; tracking force 1.8 g \pm 0.3 g; separation 27 dB at 1 kHz; frequency response 15-65,000 Hz; imp. 3.5 ohms; compliance 16.0 \times 10⁻⁶ cm/dyne; comes with individual test data \$250.00

MCB-100. Moving-coil pickup booster with double-shielded, specially wound transformer; frequency response 10-65,000 Hz; load imp. 50,000 ohms; input imp. 2-20 ohms .. \$100.00

FG-100. Stylus force gauge; unipivot suspension; calibration for 0 g \$20.00

ORTOFON

SL-15EMKII Moving Coil Cartridge

Total cartridge weight 7 grams. Features elliptical, diamond stylus; tracking force range 1 1/2-2 g. Response 10-50,000 Hz. Output impedance 2 1/2 ohms and in most applications will require use of STM-72 transformer. \$100.00

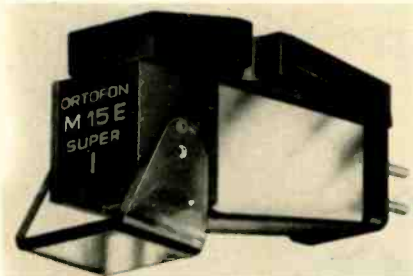
STM-72 Transformer. Designed for use with SL-15E cartridge. Input impedance 2 ohms; load impedance 47,000 ohms \$35.00

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

XSV/3000 Phono Cartridge

Output 5.0 mV at 5.5 cm/sec. Response 10-30,000 Hz; has "Stereo-hedron" stylus tip; tracking force 1 + 1/2 - 1/4 g; channel separation 35 dB; features Dustamatic brush; replacement stylus #D3000 \$99.95

XV-15/1200E Phono Cartridge

Output 4.4 mV at 5.5 cm/sec. Response 10-

30,000 Hz. Has 0.2 \times 0.7 mil elliptical stylus; tracking force 3/4 + 1/2, -1/4 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D1200 \$79.95

XV-15/750E Phono Cartridge

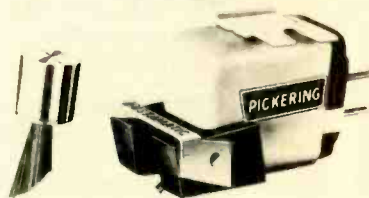
Output 4.4 mV at 5.5 cm/sec. Response 10-25,000 Hz. Has 0.3 \times 0.7 mil elliptical stylus; tracking force 1 \pm 1/2 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D750 \$65.00

XV-15/625E Phono Cartridge

Output 4.4 mV at 5.5 cm/sec; response 10-25,000 Hz; 0.3 \times 0.7 mil elliptical diamond stylus; tracking force 1 + 1/2 - 1/4 g; channel separation 35 dB; features Dustamatic brush; replacement stylus #D625 \$59.95

XV-15/400E Phono Cartridge

Output 5.5 mV at 5.5 cm/sec. Response 10-



25,000 Hz. Has 0.4 \times 0.7 mil elliptical stylus; tracking force 1 1/2 \pm 1/2 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D400 \$54.95

XV-15/200E Phono Cartridge

Output 8.0 mV at 5.5 cm/sec. Response 10-25,000 Hz. Has 0.4 \times 0.7 mil elliptical stylus; tracking force 3 \pm 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 \pm 1 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D350 \$39.95

XV-15/140E Phono Cartridge

Output 8.0 mV at 5.5 cm/sec. Response 10-20,000 Hz. Has 0.5 \times 0.7 mil elliptical stylus; tracking force 4 \pm 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 \pm 1 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D150 \$34.95

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 \pm 2 g. Channel separation 35 dB. Features Dustamatic brush. Replacement stylus #D100 \$29.95

V-15 Micro IV AME Phono Cartridge

Output 5.5 mV at 5.5 cm/sec. Response 20-20,000 Hz. Has 0.4 \times 0.7 mil elliptical stylus; tracking force 1 1/2 \pm 1/2 g. Channel separation 30 dB. Features Dustamatic brush. Replacement stylus #DIV-AME \$49.95

V-15 Micro IV ATE Phono Cartridge

Output 6.5 mV at 5.5 cm/sec. Response 20-18,000 Hz. Has 0.4 \times 0.7 mil elliptical stylus; tracking force 3 \pm 1 g. Channel separation 28 dB. Features Dustamatic brush. Replacement stylus #DIV-ATE \$39.95

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 \pm 1 g. Channel separation 30 dB.

Features Dustamatic brush. Replacement stylus #DIV-AM \$34.95

V-15 Micro IV ACE Phono Cartridge

Output 8.0 mV at 5.5 cm/sec. Response 20-17,000 Hz. Has 0.5 \times 0.7 mil elliptical stylus; tracking force 4 \pm 1 g. Channel separation 26 dB. Has Dustamatic brush. Replacement stylus #DIV-ACE \$29.95

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 \pm 1 g. Channel separation 28 dB. Features Dustamatic brush. Replacement stylus #DIV-AT \$29.95

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 \pm 2 g. Channel separation 26 dB. Features Dustamatic brush. Replacement stylus #DIV-AC \$24.95

4-CHANNEL

UV-15/2400-Q Cartridge

For discrete 4-channel playback; tracking force with Dustamatic brush 3 g \pm 1/2 g (resulting tracking force 2 g \pm 1/2 g); frequency response 10-50,000 Hz (when terminated by 100k ohm



load and 100 pF); output 3.3 mV \pm 2 dB; channel separation 35 dB; inductance each channel 290 mH; resistance each channel 675 ohms; comes with "Quadrhedral" diamond stylus assembly \$125.00

UV-15/2000-Q. Similar to 2400-Q except response 20-45,000 Hz; channel separation 30 dB \$69.90

XUV/4500-Q 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 \pm 1/2 gr (resulting in tracking force 1 \pm 1/2 gr); frequency response 10-50,000 Hz; output: 3.4 mV nominal (ref. 5.5 cm/sec recorded velocity); channel balance: 1 1/2 dB maximum difference; channel separation 35 dB nominal at 1 kHz, 25 dB nominal at 30 kHz; comes with "Quadrhedral" stylus with "Quadrhedron" 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 \$70.00

SATIN

M-117X Stereo Cartridge

Moving-coil type; preamp not required, stylus can be replaced by user; output 2.5 mV \pm 2 dB at 50 mm/sec; response 10-25,000 Hz; tracking force 0.5-1.5 g; crosstalk 25 dB at 1 kHz; load imp. 30-200 ohms; compliance 15 \times 10⁻⁶ cm/dyne; 0.1 \times 2.5 mil Shibata line-contact stylus; weight 9.0 g; replacement stylus #117NX \$190.00

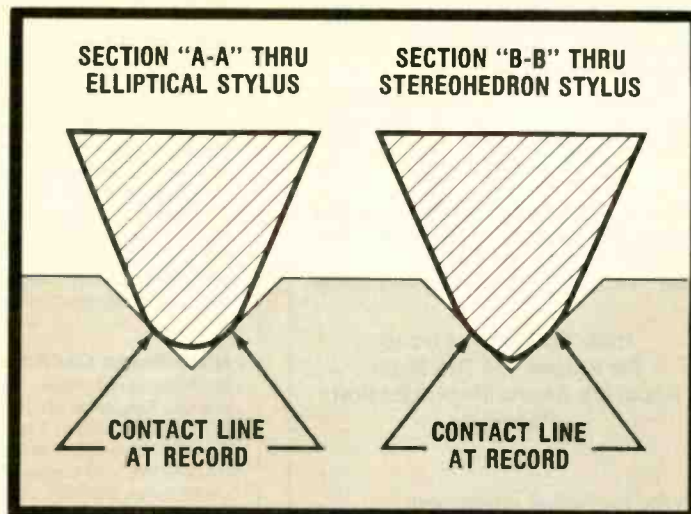
M-117E. Similar to M-117X except output voltage 3.0 mV; frequency response 10-20,000

THE SOURCE OF PERFECTION IN STEREO SOUND... PICKERING'S ALL NEW XSV/3000



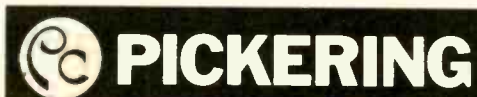
It features a totally unique construction (developed by Pickering through our pioneering efforts in discrete, 4-channel) plus a totally new stylus tip shape, the Stereohedron™, which has superior tracing ability and assures longer stylus and record life!

This new cartridge makes possible a wider, more open, finer sound — because it maximizes stereo tracing capabilities with the slightest, lightest touch a record ever had. It increases record life because force is spread over a greater contact area. And that means the least record wear achievable in these times (with a stereo cartridge).



Conventional elliptical styli have a relatively limited bearing radius at the contact area with the groove. The Stereohedron combines the elliptical and Quadrahedron concepts to create a stylus having a larger bearing contact radius at the area in order to reduce stylus wear and prolong record life.

For further information write to:
Pickering & Co., Inc. Dept. SDB
101 Sunnyside Blvd., Plainview, New York 11803



*"for those who can **hear** the difference"*

CIRCLE NO. 41 ON READER SERVICE CARD

SONUS



SONUS PHONOGRAPH CARTRIDGES

*In just a few minutes
your "subconscious"
tells you they're the best!*

An insidious form of distortion you may not even be aware of, is causing "listening fatigue" as you play your records. After about 15 minutes of a complex, musically demanding record, it shows up. You feel vaguely anxious, irritable, and ready to turn off the music. That's "listening fatigue"—virtually eliminated at last with the new Sonus phono cartridges.

You can hear and feel the difference in the time it takes to play one side of a record. Sonus has reduced Intermodulation and related distortions to previously unachieved levels, reducing these sources of "listening fatigue" to the vanishing point. As you listen, you discover that the emotional tension formerly caused by this distortion is gone. The music comes through with an effortless clarity and definition, as you listen with more attention, more relaxation, and far more pleasure than ever before.

The new Sonus cartridges take you closer to an actual performance than any other cartridges have been able to, until now.

"At one gram, the SONUS Blue Label was audibly superior . . . the sound was excellent in every respect."

Stereo Review/Hirsch-Houck Laboratories

**High Definition Phono
Cartridges for The Most
Accurate Sound Reproduction
Possible.**

Write for further information

SONIC RESEARCH INC.

27 Sugar Hollow Rd., Danbury, Ct. 06810

4

Phono Cartridges

Hz; crosstalk 20 dB; compliance 12×10^{-6} cm/dyne; 0.2×0.8 mil elliptical stylus; replacement stylus 117NE \$170.00

SHURE

V-15 Type III Phono Cartridge

Moving-magnet type. Output 3.5 mV at 5 cm/sec. Response 10-25,000 Hz. Has 0.2×0.7



mil elliptical stylus. Tracking force $\frac{3}{4}$ to $1\frac{1}{4}$ g. Channel separation better than 28 dB at 1000 Hz. Will track 38 cm/sec at 1000 Hz. Replacement stylus #VN35E \$85.00

M95ED Phono Cartridge

Features new, thinner, uninterrupted pole piece to optimize electromagnetic characteristics. Output 4.7 mV/ch at 5 cm/sec peak velocity (1000 Hz); biradial elliptical stylus with nude diamond tip; tracking force $\frac{3}{4}$ - $1\frac{1}{2}$ gr; frequency response 20-20,000 Hz; channel separation 25 dB at 1000 Hz; channel balance: output from each channel within 2 dB; will track 33 cm/sec at 1000 Hz. Replacement stylus #N95ED. \$64.95
Model M95EJ. Same except tracking force $1\frac{1}{2}$ -3 gr Replacement stylus #N95EJ \$49.45

M75ED Type 2 Phono Cartridge

Tracking force $\frac{3}{4}$ to $1\frac{1}{2}$ g. Response 20-20,000 Hz. Output 5.0 mV/ch at 1000 Hz and 5 cm/sec peak velocity. With biradial 0.2×0.7 mil elliptical stylus. Replacement stylus #N75ED. \$59.95

Model M75G Type 2. Same except with 0.6-mil spherical stylus. Replacement stylus #N75G \$43.45

M91E Phono Cartridge

Moving-magnet type. Output 5.0 mV at 5 cm/sec. Response 20-20,000 Hz. Has 0.2×0.7 mil elliptical stylus. Tracking force $\frac{3}{4}$ to $1\frac{1}{2}$ g. Channel separation better than 25 dB at 1000 Hz. Will track 18 cm/sec at 10,000 Hz. Replacement stylus #N91E \$54.95

Model M91GD. Same except with 0.6-mil spherical stylus. Replacement stylus #N91GD \$49.95

M93E Phono Cartridge

Moving-magnet type. Output 6.2 mV at 5 cm/sec. Response 20-20,000 Hz. Has 0.4×0.7 mil elliptical stylus. Tracking force $1\frac{1}{2}$ to 3 g. Channel separation better than 25 dB at 1000 Hz. Will track 13 cm/sec at 10,000 Hz. Replacement stylus #N93E \$44.95

M70EJ Phono Cartridge

Tracking force $1\frac{1}{2}$ to 3 g. Response 20-20,000 Hz. Output 6.2 mV/ch at 1000 Hz and 5 cm/sec peak velocity. With biradial 0.4×0.7 mil elliptical stylus. Replacement stylus #N700EJ \$39.50

M79B. Same except with 0.6-mil spherical stylus. Replacement stylus #N70B \$32.50

M75B Type 2 Phono Cartridge

Has good trackability at moderate tracking

forces between $1\frac{1}{2}$ and 3 g. Designed for moderately priced equipment. Response 20-20,000 Hz. Output 5 mV/ch at 1000 Hz and 5 cm/sec. Has 0.6-mil spherical stylus. Replacement stylus #N75B \$38.45
Model M75EJ Type 2. Same except with biradial 0.7×0.4 mil elliptical stylus. Replacement stylus #N75EJ \$49.95

M55E Phono Cartridge

Moving-magnet type. Output 6.6 mV at 5 cm/sec. Response 20-20,000 Hz. Has 0.2×0.7 mil elliptical stylus. Tracking force $\frac{3}{4}$ to 2 g; Channel separation 25 dB at 1000 Hz. Compliance 25×10^{-6} cm/dyne. Replacement stylus #N55E \$34.95

M44E Phono Cartridge

Moving-magnet type. Output 1.8 mV/cm/sec. Response 20-20,000 Hz. Has 0.4×0.7 mil elliptical stylus. Tracking force $1\frac{3}{4}$ to 4 g. Channel separation better than 25 dB at 1000 Hz. Compliance 15×10^{-6} cm/dyne. Replacement stylus #N44E \$29.95

M7/N21D Phono Cartridge

Moving-magnet type. Output 4.0 mV at 5 cm/sec. Response 20-20,000 Hz. Has 0.7-mil spherical stylus. Tracking force less than $2\frac{1}{2}$ g; compliance 9×10^{-6} cm/dyne. Replacement stylus #N21D \$22.95

M3D Phono Cartridge

Moving-magnet type. Output 5.0 mV at 5 cm/sec. Response 20-15,000 Hz. Has 0.7-mil spherical stylus. Tracking force adjustable 3 to 6 g. Replacement stylus #N3D \$17.95

4-CHANNEL

SME3009 Series II Tonearm

Features non-detachable shell for reduced weight; low-friction pivots with ball races for



the vertical axis and knife edges for the horizontal axis; base slides on bedplate for tracking adjustment with protractor; arm mass divided by elastic coupling; lever-operated hydraulically damped lowering and raising control; tracking force 1-1.5 g applied precisely without gauge; cartridge weight 4-9 g \$162.00
SME3009/S2. Same with detachable shell \$174.00

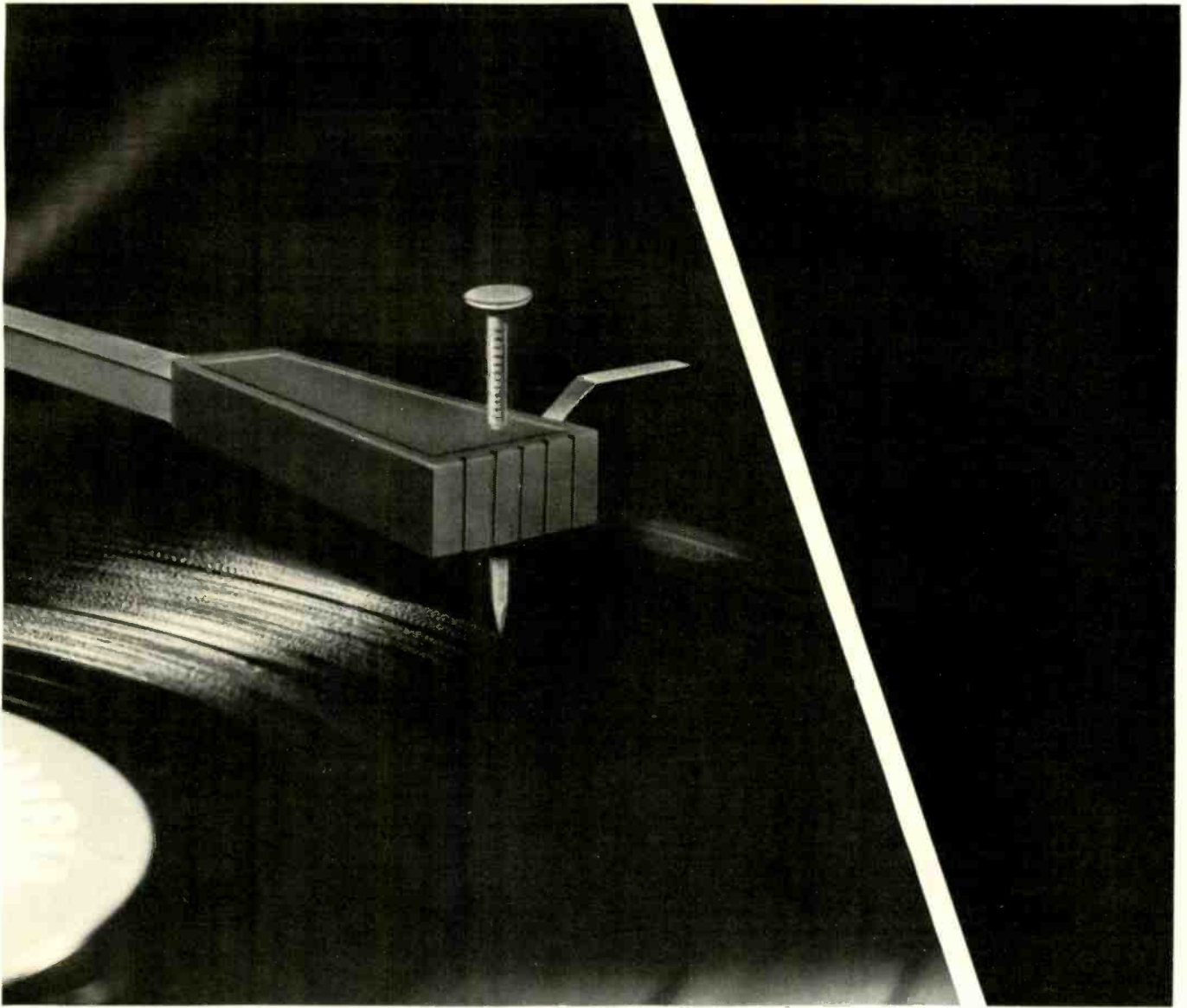
M24H 4-Channel Cartridge

Wide-range cartridge for stereo, 4-channel matrix (SQ and QS), and discrete 4-channel playback at tracking force of $1\frac{1}{2}$ g; frequency response 20-50,000 Hz; output 3.0 mV/ch at 1000 Hz and 5 cm/sec peak velocity; channel separation 22 dB at 1000 Hz; channel balance within 2 dB; inductance 160 mH; d.c. resistance 510 ohms. Features hyperbolic tip linked to a high-energy magnet by a low-mass stylus assembly \$74.95

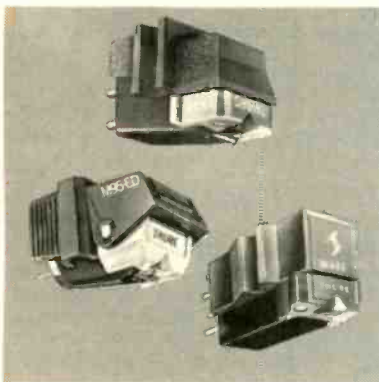
SONUS

Blue Label Cartridge

Voltage output 0.8 ± 2 dB at 1 kHz cm/sec; frequency response 5-20,000 Hz $\pm 1\frac{1}{2}$ dB, 20,000-45,000 Hz ± 6 dB; compliance 50 cm/dyne $\times 10^{-6}$; stylus force range $\frac{3}{4}$ - $1\frac{1}{4}$ g; channel balance ± 2 dB; channel separation 30 dB (at 1000 Hz), 25 dB (overall); resistance 300 ohms/ch; load imp. per channel 47,000 ohms in parallel with 400 pF (250 pF with CD-4 records); cartridge weight $5\frac{1}{2}$ g; 0.003×0.0003 "Pathe-max" diamond tip \$125.00



This is no way to nail down a hi-fi bargain.



Some stores think that one of their cost-cutters in assembling a "bargain" stereo system is to install a run-of-the-mill, inexpensive cartridge. After all, who's going to notice a tiny cartridge when it's surrounded by powerful speakers and a dynamite turntable? Unfortunately, *some* shoppers are reluctant to insist on a better cartridge when buying one of these package specials. But *you* are made of sterner stuff! And if you insist on a Shure cartridge, "better" doesn't have to mean more expensive. Time and time again, consumer magazines have rated Shure cartridges the best in their price category. As the source of sound for the entire system, that tiny Shure cartridge and its critical stylus determine what you'll ultimately hear. And as bargains go, that's the best tip you'll hear today—or any day!

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

4

Phono Cartridges

Red Label. Similar to Blue Label except response 5-20,000 Hz +2, -1 dB; 0.0007" × 0.0003" elliptical diamond stylus . . . \$104.00

Green Label. Similar to Red Label except response 5-20,000 Hz ±2 dB; 0.0006" spherical stylus . . . \$88.00

Silver Label Cartridges

Designed to be used with record changers; voltage output 1 mV ±2 dB at 1 kHz cm/sec; frequency response 5-20,000 Hz +2, -1 dB; compliance 30 cm/dyne × 10⁻⁶; stylus force range ¾-1½ g; channel balance ±2 dB; channel separation (at 1 kHz) 30 dB, 25 dB (overall); cartridge weight 5½ g.

Model P. Equipped with 0.0030" × 0.0003" "Pathemax" diamond stylus; response 20,000 to 45,000 Hz ±6 dB for CD-4 records . . \$70.00

Model E. Equipped with 0.007" × 0.0003" elliptical stylus . . . \$60.00

STANTON

500A Phono Cartridge

Output 1.0 mV/cm/sec at ±2 dB. Response 20-20,000 Hz ±2 dB. Has 0.7-mil spherical stylus; tracking force 2 to 5 g. Channel separation 35 dB. Replacement stylus D5107A . . . \$30.00

500AA Phono Cartridge

Output 1.0 mV/cm/sec at ±2 dB. Response 20-20,000 Hz ±2 dB. Has 0.5-mil spherical stylus; tracking force 1 to 2½ g. 35 dB channel separation. Replacement stylus D5105AA . . . \$35.00

500AL Phono Cartridge

Output 1.0 mV/cm/sec at ±2 dB. Response 20-17,000 Hz ±2.5 dB. Has 0.7-mil spherical stylus; tracking force 3 to 7 g. Channel separation 28 dB. Replacement stylus D5107AL . . . \$30.00

500E Phono Cartridge

Output 1.0 mV/cm/sec at ±2 dB. Response 20-20,000 Hz ±2 dB. Has 0.4 × 0.7-mil elliptical stylus; tracking force 2 to 5 g. Channel separation 35 dB . . . \$35.00

500EE Phono Cartridge

Output 1.0 mV/cm/sec at ±2 dB. Response 20-20,000 Hz ±3 dB. Has 0.3 × 0.7-mil elliptical stylus; tracking force 1 to 2 g. Channel separation 35 dB . . . \$40.00

600A Phono Cartridge

Features reduced tip mass for improved frequency response; will withstand rugged handling. 0.7-mil stylus; tracking force 2-4 g. D6071A replacement stylus . . . \$45.00

600E. Same except 0.4 × 0.7 mil elliptical stylus; tracking force 1½-3 g. D6004E replacement stylus . . . \$50.00

600EE. Same except 0.3 × 0.7 mil elliptical stylus; 1-2 g tracking force. D6003EE replacement stylus . . . \$55.00

680EL Disco Phono Cartridge

Output 1.1 mV/cm/sec at ±2 dB; response 20-20,000 Hz. Has 0.4 × 0.7-mil elliptical stylus; tracking force 2-5 g. Channel separation 30 dB. Replacement stylus D6800EL (single stylus); DP6800EL (3-styli disco pack); price includes spare stylus . . . \$90.00

680EE Phono Cartridge

Output 0.82 mV/cm/sec ±2 dB; response 20-20,000 Hz. Has 0.3 × 0.7-mil elliptical stylus; tracking force ¾-1½ g. Channel separation 35 dB. Replacement stylus D680 . . . \$62.50

681A Phono Cartridge

Output 1.1 mV/cm/sec at ±2 dB. Response 10-20,000 Hz. Has 0.7-mil spherical stylus; tracking force 1½ to 3 g. Channel separation 35 dB. Unit individually calibrated at factory. Replacement stylus D6807A . . . \$66.00

681EE Phono Cartridge

Output 0.82 mV/cm/sec at ±2 dB. Response 10-20,000 Hz. Has 0.2 × 0.7-mil elliptical stylus; tracking force ¾ to 1½ g. Channel separation 35 dB. Unit individually calibrated at factory. Replacement stylus D6800EE . . . \$72.00

681SE Phono Cartridge

Output 1.1 mV/cm/sec at ±2 dB. Response 20-20,000 Hz. Has 0.4 × 0.7-mil elliptical stylus; tracking force 2 to 4 g. Channel separation 35 dB. Unit individually calibrated at factory. Replacement stylus D6800SE . . . \$66.00

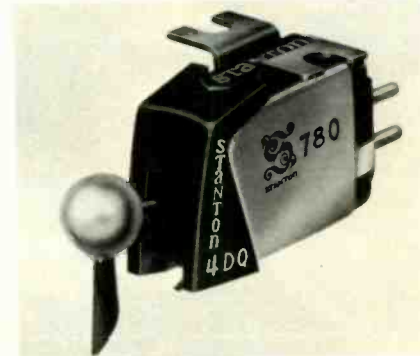
681EEE Phono Cartridge

Output 0.7 mV/cm/sec ±2 dB; Response 10-12,000 Hz ±½ dB. Has 0.2 × 0.7 mil elliptical stylus; tracking force 1 g +½. -¼. Features brush. Channel separation 35 dB. Unit individually calibrated at factory. Replacement stylus 6800EEE . . . \$82.00

4-CHANNEL

780/4DQ Four-Channel Cartridge

Designed to play the new discrete 4-channel records as well as 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 "Quadrangular" stylus . . . \$125.00
780/Q. Same except frequency response is 10-45,000 Hz . . . \$75.00

TECHNICS BY 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

WALCO

ER Replacement Stylus

Extended-range (ER) stylus assembly for stereo and CD-4 cartridges as direct replacement; low stylus-tip mass; uses parabolic-shaped tip (Shibata-type) to minimize record wear; response extended to 50,000 Hz; channel separation 25 dB (1000 Hz, 20,000 Hz) 20 dB (40,000 Hz); company claims IM and HD 10 dB lower at 20,000 Hz than other assemblies . . . \$29.95

What you don't know
 about effective tip mass
 won't hurt you,
 just your records.



You can find out
 what you don't know
 by contacting us for our
 comprehensive
 cartridge brochure.

Bang & Olufsen

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CIRCLE NO. 13 ON READER SERVICE CARD

Introduction to TAPE MACHINES

THERE are three basic tape recorder formats, each having its own special advantages and limitations: open reel, cassette and cartridge.

Open Reel: Home open-reel tape recorders use 1/4-inch-wide tape, usually in 7-inch reels holding 1200 to 2400 feet, depending on tape thickness. A growing number of tape machines can also handle 10 1/2-inch reels, which hold twice as much tape as the 7-inch size.

After leaving the supply reel, the tape passes over three heads (erase, record, playback) and is wound on to a takeup reel. Few machines today use the combined record/playback head that was popular in low-priced open reel decks some years ago. The tape speed is controlled by a capstan, against which the tape is pressed by a pinch roller. The capstan is usually turned by a constant-speed synchronous motor, through a flexible belt. A heavy flywheel on the capstan shaft smooths out motor vibration and speed fluctuations. A few high-priced recorders use an electronically controlled direct-drive motor, similar to those used on some record players.

The standard tape speeds for home recorders are 3 3/4 and 7 1/2 inches per second (ips) with the latter providing the highest fidelity. A number of machines are able to operate at the professional speed of 15 ips, which either replaces or supplements the 3 3/4 ips speed, and a few recorders also have a 1 7/8 ips speed for long uninterrupted recordings of voice or limited bandwidth music.

Separate amplifier circuits are used for recording and playback functions, which can be carried on simultaneously on most machines. The recorder's line outputs can be switched to carry either the incoming program or the output of the playback amplifier, so that a recording can be monitored a fraction of a second after it was made.

Different types of tape require different bias levels for optimum frequency response, noise, and distortion characteristics. Some machines have a fixed bias, factory adjusted for a recommended tape formulation, but others provide two or three choices of bias (and often recording equalization as well), selectable by a front-panel control so that several types of tape can be used without making internal re-adjustments.

Most home recordings and commercially recorded tapes are made in a four-track format. The 1/4-inch tape width is divided into four parallel magnetized tracks, separated by narrow guard bands. A stereo recording is made on tracks 1 and 3 on the first tape passage, after which the supply and takeup reels are interchanged and the program is continued on tracks 2 and 4. Most machines can be used to make mono recordings on one track at a time, using four tape passes as tracks 1, 2, 3, and 4 are recorded (or played) in sequence. Many serious recordists prefer to use the half-track format, however, available as an option on some of the higher-priced recorders. Each stereo channel occupies half the tape width, completing the recording in a single passage of the tape. Half-track recordings can be edited without sacrifice of material that would be present on the second pair of tracks in a four-track recording, and have a 3 dB greater dynamic range.

Since the open-reel recorder, especially at the higher tape speeds, has a considerable advantage in dynamic range over the cassette medium, few open-reel machines are equipped with built-in Dolby "B" noise reducing circuits.

Some do have them, however, and one manufacturer has recently announced that the dbx system will be available in some of their machines.

Most open-reel machines can be set to record on one channel while playing back on the other, opening the way to a number of special effects such as *sound-on-sound*, *sound-with-sound*, and *echo*. A few manufacturers make bi-directional recorders, which reverse the direction of tape movement automatically at the point where a piece of conducting foil is attached to the tape. Most auto-reverse systems operate only in playback, but some can record in both directions as well.

Cassette: The cassette is a miniature equivalent of an open-reel tape system, in which the tape, supply and takeup reels, and tape guides are molded into a compact and rugged plastic case. Access holes in its edge allow the erase head and combined record/playback head to contact the tape, which is driven by a capstan that enters through a hole in the cassette. Other holes in the back edge provide a safety recording lockout feature, so that a cassette cannot be accidentally re-recorded, and also control automatic bias switching for chromium-dioxide tape with suitably equipped recorders.

The cassette tape is slightly more than 1/8-inch wide and moves at only 1 7/8 ips. It is recorded in four very narrow tracks, using adjacent tracks for the two stereo channels. Like open-reel tapes, cassettes are recorded or played in one direction, then turned over (interchanging the supply and takeup hubs) and played in the other direction.

Modern cassette machines often have a frequency response extending to 15,000 Hz or beyond, with a flatness that rivals many open-reel machines. This is made possible by a combination of special tape coatings, having superior energy storage capability (especially at the higher frequencies) and improved tape head designs. The bias level of a cassette tape is extremely critical compared to open-reel tapes, and a given machine will usually work at its best only with the specific tape for which it was adjusted. As with open-reel recorders, virtually all cassette machines have bias and equalization switching for two or three tape formulations.

The narrow cassette tracks impose some severe and fundamental limitations on cassette performance. Compared to open-reel tape, a cassette tape saturates readily, and its signal-to-noise ratio is intrinsically poorer. Better tapes and heads have helped the first problem, and Dolby "B" noise reduction, now almost universal in good cassette decks, has gone a long way toward eliminating the second objection. With care, a cassette recording can come very close to matching the sound quality of the better home open-reel recordings, although it probably will never fully equal it.

One of the limitations of the cassette format has been the use of a combination record/playback head. The opening in the cassette was only meant to accept one head. But ingenious designers have managed to squeeze separate heads for the two functions into the available space, and there are several three-head machines on the market. They usually have superior performance, especially at high frequencies, and the recording can be monitored from the tape as it is made. *Flutter* was a problem with early cassette transports, but many current models have less than 0.1% flutter, comparing well with some of the better home open-reel machines.

On the plus side, the cassette offers the highest available convenience of handling, and it is the most compact form of music storage. The cassette has one fundamental weakness for the creative recording hobbyist—editing a previously recorded cassette is very impractical.

A new variation of the cassette format has been announced recently by a consortium of Japanese manufacturers, including Matsushita (Technics and Panasonic), Sony and Teac. The *Elcaset* (for "large cassette") is considerably larger than the Philips "Compact Cassette," uses standard 1/4-inch-wide tape, and operates at 3 3/4 ips. In use, the tape is pulled out of the cassette and passes over a head assembly much like that of an open-reel recorder. Its creators envisage the Elcaset as bridging the gap between the higher priced cassette recorders and the over-\$1000 deluxe open-reel machines, with essentially the performance capability and flexibility of the latter and the handling convenience of the former.

Cartridges: The 8-track cartridge has a simplicity of handling, with a large library of prerecorded rock music, that has made it a popular source of recorded music for use in automobiles. Inserting the cartridge into a slot in the panel of the player turns on the electronics and starts the tape in motion. The stereo 8-track cartridge contains four pairs of stereo tracks, which are played in sequence. A conducting metal foil on the tape causes the playback head to shift to the next pair of tracks at the appropriate point, and track selection can also be made manually at any time. After all tracks have been played, the cartridge pops partly out of the player and it shuts off.

Because of its greater tape width and higher speed, the 8-track format should be potentially superior to the cassette in bandwidth and dynamic range. In practice, this has not been the case. Wow and flutter are always higher in a cartridge player because of unavoidable irregularities in the tape motion as it is pulled out from the pack. The high ambient noise levels in automobiles have tended to mask tape hiss, as well as the higher audio frequencies in the program, so that there has been little incentive to bring cartridges up to the level of cassettes.

Four Channel: In spite of the tremendous engineering effort that has gone into making stereo-compatible four-channel phonograph records, tape is still the ideal four-channel recording and playback medium. In fact, 8-track cartridges are presently the major source of taped four-channel sound, since they can store two complete four-channel programs, and many players are equipped to handle them (the cartridges are keyed so that switching between four- and two-channel operation is done automatically when the cartridge is inserted.)

In theory, cassettes should have the same four-channel capability, with a single passage of the tape playing all four tracks. Unfortunately, Philips will not license its use in this manner, since it would no longer be compatible with stereo and mono cassette systems. It can be assumed that the new Elcaset system will emerge as a four-channel medium, however.

Open reel tape, of course, offers the finest possible four-channel recording and playback performance. Although there are a number of four-channel open reel decks, there are relatively few commercially recorded tapes. Nevertheless, these machines continue to be very popular with serious recording hobbyists. Their appeal lies in a special capability found in many of them, known by various names such as "Simul-Sync," "Multi-Sync," and the like. This system allows any selected track or tracks of the recording head to be used for playback, while recording through the other sections of the same head. This enables a recording to be built up, track by track, by adding new parts in exact synchronism with the previously recorded material, which is monitored through headphones while making the new recording. The end result, given sufficient patience and skill, can be a fully professional-quality stereo recording.



THREE WAYS TO IMPROVE YOUR HEARING.

NEW TANDBERG TCD-330. "The world's most sophisticated cassette tape recorder." Three heads for tape/source monitoring. Three motors for reliability. Dual capstan for lasting stability. Dolby.* Other features include servo spooling. FM Dolby* listening. Memory. Dual peak-reading meters for recording and replay. MPX filter switch. Electronic logic control with 8 ICs. Front stereo headphone jack. Adjustable azimuth. And more.

NEW TANDBERG 10XD. The world's first and only 10 1/2" reel tape recorder that operates at 15 ips and combines Tandberg's unique Cross-Field recording technique with the world-famous Dolby* B system. Result: the 10XD completely eliminates audible tape hiss. Other features: 3 speeds, 15, 7 1/2, 3 3/4 ips. 3 motors; Hall-effect capstan motor. 3 heads; plus separate bias head. Electronic servo control. Electronic logic mode controls. And more.

NEW TANDBERG TR-2075. Here's an ingenious combination. A highly sensitive tuner and pre-amp with an extremely powerful amplifier—all on one chassis. Result: a compact instrument that puts out brilliant performance. Features include an exclusive toroidal transformer that eliminates electronic stray fields. Electronic tuning. Noiseless push-button diode switching, 2 phono inputs. 2 tape inputs/outputs. And more.

For a complete demonstration of these remarkable new instruments, see your Tandberg dealer. For a color catalog full of facts and figures, write to us. It's worth \$1.50—but we'll send you a copy absolutely free!

TANDBERG

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CIRCLE NO. 73 ON READER SERVICE CARD

5

OPEN-REEL TAPE MACHINES

AKAI

GX-650D Stereo Tape Deck

Three-speed (15, 7 1/2 & 3 3/4 ips), four-track, two-channel stereo/mono system; will handle up to 10 1/2" 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 7 1/2 ips (both with LN-150 tape); dist. 0.4% at 15 & 7 1/2 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 x 17.4" W x 10" D. \$995.00

GX-630D Stereo Tape Deck

Two-speed (7 1/2 & 3 3/4 ips), four-track, two-channel stereo/mono system; will handle up to 10 1/2" 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 7 1/2 ips (LN-150 tape); dist. 0.5% at 7 1/2 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 x 17.4" W x 9.4" D. \$695.00
TX-630DB. Same except includes Double Dolby process circuits. \$775.00

GX-265D Stereo Tape Deck

Two-speed (7 1/2 & 3 3/4 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 x 15.9" H x 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 x 15.9" H x 8.3" D. \$599.95

GX-230D Stereo Tape Deck

Two-speed (7 1/2 & 3 3/4 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 x 15.6" H x 8.1" D.

..... \$499.95

4000 DS Mk-II Stereo Tape Deck

Two-speed (3 3/4 & 7 1/2 ips), 4-track, 2-channel stereo. Wow & flutter 0.07% rms at 7 1/2 ips. Response 30-26,000 Hz ±3 dB at 7 1/2 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" x 12 1/2" x 7 3/8" \$299.95
4000DB. Same as 4000DS but with Dolby built in \$379.95

1722W Tape Recorder

Two-speed (3 3/4 & 7 1/2 ips), 4-track, 2-channel stereo. Wow & flutter 0.14% rms at 7 1/2 ips. Response 30-21,000 Hz ±3 dB at 7 1/2 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" x 7" speakers. Features p.a. capability, automatic shut-off, equalizer preamp for direct phono input, selector switch for regular or low-noise tape. 14 1/8" x 14 1/2" x 9 7/8" ... \$349.95

4-CHANNEL

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; mic/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

GX-270DSS 4-Channel Tape Deck

4-track, 4 & 2 channel record/play deck; will handle 7" reels; a.c. servo direct-drive capstan motor plus two eddy current motors for fast-forward & rewind; four GX heads; 3-head function; full logic solenoid functions controls; automatic stereo reverse playback; tape/source/monitoring; Quadra-Sync recording; pitch control for record/playback (±5%); line output control; mic/line mixing; auto stop; tape speed: 7 1/2 & 3 3/4 ips; wow & flutter 0.07% rms (7 1/2 ips); S/N 54 dB (measured via tape with peak recording level of +6 VU); frequency response 30-21,000 Hz ±3 dB; distortion 1% (1000 Hz, "0" VU); 18.3" H x 17.3" W x 7.5" D. \$875.00

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 mic (0.4 mV) and line (40 mV) inputs plus line (1.23 V) output. 16 1/2" x 18" x 9 1/2" \$479.95

CROWN INTERNATIONAL

CX822 Tape Recorder

Three-speed (15, 7 1/2, 3 3/4 ips), 2-track, 3-motor

design. Will handle up to 10 1/2" 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, 7 1/2, 3 3/4 ips), 2-track, 3-motor design. Will handle up to 10 1/2" reels. Has three



heads. Response 20-20,000 Hz ±2 dB. Wow & flutter 0.09% at 7 1/2 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 (7 1/2, 3 3/4 ips), 2-ch, 1/4-track, 3-motor design. Will handle up to 10 1/2" reels. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7 1/2 ips. (S + N)/N 60 dB. Has braking, two VU meters, automatic shut-off, monitoring facilities, pause control, and optional counter. 15 and 17 1/8 ips available \$1195.00
SX724-P4C. 2- and 4-track version; plays 4-channel in-line \$1495.00

4-CHANNEL

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

1120 Stereo Tape Deck

Two-speed (7 1/2 & 3 3/4 ips), three-motor deck; will handle 10 1/2" reels. Can be used as 4-track,

5

Open-Reel Tape Machines

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 7 1/2 ips \$649.94

7100 Reel-to-Reel Tape Deck

Two-speed (7 1/2 & 3 3/4 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 7 1/2 ips. (S + N)/N 55 dB. Response 40-21,000 Hz at 7 1/2 ips \$449.95

4-CHANNEL

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 x 15 1/2" D x 20" H \$1299.95

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

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 $\pm 0.08\%$ 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. 16 7/8" W x 17 3/4" H x 6 3/4" D . . . \$669.95

FERROGRAPH

Super Seven Series Tape Recorders

Three speeds (7 1/2, 3 3/4, 1 7/8 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; 10 1/2" 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 7 1/2 ips, 40-14,000 Hz ± 3 dB at 3 3/4 ips, 50-7000 Hz ± 3 dB at 1 7/8 ips. Available in 2- and 4-track stereo models; with or without amplifiers and speakers; 15, 7 1/2, 3 3/4 ips operation; optional Dolby-B noise reduction with every speed configuration. \$1025 to \$1200

JVC

RD-1696 Tape Recorder Deck

4-track, 3-speed (7 1/2, 3 3/4 & 1 7/8 ips), 2-channel stereo design. Response 30-18,000 Hz ± 3 dB at



7 1/2 ips; (S + N)/N -52 dB; wow & flutter 0.13% rms at 7 1/2 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). 7 1/2" x 15 3/4" W x 12 3/4" D \$249.95

4-CHANNEL

4RD-1406 4-Channel Tape Deck

Will play/record 2- and 4-channel reel-to-reel tape. Two speeds (3 3/4 & 7 1/2 ips). Response 30-18,000 Hz ± 3 dB at 7 1/2 ips with low-noise tape. (S + N)/N -52 dB; wow & flutter 0.1% at 7 1/2 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-5050-2SH Tape Deck

Two-speed (15 & 7 1/2 ips); two-channel, four-head (two-track erase, record and playback, four-track playback); three motors (hysteresis synchronous); will handle up to 10 1/2" 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 balanced 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 x 19" H x 7 3/8" 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-D. Same except with d.c. servo capstan with $\pm 10\%$ variable speed . . . \$1650.00

4-CHANNEL

MX-5050-QXH Tape Deck

Four-head, four-track, four-channel version of

the company's MX-5050-2SH tape deck; S/N 65 dB; 17" W x 23 1/4" H x 7 3/8" D \$2195.00
MX-5050-QXH-D. Same except with d.c. servo capstan with $\pm 10\%$ variable speed . . . \$2345.00

PIONEER

RT-2022 Stereo Tape Deck

Two-speed (7 1/2 & 15 ips), 2-track, 3-motor, 3-head stereo deck; will handle up to 10 1/2" reels; 4/8 pole hysteresis synchronous motor; solenoid-operated direct-change function buttons; separate transport and amplifier units; plug-in head assembly; scrape filter; continuously variable tape bias, 2-step tape equalizer and tape selector with time-constant switch mechanism for use with all types of tape; wide-dynamic-range playback amplifier; independent recording amplifier for line and mic input/output; "synchronomonitor" mechanism for sound-on-sound, sound-with-sound; wow & flutter 0.04% (W rms) at 15 ips; 0.08% (W rms) at 7 1/2 ips; S/N 53 dB; THD 0.8% max. at 15 ips, 1.0% max. at 7 1/2 ips; response 30-28,000 Hz ± 3 dB at 15 ips, 40-20,000 Hz ± 3 dB at 7 1/2 ips; full complement of inputs and outputs. 21 3/4" H x 18 1/8" W x 10 1/2" D \$1250.00

RT-1050 Stereo Tape Deck

Two-track, two-speed (15 & 7 1/2 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 7 1/2 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. 18 1/8" W x 17 7/8" H x 9 5/8" D . . . \$700.00

RT-1011L Stereo Tape Deck

Four-track, two-speed (7 1/2 & 3 3/4 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 10 1/2" reels. 16 7/8" W x 16 7/8" H x 8 7/8" D \$600.00

4-CHANNEL

RT-2044 Four-Channel Tape Deck

Same as RT-2022 stereo deck except with two TAU-11 amplifier units; 37 1/2" H x 18 1/8" W x 10 1/2" D \$1600.00

RT-1020L Tape Deck

Three-motor, 3-head stereo tape deck with 4-channel reproduction capability. Has 4/8 pole

Our Contribution to the Realization of High Quality Music Reproduction in the Home over the Past 25 Years.

Our company was founded at the time of rapid developments in the field of magnetic tape recording.

During this period there were few machines available, but they revolutionized professional sound recording.

This advancing technology soon introduced a new era to the amateur recordist, because it was now possible to record sound on a reusable storage medium, which could even be cut and spliced together again.



1.



2.

It is with considerable pride that we note our participation in these developments right from the very beginning.

As long ago as 1954, our recorders were already equipped with the professional

three motor drive system.

What is it that makes REVOX recorders so successful?

The answer to this question must take into account the changes which have occurred in the consumer since the early days of recording.

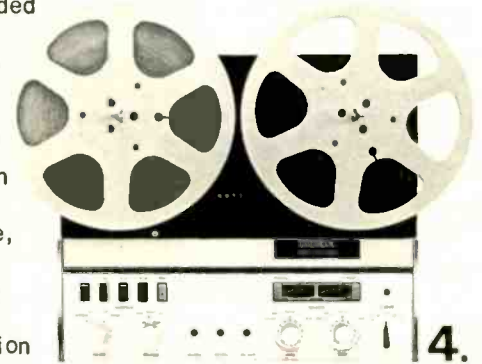
Today's audiophiles have an increasing awareness of true quality, and only a first-class product has a chance of being accepted by the serious recording enthusiast.



3.

The fact that REVOX tape recorders are in constant demand in such an increasingly quality-minded market is indicative of their high standard of construction and performance, but it also reflects the increasing sophistication of the serious audiophile, whose requirements can only be met by a small number of select products.

Our involvement in the design and production of professional equipment has led us to think in terms only of professional standards, even for our consumer products. This approach produces far-reaching effects; the performance of REVOX recorders with regard to durability, mechanical and electrical stability, and closely-held specification tolerances, will stand comparison with professional equipment, and this is our main contribution to the realization of true high fidelity sound reproduction in the home.



4.



5.

Our involvement in the design and production of professional equipment has led us to think in terms only of professional standards, even for our consumer products. This approach produces far-reaching effects; the performance of REVOX recorders with regard to durability, mechanical and electrical stability, and closely-held specification tolerances, will stand comparison with professional equipment, and this is our main contribution to the realization of true high fidelity sound reproduction in the home.



6.

Does your equipment meet the high standards you require?

Visit your nearest REVOX dealer or write to:

REVOX 155 MICHAEL DRIVE
SYOSSET, N.Y. 11791

1. DYNVOX (1950) 2. REVOX A36 (1954)
3. REVOX D36 (1960) 4. REVOX A77 MK I (1967)
5. REVOX A700 (1973) 6. REVOX A77 MK IV (1975)

5 Open-Reel Tape Machines

two-speed hysteresis synchronous motor (capstan drive) and 6-pole inner-rotor induction motor (reel drive). Operates at 7 1/2 & 3 3/4 ips. Wow & flutter less than 0.08% (W rms) at 7 1/2 ips. (S + N)/N 55 dB; dist. less than 1%. Response 40-20,000 Hz ±3 dB at 7 1/2 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 10 1/2" reels. 17 3/16" W × 17" H × 8 7/8" D \$650.00

REVOX

A700 Stereo Tape Recorder

Three-motor, three-speed (15, 7 1/2, 3 3/4 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 (1/4 or 1/2 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 (1 7/8/3 3/4, 3 3/4/7 1/2 or 7 1/2/15 ips), 2-track, 3-motor, 3-head deck. Will handle up to



10 1/2" reels. Response 30-20,000 Hz ±2.5 dB at 7 1/2 ips. Wow & flutter 0.08% peak at 7 1/2 ips. (S + N)/N 61 dB at 7 1/2 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. 16 5/8" H × 14 3/16" W × 7 1/8" 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 7 1/2 ips, 2-track \$1172.00
A77 MkIV Professional. Two-track, 7 1/2/15 ips version of A77 with Cannon connectors, transformer balanced line inputs & outputs, line amplifiers; specifications and options same as 1102 \$1490.00

SONY from SUPERSCOPE

TC-758 Stereo Tape Deck

Three-motor, automatic-reverse stereo tape deck; 7 1/2 & 3 3/4 ips speeds; will handle up to 10 1/2" reels; response 30-20,000 Hz ±3 dB (standard tape), 30-25,000 Hz ±3 dB (SLH-180 tape), both at 7 1/2 ips; features 4-digit counter; illuminated pause control with lock; illuminated VU meters; full complement of inputs & outputs; F & F heads; walnut base. 17 3/4" W × 17 1/8" H × 8 3/4" D \$999.95

TC-756 Stereo Tape Deck

Two-speed (15 & 7 1/2 ips) stereo deck; will handle up to 10 1/2" reels; frequency response 30-15,000 Hz at 7 1/2 ips, 30-22,000 Hz at 15 ips, both ±3 dB with standard tape; 30-25,000 Hz at 7 1/2 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 10 1/2" reel adapters, two stereo patchcords, 10 1/2" plastic reel, and head cleaning ribbon. Overall size 17 1/8" W × 17 3/4" H × 8 3/4" D \$899.95

TC-645 Stereo Tape Deck

Three-motor, three-head stereo deck with ferrite & ferrite heads; 7 1/2 & 3 3/4 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 7 1/2 ips; features 4-digit tape counter; illuminated VU meters; full complement of inputs and outputs; wow & flutter 0.07% at 7 1/2 ips, 0.11% at 3 3/4 ips; comes with two RK-74 stereo patchcords, 7" plastic reel. 14 7/8" W × 14 3/8" H × 8 7/8" D \$499.95

TC-270 Stereo Tape Recorder

Economy design featuring quarter-track stereo/mono play & record, three speeds (7 1/2, 3 3/4 & 1 7/8 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 7 1/2 ips. (S + N)/N 50 dB; wow & flutter 0.12% at 7 1/2 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. 20 1/4" W × 10 1/4" H × 15 1/4" D. Comes with carrying case. \$449.95

TC-377 Stereo Recorder Deck

Features 3-speed (1 7/8, 3 3/4 & 7 1/2 ips), 3-head, 4-track design. Response 30-20,000 Hz ±3 dB at 7 1/2 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 7 1/2 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. 16 1/2" W × 8 3/8" H × 15 1/2" D \$399.95

4-CHANNEL

TC-788-4 Quadradial Tape Deck

Records/plays 4 channel; 15 & 7 1/2 ips; will handle up to 10 1/2" 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, 10 1/2" empty reel, four RK-74 audio cables, head-cleaning ribbon; walnut base. 17 3/8" W × 22" H × 8 3/4" D \$1399.95

TC-388-4 Quadradial Tape Deck

Open reel, 2-speed (7 1/2 & 3 3/4 ips) 2- and 4-channel recorder. Response 20-25,000 Hz (standard tape) and 20-25,000 Hz ±3 dB (SLH-180 tape) at 7 1/2 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 7 1/2 ips (rms (NAB) weighted). Features pan pot on-off switch; mike attenuator (-20 dB); built-in reel locks; line output level control. 16 7/8" W × 19 3/4" H × 8 7/8" D. . . \$679.95

TC-277-4 Quadradial Tape Deck

Reel-to-reel, 3-speed (7 1/2, 3 3/4, 1 7/8 ips), 4-channel, in-line design. Response 50-16,000 Hz ±3 dB at 7 1/2 ips; S/N 52 dB; wow & flutter 0.12% at 7 1/2 ips. Has two heads (4-channel erase & record/play), four inputs, and four line



outputs (1/ch). Input sensitivity 0.06 V. 15 3/4" W × 7 3/4" D × 15 1/2" H \$469.95

TANDBERG

Series 10XD Stereo Tape Deck

Three-speed (15, 7 1/2, 3 3/4 ips), three-motor deck with Dolby bias-reduction system; will handle up to 10 1/2" 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 10 1/2" empty reel, NAB adapters, input-output connection cord. Remote control, pitch control kit, and rack mounting kit available as optional extras \$1399.00

Series 11 Tape Recorder

Portable (15 V, ten 1 1/2-V cells), mono design. Three speeds (7 1/2, 3 3/4, 1 7/8 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 7 1/2 ips, wow 0.1% at 7 1/2 ips, (S + N)/N 58 dB unweighted. 13" W × 10" D × 4".

Model 11-1. Full-track \$1195.00

Model 11-2. Two-track \$1195.00

A.c. power supply \$99.50

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

3500X Stereo Tape Deck

Three-speed (7½, 3¾ & 1⅞ ips); 4-head stereo deck; features company's noise-reduction sys-



tem; 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. \$599.00

Series 15 Tape Recorder

Mono design with built-in 4" x 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. 13¾" W x 11⅞" D x 6¾".

Model 1541. Four-track \$500.00

Model 1541F With foot remote control \$600.00



Model 1521. Two-track \$500.00

Model 1521F. With foot remote control \$600.00

TEAC

A-7300 Stereo Tape Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel deck. Features direct-drive d.c. capstan/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) \$1400.00

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) \$1450.00

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). 17¾" W x 20½" H x 8¾" D \$1050.00

A-6300 Auto-Reverse Stereo Deck

Two-speed (7½ & 3¾ ips), ¼-track, two-channel stereo with four heads (erase, record, playback, 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) ... \$1100.00

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). \$900.00

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 x 17⅞" W x 9¾" D \$750.00

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). 17¾" W x 15⅞" x 8½" D \$750.00

A-2300S. Same except without Dolby circuitry; S/N 65 dB (WTD at 3% THD) \$600.00

A-3300SX-2T Stereo Tape Deck

Two-speed (15 & 7½ ips), ½-track, 2-channel stereo or mono deck; one dual-speed hysteresis synchronous capstan motor; two eddy current induction reel motors; three heads; will handle 7" & 10½" reels; wow & flutter 0.04% (15 ips), 0.06% (7½ ips) NAB weighted; S/N 60 dB; frequency response 30-26,000 Hz ±3 dB at 15 ips, 30-24,000 Hz ±3 dB at 7½ ips; THD 1% at 1 kHz; independent left/right channel source/tape selectors; VU-type level meters; manual cue lever; separate bias and equalization selectors; 17¾" W x 17⅞" H x 8½" D \$750.00

A-4300SX Auto-Reverse Stereo Deck

Two speed (7½ & 3¾ ips), ¼-track, 2-channel stereo deck; dual-speed hysteresis synchronous capstan motor; two eddy-current induction reel motors; four heads (erase, record, forward play, and reverse play); will handle 7" & 5" reels; wow & flutter 0.06% at 7½ ips; S/N 58 dB; frequency response 30-28,000 Hz; 40-24,000 Hz ±3 dB at 7½ ips; THD 1% at 1 kHz; VU-type level averaging meters; automatic reverse; independent level controls for mic/line mixing; left/right channel record mode selectors for making mono recordings and adding sound-on-sound effects with external equipment; 19¼" W x 17⅞" W x 8½" D \$700.00

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). 17¾" W x 17⅞" H x 8½" D .. \$700.00

A-3399S-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) \$750.00

A-2300SX Stereo Tape Deck

Two-speed (7½ & 3¾ ips), ¼-track, 2-channel stereo deck; dual-speed hysteresis synchronous capstan motor; two eddy-current induction reel motors; three heads; will handle 7" reels; wow & flutter 0.08% W rms at 7½ ips; S/N 58 dB; frequency response 40-24,000 Hz ±3 dB at 7½ ips; THD 1% at 1 kHz; 2-pos. bias and equalization selectors; independent dual-concentric input level controls for mic/line mixing; VU-type level averaging meters; 17¾" W x 15⅞" H x 8½" D \$600.00

4-CHANNEL

A-3340S 4-Channel Tape Deck

Multi-channel, three-motor, three-head stereo tape deck with 15 & 7½ ips speeds. Features

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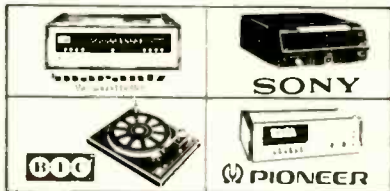
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5

Open-Reel Tape Machines



"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 7 1/2 ips; wow & flutter 0.04% at 15 ips, 0.06% at 7 1/2 ips. S/N 65 dB (WTD at 3% THD). 17 3/16" W x 20 1/2" H x 8 3/4" D \$1200.00

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 7 1/2 or 3 3/4 ips; will accept up to 7" reels; wow & flutter 0.08% at 7 1/2 ips; response 40-18,000 Hz at 7 1/2 ips. S/N 63 dB (WTD at 3% THD). 17 3/16" W x 18 3/4" H x 8 3/4" D \$900.00

A-2340SX Multichannel Tape Deck

Two-speed (7 1/2 & 3 3/4 ips), 4-track with "Simul-Sync;" one dual-speed hysteresis synchronous capstan motor; two eddy-current induction reel motors; three heads; will handle 7" & 5" reels; wow & flutter 0.08% at 7 1/2 ips; S/N 55 dB; frequency response 30-22,000 Hz at 7 1/2 ips; THD 1.0% at 1 kHz; independent source/tape output selector each channel; four VU-type level averaging meters; four independent record mode selectors; four front-panel mic inputs; two stereo headphone jacks; independent input level controls for mic/line mixing for each for four channels; record indicator lights for each channel; digital tape counter; 2-channel/4-channel playback selector; 18 3/4" W x 17 3/16" H x 8 3/4" D \$850.00

TELEX

Lab Series 2001 Tape Deck

Two-speed (7 1/2, 3 3/4 ips), 4-track, 3-head, 2-motor stereo design. Will handle up to 8 1/4" reels. Response 45-18,000 Hz ±2 dB, wow & flutter 0.18% at 7 1/2 ips, (S + N)/N 52 dB. Has VU meters, automatic shutoff, pause control, counter, solenoid operation, and monitoring facilities. 14 1/2" x 19 1/8" x 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 (7 1/2, 3 3/4, 1 7/8 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. 15 3/16" W x 12 1/4" H x 7 3/8" D \$309.95

4-CHANNEL

PT-884 2- and 4-Channel Tape Deck

Reel-to-reel type; 4 ch. record/playback. Three speeds (1 7/8, 3 3/4 & 7 1/2 ips), 3 heads. Response 30-20,000 Hz ±3 dB with low-noise tape. (S + N)/N 50 dB. Wow & flutter 0.09% at 7 1/2 ips. Has regular & low-noise tape switch. 15 3/4" x 17 1/2" H x 8 3/4" D \$499.95

UHER

SG-630 Logic Stereo Deck

Three-speed (1 7/8, 3 3/4 & 7 1/2 ips) stereo deck; Omega drive system for stabilized tape speed (eliminates pinch roller, drive couplings, springs, and function wheels); four-motor drive system with d.c. hub motors, electronically regulated motor for capstan drive, and servo motor; optional half- and quarter-track head assemblies available; built-in strobe disc; speed control; peak-reading meter; built-in "Dia-Pilot" for recording signal impulses and automatic slide-projector control; switchable peak-level limiter; separate stereo headphone



power with its own volume, bass, and treble controls, A/B monitoring, remote-control facilities; S/N 67 dB (two-track at 7 1/2 ips); wow & flutter 0.02% \$1100.00

SG-520 Four-Speed Recorder

Four-speed (7 1/2, 3 3/4, 1 7/8 & 1 3/16 ips) recorder; interchangeable head assemblies for two- or 4-track operation; remote capability for start/stop; can be sound-activated; end-of-tape stop; on/off automatic level control switch; bass & treble controls; 4-digit index counter; frequency response 30-20,000 Hz, wow & flutter 0.02% W rms (both at 7 1/2 ips); 6 W rms/ch into 8 ohms (30-20,000 Hz) at 1% THD; S/N 65 dB (two-track at 7 1/2 ips); can be operated vertically or horizontally; comes with plexiglass cover \$600.00

SG-510 Stereo Recorder

Four-track, two-speed (7 1/2 & 3 3/4 ips) recorder; will handle 7" reels; frequency response 40-20,000 Hz (7 1/2 ips); wow & flutter 0.08%; S/N 58 dB; built-in speakers; amplifier power 4 W/ch at 4 ohms; features peak-reading meters; automatic end-of-tape shut off \$399.95

STEREO DIRECTORY & BUYING GUIDE

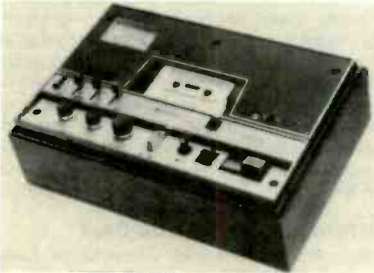
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CASSETTE TAPE MACHINES

ADVENT

201 Dolbyized Cassette Deck

Play/record stereo design. Response 35-14,500 Hz at ± 2 dB. THD less than 1 1/2% 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. 4 7/8" H x 13 3/4" W x 9 1/4" D. Oiled-walnut cabinet \$340.00

AIWA

AD-1800 Stereo Cassette Deck

Features built-in Dolby and DNL noise-reduction systems; wow & flutter 0.05%; S/N 65 dB (Dolby, DNL on, CrO₂ tape); frequency response 30-14,000 Hz (LH tape), 30-17,000 Hz (CrO₂ tape), 30-18,000 Hz (FeCr tape); fast-forward & rewind 95 sec (C-60 tape); quick review/cue control; oil-damped cassette ejection; built-in two-step peak level indicator; 16 1/16" W x 11 5/8" D x 6" H \$450.00

AD-1600 Dolbyized Cassette Deck

Dolby noise-reduction system; interlocked Dolby-MPX filter switch; memory rewind; 3-step tape selector switch; hysteresis synchronous motor; ferrite guard head; full automatic stop; LED tape-run indicator; quick review/cue control; oil-damped cassette ejection; wow & flutter 0.07%; S/N 62 dB (Dolby on, FeCr tape); frequency response 30-14,000 Hz (LH tape), 30-17,000 Hz (CrO₂ and FeCr tape); fast-forward & rewind 90 sec (C-60 tape); 120-V, 60-Hz operation; 16 1/16" W x 11 5/8" D x 6" H \$360.00

AD-6300 Dolbyized Cassette Deck

Front-loading type; Dolby noise-reduction system; interlocked Dolby-MPX filter switch; 3-step bias & equalizer switches; oil-damped cassette ejection; peak level indicator lights up at +5 dB level; quick review/cue control; full automatic stop; d.c. servo motor; wow & flutter 0.09%; S/N 60 dB (Dolby on, FeCr tape); frequency response 30-14,000 Hz (LH tape), 30-16,000 Hz (CrO₂, FeCr tape); permalloy head; fast-forward & rewind 85 sec (C-60 tape); 16 7/16" W x 11 3/16" D x 6 3/16" D \$250.00
AD-6500. Similar to AD-6300 except wow & flutter 0.07%; S/N 62 dB; ferrite guard head; frequency controlled servo motor; fast-forward 95 sec, rewind 90 sec; 17 3/4" W x 11 3/16" D x 6 3/16" H \$370.00

AD-1250 Dolbyized Cassette Deck

Slant-type housing; 3-step bias & equalizer switches for all types of tapes; oil-damped cassette ejection system; quick review/cue control for speedy replay; full automatic stop mechanism; d.c. servo motor; wow & flutter 0.09%; S/N 60 dB (Dolby on, FeCr tape); frequency response 30-14,000 Hz (LH tape), 30-16,000 Hz (CrO₂ and FeCr tape); permalloy head; fast-forward & rewind time 85 sec (C-60 tape); input sensitivity: line 50 mV/100,000 ohms, DIN 0.1 mV/2700 ohms; mic 0.3 mV/200-10,000 ohms; output level: line & DIN 0.775 V/50,000 ohms (0 VU), headphone 1 mW/8 ohms; 15 7/16" W x 10 7/8" D x 5 7/8" H \$230.00

AKAI

GXC-570D Stereo Cassette Deck

Vertical-style front-loading stereo cassette deck with Dolby; dual-process Dolby noise re-



duction; GX combination record/playback head for tape/source monitoring plus one erase head; a.c. servo capstan motor plus two d.c. motors for fast-forward and rewind; closed-loop dual capstan drive system, Sensi-Touch; full-logic function controls; automatic playback repeat, pitch control for playback ($\pm 5\%$); meters switchable from VU to peak level; memory rewind; mic/line mixing; detent-type input/output controls; remote-control operation (with optional RC-18); electrically operated top control panel; damped cassette carriage; wow & flutter 0.06% rms; S/N 62 dB (with Dolby above 5 kHz); frequency response 30-19,000 Hz (FeCr tape); dist. 1% (1000 Hz); 17.3" W x 10" H x 9" D \$800.00

GXC-75D Auto-Reverse Deck

Four-track, two-channel system; response 30-16,000 Hz ± 3 dB (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 x 5.8" H x 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/mic mixing; peak-level indicator; one-touch tape selector; limiter recording circuit; full automatic stop; two VU meters; two mic 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. \$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; wow & flutter 0.08% rms; S/N 50 dB (at peak recording level of +3 VU); 10 dB improvement (Dolby on) above 5000 Hz; frequency response 30-17,000 Hz (FeCr tape); dist. 1.5% (1000 Hz) \$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; wow & flutter 0.07% rms; S/N 50 dB (at peak recording level of +3 VU); 10 dB improvement (Dolby on) above 5000 Hz; frequency response 30-17,000 Hz (FeCr tape); dist. 1.5% (1000 Hz); 17.3" W x 11.8" D x 5.6" H \$375.00

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" x 4.6" x 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 x 4.3" H x 8.9" D \$199.95

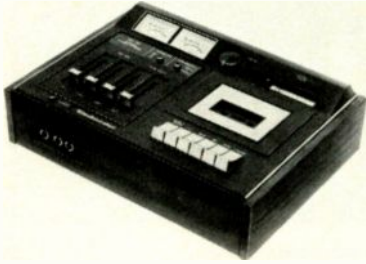
DOKORDER

MK-50 Dolbyized Cassette Deck

Features molybdenum record/play head; response 30-18,000 Hz (with CrO₂) tape; Dolby

6

Cassette Tape Machines



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 x 16" W x 11 3/4" D \$199.95

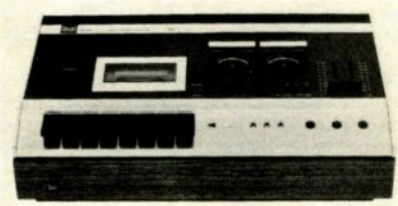
DUAL

C919 Cassette Deck

Separate mic & line-level controls for mixing; output level controls for headphones and overall output; FM and standard Dolby circuitry; separate bias & equalization controls for ferric-oxide, chrome, and ferrichrome tapes; memory stop; illuminated tape motion indicators; ballistically damped VU meters; inter-mode switching without going through stop; viscous-damped cassette eject; frequency response 20-15,000 Hz ± 1.5 dB; to 17,000 Hz ± 3 dB; wow & flutter 0.07% W rms; speed variation $\pm 0.05\%$ \$450.00

Autoreverse Cassette Deck

Features automatic reverse, continuous play-



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 ferric 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 CrO₂ tape); 20-14,000 Hz ± 1.5 dB (to 15,500 Hz with CrO₂ tape); wow & flutter 0.07% W rms ... \$450.00

HARMAN/KARDON

HK2000 Dolbyized Cassette Deck

Stereo cassette recorder deck with built-in Dol-

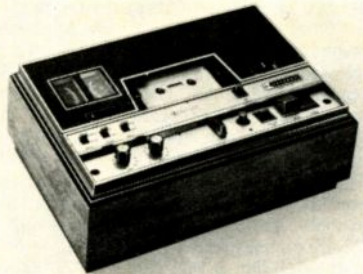


by noise-reduction circuit. Has front-panel bias switch for standard, low-noise, and chromium-dioxide tapes. Features memory relay, peak-reading VU meters, sliding controls for play-back & record level, and mike/line mixing. Response 30-17,000 Hz (CrO₂); wow & flutter 0.07% (weighted); speed variation 1%. Hard Permalloy head; peak-reading VU meters with LED overload indicator. 15 3/8" W x 5 3/8" H x 10 1/4" 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-



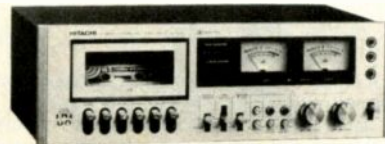
just Dolby system; a bias & equalizing switch for chromium-dioxide or standard tapes; VU meters; and mike inputs; response 40-14,000 Hz ± 3 dB (CrO₂ tape); hum & noise -58 dB (with Dolby); wow & flutter 0.25% rms; dist. 0.2% (electronics only). Walnut-stained veneer base.

Kit (mail order) \$269.95

HITACHI

D-800 Dolbyized Cassette Deck

Three-head, front-loading stereo deck; 4-track, 2-channel record/playback; frequency response



20-20,000 Hz ± 5 dB (chrome), 20-16,000 Hz ± 5 dB (FeCr), 20-15,000 Hz ± 5 dB (UD) tapes; S/N 63 dB (Dolby on), 55 dB (Dolby off); wow & flutter 0.05% W rms; R&P combination record/playback head, ferrite erase head; input sensitivity: 0.25 mV/300-5 k (mic), 50 mV/100 k (line), 0.25 mV/12 k (DIN); output level 0.5 V; 17 1/8" W x 11 7/8" D x 5 3/4" H \$479.95

D-410. Similar to D-800 but with two heads; frequency response 30-16,000 Hz (chrome), 30-13,000 Hz (normal) tapes; wow & flutter 0.08%; S/N 60 dB (Dolby on), 52 dB (Dolby off); 16 7/16" W x 10" D x 5 3/16" H \$449.95

D-3500 Three-Head Cassette Deck

Top-load, four-track, two-ch deck; R&P ferrite recording & playback heads, ferrite erase head; 4-pole hysteresis synchronous motor; response 20-20,000 Hz (CrO₂), 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. 17 1/2" x 5 3/4" x 11 1/2" \$449.95

D-2360 Stereo Cassette Deck

Top-load, four-track, two-ch deck; all ferrite recording & playback heads, ferrite erase head; electrically controlled motor; response 30-16,000 Hz (CrO₂), 30-14,000 Hz (standard); crosstalk 60 dB; S/N 58 dB (Dolby on), 50 dB (Dolby off); wow & flutter 0.13% W rms; distort-

tion 2.0% (1 kHz, 0 VU); output voltage 0.5 min. 15 3/8" x 3 3/4" x 9 1/2" \$199.95

D-2330 Stereo Cassette Deck

Top-load, four-track, two-ch deck; Permalloy recording & playback heads, ferrite erase head; electrically controlled motor; response 40-14,000 Hz (CrO₂) 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. 13 1/4" x 3 3/4" x 8 7/8" \$149.95

JVC

CD-1669-2 Stereo Cassette Deck

Frequency response 30-19,000 Hz (30-16,000 Hz ± 3 dB) with chrome tape; S/N 53 dB at 1 kHz (from peak level) without ANRS, improved 5 dB at 1 kHz & 10 dB at 5 kHz with ANRS; crosstalk 65 dB at 1 kHz; channel separation 35 dB at 1 kHz; HD 1.7% at 1 kHz; wow & flutter 0.07% W rms; "Sen-Alloy" head for play/record, ferrite head for erase; hysteresis synchronous a.c. motor for capstan, d.c. motor for reels; speed accuracy +1.5%, -0.5%; inputs: mike (2), line in (2), DIN; outputs: line out (2), headphones, DIN; solenoid-operated full-logic control circuit; CdS photocell full auto-stop mechanism; features normal/chrome tape equalizer circuits, peak-level indicator, auto-stop/auto-play memory counter; ANRS noise reduction system; 16 7/8" W x 12 1/8" D x 5 5/8" H \$499.95

CD-1970 Stereo Cassette Deck

Front-loading, front-control deck; frequency response 20-18,000 Hz (30-16,000 Hz ± 3 dB)



with chrome tape; 20-17,000 Hz (40-15,000 Hz ± 3 dB) with normal tape; S/N 52 dB at 1 kHz (from peak level) without ANRS; crosstalk 65 dB at 1 kHz, channel separation 35 dB at 1 kHz; HD 1.7% (chrome tape), 1.2% (normal tape) both at 1 kHz; wow & flutter 0.09% W rms; "Sen-Alloy" head for play/record, ferrite head for erase; frequency controlled d.c. servo motor; inputs: mike (2), line in (2), DIN; outputs: line out (2), DIN, headphones; 16 7/8" W x 11 3/4" D x 6 1/4" H \$399.95

CD-1636 Portable Cassette Deck

For home or portable applications; 12 hrs continuous recording on one set of "D" batteries or auto battery; stabilizer circuits for maintaining exact power; "Sen-Alloy" head; stereo/mono mode switch permits recording mono sound on both left & right channels simultaneously; electronic all-mode auto-stop mechanism; bias & equalization independently selectable; master recording level control with 20 detent stop positions; VU meter check light and battery checker switch; 4" monitor speaker; headphone jack; frequency response 25-18,000 Hz (45-16,000 Hz ± 3 dB) with chrome tape; S/N 54 dB at 1 kHz (from peak levels) without ANRS; crosstalk 65 dB at 1 kHz, channel separation 35 dB at 1 kHz; same inputs & outputs as CD-1970; power requirements 120 V, 60 Hz a.c.; six "D" cells, 9 V d.c.; 14 1/8" W x 9 3/8" D x 3 7/8" H; weight 10.1 lbs without batteries \$349.95

CD-S200 Stereo Cassette Deck

Front-loading cassette deck; frequency response 20-18,000 Hz (40-16,000 Hz ± 3 dB) with chrome tape; S/N 52 dB at 1 kHz (from peak level) without ANRS; crosstalk 65 dB at

1 kHz; channel separation 35 dB at 1 kHz; HD 1.7% (chrome tape), 1.3% (normal tape) both at 1 kHz; wow & flutter 0.09% W rms; features "Sen-Alloy" head for record/play, ferrite head for erase; electronic governor d.c. motor; same inputs & outputs as CD-1970; 19³/₄" W x 13³/₈" D x 6¹/₂" H \$299.95
CD-1920. Similar to CD-S200 except cronios head for record/play; 15³/₈" W x 12³/₈" D x 5¹/₁₆" H \$249.95

CD-1770 Stereo Cassette Deck

Frequency response 20-18,000 Hz (30-16,000 Hz ±3 dB) with chrome tape; S/N 52 dB at 1 kHz (from peak level) without ANRS; crosstalk 65 dB, channel separation 35 dB, HD 1.5% (chrome tape), 1.2% (normal tape) all at 1 kHz; wow & flutter 0.5% W rms; "Sen-Alloy" head for play/record, ferrite head for erase; frequency controlled d.c. servomotor; 16¹/₃₂" W x 10⁷/₈" D x 3¹/₃₂" H \$229.95

CD-1740 Stereo Cassette Deck

Dolbyized cassette deck; cronios & ferrite heads; frequency response 30-15,000 Hz (40-14,000 Hz ±3 dB) with chrome tape; S/N 50 dB at 1 kHz (from peak level) without Dolby; crosstalk 65 dB; HD 2% both at 1 kHz; electronic governor d.c. motor; bias & equalization selectable; slide level controls for left & right channels; tape run indicator; full auto-stop mechanism; 15¹/₁₆" W x 8⁷/₁₆" D x 3¹/₁₆" H \$199.95

KENWOOD

KX-920 Dolbyized Cassette Deck

Top-load stereo cassette deck; Dolby noise-reduction circuit; 4-track, 2-channel stereo/



mono; super-ferrite core record/play head; separate erase head; high-torque d.c. servo motor; precision drive belt; wow & flutter 0.08% W rms; bias & equalization for all tape types; frequency response 40-14,000 Hz (chrome); S/N 62 dB (chrome tape/Dolby in); extra 10 dB recording headroom; memory rewind; cue & review; built-in 25-μs de-emphasis for Dolby FM, pitch control; VU meter with 2-pos. time constant; mic/line mixing. \$299.95
KX-720. Similar to KX-920 but without mic/line mixing facility \$259.95

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 (CrO₂); two-way bias switch; three-way equalization switch to accommodate all tape types; 10 dB recording headroom above 0 VU. 16¹/₁₆" W x 5¹/₂" H x 11¹/₁₆" D \$219.95

LAFAYETTE

RK-D200 Dolbyized Cassette Deck

Front-loading play/record deck; electronically controlled d.c. motor; automatic shutoff in all modes; two VU meters plus LED peak-level indicator; memory rewind; copies FM Dolby broadcasts; independent bias & equalization controls; response 30-13,000 Hz; S/N 60 dB (with Dolby); channel separation 30 dB; input

sensitivity: mic 0.25 mV, line 65 mV; fast-forward & rewind time 1.5 min; 3-digit counter; stereo record & output level controls; headphone jack; 17⁷/₁₆" W x 12" D x 6⁷/₈" H. \$199.95

RK-D100 Dolbyized Cassette Deck

Play/record deck; automatic shut-off in play & record modes; separate record/playback level meters; left/right channel record-level controls; switchable record bias; response 50-12,000 Hz; wow & flutter 0.25%; S/N 55 dB (with Dolby); channel separation 30 dB; d.c. motor; 3-digit tape counter; headphone jack; 14" W x 9⁵/₈" D x 3⁵/₈" H \$159.95

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. 12⁷/₈" x 9¹/₁₆" x 3¹/₁₆" \$109.95

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. 5⁷/₈" x 3¹/₈" x 8³/₈" \$69.95

LENCO

C-2003 Dolbyized Cassette Deck

Direct-drive, dual-capstan, three-head stereo cassette deck; electronic control of all mechanical functions; logic-controlled tape transport; automatic tape selection for chrome tapes, manual selection for other types; off-the-tape monitoring facilities; tape motion sensor; illuminated 3-digit tape counter with zero stop & memory rewind; tape speed control; during shutoff pressure rollers are disengaged; separate IC Dolby decoders for record & playback; two VU meters; mic sockets for DIN plugs, for electret mic; jack for high or low imp. stereo phones; separately adjustable headphone volume; frequency response 30-18,000 Hz ±3 dB (without Dolby); S/N 60 dB (with Dolby); wow & flutter 0.10% \$695.50

PAC-10 Automatic Cassette Changer

Stereo cassette deck capable of playing up to 10 cassettes in succession; indicator lights for tracks #1 & #2, automatic or single play; on/off, start, reject operating buttons; output imp. 25 ohms; output voltage 350 mV; changeover speed approx. 10 sec. \$579.95

MARANTZ

5420 Stereo Cassette Deck

Ferrite heads; d.c. servo motor; wow & flutter 0.07% NAB (weighted); response 30-17,000 Hz ±3 dB (FeCr tape), 30-16,000 Hz ±3 dB (chrome); S/N 60 dB (Dolby on), 52 dB (Dolby



off); has two left & two right channel line inputs; two left & two right channel mic inputs; mic/line mixing; pan pots; master level control; 3-digit tape counter with memory; total shutoff; peak LED indicators; Dolby noise-reduction system; built-in adjustable stand; 17⁷/₁₆" W x 12³/₄" D x 6¹/₂" H \$429.95
5400. Same as 5420 except without Dolby circuitry \$349.95

5220 Stereo Cassette Deck

Ferrite heads; d.c. servo motor; wow & flutter 0.08% NAB (weighted); response 35-16,000 Hz ±3 dB (FeCr), 35-14,000 Hz ±3 dB (chrome), 45-13,000 Hz ±3 dB (standard tape); S/N 58 dB (Dolby on), 50 dB (Dolby off); has left & right channel line and mic inputs; mic/line mixing; master level control; 3-digit tape counter with memory; total shutoff; peak overload indicator; front-load design; 16³/₈" W x 12¹/₄" D x 5³/₈" H \$369.95
5200. Same as 5220 except without Dolby circuitry \$299.95

5*20 Stereo Cassette Deck

Ferrite heads; d.c. servo motor; frequency response 35-16,000 Hz ±3 dB (FeCr), 35-14,000 Hz ±3 dB (chrome), 45-13,000 Hz ±3 dB (standard tape); wow & flutter 0.09% NAB (weighted); S/N 58 dB (Dolby on), 50 dB (Dolby off); left & right channel line and mic inputs; mic/line mixing; master level control; 3-digit tape counter; total shutoff, peak overload indicator; built-in adjustable stand \$329.95

MERITON

HD-500 Stereo Cassette Deck

Plays/records stereo; features tape selector for standard/chromium-dioxide tapes; response 30-15,000 Hz (CrO₂), 30-12,000 Hz (standard); illuminated VU meters; pause control; limiter switch; pushbutton keyboard controls. Walnut veneer hardwood cabinet with brushed aluminum. 14" W x 3¹/₂" H x 9³/₈" D \$109.95

NAKAMICHI

1000 3-Head Cassette Deck

Stereo record/play deck has response of 35-20,000 Hz ±3 dB (CrO₂) tape. Wow & flutter less than 0.10% (weighted peak); (S + N)/N 65 dB (Dolby in); THD 1.5% 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 shutoff, 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. 11¹/₁₆" H x 20¹/₁₆" W x 8⁷/₁₆" D \$1300.00

700 3-Head Cassette Deck

Same as the Model 1000 except does not have automatic rewind or DNL. 10¹/₁₆" H x 20¹/₂" W x 5⁷/₈" D \$850.00

You're looking at our attitude about cassette decks. The HK2000.

harman/kardon

We make only one cassette deck. We certainly are capable of making more. Perhaps some day we will. But it's unlikely — unless there are compelling mechanical or sonic reasons for doing so.

We have an attitude about high fidelity instruments: to give the finest expression to every function of music reproduction. And wherever we feel we have something to contribute, to do so without compromise. The HK2000 (with Dolby*, of course), represents our attitude about cassette decks.

Its predecessor (the HK1000), was evaluated by High Fidelity Magazine as, "the best so far." When our engineering explorations suggested that improvements were feasible, we replaced it. With the HK2000.

We consider that the cassette deck has a definite and honorable utility as a means of conveniently capturing, retaining and reproducing material from phonograph records, tapes or radio broadcasts.

With one major caveat. It must perform on a level equivalent to the source.

The HK2000's specifications offer measurable evidence of its quality. For example: wow and flutter levels of 0.07%.

But performance specifications are only one influence on sound quality. Just as in all Harman Kardon amplifiers and receivers, the wide-band design characteristic of the HK2000 produces sound quality that transcends its impressive specifications.

It utilizes narrow gap, hard-faced, permalloy metal heads (the only heads used in professional studio tape machines) for extended frequency response and low distortion. Low frequency response is so linear, that the HK2000 required the incorporation of a sub-sonic filter control that can be used to remove signals issued by warped discs.

These few factors, not individually decisive in themselves, indicate the attitude with which we conceived, designed and built the HK2000 — the only cassette deck we make.

There is, of course, a good deal more to say. Please write *directly* to us. We'll respond with information in full detail: Harman Kardon, 55 Ames Court, Plainview, New York 11803.



6 Cassette Tape Machines

DS-170 Digital Timer

Designed for unattended record/play with Nakamich Models 1000 & 700; start/stop times may be set for 10 min intervals; connects to remote-control socket of cassette deck; aux. power outlets for other components... \$170.00

600 2-Head Cassette Console

Stereo record/play deck; IM suppressor circuitry; user-accessible bias, record level, and IM suppressor calibration controls; separate bias & equalization switches; built-in 400-Hz test tone; Dolby noise reduction circuitry; MPX filter switch; master record-level control; tape counter with memory; 47-dB peak-level meters; d.c. servomotor drive and self-start for unattended recording; frequency response 40-18,000 Hz ± 3 dB; wow & flutter 0.08% W rms (0.12% weighted peak); S/N 68 dB (400 Hz, 3% THD with IM suppressor & Dolby); THD 0.5%, 0 dB with IM suppressor; input 50,000 ohms, 60 mV; output 580 mV (400 Hz, 0 dB); 15 $\frac{1}{4}$ " W \times 9 $\frac{1}{2}$ " D \times 6 $\frac{3}{4}$ " H; \$500.00
600B. Same except in black matte finish. \$520.00

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 63 dB (CrO₂ tape with Dolby); THD 1.5% 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 \times 4 $\frac{1}{2}$ " H \times 10" D \$400.00
550. Similar to Model 500 except S/N 60 dB (CrO₂ 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 $\frac{1}{4}$ " W \times 3 $\frac{1}{2}$ " H \times 13 $\frac{3}{4}$ " D; 11 $\frac{1}{4}$ pounds without battery (battery life 15 hours continuous use) \$500.00

350 Universal Cassette Deck

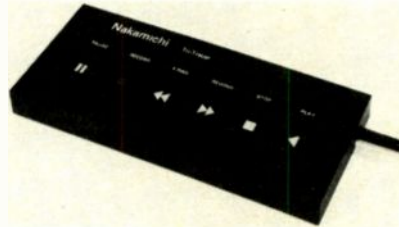
Stereo record/playback deck; operates from a.c. power pack (included), 12-V d.c. source in cars, boats, planes (mounting bracket included), or from built-in rechargeable battery (in optional carrying case); Dolby noise reduction circuitry; tape selector; full automatic shutoff; 3 low-imp. mic inputs with mixing; d.c. servomotor drive; frequency response 40-15,000 Hz ± 3 dB; wow & flutter 0.08% W rms; S/N 58 dB (with Dolby); 9 $\frac{1}{2}$ " D \times 7 $\frac{1}{3}$ " W \times 3 $\frac{1}{2}$ " H; weight 7 lbs \$350.00
Carrying Case. Includes built-in 12-V lead-acid battery & recharging circuit; 12 hr charge for 6 hr continuous recording (with 350); 10 $\frac{1}{2}$ " H \times 9 $\frac{1}{2}$ " W \times 3 $\frac{3}{4}$ " D; 4.5 lbs \$100.00

250 Cassette Play-Only Deck

Designed for use with ADS subminiature bi-

amplified speaker systems; Dolby noise reduction circuitry; selectable playback equalization; full auto shutoff; d.c. servomotor drive; volume, tone, and balance controls; includes bracket for underdash mounting & cable for interfacing with ADS system; playback response 40-17,000 Hz ± 3 dB; wow & flutter 0.08% W rms; S/N 62 dB (with Dolby); output 580 mV; 9 $\frac{1}{2}$ " D \times 7 $\frac{1}{3}$ " W \times 3 $\frac{1}{2}$ " H \$275.00
 With a.c. power pack \$300.00

Remote Control Box



Electronic touch control (duplicating control system on the 1000 & 700). Controls all tape motion, including record, within 15 ft. . \$50.00

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 Afrosmosia wood sides; sloped front panel. 14" W \times 5" H \times 9 $\frac{1}{2}$ " D. \$598.50
102 MkII. Same as Model 103 but does not include mixing facilities \$549.50

PIONEER

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. 17 $\frac{1}{8}$ " W \times 7 $\frac{7}{8}$ " H \times 12 $\frac{3}{8}$ " D \$450.00

CT-F8282 Dolbyized Cassette Deck

Front-loading 2-motor solenoid-operated cassette deck with Dolby noise-reduction circuit; peak-level indicator; ferri-chrome/chrome/standard bias and equalization; memory stop; fast wind, within 65 seconds for C-60; frequency response 20-16,000 Hz (standard tape), 20-17,000 Hz (chromium-dioxide tape), 20-17,000 Hz (ferri-chrome tape); wow & flutter 0.07% W rms max; S/N 53 dB (Dolby out), 63 dB (Dolby in); HD 1.5% max. Sensitivity: line input 60 mV; mic 0.2 mV; line output 0.45 V; 17 $\frac{3}{4}$ " W \times 13 $\frac{3}{32}$ " D \times 7 $\frac{1}{32}$ " H \$400.00

CT-F7272 Dolbyized Cassette Deck

Front-loading cassette deck with Dolby noise-reduction system; automatic chrome detection; memory stop; fast wind, within 85 seconds for C-60; frequency response 30-14,000 Hz (standard tape), 30-17,000 Hz (chromium-dioxide tape), 30-16,000 Hz (ferri-chrome tape); wow & flutter ± 0.2 % (DIN); S/N 52 dB (Dolby out), 62 dB (Dolby in); HD 1.7% max. Sensitivity: line input 64 mV; mic 0.23 mV; line output 0.45 V. 15 $\frac{27}{32}$ " W \times 13 $\frac{1}{2}$ " D \times 6 $\frac{31}{32}$ " H \$320.00

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-



sion cueing. Response 30-16,000 Hz (CrO₂); 30-13,000 Hz (standard) tape; (S + N)/N 58 (with Dolby), 48 dB (without); wow & flutter 0.12% W rms; bias frequency 85 kHz. 120-V, 60-Hz operation. 15 $\frac{5}{8}$ " W \times 3 $\frac{3}{4}$ " H \times 9 $\frac{1}{2}$ " D \$270.00

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 $\frac{5}{8}$ " W \times 3 $\frac{3}{4}$ " H \times 9 $\frac{1}{2}$ " D \$250.00

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: 13 $\frac{3}{4}$ " W \times 5 $\frac{5}{8}$ " H \times 11 $\frac{1}{8}$ " D \$200.00

RADIO SHACK

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. 4 $\frac{3}{16}$ " H x 14 $\frac{7}{16}$ " W x 9 $\frac{1}{16}$ " D \$199.95

SCT-10 Stereo Cassette Deck

Pushbutton control of all functions including on/off, pause & rewind, stop/eject; hysteresis synchronous motor; response (with "Super-tape") 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 $\frac{1}{16}$ " H x 14 $\frac{7}{16}$ " W x 8 $\frac{3}{4}$ " D \$99.95

ROYAL SOUND

RS-5800 Dolbyized Cassette Deck

Vertical stereo cassette deck; Dolby noise-reduction circuit; d.c. servo motor (play & record), d.c. mechanical governor motor (fast-forward & rewind); frequency response 40-15,000 Hz (chrome tape); wow & flutter 0.2% W rms; distortion 1.5%; S/N 55 dB (Dolby on); crosstalk 45 dB; fast-forward & rewind 85 sec (C-60); features eject button, memory stop, auto play, auto repeat, timer record & play, tape selector buttons, mic level volume & input level volume controls, level meter, peak indicator lamp, stereo headphone jack; 220/240 117 V, 50/60 Hz; 470 mm W x 320 mm D x 135 mm H \$300.00

RS-5700 Dolbyized Cassette Deck

Dolbyized stereo deck; frequency response 40-12,000 Hz ± 3 dB; wow & flutter 0.15% W rms; S/N 50 dB (play), 48 dB (record); dist. 2% at 1 kHz; Permalloy record head, ferrite erase head; has full complement of inputs, outputs & controls; 240/220/117 V, 50/60 Hz a.c.; 395 mm W x 250 mm D x 95 mm H \$200.00

SANKYO

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 x 3 $\frac{1}{4}$ " H x 10" D \$199.95

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

SANSUI

SC-3000 Stereo Cassette Deck

Front-loading stereo deck with fail-safe insertion device; 4-track/2-channel record/play-back; Permalloy record/play head, ferrite erase head; electronically controlled d.c. motor; direct-change mode levers; auto shutoff; memory rewind; IC Dolby circuitry; selectable equalization circuit; LED peak-level indicators; two VU meters; wow & flutter 0.09% W rms; frequency response 30-11,000 Hz ± 3 dB (normal), 35-13,000 Hz ± 3 dB (chrome); S/N 50 dB (Dolby out), 60 dB (Dolby in); simulated walnut-

grain cabinet; 18 $\frac{3}{8}$ " W x 11 $\frac{7}{8}$ " D x 7 $\frac{1}{2}$ " H \$380.00
SC-3003. Same except 17 $\frac{3}{8}$ " W x 11 $\frac{7}{8}$ " D x 6 $\frac{1}{2}$ " H \$370.00
SC-2000. Similar to SC-3000 except wow & flutter 0.1% W rms; frequency response 35-12,000 Hz ± 3 dB (chrome); \$310.00
SC-2002. Same as SC-2000 except 17 $\frac{3}{8}$ " W x 11 $\frac{7}{8}$ " D x 6 $\frac{1}{2}$ " \$300.00

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 (CrO₂); (S + N)/N 50 dB, Dolby out, but with chromium-dioxide tape. 16 $\frac{1}{16}$ " W x 4 $\frac{1}{16}$ " H x 11 $\frac{3}{16}$ " D ... \$280.00

SANYO

RD8400 Cassette/8-Track Deck

Front-loading unit combines cassette record/play deck with 8-track cartridge record/play deck; permits recording either on cassette or 8-track and transferring from one to another; cassette section frequency response 60-12,000 Hz; S/N 45 dB; wow & flutter 0.25% rms; speed accuracy $\pm 2.5\%$; CrO₂/standard tape selector; tape counter; pause control; 8-track section frequency response 30-12,000 Hz; S/N 42 dB; wow & flutter 0.25% rms; lighted program indicators; LED record and end-of-tape indicators; locking pause; two lighted VU meters; separate record-level controls \$179.95

RD5300 Dolbyized Cassette Deck

Front-loading stereo cassette recorder deck with built-in Dolby noise-reduction circuit; frequency response 30-14,000 Hz; S/N 57 dB (Dolby out), 63 dB (Dolby in); wow & flutter 0.10% rms; separate input and output level controls; CrO₂/standard tape pushbutton equalization control and LED indicators; bias high/low control; limiter on/off control; two large VU meters \$179.00

RD4553 Dolbyized Cassette Deck

Front-loading stereo cassette recorder with built-in Dolby noise-reduction circuits; frequency response 50-13,000 Hz; S/N 53 dB (Dolby out), 60 dB (Dolby in); wow & flutter 0.2% rms; CrO₂/standard tape selector; two VU meters \$149.95

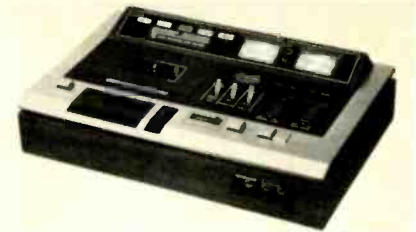
RD4153 Stereo Cassette Deck

Stereo record/play. Response 30-12,000 Hz; S/N 45 dB; wow & flutter 0.24% max.; features two VU meters; mike & line inputs; automatic end-of-tape stop; CrO₂/standard tape selector; 11 $\frac{3}{16}$ " W x 9" D x 3 $\frac{1}{2}$ " H \$99.95

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. 16 $\frac{7}{8}$ " W x 4 $\frac{1}{2}$ " H x 10 $\frac{1}{2}$ " 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. 16 $\frac{7}{8}$ " W x 4 $\frac{1}{2}$ " H x 10 $\frac{1}{2}$ " 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 x 4 $\frac{3}{8}$ " H x 10 $\frac{1}{8}$ " D \$179.95

RT-1155 Dolbyized Cassette Deck

Front-loading; frequency response 40-10,000 Hz (regular tape); 40-12,000 Hz (ferrichrome tape); 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; Auto Program Search System seeks music cue, for skipping to and stopping at musical selections. 16 $\frac{1}{16}$ " W x 10 $\frac{1}{16}$ " D x 4 $\frac{3}{8}$ " H \$169.95

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 x 4" H x 10" D \$399.00

SONY from SUPERSCOPE

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 (CrO₂ and FeCr tape); has illuminated VU meters; peak-level indicator; 400-Hz calibration tone switch; push-button operation. Walnut base. 17 $\frac{1}{8}$ " W x 6 $\frac{1}{8}$ " H x 12 $\frac{1}{8}$ " D \$749.95

TC-209SD Dolbyized Cassette Deck

Front-load stereo cassette deck; Dolby noise-reduction circuit; ferrite & ferrite head; FeCr

equalization; frequency response 20-15,000 Hz (standard tape), 30-17,000 Hz ± 3 dB (chrome & FeCr tape); S/N 53 dB (standard), 55 dB (FeCr & chrome); hysteresis synchronous motor; wow & flutter 0.07%; features "Symphase" recording capability, built-in multiplex filter; 3-pos. equalizer selector, 2-pos. bias selector; mic/line mixing; record interlock; stereo headphone monitor jack; two illuminated VU meters plus one peak indicator; pause control; 3-digit tape counter; memory tape counter; automatic total mechanism shutoff; mic & aux. inputs; two a.c. convenience outlets;; Dolby indicator; front-panel mic jacks; front-panel line-in; comes with two RK-74 patchcords, head cleaning tips, FeCr-60 cassette; 17 $\frac{3}{16}$ " W x 12 $\frac{7}{32}$ " D x 6 $\frac{1}{16}$ " H \$499.95

TC-138SD Dolbyized Cassette Deck

Stereo cassette deck with Dolby noise-reduction system, ferrite & ferrite head; FeCr equalization; built-in multiplex filter; 3-pos. tape select switch; pushbutton operation; mic/line mixing; straight-line record level controls; record interlock; separate line-out volume control; stereo headphone monitor jack; two calibrated VU meters, peak limiter; peak level indicator; 3-digit tape counter; automatic total mechanism shutoff; four function-indicator lamps; locking fast-forward & rewind; frequency response 20-15,000 Hz (standard), 30-15,000 Hz ± 3 dB (chrome & FeCr tape); induction motor drive; wow & flutter 0.07%; comes with two RK-72 patchcords, dust cover, FeCr-60 cassette; 16 $\frac{3}{16}$ " W x 11 $\frac{7}{16}$ " D x 5 $\frac{7}{16}$ " H \$399.95

TC-153SD Portable Cassette Deck

Portable a.c./d.c. cassette deck with Dolby noise-reduction system; ferrite & ferrite head; Symphase recording capability; built-in multiplex filter; 3-pos. tape select switch; straight-line record level controls; record interlock; stereo headphone monitor jack; 3-pos. mic attenuator; two illuminated VU meters; built-in speaker; p.a. capability; 3-digit counter; automatic shutoff; mic & aux. inputs; d.c.-to-d.c. converter; optional car battery operation; lever-action control transport; built-in recharging circuit for NiCad battery pack; frequency response 30-13,000 Hz (standard), 40-14,000 Hz ± 3 dB (chrome & FeCr tape); d.c. servo motor; wow & flutter 0.15%; battery-strength indicator; comes with four batteries, two RK-74 patchcords, a.c. power cord, head cleaning tips, shoulder strap, FeCr cassette; optional accessories include LC-29 carrying case, DCC-128 car battery; 120-V/60 Hz, 6 V d.c. (four "D" cells); 14 $\frac{7}{8}$ " W x 9 $\frac{3}{8}$ " D x 4 $\frac{1}{8}$ " H; weight 11 lbs, 15 oz \$369.95

TC-206SD Stereo Cassette Deck

Front-load stereo cassette deck; Dolby noise-reduction system; ferrite & ferrite head; FeCr equalization; d.c. servo-controlled motor; Symphase recording capability; 3-pos. tape select switch; 3-pos. bias selector switch; pushbutton operation; mic/line mixing; record interlock; stereo headphone monitor jack; two calibrated VU meters; peak limiter; peak level indicator; 3-digit tape counter with reset button; mic & aux. inputs; two a.c. outlets; Dolby indicator lamp; frequency response 20-14,000 Hz ± 15 dB; 20-16,000 Hz ± 15 dB (FeCr), 30-15,000 Hz ± 3 dB (chrome); wow & flutter 0.08%; comes with two RK-74H patchcords; 17" W x 12 $\frac{1}{4}$ " D x 6 $\frac{5}{8}$ " H \$349.95

TC-186SD Stereo Cassette Deck

Front-load stereo cassette deck; Dolby noise-reduction system; ferrite & ferrite head; Symphase recording capability; Dolby FM; Dolby calibration controls (FM); 3-pos. tape select

switch; 3-pos. bias select switch; pushbutton operation; record interlock; stereo headphone monitor jack; two illuminated VU meters; peak limiter; 3-digit tape counter; automatic total mechanism shutoff; frequency response 30-14,000 Hz ± 15 dB (standard), 40-15,000 Hz ± 3 dB (chrome & FeCr tapes); two mic & line inputs; two line & one stereo headphone outputs; comes with two RK-74 patchcords, wooden cabinet; 16 $\frac{1}{4}$ " H x 11 $\frac{3}{8}$ " D x 6 $\frac{1}{2}$ " W \$299.95

TC-136SD Stereo Cassette Deck

Stereo cassette deck; Dolby noise-reduction system; ferrite & ferrite head; Symphase recording capability; built-in multiplex filter; 3-pos. tape select switch; pushbutton operation; mic/line mixing; straight-line record level controls; record interlock; two illuminated VU meters; peak limiter; 3-digit tape counter; automatic total mechanism shutoff; Dolby & record indicator; frequency response 30-12,000 Hz (standard), 40-15,000 Hz ± 3 dB (chrome & FeCr tapes); comes with two RK-74 patchcords, head cleaning tips, FeCr cassette; 15 $\frac{1}{4}$ " W x 9 $\frac{1}{2}$ " D x 5" H \$299.95

TC-135SD Stereo Cassette Deck

Stereo cassette deck; Dolby noise-reduction system; ferrite & ferrite head; FeCr equalization; Symphase recording capability; d.c. servo-controlled motor; Dolby FM & calibration controls; multiplex filter; 3-pos. tape select switch; automatic bias adj. for CrO₂ tape; two illuminated VU meters; pushbutton operation; peak limiter; 3-digit tape counter with reset button; input selector for mic or line input; record indicator pilot lamp; locking fast-forward & rewind; frequency response 30-13,000 Hz ± 15 dB (standard), 30-15,000 Hz ± 15 dB (FeCr), 50-14,000 Hz ± 3 dB (chrome); comes with two RK-74 patchcords; 15 $\frac{5}{8}$ " W x 9 $\frac{3}{4}$ " D x 4 $\frac{1}{4}$ " H \$229.95

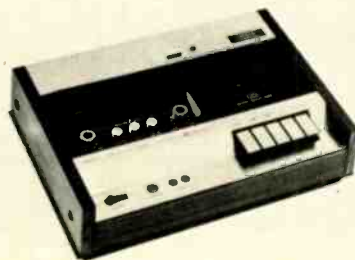
TC-117 Stereo Cassette Deck

Stereo cassette deck; FeCr equalization; servo-controlled motor; tape select switch; pushbutton operation; straight-line record level controls; record interlock; two illuminated VU meters; pause control with interlock; 3-digit tape counter; function indicators for Rec/Limiter/NSS; high filter switch; frequency response 40-10,000 Hz; 40-13,000 Hz (chrome & FeCr); comes with walnut base & two RK-74 patchcords; 14 $\frac{1}{4}$ " W x 9 $\frac{3}{8}$ " D x 4 $\frac{1}{8}$ " H \$149.95

SUPERSCOPE

CD-302A Stereo Cassette Deck

Similar to CD-301A except includes the Dolby noise reduction system. (S + N)/N -48 dB; Dol-



by in -60 dB; CrO₂ -51 dB. Has the same controls and features as the Model CD-301A plus pause button. \$189.95

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 CrO₂ 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 12 $\frac{1}{2}$ " W x 3 $\frac{1}{4}$ " H x 8 $\frac{7}{8}$ " D \$139.95

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 x 8 $\frac{1}{2}$ " H x 3 $\frac{3}{4}$ " D; 7 lbs, 5 ounces. \$109.95

TANDBERG

TCD-330 Cassette Deck with Dolby

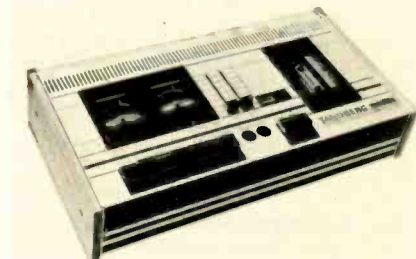
Front-loading cassette deck; three heads, for tape/source monitoring during recording;



azimuth adjustment for precise tape/head alignment; electronic editing; dual-capstan closed-loop drive system; dual Dolby system for simultaneous record/playback Dolby processing; servo-controlled tape winding. Response 30-18,000 Hz ± 3 dB; wow & flutter 0.12% (W rms). Has radio (775 mV) and line (1.5 V) inputs. 18 $\frac{1}{2}$ " W x 9 $\frac{1}{8}$ " D x 4 $\frac{1}{8}$ " H \$999.00

TCD-310 Cassette Recorder Deck

Features Dolby noise-reduction system; three motors; two peak-reading record meters; chrom-



mium-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" x 4 $\frac{1}{4}$ " x 9 $\frac{1}{8}$ " D. . . \$499.00

TEAC

A-650 Stereo Cassette Deck

Front-loading cassette deck; phase-locked-loop d.c. servo capstan motor, mechanically governed d.c. reel motor; two heads; wow & flutter 0.06% (NAB weighted); S/N 57 dB at 3% THD (without Dolby), 62 dB at 1 kHz and 67 dB at 5000 Hz (with Dolby); frequency response 30-16,000 Hz (chrome & FeCr tapes), 30-13,000 Hz (hi-energy tape); inputs: two line 60 mV/50 k; two mic 0.25 mV/-72 dB (600 ohms or more); outputs: two line 0.3 V/load imp. 50 k or more; one 8-ohm stereo headphone; two VU-type loudness meters; two LED peak-reading indicators; Dolby circuit has FM/copy and MPX functions so unit can decode any external Dolby-encoded source for monitoring while re-

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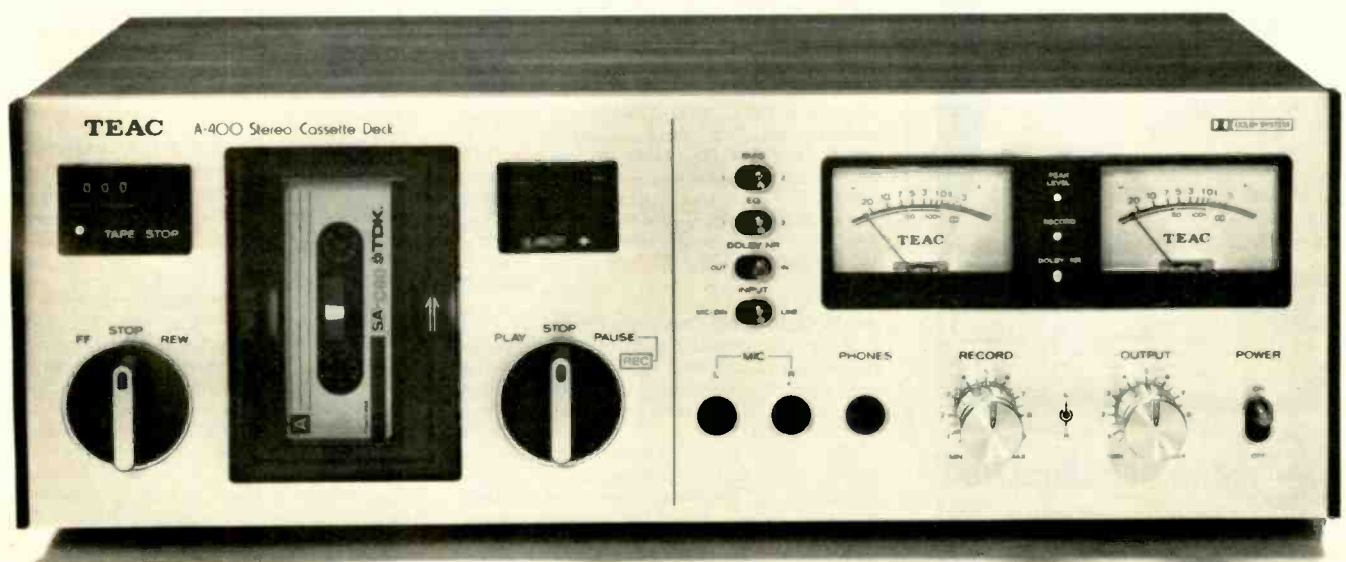
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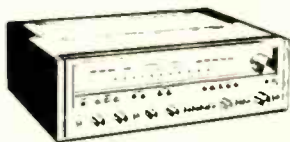
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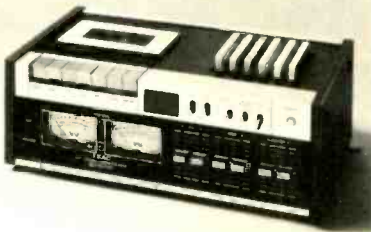
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6

Cassette Tape Machines

ording that source signal still encoded; individual input level controls; memory stop system; digital tape counter; independent 3-position bias and equalization selectors; 17¹/₈" W x 12¹/₈" D x 7" H \$550.00

A-450 Dolbyized Stereo Cassette Deck
Features Dolby-B type noise-reduction system. Has switchable controls for bias and equaliza-



tion 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 x 17¹/₂" W x 10¹/₈" D \$500.00

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 (CrO₂ tape), S/N 60 dB (WTD with Dolby); wow & flutter 0.08%. \$350.00

A-420 Dolbyized Cassette Deck
Vertical front-load deck; two heads; d.c. servo motor; wow & flutter 0.07% W rms (NAB weighted); S/N 55 dB at 3% THD (without Dolby), 60 dB at 1 kHz and 65 dB at 5000 kHz (with Dolby); frequency response 30-16,000 Hz (chrome & FeCr tapes); two VU-type loudness meters; two LED peak-reading indicators; inputs: two line 60 mV/50 k; two mic 0.25 mV/72 dB (600 ohms or more); outputs: two line 0.775 V/load imp. 50 k or more; one 8-ohm stereo headphones; digital tape counter; 3-pos. bias and equalization selectors; switchable timer function; 17¹/₈" W x 11¹/₄" D x 6¹/₈" H \$350.00

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 (CrO₂ tape); wow & flutter 0.09% (WTD with Dolby) \$250.00
A-150. Similar to A-170 except frequency response 30-15,000 Hz (chrome & FeCr tapes), 30-12,000 Hz (hi-energy tape); two VU-type loudness meters; one LED peak-reading indicator; dual concentric input-level controls; 16¹/₈" W x 11¹/₈" D x 6¹/₈" H \$250.00

A-100 Stereo Cassette Deck
Front-load deck; d.c. servo motor; two heads; wow & flutter 0.10% W rms (NAB weighted);

S/N 50 dB at 3% THD (without Dolby), 55 dB at 1 kHz, 60 dB at 5 kHz (with Dolby); frequency response 30-14,000 Hz (chrome & FeCr tapes), 30-11,000 Hz (hi-energy); two VU-type loudness meters; 16¹/₈" W x 11¹/₈" D x 6¹/₈" H \$200.00

Esoteric Series

860 Stereo Record/Reproducer
Three-motor dual-capstan drive transport system; dbx II noise reduction system for 30 dB



noise reduction over entire audio frequency spectrum; three heads; wow & flutter 0.04% W rms; frequency response 20-20,000 Hz (chrome & FeCr tapes); 20-18,000 Hz (hi-energy tape); S/N 60 dB at 3% THD (without Dolby), 65 dB at 1 kHz & 70 dB at 5000 Hz (with Dolby), 80 dB (with dbx II); two VU-type loudness or peak-reading meters (selectable); four line & four mic inputs; test input for test tone generator; mic attenuation 0/20 dB (selectable on mixer panel); built-in 4-in/2-out mixer; 3-pos. bias & equalization selectors; cue control; memory circuit; pitch control for ±4% speed adjustment; 17¹/₈" W x 14¹/₈" H x 9¹/₂" D \$1600.00

PC-10 Portable A.C./D.C. Deck
Features PLL d.c. servo direct-drive capstan motor & mechanically governed d.c. reel motor; two heads; wow & flutter 0.07% W rms (NAB weighted); frequency response 30-16,000 Hz (chrome & FeCr tapes), 30-13,000 Hz (hi-energy tape); S/N 58 dB at 3% THD (without Dolby), 63 dB at 1 kHz, 68 dB at 5000 Hz (with Dolby); two VU-type loudness meters & one peak-reading indicator; mic attenuation 0/15/30 dB (selectable); built-in monitor speaker with 300 mW amplifier; locking pause control; locking meter illumination button; battery check circuit; comes with PA-2 a.c. adapter, heavy-duty shoulder strap, input/output connecting cords; 117 V a.c., 60 Hz/9 V d.c. (six "C" cells); 11¹/₂" H x 9¹/₈" D x 3¹/₂" H; 11 lbs including batteries \$500.00

TECHNICS BY PANASONIC

RS-677US Cassette Recorder Deck
Vertical design with front-loading features Dolby circuit (including switch selector and calibrator for pre-encoded Dolby FM broadcasts); two motors including electronic control for capstan drive; solenoid operation; hot-pressed ferrite head; meter peak-check switch; selectable MPX filter; chromium-dioxide/normal tape selector (either manual or automatic). Has full auto stop in any mode; mechanical pause; single level control for record mode with aux. left/right balancer; digital counter; memory rewind with automatic replay; mike/line/tuner inputs with a mic level control for mixing. Remote-control box included. Vinyl-over-wood cabinet. Guaranteed minimum specifications: record/play frequency response 30-15,000 Hz ±3 dB (chromium-dioxide tape); 30-17,000 Hz ±3 dB (standard tape); wow & flutter 0.07% W rms; S/N 52 dB (Dolby out), 65 dB (Dolby in); dist. 2.0% with regular tape. 17¹/₄" W x 13¹/₄" D x 5¹/₈" H \$499.95

STEREO DIRECTORY & BUYING GUIDE

RS-671AUS Cassette Recorder Deck

Front-loading design with front-panel controls, features Dolby circuit; two motors including electronic control for capstan driver; solenoid operation; hot-pressed ferrite head; meter peak-check switch; separate bias and equalization selectors; full auto-stop in any mode; mechanical pause; digital counter; memory rewind; output level control; mic/line inputs. Guaranteed minimum specifications: response 30-17,000 Hz (chromium-dioxide tape), 30-15,000 Hz (standard tape); wow & flutter 0.075% W rms; S/N 52 dB (Dolby out, standard tape), 65 dB (Dolby in, CrO₂ tape); 17 1/4" W x 13" D x 5 5/8" H. \$399.95

RS-640US Cassette Recorder Deck

Horizontal design with Dolby circuit; standard and chromium-dioxide tape selection; hot pressed ferrite heads; Tape-End Alert-Eye gives 3-minute warning before tape runs out; peak-level meters with checking switch; memory rewind; separate mic/line level controls; response 30-16,000 Hz (chromium-dioxide tape), 30-14,000 Hz (standard tape); wow & flutter 0.08% W rms; S/N 51 dB (Dolby out, standard tape), 64 dB (Dolby in, CrO₂ tape); 17" W x 11 7/8" D x 5 1/8" H. \$349.95

RS-625US Cassette Recorder Deck

Dolbyized design with patented HPF (hot-pressed ferrite) head, guaranteed for 10 years; selector for ferric-oxide /CrO₂ (70 μs) tapes; VU meters with pushbutton peak-reading function; tape counter with memory rewind; separate input/output level controls; lockable pause control; tape-run indicator lamps; full automatic stop in any mode with transport disengagement; Mic/headphone inputs; push-button controls; guaranteed minimum specs: wow & flutter 0.10% weighted rms or better; overall record/play frequency response +3, -5 dB at 40 Hz to ±3 dB at 11,000 Hz (ferric-oxide tape), +3, -5 dB at 40 Hz to ±3 dB at 12,000 Hz (CrO₂) tape; S/N 49 dB (without Dolby), 57 dB (with Dolby); dist. 2.3%; overall speed accuracy ±2%. \$299.95

RP-905 Recording Timer Adapter

For use in conjunction with a timing on-off clock and solenoid-controlled Model RS-677US and RS-640US recorders; may be used to initiate recording or playback at pre-selected time; may also provide turn-off and restart (depending on clock capability) \$69.95

RS-630US Cassette Recorder Deck

Front-loading design with front-panel controls, features Dolby circuit; chromium-dioxide/standard tape selector; dual output-level controls; mic/line input selector; lockable pause control; auto-stop; peak-level meters with checking switch; response 30-16,000 Hz (chromium-dioxide tape), 30-14,000 Hz (standard tape); wow & flutter 0.09% W rms; S/N 50 dB (Dolby out, standard tape), 63 dB (Dolby in, CrO₂ tape); 17 1/8" W x 12 3/8" D x 5 5/8" H. \$249.95

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 dB (55 dB Dolby). Has peak level check switch; separate output level adjustments, mike & line inputs, automatic stop, memory rewind and pause control. Overall size 14" x 5" x 9 3/4" D. \$199.95

TOSHIBA

PC-6030 "Feather-Touch" Deck

Dual-capstan system; PLL controlled d.c. servo motor for capstan, d.c. bridge servo motor for reel driver; "Feather-Touch" operation with IC logic & solenoid; has ferrite record/

play and erase heads; frequency response 30-17,500 Hz; S/N 58 dB; features auto rewind; auto play; automatic counter; external timer. \$750.00

PC-5060 Dolbyized Cassette Deck

Front-loading; electrically controlled servo motor; tape selector with independently switchable bias and equalization; chrome tape auto selector; editing switch; limiter switch; input selector switches; frequency response 40-15,000 Hz (chrome); S/N 58 dB (Dolby off); wow & flutter 0.08% W rms; dist. 1.5%; 17 1/16" W x 13 1/8" D x 5 7/8" H. \$319.95

PC-4030 Dolbyized Cassette Deck

Electrically controlled bridge servo d.c. motor; tape selector; chrome tape auto selector; auto-play; cue & review; input selector switch; fader control for recording; frequency response 40-15,000 Hz (chrome); S/N 57 dB (Dolby off); wow & flutter 0.09% W rms; dist. (standard tape) 2.0%; 15 3/4" W x 11 1/8" D x 5 7/8" H. \$229.95

PC-3060 Dolbyized Cassette Deck

Front-loading deck; d.c. servo drive motor; two Permalloy heads; Dolby & FM Dolby circuitry; frequency response 40-12,000 Hz (standard tape), 40-15,000 Hz (chrome); S/N 50 dB (standard tape); wow & flutter 0.09% W rms; bias & equalization selector; tape counter; record/play timer switch; cue & review switch; auto-play \$199.95

UHER

CG-362 Stereo Cassette Deck

Front-loading, three-motor stereo cassette deck; Dolby noise-reduction circuit and DNL; switchable multiplex filter; automatic bias & equalization switch; three-position tape selector; RCA style & DIN input/output connectors; digital IC logic controls; digital tape counter; auto-stop; tape-flow control; input mixing & 3-pos. replay program selector; frequency response 20-18,000 Hz (without multiplex filters); wow & flutter 0.15% W rms; S/N 68 dB with chrome tape & Dolby in; extra output of 1/2 W, 4 ohms for driving motional feedback speakers \$1066.95

CR-210 Portable Cassette Recorder

Operates from a.c., lead-acid or NiCd rechargeable batteries, or 12-V auto batteries; can be operated in mono and stereo modes in both playback & record; four-track in-line tape head; built-in condenser mic; self-contained power stage; internal monitor speakers; photoelectric electronic control of tape drive; on/off ALC switch; automatic bias switching for chromium-dioxide tape; frequency response 20-16,000 Hz (chrome); wow & flutter 0.12% W rms; S/N 58 dB (chrome); comes with carrying case but less batteries; 7" W x 7" D x 2" H. \$595.00

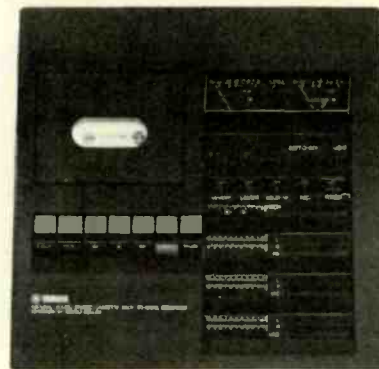
CG-320 Stereo Cassette Recorder

Two-motor stereo/compatible mono record/play unit; self-contained stereo power supply; internal speakers; power-supply socket for 12-V car battery operation; has automatic level control with on/off switch; DNL system; automatic bias/level switching for chromium-dioxide tape; 3-digit counter with reset & memory buttons; two separate sliders for independent level controls; two sliders for independent acoustical replay level control; slider tone-level control; frequency response 30-16,000 Hz (chrome); wow & flutter 0.10% W rms; S/N 60 dB (chrome with DNL in); 16" W x 11" D x 4 1/2" H. \$585.00

YAMAHA

TC-800GL Dolbyized Cassette Deck

Designed to operate from a.c.-d.c. and 12-volt battery; Super Permalloy record/playback



head; two meters (display from -40 dB to +6 dB); push-button tape selector switches bias, equalization, and record-level automatically; line & mike mixing circuit; memory rewind; variable pitch control ±3%; built-in headphone amplifier; fully automatic shut-off; wow & flutter 0.06% W rms; speed fluctuation 1.0%; fast-forward & rewind; response 30-13,000 Hz (standard), 30-15,000 Hz (chromium-dioxide); Dolby noise-reduction circuit. 12 1/4" W x 3 3/4" H x 12 1/4" D. \$390.00
TC-800D. Same as TC-800GL except a.c. operation only; meter display from -20 dB to +3 dB. \$310.00

TC-511S Cassette Deck with Dolby

Front-loading stereo play/record deck with Dolby noise-reduction circuit and Super Permalloy record/playback head; two meters (display from -40 dB to +6 dB); precision line, mic and playback controls; wow & flutter 0.07% W rms; HD 1.5% (1000 Hz, 0 VU); response 30-13,000 Hz (standard tape), 30-15,000 Hz (CrO₂ + FeCr); S/N 50 dB (Dolby out), 50 dB (Dolby in). 17 1/4" W x 13" D x 6 1/4" H. \$260.00

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7

8-TRACK TAPE MACHINES

AKAI

CR-83D 8-Track Record/Play Deck

Features illuminated elapsed-time record indicator, locking pause, fast-forward, independent dual-record level controls, combination record/play & erase head, auto-stop, continuous playback selector switch; d.c. motor, illuminated record interlock, automatic a.c. on when cartridge is inserted; wow & flutter 0.15% rms; S/N 48 dB; frequency response 60-14,000 Hz ± 3 dB (low-noise tape); dist. 2% at 3 $\frac{3}{4}$ ips; 16 $\frac{1}{2}$ " W x 9 $\frac{1}{2}$ " D x 4.3" H. \$220.00

4-CHANNEL

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

BSR McDONALD

TD8SW-2 8-Track Playback Deck

Stereo 8-track player; straight-line stepping cam tape-head mounting for intimate contact



with tape; simulated walnut-grained cabinet; comes with connecting cables; 10 $\frac{1}{4}$ " W x 8 $\frac{1}{8}$ " H x 3 $\frac{7}{8}$ " D. \$39.95

CHANNEL MASTER

8-Track Record/Play Deck

Stereo record/play deck; can be used with any stereo system as an add-on; right & left channel record-level slide controls; illuminated VU meters; pushbutton control of program selection, pause, fast-forward, power, record, and auto stop; comes with two dynamic mics, stereo jacks for mic & aux inputs, output jacks for tape monitoring with stereo phones; veneered construction with wood-grained vinyl finish; 15" W x 9 $\frac{1}{2}$ " D x 4 $\frac{3}{4}$ " H. \$99.95

JVC

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. 4 $\frac{3}{16}$ " H x 15 $\frac{3}{16}$ " W x 9 $\frac{3}{8}$ " D. \$249.95

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. 4 $\frac{1}{4}$ " H x 13 $\frac{1}{2}$ " W x 9 $\frac{1}{8}$ " D. \$169.95

LAFAYETTE

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 μ V, aux. 100 μ V; channel separation 45 dB at 400 Hz; S/N 45 dB; Walnut side panels. 12" W x 3 $\frac{3}{4}$ " H x 9 $\frac{1}{8}$ " D. \$179.95

RK-899 8-Track Record/Play Deck

Selectable automatic stop for play/record modes; dual illuminated level meters; individual left/right mic input jacks; record-level controls on front panel; pause control; response 50-10,000 Hz; output level 0.5 V max; crosstalk &

channel separation 40 dB; S/N 40 dB; wow & flutter 0.3%; input sensitivity: mic 0.8 mV, aux. 250 mV; walnut vinyl covered wood cabinet; 16 $\frac{1}{2}$ " W x 18 $\frac{1}{4}$ " D x 4 $\frac{1}{8}$ " H. \$139.95

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 x 5 $\frac{5}{8}$ " H x 8 $\frac{3}{8}$ " D. \$119.95

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/continuous play switch; fast-forward; stereo headphone & mike jacks. Walnut cabinet with brushed chrome face. 14 $\frac{1}{4}$ " W x 5 $\frac{3}{8}$ " H x 9 $\frac{3}{8}$ " D. \$139.95

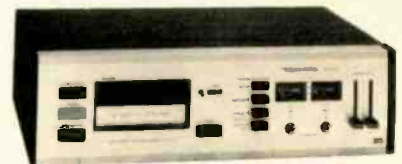
HD-800 8-Track Playback Deck

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. 10 $\frac{5}{8}$ " W x 5 $\frac{3}{8}$ " H x 8 $\frac{3}{4}$ " D. \$54.95

RADIO SHACK

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. 4 $\frac{3}{4}$ " x 16 $\frac{1}{2}$ " x 10". \$149.95

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. 3⁷/₈" x 13¹/₄" x 8³/₈" . . . \$99.95

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. 4¹/₂" H x 8¹/₂" W x 1³/₄" D . . . \$79.95

SANYO

RD8020 8-Track Record/Play Deck

Frequency response 30-12,000 Hz; S/N 42 dB; wow flutter 0.3%. Features automatic stop at program-start point; two calibrated VU meters; latching fast-forward control; latching pause control; restart button; lighted channel indicators; inputs for right/left mike & aux.; 12¹/₂" W x 10" D x 5" H . . . \$99.95

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. 15³/₄" W x 4¹/₂" H x 9¹/₈" D . . . \$149.95

RT-821. Similar to RT-820 but includes APSS (auto program search system); time display tape counter . . . \$169.95

4-CHANNEL

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; 15³/₄" W x 4¹/₂" H x 9¹/₈" D . . . \$199.95

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. 8³/₄" x 4¹/₁₆" H x 9¹/₂" 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. 14³/₈" x 4³/₄" x 8³/₄" D . . . \$199.95

4-CHANNEL

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%. 8³/₄" W x 4¹/₁₆" H x 9¹/₁₆" D. 120-V, 60-Hz operation . . . \$119.95

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. 7¹/₄" W x 4⁷/₈" H x 9³/₄" D . . . \$74.95

4-CHANNEL

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. 7¹/₈" x 4⁷/₈" H x 9³/₄" D . . . \$99.95

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. 4³/₈" H x 15³/₄" W x 8¹/₂" D . . . \$179.95

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 controls, four VU meters, mike & line inputs plus pause control and noise-suppressor switch. Response 30-12,000 Hz; wow & flutter 0.2%. 8¹/₂" x 21¹/₈" x 11¹/₄". . . \$329.95

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. 18¹/₂" x 9" H x 16¹/₄" 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; 15³/₄" W x 4¹/₂" H x 10³/₄" D . . . \$149.95

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8

STEREO
COMPACTS

THE so-called *compact system* is generally an integrated combination of a receiver, record changer, and speakers. Usually, the turntable is combined with the receiver in a single cabinet that can be placed where convenient and is ready to use when the polarized speaker cables are plugged in. Some units also contain a cassette recorder or an 8-track cartridge player, and some substitute a tape machine for a record player.

The elimination of virtually all connecting wires and cables, and the economies resulting from the unitized design of the system, make the compact an attractive means of bringing reasonably good sound to the home at mini-

mum expense, without requiring any technical expertise or even interest on the part of the user. Since compacts are designed to appeal to a mass market, their receivers have modest performance, and rarely deliver more than a few watts per channel of audio power. On the other hand, their speakers are designed to complement the amplifier characteristics, with relatively high efficiency and limited response.

Beginning with the original "compact," the KLH 11 of 1960, compacts enjoyed a period of great popularity during the 1960's. At one time, most of the well-known high-fidelity component manufacturers produced compacts, sometimes using the same components which they

sold separately. More recently, the compact's share of the market has fallen off considerably, however. Their principal appeal is for use as a second "stereo," and for people who do not appreciate or cannot afford better sound reproducing equipment.

Four Channel: A relatively high proportion of current compacts offer four-channel capability. Their small speakers are well suited to four-channel installation requirements. Most four-channel compacts are designed to play 8-track cartridges, sometimes with dramatic results. Their phonograph matrix decoders, if present, are often rudimentary and cannot exploit the potential of modern quadrasonic discs.

AIWA

AF-3030 AM/FM Stereo/Cassette Deck

Combines AM/FM stereo receiver with front-load Dolbyized cassette deck; 13 W rms/ch at 8 ohms (20-20,000 Hz) at 0.3% THD; outputs: tape record, DIN, speaker 8 ohms, headphones 8 ohms; FM sensitivity 2.0 μ V (IHF), frequency response 30-15,000 Hz; FM stereo dist. 0.7%; stereo separation 38 dB at 1000 Hz; antenna 300 ohms (balanced), 75 ohms (unbalanced); cassette deck wow & flutter 0.1% W rms; tape counter; built-in Dolby noise-reduction system; mechanical full-stop system; Permalloy head; d.c. servo motor; 18 $\frac{1}{16}$ " W x 12 $\frac{1}{16}$ " D x 6 $\frac{3}{4}$ " H. \$380.00

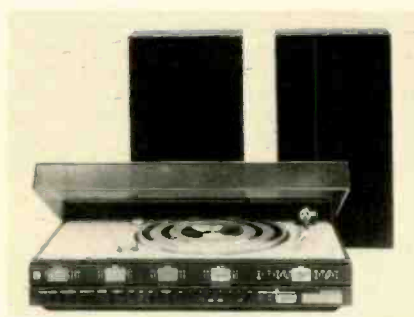
AF-5080A 3-in-1 Music System

Combines AM/FM stereo receiver, Dolbyized cassette deck, single-play/automatic turntable; 22 W rms/ch at 8 ohms (20-20,000 Hz) at 0.3% THD; complementary SEPP OTL circuit; FM sensitivity 2.0 μ V (IHF); frequency response 30-15,000 Hz; stereo separation 38 dB at 1000 Hz; cassette deck wow & flutter 0.1% W rms; frequency response 30-11,000 Hz (normal tape), 30-15,000 Hz (CrO₂, FeCr tapes); Permalloy head; d.c. servo motor; belt-driven turntable with automatic tonearm return; S/N 45 dB; wow & flutter 0.1% W rms; static-balance tonearm; MM type cartridge; frequency response 20-20,000 Hz; turntable/cassette deck synchronized for automatic recording; tuning meter; two VU meters; 3-step tape selector; 23 $\frac{1}{4}$ " W x 16 $\frac{1}{16}$ " D x 8 $\frac{1}{16}$ " H. \$570.00

BANG & OLUFSEN

Beocenter 3500 Receiver/Turntable

Combines FM receiver and integrated automatic turntable; 40 W/ch continuous rms power; frequency response 40-20,000 Hz; THD 0.6%; IM 0.6% at all power levels; S/N 75 dB at rated output; channel separation 45 dB at 1000 Hz; inputs: phono, aux., tape; output: tape recorder; has headphone jack, bass & treble tone controls, high & low filters; FM tuner sensitivity 2 μ V (IHF); frequency response 20-15,000 Hz \pm 1.5 dB; S/N 70 dB (1000 Hz, 40 kHz mod., 100 V); stereo channel separation 40 dB at



1000 Hz; automatic two-speed turntable; activator button provides automatic operation; automatic anti-skating control; idler wheel and belt drive system; a synchronous motor; wow & flutter 0.15%; rumble -60 dB (DIN B); SP-12A cartridge; suggested speakers Beovox Phase Link S-45 or S-60; dust cover included; 23" W x 13 $\frac{1}{2}$ " D x 5 $\frac{1}{2}$ " H. \$715.00

HEATH

AC-1122 4-Ch Receiver/8-Track Player

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 μ V; 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 x 4" H x 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 x 4" H x 15" D. Kit. \$169.95

HITACHI

SDT/8700H Receiver/Cassette/Phono

Combines AM-FM stereo receiver, automatic record changer, cassette record/play deck, plus pair of bass-reflex speaker systems; FM section features illuminated slide-rule tuning dial, two



VU meters, a.f.c.; overall frequency response 40-18,000 Hz; BSR C-123R2 record changer with diamond/sapphire stylus, ceramic cartridge, sleep switch; cassette features automatic stop, pause control, digital counter; speakers have 8" woofer & 2" tweeter in 23" H x 13" W x 8" D enclosures, wood-grain vinyl cabinet, charcoal brown matte grille cloth; full complement of inputs/outputs; control center 23 $\frac{3}{8}$ " W x 15 $\frac{3}{8}$ " D x 8 $\frac{3}{4}$ " H. \$249.95
SDP/85DDH. Same as 8700H except with 8-track record/play deck. \$249.95
SDT/8600H. Similar to SDT/8700H except overall frequency response 50-15,000 Hz; speaker has 8" woofer with whizzer cone (20 $\frac{3}{4}$ " H x 12" W x 7 $\frac{1}{4}$ " D); control center 22 $\frac{1}{2}$ " W x 15 $\frac{3}{4}$ " D x 8 $\frac{3}{4}$ " H. \$199.95
SDP/8400H. Same as 8600H except with 8-track record/playback deck. \$199.95
SDP/8300H. Same as 8400H except 6 $\frac{1}{2}$ " woofer with whizzer (18" H x 11" W x 6 $\frac{1}{2}$ " D); control center 18 $\frac{3}{16}$ " W x 15 $\frac{3}{4}$ " D x 8 $\frac{1}{16}$ " H; matte black grille cloth. \$149.95
SD/8100H. Same as 8200H but without tape player. \$129.95

JULIETTE

C952-172 Home Entertainment System

STEREO DIRECTORY & BUYING GUIDE

Combines stereo cassette recorder/player, AM-FM stereo receiver, built-in automatic record changer with diamond stylus & hinged dust cover, 4-way air-suspension speaker systems, and two dynamic microphones; features automatic system shutoff after last record, illuminated black-out slide-rule vernier tuning dial, lighted station indicator, stereo indicator; slide volume, speaker balance, and bass & treble controls; independent left/right recording level controls; recording level VU meters; cassette has automatic stop, digital tape counter with reset, left/right mike inputs up front; conventional inputs & outputs; control center 23 1/4" W x 15 1/4" D x 10" H; speakers 23 1/4" H x 12" W x 9" D \$275.00
C646-92. Similar to C952-172 except has 8-track cartridge recorder/player instead of cassette; control center 21" W x 14 1/2" D x 9 1/2" H; speakers 19" H x 11" W x 6 1/2" D \$220.00

C954-92 Home Entertainment System

Combines stereo cassette recorder/player; AM-FM stereo receiver, automatic record player, two air-suspension speaker systems, and two dynamic microphones; pushbutton selects regular 2-channel stereo or 4-speaker "quad" effect; full complement of controls; control center 20 1/2" W x 16 3/4" D x 9 3/4" H; speakers 19" H x 11" W x 6 1/2" D ... \$175.00
C650-90. Similar to C954-92 except has built-in 8-track cartridge recorder/player; control center 19 3/4" W x 16" D x 10" H; speakers 19" H x 11" W x 6 1/2" D \$175.00
C442-172. Similar to C650-90 except 8-track cartridge player and 4-way air-suspension speaker systems; control center 20 1/2" W x 15 1/4" D x 10" H; speakers 23 1/4" W x 12" W x 9" D \$175.00

MERITON

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

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 μ V for 30 dB quieting; S/N 60 dB; HD 1.0% stereo; response 20-15,000 Hz \pm 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; 6 1/2" full-range speaker in each simulated walnut-veneer cabinet (18 3/8" H x 11 1/2" W x 6 3/4" D); control center simulated walnut-veneer cabinet. 5 1/2" H x 18 1/8" W x 13" D \$159.95

PANASONIC

SE-2650 Cassette/Radio/Phono

AM-FM stereo receiver with built-in record changer and cassette recorder/player; anti-



skating and cueing lever; two level meters for recording; automatic record-level control; comes with two speaker systems, each with 6 1/2" woofer, 6 1/2" passive radiator and 2 1/2"

tweeter \$349.95
SE-2680. Same as SE-2650 except with 8-track recorder/player; automatic stop in record mode. \$349.95
SE-2600. Same as SE-2650 except without cassette recorder/player \$279.95

SE-1240 Cassette/Radio/Phono

AM-FM stereo receiver with built-in record changer and cassette recorder/player; anti-skating and cueing lever; auto-stop in record and play; automatic record-level control; comes with two speaker systems, each with 6 1/2" full-range and 6 1/2" passive radiator. \$279.95
SE-3190. Similar to SE-1240 except with 8-track recorder/player \$249.95
RE-7556. Similar to SE-1240 except without cassette recorder/player; tuning meter; record changer not built-in \$229.95

RE-8016 Cassette/Radio/Phono

AM-FM stereo receiver with built-in cassette recorder/player and record changer; cueing lever; auto-stop in record and play; automatic record-level control; comes with two speaker systems, each with 6 1/2" full-range and 6 1/2" passive radiator \$229.95

RE-8126 8-Track/Radio/Phono

AM-FM stereo receiver with built-in 8-track recorder/player and record changer; tuning meter; auto-stop in record mode; automatic record-level control; locking fast forward; comes with two speaker systems, each with 6 1/2" full-range and 6 1/2" passive radiator. \$199.95

RE-8176 8-Track/Radio/Phono

AM-FM stereo receiver with built-in 8-track player and record changer; cueing lever; lighted program indicator; comes with two speaker systems, each with 6 1/2" full-range and 6 1/2" passive radiator \$199.95

RE-8146. Same as RE-8176 except without record changer \$149.95

RE-7016 Phono/Stereo Receiver

AM-FM stereo receiver with built-in record changer; cueing control; comes with two speaker systems, each with 6 1/2" full-range and 6 1/2" passive radiator \$179.95

SANYO

DXT5251 Compact Stereo System

Combines 8-track record/play deck, cassette record/play deck, AM-FM stereo receiver, 3-



speed automatic record changer, and pair of matched three-way acoustic-suspension speaker systems; features built-in 4-channel matrix circuit for future use; back-lighted receiver tuning dial; 8-track deck has fast-forward and pause controls, two calibrated VU meters, separate recording amplifiers; cassette deck has fast-forward and rewind, separate recording amplifiers, auto-stop at end of tape; 8-track tapes can be played while recording them on cassette, and vice versa; phono has cue and pause control, calibrated tracking-force adjustment, diamond-stylus cartridge; speaker size 21 1/2" H x 13 1/2" W x 10 1/2" D \$349.95
DXT5240. Similar to DXT5251 except 8-track deck is player only; record-level indicator instead of VU meters \$299.95

GXT4512 Cassette/Phono/Receiver

Combines AM-FM stereo receiver; stereo cas-

sette 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 19 1/2" H x 12" W x 8" D \$249.95
GXT4800. Similar to GXT4512 but with 8-track cartridge unit instead of cassette deck. \$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 21 1/2" H x 13 1/2" W x 10 1/2" D \$299.95

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 7/8" H x 11 7/8" W x 7 7/8" D \$199.95

DXT5205. Similar to DXT5220 except 8-track deck is player only \$169.95

GTX4505. Similar to DXT5220 but with cassette record/play deck instead of 8-track cartridge unit \$199.95

SHARP

SG-220 Cassette/Phono/Receiver

Combines AM-FM stereo receiver with front-loading cassette recorder/player, automatic record changer, and two speaker systems; features built-in APSS (auto program search system) that locates music cue on cassette; pause control for tape editing and monitoring; two-speed changer with cueing control, anti-skate, automatic shut-off; air-suspension speakers each with 8" woofer & 2 1/2" tweeter ... \$349.95
SC-210. Same as SG-220 except without record changer \$299.95

SG-143 Cassette/Phono/Receiver

Combines AM-FM stereo receiver with top-loading cassette recorder/player, automatic record changer, and two speaker systems; features built-in APSS; pause control; three-speed changer with cueing control, automatic shut-off; air-suspension speakers each with 8" woofer & 3" tweeter \$269.95
SG-142. Same as SG-143 except without record changer \$229.95

SG-141 8-Track/Phono/Receiver

Combines AM-FM stereo receiver with 8-track tape recorder, automatic record changer, and two speaker systems; features built-in APSS; pause control; three-speed changer with cueing control, automatic shut-off; air-suspension speakers each with 8" woofer & 3" tweeter \$269.95
SR-140. Same as SG-141 except without record changer \$229.95

SG-131 8-Track/Phono/Receiver

Combines AM-FM stereo receiver with 8-track tape recorder, automatic record changer, and two speaker systems; features one-touch 8-track program selector; three-speed changer with automatic shut-off; full range of input/output terminals; air-suspension speakers each with 6 1/2" full-range \$189.95
SR-130. Same as SG-131 except without record changer \$149.95

8

Stereo Compacts

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;

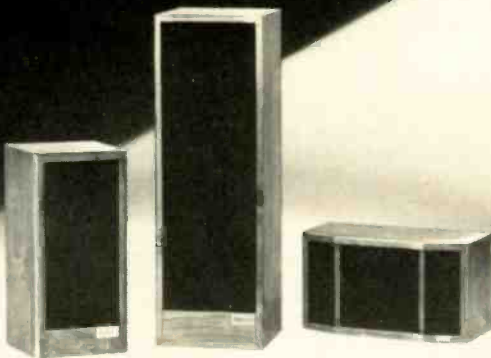
lighted FM stereo indicator and tuning meter. 18 1/4" W x 4 1/2" H x 9 7/8" D \$159.95
SG-174. Similar to SR-172 except includes full-size, three-speed record changer with ceramic stereo cartridge, flipover diamond stylus. 18 1/4" W x 4 1/2" H x 14 3/4" D. \$199.95

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

Brahms and the Beatles would have loved our speakers...



... because our speakers are uniquely designed to reproduce all music the way it was written. Vocals are sweet and open. Pianos and flutes incredibly alive. Drums, clean and tight. Violins clearly defined.

Marjen speakers are musical, intensely accurate, with a *lifelong*

warranty. They're designed from strict specifications rigidly adhered to.

Looking for the best? Then, listen to the best — Marjen speakers. A marked advance toward perfection. You'll love them... Brahms and the Beatles would have.

For specifications and details write or call:

MARJEN

Marjen Company, Inc.
 PO Box 251
 South Kent, Connecticut 06785
 (203) 354-3857

each with 8" woofer, 3" tweeter (22 1/2" H x 13" W x 8 1/2" D); 8-ohm imp.; FM ribbon antenna; 45 rpm manual adapter; manual/automatic spindle; dust cover \$450.00

SYLVANIA

CST5735W Phono/8-Track/Receiver

Features full-size BSR automatic turntable, AM-FM stereo receiver, 8-track play/recorder 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 9 7/8" H x 25 3/8" W x 15 3/8" D; speakers 16 1/4" H x 10 3/4" W x 6 3/4" D \$329.95

CS5720W. Same as 5735W except 8-track tape player; control center 9 7/8" H x 18" W x 16 3/8" D; speakers 15 3/8" H x 9 3/4" W x 7 1/4" D. . . \$229.95

TELEX

TXC 1201 AM-FM Stereo/8-Track

Combines an AM-FM stereo receiver, an 8-track tape player, with pair of speakers. 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" duocone (18" H x 10" W x 6 3/4" D). Control center 4 1/4" H x 22 1/8" W x 11 1/2" D \$189.95

TXC R1201. Same as TXC 1201 but with 8-track recorder/player \$224.95

TXC 1200. Similar to TXC 1201 except includes automatic record changer; tinted hinged dust cover; 8-track storage compartment; 4 1/4" H x 22 1/8" W x 14 7/16" D \$239.95

TXC R1200. Same as TXC 1200 but with 8-track recorder/player \$264.95

ZENITH

HR596W-30 Phono/8-Track/Receiver

Combines AM-FM stereo receiver, built-in record changer, built-in 8-track recorder/player and a pair of Allegro 3000 speaker systems; cartridge unit features sequential program selector, fast-forward, dual record-level meters; 3-speed automatic changer handles 7", 10", & 12" discs; each speaker has 10" woofer & 3 1/2" treble horn, RLC crossover network; response 40-15,000 Hz; 8 ohms; control unit 26" W x 18 1/4" D x 10" H; speakers 24 3/4" H x 15 5/8" W x 10" D \$530.00

4-CHANNEL

H736W-10 Phono/8-Track/Receiver

Combines AM-FM stereo receiver with built-in 2/4-channel 8-track tape player, built-in record changer and a pair of Allegro 1000 speaker systems; cartridge unit features automatic switching to & from 4-channel mode, indicators to show which mode unit is in; 3-speed automatic changer handles 7", 10" & 12" discs, plays 4-channel matrix records (SQ, QS); each speaker has 6 1/2" woofer & 3" tweeter; response 60-15,000 Hz; 8 ohms; control unit 25 1/4" W x 15 1/2" D x 9 1/2" H; speakers 18" H x 10 1/2" W x 7 1/2" D \$420.00

NEED MORE INFORMATION?

Write direct to the manufacturer or distributor. A list of names and addresses starts on page 16.

9

EQUALIZERS, EXPANDERS, NOISE-REDUCTION UNITS

ONE of the major advantages of component high-fidelity systems is their flexibility. Not only can the basic components be replaced individually without unnecessary obsolescence, but almost any type of signal processing accessory can be integrated with the system without interfering with its normal operation. This is usually done through the amplifier's tape-monitoring circuits, but sometimes it is more convenient to interpose the accessory between the preamplifier and the power amplifier.

A signal processor can be defined as a device which alters the frequency balance, noise level, or dynamic range of a program. In the first category are *equalizers*, usually of the so-called *graphic* type. An equalizer can be considered as a highly flexible tone control, able to modify the response in a number of separate frequency bands. Simple graphic equalizers may have as few as five bands, but others have individual octave controls, using ten or eleven controls to cover the entire audio band. Normally, separate adjustments are provided for each channel, which can make for a formidable array of controls. However, they are usually set only once, to equalize the response of a loudspeaker or a listening room, and are not meant to replace conventional tone controls.

The most common noise-reducing accessory is probably the Dolby "B" decoder. It is used to play back programs that have been recorded with Dolby encoding. At one time, outboard Dolby units were widely used in conjunction with cassette recorders, and most of them could be switched to a recording function as

well as for playback decoding. Now that Dolby circuits are built into practically every cassette machine, the "add-on" units are most useful with FM turners and receivers when receiving Dolbyized broadcasts.

Other noise-reducing accessories are signal-controlled dynamic filters, which can actually remove noise already present in a program (the Dolby devices merely prevent noise from being added to a program during recording or broadcast, but cannot remove noise from the original program).

Dynamic expanders are devices whose gain varies with the level of the program. All recorded and broadcast programs are compressed to accommodate the requirements of their media. The compression takes many forms, but its effect is to increase the level of soft passages and reduce the level of loud passages, thereby reducing the dynamic range of the program. If a complementary expander is used to provide the opposite action, reducing gain at low levels and increasing gain at high levels, it is theoretically possible to restore the dynamics of the original program. However, most expanders merely apply a moderate, controllable amount of expansion, letting the listener decide for himself when the optimum amount of expansion has been applied.

Another accessory category is the four-channel decoder (sometimes called a demodulator). A stereo system can be converted to four-channel operation by passing its two channels through a suitable decoder, which provides four output channels. The front channels are

returned to the stereo system, and are heard through its regular speakers. The back channels are passed through a second stereo amplifier and are heard through the back speakers. A simple matrix decoder can be used with phonograph records or FM broadcasts encoded with the SQ or QS system to give a reasonably good four-channel effect or to enhance the sound of stereo programs. More advanced decoders, for both systems, use logic circuits that greatly enhance their channel separation and directive qualities, often giving the sound a "discrete" character.

The CD-4 demodulator, similar in concept to the matrix decoders, does not go into the signal path through the tape monitoring circuits. A CD-4 phono cartridge plugs directly into the demodulator, which supplies separate four-channel outputs to the high-level inputs of a four-channel amplifier or two stereo amplifiers.

A recent addition to the signal processing scene is the *time delay* unit. This all-electronic device applies various time delays to a stereo or mono program, and re-circulates the delayed signals to synthesize the effect of multiple reverberations. The processed signals drive side or rear speakers through a separate stereo amplifier, while the original unmodified stereo or mono signals are heard through the front speakers.

The designers and manufacturers of all these signal processing accessories have made them compatible with the levels and impedances found at typical amplifier tape recording outputs and inputs.

ACCUPHASE

F-5 Frequency Dividing Network

Electronic frequency dividing network for stereo multi-amp or tri-amp systems; uses

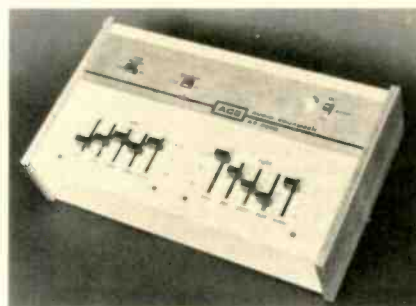


plug-in crossover frequency PC boards for changes in crossover points; sixteen crossover boards available (100, 180, 250, 350, 500, 650, 800, 1200, 1800, 2500, 4000, 5000, 6500, 8000, 10,000, and 12,500 Hz); each board has two symmetrical configurations for left & right channel operation; selector for 12 or 18 dB/octave cutoff attenuation at crossover freq.; mid- and hi output level controls; pilot light; standard 19" rack mount front panel available (F-5A); 17 1/2" W x 13 3/4" D x 3 1/4" H... \$650.00

ACE AUDIO

AE-2002 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. re-



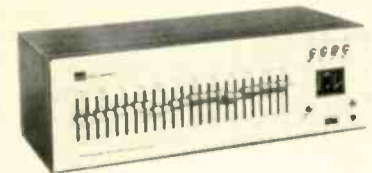
sponse 5-100,000 Hz ± 1 dB; hum & noise 80 dB below 2 V output; inputs: main, tape monitor; outputs: main, tape out; switches: power, defeat; tape monitor; unswitched convenience outlet; Canadian maple end caps; 3 1/2" H x 12 1/4" W x 7" D \$138.75
Kit version with manual \$89.25
Construction manual \$2.25

ADC PROFESSIONAL PRODUCTS

500 Frequency Equalizer

Stereo frequency equalizer; 24 operative bands, each with approx. 24 dB range; frequency response (flat) 5-100,000 Hz ± 1 dB; control frequencies: 30, 50, 90, 160, 300, 500, 900, 1600, 3000, 5000, 9000 & 16,000 Hz; HD (2-V output, 20-20,000 Hz) 0.035%; IM (2-V output) 0.04%; inputs: 2 main, 2 tape

monitor, sound level meter; outputs: 2 main, 2 tape out; two VU meter; comes with two 48"



twinshielded audio cables; 18" W x 7 1/4" D x 6" H \$299.95
300. Modified economy version of 500. \$229.95

ALTEC

729A "Acousta-Voicette" Equalizer

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 1/3 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. \$972.00

CERWIN-VEGA

GE-2 Stereo Graphic Equalizer

Covers 13 frequency bands (from 31.5 Hz to 16,000 Hz) ± 12 dB; response 20-20,000 Hz

Equalizers, Expanders & Noise-Reduction Units

±1 dB with equalizer controls at center detent; rated output 2 V rms (2000 ohms or greater load imp.; control accuracy within 1 dB of calibrations; hum & noise 0.05% at rated output; inputs: two each source & tape input, line; output tape (RCA phono jack); half-octave control below middle C, octave control above; 19" (rack mount) × 7 1/4" D (inc. knobs) × 5 1/4" H \$470.00

DAHLQUIST

DQ-LPI Variable Filter/Bass Equalizer

Low-pass electronic crossover for bi-amp bass speaker applications, including external low bass reproducers; each channel continuously variable from 40-400 Hz; cutoff slopes at 18 dB/octave; controls adjustable from flat to 5 dB boost at 20 Hz; outputs: choice or combination of mixed center-channel and stereo bass; separate level controls for system balance and up to 15 dB gain; satin-brushed panel with wood end blocks; 12 3/4" W × 5 1/4" D × 2 1/8" H \$250.00

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. 3 1/2" H × 9" W × 10 1/2" 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

30 Third-Octave-Band Equalizer

Active program equalizer with switchable inflection points for variable Q. 19" W × 5 1/4" H × 12" D \$975.00
Genuine walnut-veneer cabinet \$50.00

DYNACO

Stereo Octave Equalizer

Provides 12 dB boost or cut at octave intervals from 30-15,000 Hz; 10 separate slider adjust-

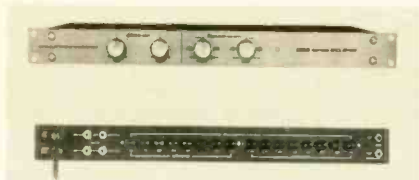


ments for each channel; separate level adjust. each channel from -12 dB to +6 dB; response 10-35,000 Hz ±1 dB; 600 ohm outputs standard; distortion at 2 V output; THD 0.04%, IM 0.02%; S/N 85 dB below rated output; IC-regulated power supplies 13 1/2" W × 11" D × 4 1/4" H Kit \$249.00
Assembled \$349.00

ESS

Eclipse 2240 Electronic Crossover

Selectable frequency electronic crossover for stereo bi-amplification & mono tri-amp applica-



tions; bandwidth 20-25,000 Hz; gain 0 dB; frequency response 20-20,000 Hz ±1/4 dB; distortion 0.05% typical in passband; noise level -90 dBm (104 dB below rated output); max. input level +30 dBm; max. output level: bridging 5 V rms into 10 k; crossovers: 100, 150, 200, 250, 500, 800, 1000, 1250, 1500, 2000, 2500, 5000, 8000, 12,500 Hz (ea. ch.); crossover slopes 12 dB/octave; input imp. 50 k unbalanced; output imp. 600 ohms; crosstalk 70 dB down at 20,000 Hz, 90 dB down at 1000 Hz; two rotary level and two rotary LF/HF shelving controls; rear-mounted pushbutton selector panel permits simultaneous LF/HF crossover selection from among 14 pre-assigned frequencies for A/B comparisons; brushed aluminum panel; 19" W (rack mount) × 9" D × 1 3/4" H. \$300.00

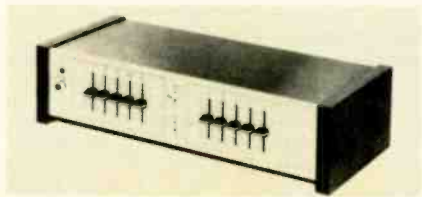
2241-AM Electronic Crossover

Two-channel, fixed-frequency electronic crossover/bass equalizer/rumble filter for use with bi-amp systems; gain: in-band 0 dB through-put gain; crossover 800 Hz; frequency response 20-20,000 Hz ±1/4 dB; dist. 0.05% typical in passband; crossover 12 dB/octave; bass equalization: "out" to +6 dB boost at 32 Hz; input/output: six phono connectors; front-panel controls: left & right channel high/low balance, bass equalization; 11 1/4" W × 7" D × 2 3/4" H. \$195.00

HEATH

AD-1305 Stereo Equalizer

Five-band, two-channel graphic equalizer; matches Heathkit AP-1615 preamplifier; HM & IM dist. less than 0.05%; hum & noise 90 dB below rated output; slide controls with center



detent; switches for tone flat, tape monitor; solid walnut end panels. 17 1/2" W × 8" D × 4 7/32" H (kit) \$119.95

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. 5 1/4" × 7 1/2" × 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. 3 3/8" × 13 1/8" × 7 1/2" D \$149.95

MXR

Stereo Equalizer

Dynamic range 110 dB; control range ±12 dB; gain: unity ±1 dB (controls centered); max out-



put level: +15 dBm (600 ohms), +22 dBm (unloaded); input imp. 47 k; equiv. input noise -95 dBm; frequency response 20-20,000 Hz ±1 dB at 0 dBm; THD 0.05% at 0 dBm (20-20,000 Hz); IM 0.05% at 0 dBm (60/7000 Hz 4:1); center frequencies (per channel) 31, 62, 125, 250, 500, 1000, 2000, 4000, 8000 & 16,000 Hz; 8 rear-panel phono jacks: two inputs, two low-imp. outputs, two tape-record outputs, two tape-monitor inputs; two switches control tape monitor function & equalizer bypass. . \$199.95

PANASONIC

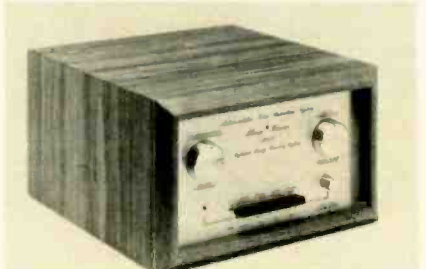
RP-966P Outboard Dolby Unit

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

PHASE LINEAR

1000 Noise Reduction System

Combines features of dynamic-range-recovery system with an autocorrelation noise-reduction



system, reduces noise and improves dynamics without pre-encoding; works in the tape monitor of a receiver or preamp; provides 10 dB noise reduction; 7.5 dB of increased dynamic range; adjustable dynamic low filter for reducing rumble and hum. Total distortion less than

0.25%; input impedance 70,000 ohms; input level 3 V rms max; output voltage 8 V rms, better than 3 V rms into 2000 ohms; frequency response 20-20,000 Hz ± 1 dB; peak unlimiter 0.5 dB/ μ s for +6 dB peak unlimit operation; nominal amplitude attack threshold 0.2 V peak at input to peak unlimiter; downward expander begins at -35 dB; ultimate limit is -41 dB; unlimiter window is 35 dB wide; upper and lower thresholds simultaneously variable by front-panel unlimit threshold control; high-frequency noise reduction begins at 2 kHz and is 3 dB, reaching 10 dB from 4 kHz to 20 kHz; low-frequency noise reduction begins at 200 Hz, ultimately reaching 20 dB at 20 Hz; passive subsonic filter rejection of -35 dB at 5 Hz; weighted overall noise reduction is -10 dB from 20 to 20,000 Hz. 11 $\frac{1}{2}$ " D x 9 $\frac{1}{2}$ " W x 5" H. \$349.00
Walnut cabinet \$29.00

PIONEER

SG-9500 Audio Frequency Equalizer

Stereo graphic octave equalizer for tone control with ten elements: 32, 64, 125, 250, 500, 1000, 2000, 4000, 8000, 16,000 Hz; level control range ± 10 dB; frequency response 5-70,000 Hz +0/-1 dB; S/N 90 dB; input impedance 200,000 ohms; output impedance 600 ohms; THD 0.04% at 1V (20-20,000 Hz); max. output 6 V. 16 $\frac{1}{2}$ " W x 13 $\frac{9}{16}$ " D x 5 $\frac{7}{8}$ " H. \$300.00

RG-1 Dynamic Range Expander

Dynamic processor provides improvements in dynamic range to enhance realism in reproduced music and noise reduction to eliminate unwanted tape and record noise; automatic operation; max. output 6.5 V; THD 0.1% at 1 V; dynamic expansion 6, 8, 10, 12, 14 dB; impulse response: attack time 0.5 ms, release time 80 ms; input impedance 70,000 ohms; output impedance 300 ohms; constant loss -3 dB; residual noise 65 μ V; S/N 100 dB (1 kHz, dynamic expansion 14 dB); twin meters. 13 $\frac{3}{32}$ " W x 12 $\frac{19}{32}$ " D x 5 $\frac{17}{32}$ " H. \$175.00

SAE

Mark 2700B Half-Octave Equalizer

Dual-control active equalizer for altering frequency response of a stereo sound system; has 40 frequency level controls, 40 toroidal band-pass 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 $\pm 0.25\%$, 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 x 7" D x 8 $\frac{3}{4}$ " H. . . \$550.00

Mark 2800 4-Band Parametric Equalizer

Parametric equalizer; 0.02% IM & THD; S/N 100 dB; 10 V output; peak indicators; level match controls; 19" W x 7" H x 4" D. . . \$550.00

SOUNDCRAFTSMEN

TG2209-600 Equalizer

Twin-graphic equalizer; four LED's for front-panel display for zero-gain input to output signal ratios; two separate 10-octave equalization panels; ± 12 dB boost and cut each octave; separate equalized signal zero-gain controls for balancing input to output with +6, -12 dB range; front-panel controls for equalized or unequalized output, low and/or high shelving-zero-gain lights on or off; separate terminations for input and output of Section A & B; balanced 600-ohm op-amp input & output. \$550.00

dbx your Revox



and get studio quality live recordings with absolutely no audible tape hiss while preserving the full dynamic range of music. With the dbx 122 noise reduction system you also enjoy the bonus of 10 dB extra headroom. And, dbx 122 tape copies cannot be distinguished from the originals.

The dbx 122 increases the signal-to-noise ratio by at least 30 dB and transforms your Revox into a musical miracle machine that will outperform professional studio recorders costing many times more than your Revox.

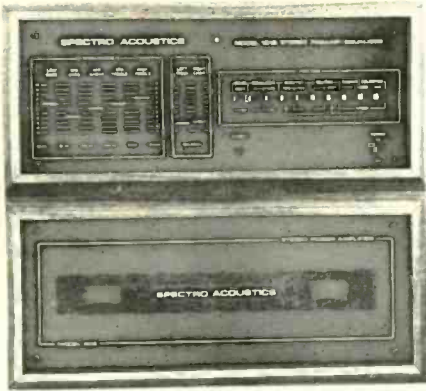
Have the dbx expert at your dealer show you how the dbx 122 noise reduction system makes a miracle machine out of your Revox or other open reel recorder. For complete product information and a list of demonstrating dbx dealers in your area, circle reader service number or contact:

dbx, Incorporated, 296 Newton Street
Waltham, Massachusetts 02154 • (617) 899-8090

dbx

CIRCLE NO. 22 ON READER SERVICE CARD

POWER PERFORMANCE



STACK PACK

You want power, performance and flexibility in a topnotch stereo system, but you don't want to sacrifice all those records and tapes you could buy while you pay off the finance company. The Spectro Acoustics Model 101B preamp/equalizer and Model 202 power amplifier together have more performance and flexibility than systems costing twice as much. With a good quiet turntable and a pair of wide range bookshelf speakers you can have an outstanding stereo system for under a grand. Plus a couple of records.

The 101B preamp/equalizer has a five band equalizer to perfectly match your components, your music and your room. A ten button function selector offers two tape circuits, with deck to deck dubbing, line or tape equalization and defeat, as well as input and mode selection.

The 202 power amplifier uses an unusual power supply so that power at clipping is typically 200 watts per channel on musical peaks. It's strong, solid and can drive practically any speaker made including most electrostatics. Next time you go out and boogie, check out the sound system. There will probably be one or two of our Pro/Com 202C's putting out those good times.

SPECIFICATIONS

101B Stereo Preamp/Equalizer

Frequency Response: 20Hz-20kHz \pm 0.5 db typically within 0.1 db)

THD: Less than 0.05% 2 volts output, 20Hz-20kHz, 10k ohm load

IMD: Less than 0.01% SMPTE

Phono Noise: Better than 88 db below full output, Std. "A" weighting

202 Stereo Power Amplifier:

Power Output: No less than 100 watts, RMS continuous, per channel, both channels driven into 8 ohms at any frequency from 20 Hz to 20kHz, and no more than 0.25% THD.

IMD: No more than 0.25%

SPECTRO ACOUSTICS INC.

1309 E. Spokane Pasco, Washington
(509) 545-1829 99301

CIRCLE NO. 65 ON READER SERVICE CARD

9

Equalizers, Expanders & Noise-Reduction Units

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 \pm 0.25 dB; THD & IM 0.05%. Walnut grained cabinet. 7 1/4" x 20" x 11 1/4" \$529.50

SG2205-600 Equalizer

Provides front-panel pushbutton control of line



or tape equalization for conventional hi-fi systems or separate stereo outputs for multiple-system equalization; tape monitor circuit provides monitoring equalized program material during use; environmental test record for listening environment equalization; four LED's for front-panel display controlled by zero-gain level controls for input vs output level balancing; S/N 96 dB; THD 0.1% at 2 V, 0.05% at 1 V (typical); \pm 12 dB boost or cut each octave; 600 ohm output; black anodized aluminum panel 19" wide for rack mounting. \$399.50

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. \$369.50

RP-2204 Tape Playback Equalizer

Can be used for equalization of tape recordings; environmental test record included for listening environment equalization; designed to be connected to tape monitor circuit of any stereo receiver or preamp; has tape monitor inputs & output with front-panel pushbuttons; two separate 10-octave equalization panel with \pm 12 dB boost and cut for each octave; separate equalized-signal zero-gain controls for exact balancing input-to-output levels within an 18 dB range; S/N 96 dB; THD 0.1% at 2 V; walnut vinyl case. \$329.50

20-12A Audio Frequency Equalizer

Frequency response 20-20,480 Hz \pm 1/2 dB at zero setting; has toroidal and ferrite-core inductors (10 octave-bands per channel); IM & THD 0.1% at 2V; S/N 96 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



CITIZENS BAND HANDBOOK

All the authoritative information you need on CB two-way radios to make an intelligent buying decision for transceivers, antennas and accessories. Here's a partial look at what the experts have packed into one volume.

- Over 500 CB models fully described with technical specs, features latest prices and photos.
- Lab test evaluations on mobile and base-station transceivers, both AM and SSB, spell out what the rigs can really do.
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- Manufacturers' specifications "decoded" to help you read a "spec sheet" with ease.
- All about CB antennas—the true key to "talk power."
- CB language translation chart.
- How emergency CB associations can save your life!
- How phase-lock-loop digital synthesizers work.
- The latest Flash Report on upcoming CB units presented at the first all-CB-manufacturers show.

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CITIZENS BAND HANDBOOK
Consumer Service Division
595 Broadway • N.Y., N.Y. 10012

SDBG

Please send the 1976 CITIZENS BAND HANDBOOK. I'm enclosing \$2* (\$1.75 plus 25c for postage and handling.) Outside U.S.A. \$3, postpaid.

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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.

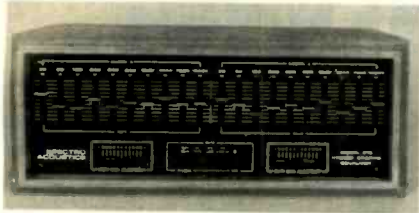
The Publisher

octave; zero-gain controls for left & right channels provide continuously variable 18 dB range for unity gain compensation; walnut-grained wood case. 7 1/4" x 20" x 11 1/4" D. \$299.50

SPECTRO ACOUSTICS

210 Ten-Band Stereo Equalizer

Provides 10 bands of equalization with ±15 dB



boost or cut in each of the 10 audible octaves; uses gyrator synthesized inductors; features full line or tape equalization with lockout to prevent program destruction; unity gain controls for each channel or audible adjustments; distortion 0.1% of 1 V (20-20,000 Hz) with any combination of equalization adjustments, 0.05% of 1 V with equalizer bypassed or set flat; S/N 90 dB below 2 V rms; output impedance 600 ohms; dynamic range: noise floor is over 100 dB below full output. 17" W x 7" D x 6" H. \$295.00

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 \$350.00

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. \$175.00

4-CHANNEL

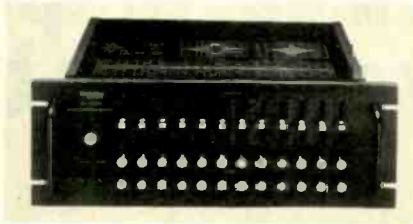
AN-300 Dolby Noise Reduction Unit

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. 6 3/4" H x 16 1/8" W x 10 1/8" D. \$450.00

TECHNICS BY PANASONIC

SH-9090P Frequency Equalizer

Single-channel octave equalizer with 12 bands covering 10 to 32,000 Hz, 12-dB boost or at-



tenuation at each frequency point; center frequency of each band variable by one octave

in either direction; bandwidth ("Q") continuously variable for each band; equalizer in/out for comparisons; frequency response (at 0 dB levels) 20-20,000 Hz +0/-0.5 dB (balanced); 15-30,000 Hz +0/-0.5 dB (unbalanced); THD 0.05%; input imp. 100,000 ohms (balanced), 50,000 ohms (unbalanced); output impedance 20 ohms (balanced), 10 ohms (unbalanced); maximum output voltage +24 dBm (balanced), +20 dBm (unbalanced); master level control +6 dB. 18 2/32" W x 14 3/4" D x 6 1/16" H. \$999.95

ALWAYS

Carry a copy of the Guide when shopping for audio components. It can save you time and money!

**Creative Technology!
The MXR StereoGraphic Equalizer**

The Technical Equalizer

The MXR Equalizer is a 2-channel frequency equalizer that offers 10 bands of discrete adjustment on each channel. Nominal center frequencies are: 31hz, 62hz, 125hz, 250hz, 500hz, 1khz, 2khz, 4khz, 8khz, and 16khz. Each of these octave bands may be cut or boosted independently to plus or minus 12 decibels by using the slide controls. The MXR StereoGraphic Equalizer features a bypass switch which enables the user to switch the equalization in and out of the signal path for instant sound comparison. The unit has an internal power supply and is designed to work into output loads of 600 ohms or higher. These input and output characteristics make the MXR StereoGraphic Equalizer compatible with any stereo Hi-Fi equipment.

The Creative Equalizer

Become creative with the MXR StereoGraphic Equalizer whether you want to decrease the "boomy" mid-bass sounds or increase the deep-bass sounds, decrease nasality, harshness or shrillness or move the sound source closer or further away, it's all at the touch of a slide control. Tailor your playback to suit any number of variables and develop the mood you want to hear. The MXR StereoGraphic Equalizer is compact, stylish and handsomely packaged in brushed aluminum with walnut side panels. Its design and circuitry will complement any modern Hi-Fi system at the attractive price of \$199.95. At MXR, we combine engineering excellence and creativity to provide you with superior products. For more information see your nearest MXR dealer or direct inquiries to MXR, 277 N. Goodman St., Rochester, New York 14607, (716) 442-5320.



MXR Consumer Products Group

CIRCLE NO. 51 ON READER SERVICE CARD

From the company that's brought new thinking to speakers, come new speakers that think.

In a field where most of the leading brands have been established for decades, B-I-C VENTURI™ speaker systems have achieved eminence overnight.

In sales, where we are rapidly closing in on first place.

But, more importantly, in speaker technology.

At a time when most believed the technical frontiers had been thoroughly explored, B-I-C VENTURI speakers have been awarded two basic design patents in the space of six months.

#3,892,288 for the application of the 'venturi' principle to acoustics, which revolutionized bass reproduction.

And #3,930,561 for the BICONEX™ horn, which combined the virtues of conical and exponential flare rates.

The resulting gains in efficiency, bass response and dynamic range have established new performance/value criteria.

And, already, many long-time leaders in speaker design are attempting to follow our lead.

Thinking defined.

Now B-I-C VENTURI introduces two new high-efficiency speakers, that go on to do what no others have ever attempted.

They're called the Monitor Series.

And, by any definition, they're the first speakers that can think.

Both the Formula 5 and Formula 7 are equipped with electronic circuitry capable of taking measurements, displaying information, even initiating specific action.

For example, they can tell when your amplifier is 'clipping,' and signal you.

They can warn when they're being overloaded, and protect themselves.

They can automatically adjust their frequency response to match the aural response of the human ear.

And the Formula 7 can even let you see what you're hearing.

These unique abilities elevate the loudspeaker to a new role in the stereo system. That of a system monitor, which can literally help you hear better.

Get 'clipped' no more.

Until now, there has been no way for the user to accurately identify amplifier distortion due to clipping, or the precise point at which it occurred.

But the new B-I-C VENTURI Monitor Series speakers come with a test record

that lets you pinpoint the output level at which your amplifier begins to clip the peaks of the waveform.

Each speaker has a Clipping Indicator lamp, and a control that adjusts lamp sen-



sitivity to your amplifier's maximum 'clean' output.

Once matched to your amplifier, the indicator will stay lit when clipping occurs. Lowering your amplifier until the lamp just flickers will allow musical peaks to be perfectly reproduced.

What's more, this circuit can be used to indicate speaker overload in those few instances where an amplifier has a power rating *higher* than the Formula 5 or 7 it's being matched with.

And, if overloaded, the speakers protect themselves by shutting off power to the stressed component. Individual indicator lamps (left above) signal you, and can also help isolate the problem.

Improving on nature.

One of the curious facts in acoustics is that the ideal in musical reproduction has long been 'flat' response.

Curious, because only at very high levels can the human ear hear flat. As listening levels decrease, the ear quickly loses bass and treble tones.

That's why our exclusive Dynamic Tonal Balance Compensation circuit (patent pending) was developed.

The idea is to improve on nature.

And by automatically compensating for what the ear can't normally hear, today's B-I-C VENTURI speakers bring you music that's music to the ears.

A balanced performance.

The Formula 7 takes the monitor concept an interesting step further.

A bank of Sound Pressure Level Indicators light in sequence, as speaker output increases. This visual display covers the range from 75db (normal speech) to 117db (jet engine at 70 feet).

A reference chart on the display panel further interprets the information.

Interesting in themselves, the SPL readings can also help you fine-tune your system to room acoustics, and compensate for imbalanced output levels in amplifier and tuner channels, tape heads and phono cartridges.

Tomorrow's technology today.

Once again, B-I-C VENTURI has extended the limits previously envisioned for speaker design.

These two new Monitor Series speakers take speaker technology an innovative step into the future. They establish a new, and larger, role for the loudspeaker.

And we confidently predict that they presage the speakers of tomorrow.



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B-I-C VENTURI™ SPEAKER SYSTEMS
TOMORROW'S TECHNOLOGY TODAY

CIRCLE NO. 15 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE

10

SPEAKER SYSTEMS

THE loudspeaker is the most important component of a high fidelity system, since it has by far the greatest effect on the final sound. Most speakers use *dynamic* drivers. A voice coil suspended in a powerful magnetic field moves a paper cone, in accordance with the signal current passed through the coil by the power amplifier. The moving cone, in turn, generates sound pressure waves in the air, which are ultimately heard by the listener as a reproduction of the original program.

A large, heavy cone is needed to generate the low (bass) frequencies, while a small, light cone is required for the high (treble) frequencies. Since it is not practical for a single speaker to cover the full audio range, multi-way speaker systems are the rule in high-fidelity applications. A two-way speaker uses a large low-frequency driver, or *woofer*, and a *tweeter* or high-frequency driver. A *crossover network* channels only the bass frequencies to the woofer, and the treble to the tweeter. A three-way system also has a midrange driver, with a crossover from woofer to midrange and another from midrange to tweeter. The actual crossover frequencies and the rate at which undesired frequencies are attenuated (the *slope*) are selected by the designer to complement the characteristics of the drivers.

As a rule, speakers are enclosed in boxes, which may be, essentially, fully sealed (*infinite baffle* or *acoustic suspension*), or vented to the outside through a hole or *port*. The size of the enclosure, and the port if one is used, is coordinated with the woofer characteristics to achieve the desired low-frequency performance. A full-range frequency response is possible with an enclosure of almost any size, but (all else being equal) a smaller enclosure results in lower effi-

ciency, which in turn requires more amplifier power for a given listening volume. In addition to being more efficient, a larger speaker system usually can generate a higher sound level without excessive distortion.

There are numerous variations of the ported enclosure, including the use of a passive radiator (a speaker unit without a magnet or voice coil) instead of a port opening, an internal tube or duct leading to the port opening, and a system of internal baffling known as a transmission line that extends and smooths the bass response.

A speaker that radiates all its sound from the front tends to be directional, especially at the higher frequencies (woofers are inherently non-directional). It is generally agreed that the dispersion or *polar response* of a speaker should encompass the entire listening area of the room. To this end, most high-frequency drivers are small dome radiators, which disperse the sound widely. Some speakers are designed to be *omni-directional* (or partially so) radiating their sound more or less evenly throughout the room. This may be accomplished by placing several drivers on different surfaces of the enclosure, using reflectors to disperse the sound, or by angling some of the drivers rearward so their output will be reflected from a wall.

The purpose of a speaker enclosure is to prevent the sound from the back of the cone from entering the room, where it could cancel the front radiation and reduce the bass response. In ported speakers, the back radiation is reversed in phase when it leaves the port, so that it enhances the bass response. Another type of speaker, the *dipole*, uses the back radiation directly to re-inforce its bass output. A dipole is usually a free-standing panel, or screen,

that must be placed a few feet from a wall for best results.

A few high quality speakers use *electrostatic* drivers instead of dynamic units. Their thin, plastic membranes are moved by a high-voltage electric field. Since the membrane is acted upon uniformly over its entire surface, it is relatively free of mechanical breakup effects that can roughen the response of a cone speaker, and the sound of an electrostatic speaker is characteristically very smooth and uncolored. However, in addition to their considerable size and cost, many electrostatic speakers place severe demands on the driving amplifier (the speaker is effectively a large capacitor instead of the combination of resistance and inductance that is typical of dynamic speakers), and deep-bass response is limited. Various specialized drivers have been developed, principally for the higher frequencies. These include piezoelectric drivers, ribbon drivers, and the "air motion transformer," a form of ribbon speaker.

Unlike most other high-fidelity components, the performance of a loudspeaker cannot be defined easily in numerical terms. Not only are there no universally accepted measurement systems, but the sound of any speaker is affected greatly by its acoustic environment, including the size and shape of the room, its furnishings, and the placement of the speaker (and the listener) in the room. For this reason, the best way to judge a speaker is to listen to it critically, using a variety of program material, and to note whether its output is well balanced, or whether some portions of the frequency range are over-emphasized or under-emphasized. If possible, the final judgment should be made in your own home, since any speaker will sound different there than it did in the dealer's showroom.

ACOUSTIC RESEARCH

AR-LST Three-Way System

Three-way system with 12" acoustic-suspension woofer, four 1 1/2" dome midrange, four 3/4" dome tweeters; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 35 Hz & 23,000 Hz; crossovers 525 Hz & 5000 Hz; six-position switch for different spectral energy profiles; imp. 4-16 ohms nominal depending on sw. positions; min. amp. power 25 W for 100 dB SPL in 3000-cu-ft room, max. 100 W rms/ch for speech and music; 27 1/8" W x 20" H x 9 3/4" D \$600.00

AR-3a Three-Way System

Three-way system with 12" acoustic-suspension woofer, 1 1/2" dome midrange, 3/4" dome tweeter; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 35 Hz & 23,000 Hz; crossovers 575 Hz & 5000 Hz; midrange & high-range level controls; imp. 4 ohms; min. driving power 25 W for 100 dB in 3000-cu-ft room; max. 100 W rms/ch for speech and music; oiled-walnut veneer cabinet; 25" H x 14" W x 11 3/8" D \$295.00

AR-5 Three-Way System

Three-way system with 10" acoustic-suspension woofer, 1 1/2" dome midrange, 3/4" dome tweeter; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 44 Hz and 23,000 Hz; crossovers 650 Hz & 5000 Hz; midrange & high range level controls; imp. 8 ohms; driving power 25 W min for 100 dB SPL in 3000-cu-ft room; max. 100 W rms/ch for speech and music; oiled-walnut veneer cabinet; 24" H x 13 1/2" W x 11 1/2" D \$215.00

AR-2ax Three-Way System

Three-way system with 10" acoustic-suspension woofer, 3 1/2" cone midrange, 3/4" dome tweeter; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 44 Hz & 23,000 Hz; crossovers 1400 Hz & 5000 Hz; midrange & high-range controls; 8 ohms imp.; min. driving power 25 W for 100 dB SPL in 3000-cu-ft room, max. power 100 W rms/ch for speech and music; oiled-walnut veneer cabinet; 24" H x 13 1/2" W x 11 1/2" D \$165.00

AR-6 Two-Way System

Two-way system with 8" acoustic-suspension

woofer & 1 1/4" cone tweeter; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 50 Hz & 21,000 Hz; crossover 2000 Hz; two-position high-range level control; 8 ohm imp.; min. driving power 25 W for 100 dB SPL in 3000-cu-ft room, max. power 100 W rms/ch for speech and music; oiled-walnut cabinet; 19 1/2" H x 12" W x 7" D \$99.00

AR-7 Two-Way System

Two-way system with 8" acoustic-suspension woofer & 1 1/4" cone tweeter; rated response: efficiency 86 dB SPL for 1 W input at 1 meter, 3 dB down at 62 Hz & 21,000 Hz; crossover 2000 Hz; min. driving power 15 W for 100 dB SPL in 3000-cu-ft room, max. power 100 W rms/ch for speech and music; walnut-grained vinyl cabinet; 15 3/4" H x 9 3/4" W x 6 1/4" D \$75.00

AR Advanced Development Div.

AR-10π Three-Way System

Three-way system with 12" acoustic-suspension woofer, 1 1/2" dome hemispherical mid-range, 3/4" soft-dome hemispherical tweeter; rated



response: efficiency 86 dB SPL at 1 meter for 1 W input, 3 dB down at 35 Hz & 25,000 Hz; crossovers 525 Hz & 5000 Hz; controls: woofer environmental control for optimum acoustic loading in almost any room position; three-position mid-range level control; three-position high-range level control; imp. 4-16 depending on control settings; min. driving power 25 W for 100 dB SPL in 3000-cu-ft room, max. 150 W rms/ch on speech and music; oiled-walnut veneer cabinet, finished all sides, including rear; 25" H x 13¹/₂" W x 10³/₄" D. . . . \$395.00
AR-11. Same as AR-10 π except imp. 4 ohms; no woofer environmental control. . . . \$295.00

AR-12 Three-Way System

Three-way system with 10" acoustic-suspension woofer, 2¹/₄" midrange with magnetic fluid suspension and integral rear-loading cavity; 3/4" dome tweeter; rated response: efficiency 86 dB for 1 W input at 1 meter, 3 dB down at 44 Hz & 25,000 Hz; crossovers 700 Hz & 4000 Hz; three-position mid-range and high-range level controls; 8 ohms imp.; min. driving power 25 W for 100 dB SPL in 3000-cu-ft room, max. 150 W rms/ch for speech and music; oiled-walnut veneer cabinet; 25" H x 13¹/₂" W x 10³/₄" D. . . . \$225.00

AR-14 Two-Way System

Two-way system with 10" acoustic-suspension woofer, 1" dome tweeter; rated response: efficiency 86 dB for 1 W input at 1 meter, 3 dB down at 44 & 22,000 Hz; crossover 1300 Hz; high-range contour control with optional treble roll-off above 4000 Hz; imp. 8 ohms; min. driving power 15 W for 100 dB SPL in 1500-cu-ft room; max. 100 W rms/ch for music and speech-oiled-walnut veneer cabinet; 25" H x 13¹/₂" W x 10³/₄" D. . . . \$160.00

AR-16 Two-Way System

Two-way system with 8" acoustic-suspension woofer, 1" soft-dome tweeter; rated response: efficiency 85 dB for 1 W input at 1 meter; 3 dB down at 50 Hz & 22,000 Hz; crossover 1300 Hz; high-range contour control with optional treble roll-off above 4000 Hz; 8 ohms imp.; min. driving power 15 W for 100 dB SPL in 1500-cu-ft room, max. 100 W rms/ch for music and speech; 19⁷/₈" H x 9⁷/₈" W x 8¹/₂" D. Genuine wood with simulated walnut-grain finish. . . . \$115.00
 Walnut-grained vinyl cabinet. . . . \$99.95

ACOUSTI-PHASE

Phase-III+ Three-Way System

Three-way dynamic bass-reflex system; 12" woofer, 5" midrange, 1" Mylar dome tweeter; response 32-20,000 Hz \pm 3 dB; crossovers

700 & 4500 Hz; imp. 4-8 ohms; min. amp power 10 W rms, 100 W rms max.; high-frequency level control; built-in fusing; walnut enclosure; 25" H x 15" W x 14" D. . . . \$279.85

Phase II Three-Way System

Three-way dynamic bass-reflex system; 10" woofer, 5" midrange, 1" Mylar dome tweeter; response 38-20,000 Hz \pm 3 dB; crossovers 1200 & 4500 Hz; imp. 4-8 ohms; min. amp power 10 W rms, 70 W rms max.; high-frequency level control; built-in fusing; available in utility or walnut cabinet; 24¹/₂" H x 14¹/₂" W x 12¹/₂" D. . . . \$199.95

Phase Monitor Two-Way System

Two-way dynamic bass-reflex system; 12" woofer & 1" Mylar dome tweeter; response 38-20,000 Hz \pm 3 dB; crossover 2000 Hz; imp. 4-8 ohms; min. amp power 10 W rms, 70 W rms max.; high-frequency level control; built-in fusing; 25" H x 15" W x 14" D. . . . \$159.00

Phase I Two-Way System

Two-way dynamic bass-reflex system; 8" woofer & 1" Mylar dome tweeter; response 40-20,000 Hz \pm 4 dB; crossover 1600 Hz; imp. 4-8 ohms; min. amp power 5 W rms, 50 W rms max.; high-frequency level control; built-in fusing; 21¹/₂" H x 12¹/₂" W x 10⁷/₈" D. . . \$119.95

Microphase Two-Way System

Two-way dynamic bass-reflex system; 6¹/₂" woofer & 1" Mylar dome tweeter; frequency response 48-20,000 Hz \pm 4.5 dB; crossover 1600 Hz; imp. 4-8 ohms; min. amp power 5 W rms, 30 W rms max.; 17¹/₂" H x 10¹/₂" W x 8" D. . . . \$79.95

Phase Master Three-Way System

Three-way dynamic bass-reflex system; 12" woofer, two 13-cm dome midrange & horn-loaded supertweeter; frequency response 30-20,000 Hz \pm 4 dB; crossovers 500 & 5500 Hz; imp. 4-8 ohms; mid- and high-frequency level controls; 15 W min. power, 125 W max.; laminated butcher block hardwood cabinet; 25" H x 15" W x 14" D. . . . \$359.00

ACOUSTIQUE 3a

Andante Studio Speaker System

Three-way speaker system, 15" woofer, 2" dome midrange, equiphase flat ribbon tweeter 2¹/₈" x 7⁸/₁₆"; crossovers 250 Hz & 5000 Hz; frequency response 25-40,000 Hz \pm 3 dB; efficiency (90 dB SPL at 400 Hz at 6 feet on-axis) 1.25 W; max. power handling 100 W rms; 8 ohms; 150 W built-in servo amplifier; distortion 0.7%; 30" x 16" x 10" \$1000.00

Andante Master Control System

Three-way acoustic-pressure feedback speaker system; 10" woofer, 2" dome midrange, 2¹/₈" x 7⁸/₁₆" symmetrical flat ribbon tweeter; crossovers 300 Hz & 5000 Hz; frequency response 25-40,000 Hz \pm 3 dB; power required to produce 90 dB SPL at 400 Hz at 6 feet on-axis 1.4 W; 8 ohms; max. power handling 60 W rms; 125 W built-in servo amplifier; distortion 0.7%; 18" x 12" x 8" \$729.00

Arioso Monitor Speaker System

Three-way bass-reflex with internal controlled damping; 15" woofer, 5.8" midrange, horn tweeter; crossovers 300 Hz & 5000 Hz; frequency response 40-18,000 Hz \pm 3 dB; max. power handling 120 W rms; 8 ohms; 27" x 18" x 15" \$499.00

Andante Ultra-Linear System

Three-way acoustic pressure feedback speaker system; 11" woofer, 2" dome midrange, 3/8" dome tweeter; crossovers 300 Hz & 4000 Hz; frequency response 30-30,000 Hz \pm 3 dB; max. power handling 50 W rms; 8 ohms; 120 W built-in servo amplifier; 18" x 12" x 8" \$459.00

Adagio ∞ Speaker System

Three-way infinite-acoustic-load speaker system; 11" woofer, 2" dome midrange, 3/8" dome tweeter; crossovers 400 Hz & 4000 Hz; frequency response 35-30,000 Hz \pm 3 dB; max. power handling 80 W rms; 8 ohms; internal acoustical "low pass" filter plus infinite transmission line; 31" x 12" x 12" \$389.00

Aubade Folded-Horn System

Two-way folded-horn speaker system; 10" woofer, two horn tweeters; crossover 5000 Hz; frequency response 40-18,000 Hz \pm 3 dB; max. power handling 60 W rms; 8 ohms; 42" x 11" x 11" \$389.00

Allegretto Bass-Reflex System

Three-way bass-reflex system with internal controlled damping; 10" woofer, 4" x 8" horn midrange, horn tweeter; crossovers 2000 Hz & 10,000 Hz; frequency response 50-18,000 Hz \pm 3 dB; max. power handling 60 W rms; 8 ohms; 25" x 12" x 10" \$269.00

Apogee Bass-Reflex System

Two-way bass-reflex system with internal controlled damping; 10" woofer, 3/4" dome tweeter; crossover 3500 Hz; frequency response 50-30,000 Hz \pm 3 dB; max. power handling 60 W rms; 8 ohms; 25" x 12" x 10" \$189.00

ADC

303AX 2-Way System

Sealed enclosure, 2-way bookshelf system with 10" woofer and 2¹/₂" wide-dispersion tweeter. Response 37-20,000 Hz \pm 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. 23³/₄" H x 13" W x 11³/₄" D. . . . \$129.00

ADS

910 Three-Way Speaker System

Three-way system with optional tri-amplification; frequency response 28-20,000 Hz \pm 3 dB; power rating 150 W rms; efficiency: 94 dB SPL (at 1 W rms at 1 meter); recommended amp power: 15 W rms min, 300 W rms max.; crossovers 450 & 4000 Hz at 12 dB/octave; crossover replaceable with tri-amplifier; 4 ohms; has 1" soft-dome tweeter, 2" soft-dome midrange, two 10" long-excursion, high-compliance woofers in separate acoustic-suspension chambers; round-cornered walnut cabinet finished on all sides including back & baffle; removable black grille; optional swivel stand; 33¹/₂" H x 19" W x 15¹/₄" D. . . . \$550.00

810 Three-Way Speaker System

Efficient acoustic-suspension design; response 35-20,000 Hz (\pm 3 dB); minimum recommended amplifier power 20 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: 93 dB SPL at 1 W input at 1 meter; selected natural walnut finish; removable black grille; 25¹/₂" H x 14¹/₈" W x 11³/₄" D. . . . \$340.00

710 Three-Way Speaker System

Efficient acoustic-suspension design; response 40-20,000 Hz (\pm 3 dB); 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: 93 dB SPL at 1 W input at 1 meter; selected natural walnut finish; removable black grille. 21⁷/₈" H x 12¹/₄" W x 10¹/₂" D. . . . \$249.00

500 Two-Way Speaker System

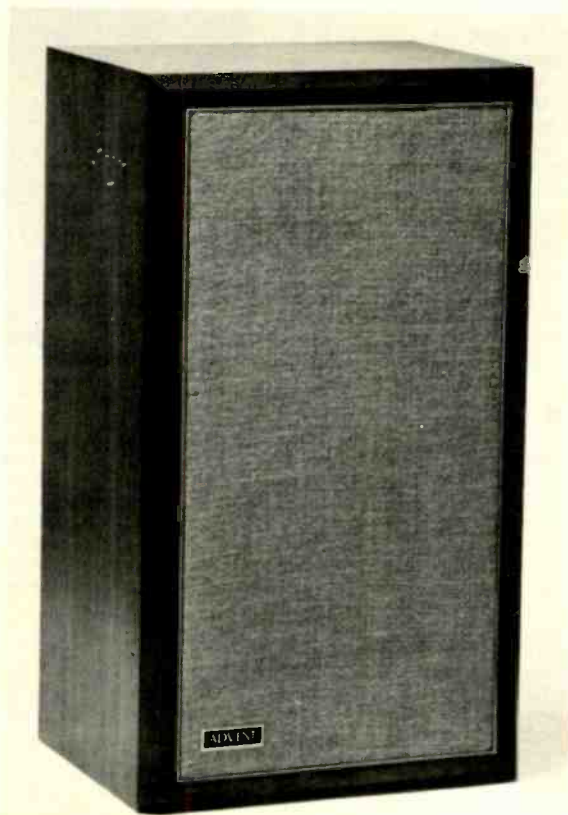
Efficient acoustic-suspension design; response 45-20,000 Hz (\pm 3 dB); minimum recommended amplifier power 10 W rms; crossover 1500 Hz

*(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 \$121 to 149 (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.

12 dB/octave; 4 ohm imp.; has 1" soft-dome tweeter, 8" long-excursion, high-compliance woofer; efficiency: 91 dB SPL for 1 W input at 1 meter; selected natural walnut finish; removable black grille; 20" H x 11 1/2" W x 9 3/4" D. \$135.00

700. Same as 500 except has two 7" long-excursion, high-compliance woofers; 21 3/8" H x 12 1/4" W x 10 1/2" D \$179.50

200 Two-Way Speaker System

Miniature two-way acoustic-suspension system; frequency response 90-20,000 Hz ± 3 dB; power rating 30 W rms; recommended power 10 W rms min., 40 W rms max.; crossover 2500 Hz at 12 dB/octave; 4 ohms; has 1" soft-dome tweeter, 4" ultra-long-excursion high-compliance woofer; efficiency: 89 dB SPL at 1 W rms at 1 meter; brushed aluminum enclosure (black or silver anodized); anodized aluminum grille; 6 3/4" H x 4 1/4" W x 4 1/8" D \$100.00

400 Two-Way Speaker System

Efficient acoustic-suspension design; response 48-20,000 Hz (± 3 dB); 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: 91 dB SPL at 1 W rms input at 1 meter; selected natural walnut finish; removable black grille. 17 3/4" H x 10" W x 8 1/2" D \$99.50

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 15 W (rms) driving power. 14 1/4" H x 25 3/8" W x 11 1/2" D. Walnut \$140.00
Same but vinyl enclosure \$121.00

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 x 20" W x 9 1/4" D. Vinyl-clad walnut... \$89.00

Advent/2 Speaker System

Sealed enclosure, 2-way bookshelf system. 8



ohms impedance. Requires 10 W (rms) driving power. 11 1/2" x 19" x 7 1/4" D. White \$94.00
Vinyl-clad walnut enclosure \$77.00

Advent/3 Speaker System

Two-way acoustic-suspension system designed for smaller apartments; drivers & LCR network provide octave-to-octave tonal balance of more expensive Advent speakers; 8 ohms; requires

minimum of 10 W rms amp power; non-resonant particle board finished in walnut-grained vinyl; 15 3/4" x 9 3/8" x 6 3/8" D \$50.00

400 Miniaturized Speaker

Miniaturized acoustic-suspension speaker; 8 ohms; requires 4 to 6 W of amp. power; warm white polystyrene cabinet with silver gray metal grille; 11" x 6 3/8" x 6" D \$32.00

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 35-20,000 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; 14 3/4" W x 26 3/4" H x 10 1/4" D \$189.95

S-122 Two-Way Speaker System

Two-way system with 12" rolled-edge woofer and 1 3/4" 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; 14 3/4" W x 26 3/4" H x 10 1/4" D \$129.95

S-102 Two-Way Speaker System

Two-way system with 10" rolled-edge woofer and 1 3/4" 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; 13 1/8" W x 24" H x 9 3/4" 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 x 19" H x 6 3/4" D \$75.00

ALLISON

Model One Speaker System

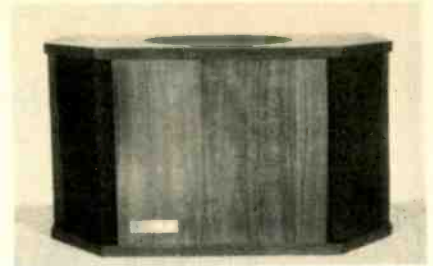
Stabilized radiation loading design with two 10" woofers, two 3 1/2" convex mid-range units, and two 1" tweeters; crossovers at 350 & 3750 Hz; LC half-section crossover network, air-core chokes and nonpolarized computer-grade capacitors. Features three-position control switch for selection of system 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 1/2 acoustic watt minimum over full frequency range, with 70 watts input; system resonance 45 Hz nominal. Sealed enclosure 40" H x 19" W x 10 3/4" front-to-back; internal volume 2550 cubic inches. Oiled walnut \$360.00

Model Two. Same as Model One except has two 8" woofers, two 3 1/2" convex mid-range, and two 1" convex tweeters; system resonance 52 Hz nominal. Sealed enclosure 36" H x 16" W x 9 3/8" front-to-back; internal volume 1775 cubic inches. Oiled walnut \$295.00

Model Three. Sealed acoustic-suspension system with 10" woofer, 3 1/2" midrange, 1" tweeter; LC half-section crossover network; crossovers 350 and 3750 Hz; min. amp. power 30 W/ch for 100 dB reverberant SPL; resonance freq. 45 Hz; designed for corner mounting; 3-pos. control switch selects system acoustic power response; 4 ohms (3.5 ohms min.); high-density particle board, walnut veneered, oil finished; 40" H x 15 1/4" W x 10" front-to-back (occupies 10 7/8" wall space min.) \$260.00

Model Four Speaker System

Two-way sealed acoustic-suspension system; 8" woofer & two 1" "Convex Diaphragm"

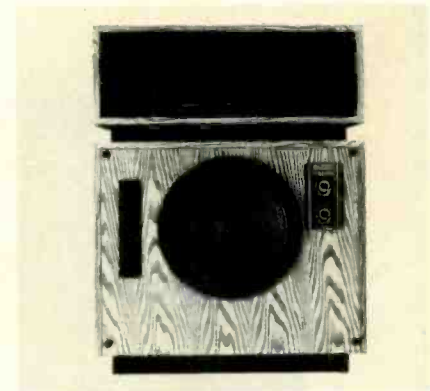


tweeters; crossover 2000 Hz; LC quarter-section network with 3-pos. control switch to adjust response from nominally flat to "concert-hall" balance slope; imp. 8 ohms; amp power 30 W/ch for 100 dB SPL; acoustic power output: 0.5 acoustic watt (70 W peak input), 0.25 (35 W input); designed to be used against wall or hung on wall (hardware included); walnut-veneered high-density particle board, oiled finish; 19 3/8" W x 11" H x 10" D \$175.00

ALTEC

19 Two-Way Speaker System

Two-way floor-standing vented enclosure with 15" bass driver, "Radial Phase Plug" driver



mounted on 811B sectoral horn; crossover 1200 Hz; 8 ohms; frequency response 30-20,000 Hz; operational power range 10 to 350 W; long-term broadband max. power 65 W; dispersion 105 degrees at -6 dB both vertical & horizontal; max. long-term acoustic output 120 dB at 65 W; hand-rubbed oiled-walnut or oak finish; acoustically transparent knit fabric grille mounted on removable frame; 39" H x 30" W x 21" D (including base and grille) \$659.00

17 Two-Way Speaker System

Two-way floor-standing vented enclosure with 15" bass driver with coaxially mounted sectoral horn and compression driver; crossover 1500 Hz; 8 ohms; frequency response 30-20,000 Hz; operational power range 100 to 350 W; long-term broadband max. power 65 W; long-term max. acoustic output 118 dB SPL at 65 W; dispersion 40 degrees (vertical) & 90 degrees (horizontal), both at -6 dB; hand-rubbed oiled oak finish; acoustically transparent knit fabric mounted on removable frame; 40" H x 26" W x 18" D \$585.00

"Voice of the Theatre" Systems

Features 15" bass driver plus compression driver mounted on 511B sectoral horn; crossover frequency 500 Hz; 8 ohms; frequency response 45-20,000 Hz; long-term broadband max. power 50 W; operational power range 10 to 250 W; long-term max. acoustic output 118 dB SPL at 50 W; sensitivity 101 dB SPL; theatre gray finish; 52 1/4" H x 30" W x 24" D. Model A7-500-8 \$589.00
A7-8. Same as A7-500-8 except different compression driver; crossover 800 Hz ... \$557.00

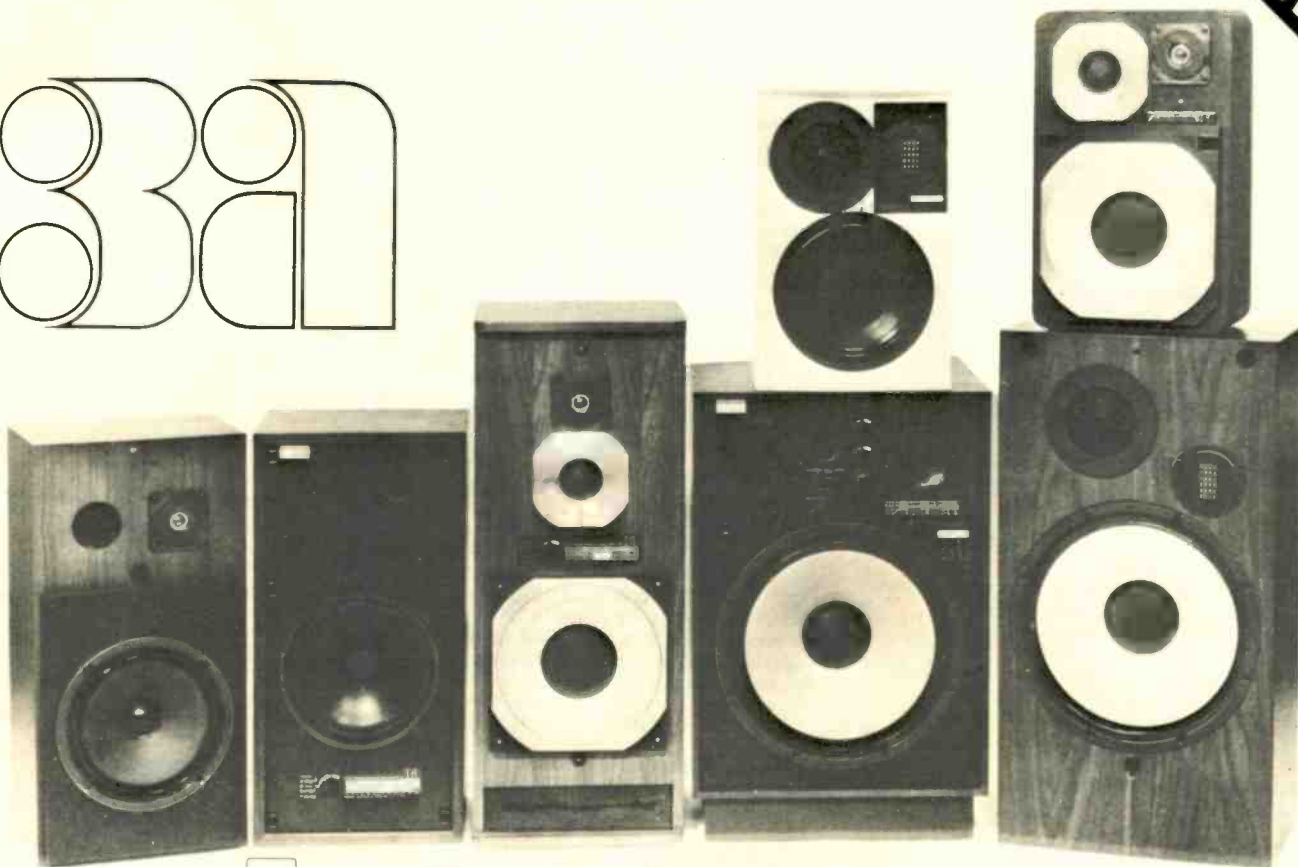
15 Two-Way Speaker System

Two-way floor-standing vented enclosure with 12" bass driver and "Radial Phase Plug" com-

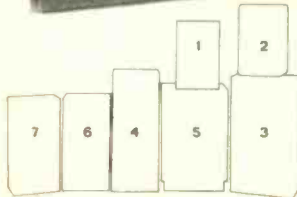
The Prestige of High Fidelity

NEW

3A



The Professional Loudspeaker for the Audiophile.

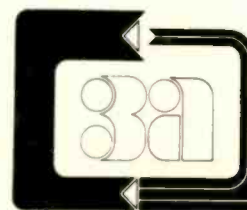


A.P.F.* speakers

- 1. ANDANTE "Master Control" the reference**
 25-40,000 Hz ± 3 dB
 60 watts R.M.S. power handling
 10" woofer controlled by A.P.F.* through a 125 watt built-in servo amplifier, dome midrange
 efficiency 93dB/W/m
 Equiphase flat ribbon tweeter
 Size - 18" x 12" x 8"
- 2. ANDANTE "Ultra linear" the miniature feedback**
 30-30,000 Hz ± 3 dB
 50 watts R.M.S. power handling
 11" woofer controlled by A.P.F.*
 120 watt built-in amplifier
 Dome midrange and tweeter
 Efficiency 93dB/W/m
 Size - 18" x 12" x 8"

- 3. ANDANTE "Studio" the Giant Feedback**
 20-40,000 Hz ± 3 dB
 100 watt R.M.S. power handling
 15" woofer controlled by A.P.F.*
 150 watt built-in amplifier
 dome midrange
 equiphase flat ribbon tweeter
 efficiency 94dB/W/m
 Size - 30" x 16" x 10"
 Infinite Acoustic line
- 4. ADAGIO the latest revolutionary principle (3A patent)**
 35-30,000 Hz ± 3 dB
 80 watt R.M.S. power handling
 11" woofer - dome midrange and tweeter
 efficiency 92dB/W/m
 Size - 31" x 12.5" x 12"

- 5. ARIOSO "Monitor" Professional speaker**
 25-20,000 Hz C.E.I. standard
 3 way - 15" woofer
 100 watt R.M.S. power handling
 efficiency 94dB/W/m
 Size - 27" x 18" x 15"
- 6. ALLEGRETTO a very bright speaker**
 3 way - 10" woofer
 50 watt R.M.S. power handling
 horn midrange and tweeter
 efficiency 93dB/W/m
 Size - 25" x 12" x 10"
- 7. APOGEE high quality control speaker**
 2 way - 10" woofer - dome tweeter
 45 watt R.M.S. power handling
 efficiency 93dB/W/m
 Size - 25" x 12" x 10"



The new generation of loudspeakers
 The electronic Pressure Feedback Speaker
 25-40,000 Hz ± 3 dB in a 0.8 cu. ft. capacity enclosure
 Woofer controlled by A.P.F.* through a 125 watt built-in servo amplifier
 Distortion lower than 0.7%
 RMS power: 60 watts
 Music power: 120 watts

All 3A speakers are delivered with their own frequency response curve measured in our anechoic chamber (40,000 cu. ft. - 35' high) and data is guaranteed according to broadcasting standards. One day all speakers will be made this way.

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Did you know that in Europe more than 20,000 audiophiles own an A.P.F.* speaker?

(*A.P.F. - Acoustic Pressure Feedback - 3A exclusive patent)

For free literature: IN CANADA - 3A International Inc. 871 Montee de Liesse, ST. LAURENT, MTL. P.Q. tel: (514) 735-6116
 IN U.S.A. - 172 Madison Av. Room 602, N.Y. 10016

10 Speaker Systems

pression driver mounted to curved radial horn; crossover 1700 Hz; 8 ohms; frequency response 30-20,000 Hz; long-term broadband max. power 60 W; operational power range 12 to 250 W; long-term max. acoustic output 111 dB SPL at 60 W; hand-rubbed oiled walnut or oak finish; finished all sides & back; acoustically transparent foam mounted on removable panel; 27" H x 22" W x 15 1/2" D (with base & grille) . . . \$429.00

Stonehenge II Speaker System

Three-way floor-standing system with 12" bass driver, 5 1/2" 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. 37 1/2" H x 16" W x 14 3/4" D . . . \$359.00

Santana II Speaker System

Two-way floor-standing vented enclosure with 12" bass driver & 5" frame cone driver; crossover 2500 Hz; 8 ohms; frequency response 40-20,000 Hz; max. power 45 W; operational power range 12 to 150 W; long-term max. acoustic output 107.5 dB SPL at 45 W; hand-rubbed oiled walnut finish with composition slate top; acoustically transparent black knit fabric grille mounted on removable frame; 25 3/8" H x 19" W x 16" D . . . \$259.00

Model Seven Bookshelf Speaker

Three-way system with 12" bass driver, 6 1/2" 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 x 16" W x 14 1/8" 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. 26 1/2" H x 17 1/2" W x 15" D . . \$289.00

Model One Bookshelf Speaker

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 x 11 1/2" W x 10 7/8" D . . \$89.00

Model Three. 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 x 12 1/2" W x 11 1/2" D . \$119.00

Model Five. Similar to Model Three 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; 25 1/2" H x 14 1/2" W x 12" D . . . \$169.00

AUDIOANALYST

Anthem Array Speaker System

Floor-standing system with 10" sub-woofer, 10" woofer, 4.5" midrange, 1" dome tweeter, piezoelectric super tweeter; response 28-20,000 Hz ± 3 dB (down 10 dB at 23 Hz in free field); max. sine-wave power input (400 Hz) 90 W for 5 min.; sensitivity: 10 W random noise input, 92 dB SPL output measured at 6 ft in 3000-cu-ft room; dispersion 180 degrees; controls: midrange, tweeter, dispersion; separate fusing

for midrange & tweeter; sealed woofer chambers, acoustic transparent foam housing for midrange & tweeter elements; removable dark fabric grille; min. amp. power 20 W rms; 44" H x 15" W x 15" D . . . \$499.00

A-200X Four-Way Speaker System

Floor-standing system with 12" high-compliance woofer, 5" mid-range in separate sub-chamber, 2" tweeter, two 1 1/2" 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 x 15" W x 12 3/4" D. Has black grille cloth . . . \$279.00

A-100X Three-Way Bookshelf System

Has 10" high-compliance woofer, 2" cone mid-range, 1 1/2" 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 white grille cloth. 24 3/8" H x 13 3/4" x 12" D . . . \$159.00

A-100C Bookshelf System

Three-way bookshelf speaker; 10" woofer, 2" midrange, 1 1/2" tweeter; crossovers 2200 Hz & 8500 Hz; frequency response 44-20,000 Hz ± 3 dB (down 10 dB at 35 Hz in free field); system resonance 52 Hz; max. sine-wave power input (400 Hz) 40 W for 5 min.; single switch for midrange & tweeter level control; sealed walnut-vinyl enclosure; removable white fabric grille; 21" H x 12 1/4" W x 10 1/2" D . . . \$138.00

A-76X Two-Way Speaker System

Acoustic-suspension design with 10" woofer, 2" 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 white grille cloth. 21" H x 12 1/4" W x 11 1/8" D . \$119.00

A-66 Bookshelf System

Two-way bookshelf speaker, two 4.5" woofers & 2" tweeter; 6 ohms; 55-18,000 Hz ± 3 dB (down 10 dB at 45 Hz in free field); dispersion 120 degrees; walnut vinyl vented enclosure; removable sculptured foam grille; 20" H x 9.875" x 9" D . . . \$89.00

AUDIO INTERNATIONAL

CM15b Speaker System

Four-way speaker system; 15" woofer, 6" mid-range, two phenolic-ring tweeters, piezoelectric



supertweeter; frequency response 20-22,000 Hz ± 2.5 dB; THD 2% at 100 dB SPL; max. SPL 120 dB; 4 ohms; will handle 200 W (music power), 40 W min. power; 12 dB/octave crossovers at 450, 5000 & 12,000 Hz; continuously variable tweeter & midrange level controls; three-position room-gain control; dual-enclosure of hand-rubbed walnut, black mica top; comes with 25-ft connecting cable; 33" H x 17" W x 17" D . . . \$499.00
CM25. 25-ft extension cable . . . \$15.00
CM662. Feedback speaker coupler for universal amplifier hookup . . . \$75.00

CM10 Speaker System

Three-way bookshelf speaker system; 10" woofer, 5" midrange, 1" tweeter; frequency response 30-18,000 Hz ± 2.5 dB (with feedback), 60-18,000 Hz ± 2.5 dB (without feedback); 2% THD at 90 dB SPL; 6 ohms; will handle 200 W music power, 40 W min.; crossovers at 12 dB/octave at 500 & 5000 Hz; hand-rubbed walnut cabinet; 22" W x 13" H x 12" D . . . \$149.00
CM25. 25-ft feedback extension cable . . . \$15.00
CM662. Feedback speaker coupler for universal amplifier hookup . . . \$75.00

CM15SW Servo-Feedback Sub-Woofers

Features 15" woofer; frequency response 20-450 Hz ± 2.5 dB; 4 ohms; THD 2% at 100 dB SPL; efficiency at 200 Hz: 94 dB at 0.8 W input at 1 meter; min. power handling 75 W, capacity 200 W music power; crossover 12 dB/octave at 450 Hz; three position room-gain control; 25-ft connecting cable included; hand-rubbed walnut cabinet with mica top; 19" H x 17" W x 17" D . . . \$299.00
 Same accessories as for CM15b & CM10

AUDIONICS

TLM200 Tower Speaker System

Four-way dynamic system with 9" x 12" foil-stressed piston sub-woofer, 8" Bextrene cone midrange, 5" Bextrene cone midrange, and 7/8" Mellinex dome tweeter, plus rear-mounted dome tweeter; mirror-image pair enclosures with 7-ft transmission line with sub-enclosures for mid-bass & midrange drivers; crossovers 140, 750, 3200 & 20,000 Hz; frequency response 20-30,000 Hz ± 3 dB on-axis near-field measurement; 70 W rms min. power; will handle 250 W instantaneous peaks; 8 ohms; dispersion 60 degrees vertical, 150 horizontal; rosewood-grain laminate cabinet with sculptured black grille; 50" H x 16" W x 25" D . . . \$1050.00
 Same but natural walnut veneer cabinet . . . \$1150.00

M33 Three-Way Speaker System

Three-way acoustic-suspension system; 9" x 12" piston woofer, 5" midrange, 7/8" dome tweeter; crossovers 250 & 3500 Hz; frequency response 34-20,000 Hz ± 3.5 dB on-axis near-field measurement; 20 W rms min. power; will handle 100 W instantaneous peaks; 8 ohms; dispersion 60 degrees vertical, 120 horizontal; rosewood-grain laminate cabinet with sculptured black grille; 30" H x 18" W x 15" D . . . \$409.00

TL30C Two-Way Speaker System

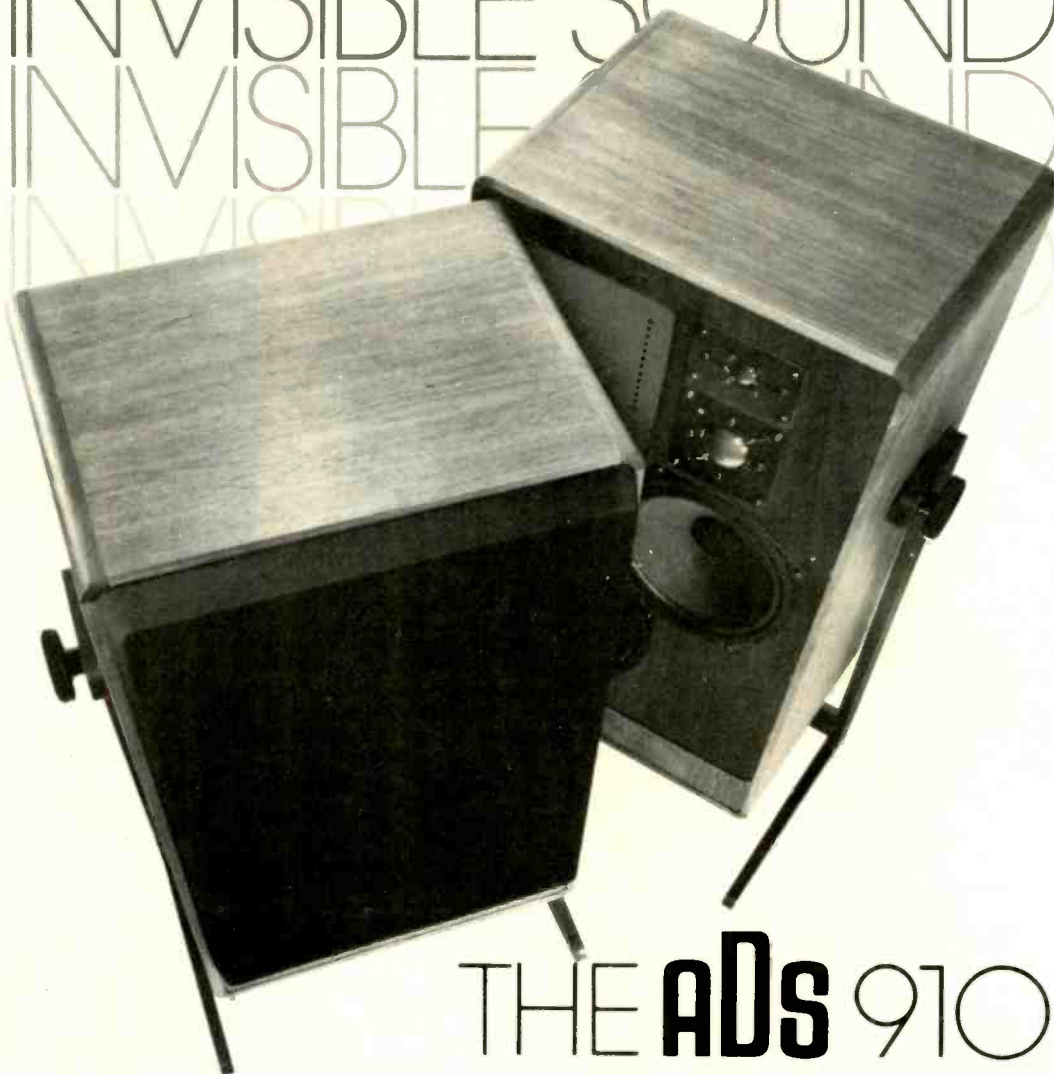
Two-way dynamic system with 8" woofer & 2" cone tweeter; triangulated transmission line; crossover 3000 Hz; frequency response 39-20,000 Hz ± 2.5 dB; 20 W rms min. power; will handle 80 W instantaneous peaks; 8 ohms; dispersion 30 degrees vertical, 120 horizontal; rosewood-grain laminate cabinet with sculptured black grille . . . \$239.00

TL51. Same as TL30C except heavier duty woofer for higher power inputs; improves performance below 50 Hz; 46" H x 12 1/2" x 12 1/2" . . . \$329.00

M32B Two-Way Speaker System

Two-way dynamic bookshelf system; 8" woofer

INVISIBLE SOUND
INVISIBLE SOUND
INVISIBLE SOUND



THE ADS 910

**The ADS 910 Reference System -
A benchmark in loudspeaker performance.**

For the first time, awesome dynamic capacity, widest bandwidth, high efficiency, and substantial power handling have successfully been combined - in the ADS 910.

Equally important, it is a transducer of unprecedented musical merit: incredible realism (regardless of playing level), stunning clarity and openness, pinpoint definition and stable imaging, identify this new standard of sound reproduction.

State-of-the-art materials technology and brilliant audio engineering allow the speaker to fulfill the demands of both active performers and recording engineers: their demands for "true to life" musical presentation.

Tasteful, functional design, expressed through choice woods and a meticulous furniture finish, elevates the ADS 910 to a showpiece in the well-appointed home of the discerning music lover. The speaker system's integrity and built-in flexibility appeal to the dedicated audiophile.

A new cost/performance ratio has been established by which all future studio speakers will have to be measured.

Coast to Coast, the skilled and carefully selected team of ADS dealers will proudly demonstrate our new 910, as well as any of our other eight, smaller precision speakers. Listen to the ADS 910 reference system; listen to music - the way it was recorded: Live, authentic, real!



ADS 910's shown in the recording studio of Deutsche Grammophon Gesellschaft at Symphony Hall, Boston. ADS speakers range in price from \$100 to \$600. ADS 910 Dimensions: 33 1/2" (H) x 19" (W) x 15 1/4" (D) 910C - 76PG

ADS, Analog & Digital Systems
64 Industrial Way, Wilmington, MA 01887

10 Speaker Systems

& two 2" cone tweeters; crossover 3000 Hz; frequency response 42-20,000 Hz ± 2.5 dB; 15 W rms min. power; will handle 60 W instantaneous peaks; 8 ohms; dispersion 30 degrees vertical, 100 horizontal; rosewood-grain laminate cabinet with sculptured black grille; 22" H x 14" W x 9 1/2" D \$155.00

AUDIO PHASE

fw154 Four-Way Speaker System

Tunable port bass-reflex four-way system with 15" woofer, 4" x 10" exponential horn midrange, 3" x 7" exponential horn tweeter, 4" phenolic dome tweeter; frequency response 20-25,000 Hz; 4-way electronic crossover 800, 2500 & 6500 Hz; variable treble brilliance & midrange presence controls; dispersion 180 degrees; 8 ohms; 5 W rms min. power, 75 W rms max.; hand-rubbed oiled-walnut finished wood cabinet; 28" H x 18" W x 16" D \$299.50
fw 124. Similar to 154 except ducted-port bass-reflex; 12" woofer; 60 W rms max. power; 23 1/2" H x 15 1/2" W x 12" D \$249.50

sw123 Three-Way Speaker System

Ducted-port bass-reflex 3-way system; 12" woofer, 4" x 10" midrange, phenolic ring tweeter; frequency response 30-19,000 Hz; crossovers 800 & 1500 Hz; 8 ohms; power rating 1-40 W rms; hand-rubbed walnut wood cabinet; removable grille cloth; 23 1/2" H x 15 1/2" W x 12" D \$169.50

lv123 Three-Way Speaker System

Ducted-port bass-reflex 3-way system; 12" woofer, pliable cone midrange, phenolic ring tweeter; crossover 800 & 1500 Hz; frequency response 35-19,000 Hz; 8 ohms; power rating 1-30 W rms; walnut-finish vinyl cabinet; removable foam grille; 23 1/2" H x 15 1/2" W x 12" D \$119.50

lv82. Similar to 123 except single 8" full-range woofer, phenolic ring tweeter; frequency response 40-18,000 Hz; crossover 1500 Hz; power rating 1-20 W rms; 23" x 13" x 10". \$69.50

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.

T-IC. Response 40-18,000 Hz ± 3 dB; crossover 1300 Hz; imp. 8 ohms; can be bi-amped \$1325.00 pr.

T-III A. Response 35-18,000 Hz ± 3 dB; crossover 100/1500 Hz; imp. 8 ohms; bi-amp or tri-amp \$1895.00 pr.

T-III A-TM. Treble/midrange of IIIA; 100-18,000 Hz ± 3 dB; imp. 8 ohms; bi-amp \$995.00 pr.

T-WA. Woofer of IIIA; 35-100 Hz; 8 ohms \$900.00 pr.

AUDIO SPECTRUM

Spectrum III Four-Way System

Four-way system with 15" woofer, 5" midrange, 1 3/4" tweeter, piezoelectric supertweeter; crossovers 575, 5000 & 10,000 Hz; tweeter/supertweeter level control; min. power 6 W rms/ch, max. 175 W; imp. 4-8 ohms; walnut veneer cabinet; 25 3/4" x 18" x 14 3/4" \$385.00

Spectrum II. Similar to Spectrum III except 3-way system; 12" woofer; crossovers 575 & 5000 Hz; min. power 6 W rms/ch, max. 125 W; tweeter control; 25 1/2" x 15" x 12 1/4" \$250.00

Spectrum I. Similar to Spectrum II except 10" woofer; crossovers 1800 & 5000 Hz; max. power 55 W rms/ch; walnut-grained vinyl cabinet; 24" x 14" x 11 1/4" D \$175.00

AURATONE

5C "Super-Sound-Cube" Monitor

Ultra-compact, full-range speaker system with high-compliance 4 1/2" 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. 6 1/2" x 6 1/2" x 5 3/4" D. Walnut wood-grained vinyl; finished four sides & back; black foam grille with bronze-tone molding (pair) \$49.95

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 1 3/8" 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 ± 2.5 dB. Separate 3-position mid-range & high-frequency level switches; fuse-overload protection. Brown grille cloth; hand-rubbed walnut-veneer cabinet; 26 1/4" H x 20 1/8" W x 15" D. 5-year transferable warranty \$319.00

103 Three-Way Speaker System

Uses matched high-compliance 10" woofer, 4 1/2" 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. Brown grille cloth; changeable grille cloths in eight decorator colors available separately. 25" H x 15" W x 9 3/8" D. A 1 3/4" high floor stand is included. 5-yr transferable warranty \$179.00

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. Brown grille cloth; changeable grille cloths in eight decorator colors available separately. 25" H x 15" W x 9 3/8" D \$139.00

101 Two-Way Speaker System

Two-way vented enclosure system with special 8" woofer, 1 3/4" tweeter, two side-firing 2" tweeters; crossovers 2500 and 3500 Hz; will handle 70 W, min. amp. power 15W; 8 ohms imp.; response 30-18,000 Hz ± 3 dB; brown grille cloth,



MODEL 19

We at Altec/Lansing are very proud of our newest and best speaker system, MODEL 19.

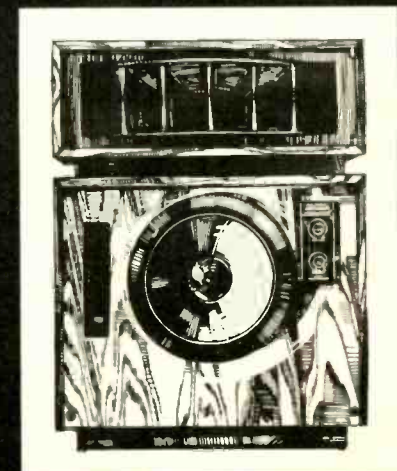
The key to the performance of MODEL 19 is an all-new high-frequency compression driver. It sports our exclusive new radial-design phase plug, The Tangerine™. With the Tangerine™ the driver produces greatly extended high-frequency response allowing our designers to employ a unique dual-range dividing network. This network permits variable equalization of mid and high-frequencies.



The dual-box design and tuned vent give MODEL 19 the proper internal volume and enclosure tuning to produce unprecedented low-frequency response.

MODEL 19 is available in oiled oak with removable brown knit grilles or oiled walnut with black knit grilles.

MODEL 19 turns your commitment to listening into a daring musical statement. Its solid beauty engulfs the senses as it bares the soul.



Altec/Lansing's full line of bookshelf and floor-standing speaker systems start at under \$100.

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*Alone with sea sounds and sunlight
the senses are freely touched.
And whatever touches the senses
touches the soul.*



Model 19



*Speakers for people from
the people at Altec/Lansing*

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10

Speaker Systems

removable grille; 29" H x 12⁷/₈" W x 12⁷/₈" D . . .
\$149.00

100 Two-Way Speaker System

Air-suspension system with 8" high-compliance woofer and 1³/₄" 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. Brown grille cloth; changeable grille cloths in eight decorator colors available separately. 21" x 12³/₄" W x 8¹/₂" D. 5-yr transferable warranty \$95.00

60 Two-Way Speaker System

Two-way bass-reflex speaker system with 2¹/₂" wide-dispersion tweeter and high-compliance 9" x 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. 8³/₈" W x 27⁵/₈" H x 8¹/₁₆" D. \$65.00

Double 60 Coupler Kit

Creates unified appearance of two Model 60's in parallel; provides higher efficiency, improved dispersion, and higher acoustic power output. 28¹/₁₆" H x 20⁵/₁₆" W x 10⁷/₁₆" D. . (pair) \$30.00

BANG & OLUFSEN

Beovox Phase-Link M70 System

Three-way acoustic-suspension floor-standing

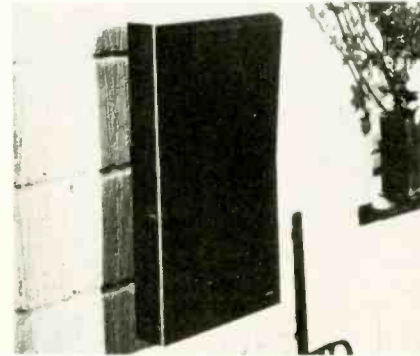
system with 10" woofer, 5" phase-link unit, 2¹/₂" mid-range, and 1" dome tweeter. Response 27-20,000 Hz; 4-8 ohm imp.; 70 W continuous load; 120 W dynamic max. input power, comes with stand; 13³/₄" W x 25⁵/₈" H x 11⁷/₁₆" D \$375.00

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 x 23¹/₄" H x 7¹/₄" D \$240.00

Beovox Phase-Link P-45 System

Panel speaker with two 5" bass drivers, 3¹/₂" filler driver & 1" dome tweeter; HD 1%; imp.



4-8 ohms; dispersion 120 degrees; 13³/₄" x 25⁵/₈" x 5⁵/₈". \$165.00

Beovox Phase-Link S45 System

Two-way acoustic-suspension bookshelf system with 8" woofer, 3¹/₂" 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. 10¹/₄" W x 18⁷/₈" H x 7¹/₁₆" D \$145.00

Beovox Phase-Link S-30 System

Two-way pressure-chamber speaker with 6¹/₂" woofer & 1" dome tweeter; max. load 30 W rms or 50 W music power; frequency response 49-20,000 Hz; HD 2%; imp. 4-8 ohms; dispersion 120 degrees; 8¹/₁₆" x 16¹³/₃₂" x 5¹/₁₆". . . \$100.00
P-30. Same specs as S-30 but panel type enclosure; 11¹³/₁₆" x 21¹/₄" x 3⁵/₈" D \$115.00
All speaker cabinets available in teak, rosewood, oak or white lacquer finishes.

B.E.S.

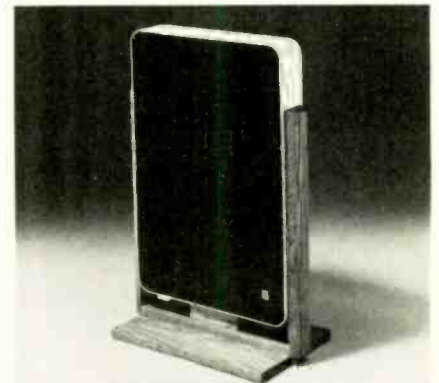
D110 Three-Way Speaker System

Three-way system; pulsating plane diaphragm activated by electromagnetic driver; two diaphragms activated by four drivers: 1 piezoelectric, 3 PM/voice coil; crossovers 1200 & 10,000 Hz; frequency response 30-20,000 Hz at 92 dB SPL; controls: one high and one mid-range frequency; imp. 4 ohms; min. amp power 25 W rms; max. power handling 250 W music & speech (100 W rms at 400 Hz); 1730 sq. in. radiating surface; built-in resettable circuit breaker; omnipolar dispersion at all audible frequencies; no enclosures or cones; has extruded aluminum external & internal structures; solid oak frame; 48¹/₄" H x 22" W x 3³/₄" D. \$599.00

D120. Same as D110 except frequency response 35-20,000 Hz at 92 dB SPL; 1700 sq. in. radiating surface; 52¹/₂" H x 20" W x 3³/₄" D \$549.00

D75 Three-Way Speaker System

Pulsating plane diaphragm activated by electromagnetic driver; single diaphragm activated by three drivers: 1 piezoelectric, two PM/voice coil; crossovers 1200 & 10,000 Hz; frequency response 30-20,000 Hz at 92 dB SPL; high- and mid-frequency controls; imp. 8 ohms; min.



amp power 25 W rms; max. power handling 200 W music & speech (75 W rms at 400 Hz); 1200 sq. in. radiating surface; built-in resettable circuit breaker; omnipolar dispersion at all audible frequencies; no enclosure or cones; heavy extruded aluminum external & internal structures; solid oak frame; 32" H x 22" W x 3³/₄" D \$349.00
D60. Same as D75 except crossovers 800 & 10,000 Hz; frequency response 38-20,000 Hz; 15 W rms min. amp power; max. power handling 150 W music & speech; 28" H x 20" W x 3³/₄" D. \$259.00

U60 Two-Way Speaker System

Two-way speaker system with pulsating plane diaphragm activated by electromagnetic driver; single diaphragm with two PM/voice coil drivers; crossover 800 Hz; no controls; frequency response 38-18,000 Hz at 92 dB SPL; 8 ohms; min. amp power 15 W rms; max. power handling 100 W music & speech; 850-sq.-in. radiating surface; omnipolar dispersion; no enclosures or cones; extruded aluminum internal & external structures; 25⁵/₈" H x 17³/₄" W x 3³/₄" D

The Avid 103.

Few people would expect
more in a loudspeaker.



For most people, the Avid Model 103 really is the ultimate speaker.

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some straight talk about loudspeaker accuracy from the people who invented it

Of over 100 speaker brands advertised on the market, all claiming supremacy for their product based on the kind of sound they produce, one leading company stands apart. It is Acoustic Research. We design, build and test our products to accurately reproduce all the sound information contained on your records, tapes and radio broadcasts, but no more. What you want from a loudspeaker is a precise recreation of what the recording engineer placed on your disc or tape, be it good, bad or mediocre. Only AR loudspeakers can guarantee you this kind of accuracy.

The most important contributors to AR loudspeaker accuracy are an original design with inherently flat frequency response (the ability to reproduce faithfully the complete range of musical sounds, including harmonics, without emphasizing or subduing any of them) and a rigorous testing program to insure that this ideal specification is fully realized in every product shipped. The flatness of AR response curves is an accepted fact. Perhaps not so well known is our insistence that every individual AR driver, and every completed system, perform to within ± 1 dB of this response curve before it may be shipped to your dealer.

We'd like you to know much more about accuracy in sound reproduction and have prepared a 36-page brochure on loudspeaker design and selection which will help you to make the most informed choice among the many options offered in the marketplace. For \$1.00 we'll send you a copy by first class mail. Or you may obtain your copy free by visiting your AR dealer. While you're there ask for an A-B demonstration of AR speakers using music with which you're familiar, against any other speakers in his showroom. We think you'll find our accurate sound the one you want to live with. For a list of AR dealers serving your area, circle reader service number or contact:

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Tim Holl, Director of Engineering at Acoustic Research

AR-11 three-way loudspeaker system \$325.

AR accuracy is available in speakers selling from under \$100 to \$425.

10 Speaker Systems

..... \$199.00
U50. Similar to U60 but with one PM/voice coil and one piezoelectric drivers; crossover 3000 Hz; frequency response 45-20,000 Hz; max. power handling 60 W music & speech; 530-sq.-in. radiating surface; 21½" H x 14" W x 3¾" D. \$129.00

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-4,700 ohms; response 40-15,000 Hz ±2 dB. Oiled walnut cabinet; 6½-ft. H x 2-ft W x 11" side D, 16" center D. (pair) \$400.00

B•I•C VENTURI

Formula 7 Monitor Speaker

Utilizes Venturi principle plus "T-Slot" horn assembly; three-way system; 12" heavy-duty woofer, 8" upper bass/lower midrange cone and heavy-duty dynamic compression driver on T-Slot horn vertical element, piezoelectric driver on T-Slot horn horizontal element; response 20-30,000 Hz; sensitivity 99 dB SPL at 1 W, 1 meter; will handle up to 125 W/ch program material; 6 ohms; features amplifier clipping indicator; "set level" control adjusts threshold of sensitivity of indicator to specific characteristics and power rating of amplifier being used; circuit breakers that trigger overload indicator lights; dynamic tonal balance compensation which changes frequency response relative to midrange to compensate to hearing loss of bass & treble tones at low listening levels (manual reset provided); dispersion 180 x 120 degrees; walnut-veneer cabinet with scuff-resistant smoked "glass" top; 41¼" H x 16" W x 13¾" D. \$445.00

Formula 2 Speaker System

Utilizes Venturi principle (operates 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° x 120°. Has removable reticulated foam grille available in black, brown, burnt orange, or blue. 19¾" x 12" x 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" x 13¾" x 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° x 120°. Same grille options. 26¼" x 15¾" x 14¾" D. \$295.00
VB-6. Optional base \$12.00

Formula 5 Monitor Speaker

Similar to Formula 7 but response 30-30,000 Hz; 10" woofer, T-Slot horn with dynamic compression driver on vertical element midrange; 96 dB SPL; will handle up to 100 W/ch program material; dark brown stretch cloth grille on removable frame; walnut veneer cabinet; optional VB-4 base available; 25½" H x 14¼" W x 12¼" D. \$219.95

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" x 10¾" x 10" D. \$74.95

BML

Tracer II Speaker System

Three-way floor-standing/bookshelf system; 8" woofer, 8" ABR, two horn-loaded solid state tweeters; uses dual phase coupling for flat tuned response within 38-22,000 Hz ±5 dB bandwidth; linear impedance curve for boom-free, tight musical bass response; 1.8 cu. ft; fuse protected; cocoa double-knit grille cloth; 24½" H x 14¼" W x 9" D. under \$227.00

Tracer 1A Speaker System

Three-way bookshelf system; 8" woofer, 8" ABR, 3½" horn-loaded VHF driver; dual-phase coupling instead of crossover; frequency response 43-23,000 Hz +3, -5 dB; nominal imp. 5 ohms; will handle 8 to 1000 W rms; fuse protected; 22" H x 12" W x 10" D. \$149.95

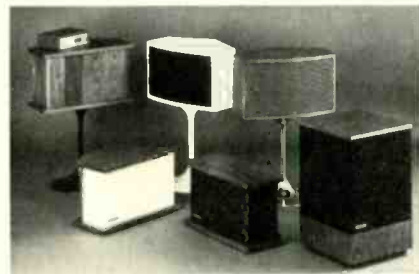
Tracer SK Speaker System

Three-way bookshelf system; 8" woofer, 6½" ABR, 3½" direct-radiating tweeter; dual-phase coupling; frequency response 50-18,000 Hz ±5 dB; fuse protected; will handle 5 to 50 W rms. \$99.95

BOSE

501 Series II Speaker System

Special Direct/Reflecting speakers with one woofer providing direct sound and two tweeters



reflecting sound from rear wall. 15 W rms minimum recommended power; 100 W rms maximum power. 4 ohms impedance; walnut enclosure. 24" H x 14½" W x 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 x 20¾" W x 12¾" D. Pair including equalizer. \$598.00

301 Bookshelf Speaker System

Ported, asymmetrical design, Direct/Reflecting speakers 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 rms; poly-urethane foam grille; enclosure 14½" W x 10½" H x 9½" D. May be operated vertically or horizontally. Supplied in mirror-image pairs only. \$96.00 ea.

BOZAK

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 x 52" H x 19" D. \$1150.00
B410. Same except Classic cabinet. \$1200.00
B-410. Same except Moorish styling. \$1250.00

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 x 44½" H x 15½" D. \$669.50
B-4000A. Same except Classic styling. \$759.50

B-4000A. Same except Moorish styling. \$789.50

B-4005. Same as B-4000A except low-boy enclosure; 36" W x 27½" H x 20" D. \$679.50

B-4005. Same as B-4005 Century except Moorish styling. \$795.00

MonitorC B-407A 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" x 40¼" H x 15" D. \$529.50

Concerto VII B-501 Speaker System

Three-way floor-standing system with 12" high-compliance bass driver. 6½" midrange, plus three treble units mounted in arc array for improved dispersion; response 40-20,000 Hz; crossovers 800 & 2500 Hz at 6 dB/octave; 8 ohm imp.; will handle 60 W program; 30" H x 20½" W x 16" D. \$379.50

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 x 25½" H x 13¼" D. \$279.50
B-402. Same except with fabric grille. \$279.50

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 x 24¼" H x 11½" D. Sculptured foam grille. \$197.50

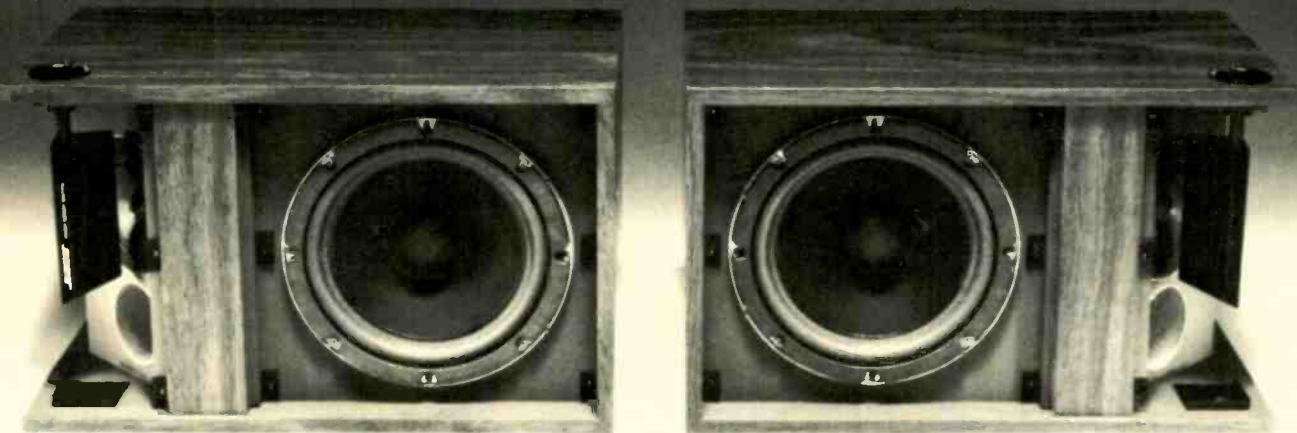
Sonora B-201A Speaker System

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 x 20¼" x 10" D. Sculptured foam grille. \$104.50

B-1000 Bard Outdoor Speaker

All-weather speaker with B-800 wide-range

Odd Couple.



This is a pair of Bose Model 301 Direct/Reflecting® bookshelf speakers with their grilles removed.

What's odd about them might not be immediately obvious, but it's very significant. Unlike most pairs of speakers, they're not identical. Instead, the left-hand speaker is a mirror image of the right-hand speaker.

Bose goes to the extra trouble and expense of making the two speakers of the pair you buy different to provide the proper proportion of reflected and direct sound at high frequencies, a feature unique among bookshelf speakers.

To accomplish this, each speaker is of an "asymmetrical"

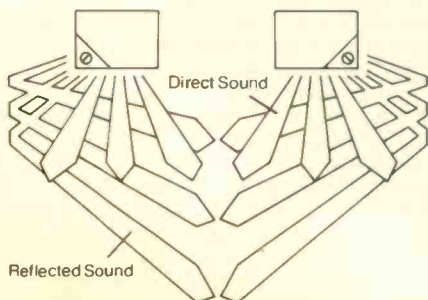
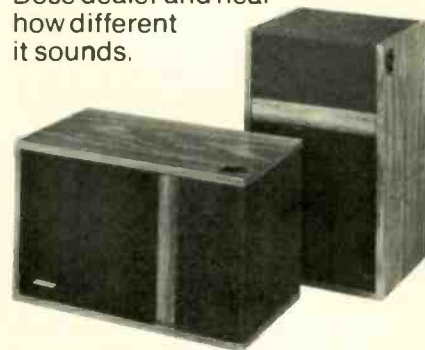
design. As a result, a pair of Model 301s has woofers pointing straight ahead and tweeters angled outward. A large proportion of the high frequency energy is reflected off the side walls and then into the center of the listening room, rather than being aimed directly at the listener. As in a live performance, the listener is surrounded with a balance of reflected and direct sound. This is the same principle used in the Bose 501 and in the legendary Bose 901® Direct/Reflecting speaker system. The result is extraordinarily open, natural, and spacious sound.

In addition, the Model 301 Dual Frequency Crossover™ network causes the woofer and tweeter to operate simultaneously for more than an octave, providing exceptionally smooth midrange response and an open spatial quality.

With the unique Direct Energy Control, the Model 301 provides excellent performance in a wide variety of rooms, including small apartments and dormitory rooms. And it is truly small enough to fit in a bookshelf.

These features make the Model 301 an unusual speaker with unusually fine performance. Its suggested retail price—less than \$100 per speaker—makes it an extraordinary value.

You already know the Model 301 looks different from other bookshelf speakers. Now visit a Bose dealer and hear how different it sounds.



BOSE®

The Mountain
Framingham, Mass. 01701

Patents issued and pending.

For a full-color brochure on the Model 301, write:
Bose, Dept. SD10, The Mountain, Framingham,
Mass. 01701.

10

Speaker Systems

driver with anodized-aluminum cone; 8 ohm imp.; has jack and plug connector . . . \$104.50
Two-Way Bard. Same except B-800 driver plus B-200Y tweeter . . . \$127.50

CELESTION

Ditton 66 Studio Monitor

Three-way system with 12" woofer, 12" ABR, 2 1/4" dome midrange, 3/4" dome tweeter; response 16-40,000 Hz; crossovers 500 & 5000 Hz; min. driving power 10 W; max. power handling 80 W; imp. 4-8 ohms; walnut cabinet; 39" H x 15" W x 11" D . . . \$479.50

Ditton 25 Speaker System

Three-way system with 12" woofer, 12" ABR, two 1.5" pressure midrange, 3/4" dome tweeter; response 20-40,000 Hz; crossovers 2000 & 9000 Hz; min. driving power 10 W; max. power handling 60 W; imp. 4-8 ohms; walnut cabinet; 32" x 14" x 11" D . . . \$329.50

Ditton 44 Speaker System

Three-way system with 12" woofer, 6" cone midrange, 3/4" dome tweeter; response 30-40,000 Hz; crossovers 500 & 5000 Hz; min. driving power 10 W; power handling 44 W; imp. 4-8 ohms; walnut cabinet; 30" x 14.6" x 9.8" D . . . \$269.50

Ditton 33 Speaker System

Three-way system with 10" woofer, 5" cone midrange, 1" dome tweeter; response 40-25,000 Hz; crossovers 500 & 2500 Hz; min. driving power 10 W; max. power handling 40 W; imp. 4-8 ohms; walnut cabinet; 24" x 14" x 10 1/2" D . . . \$229.50

Ditton 15 Speaker System

Two-way system with 8" woofer, 8" passive ABR, 1.5" pressure tweeter; response 30-15,000 Hz; crossover 2500 Hz; min. driving power 10 W; max. power handling 30 W; imp. 4-8 ohms; 21" x 9.4" x 9" D . . . \$149.50

UL10 Speaker System

Three-way system with 10" woofer, 2" dome midrange, 3/4" dome tweeter; response 20-40,000 Hz; crossovers 700 & 500 Hz; min. driving power 40 W; max. power handling 100 W; walnut cabinet; 26 1/2" x 12 1/2" x 15" D . . . \$349.50

UL8 Speaker System

Two-way speaker system with 8" woofer, 8" ABR passive radiator, 1" dome tweeter; response 30-28,000 Hz; min. driving power 15 W; max. power handling 50 W; walnut cabinet; 23" x 11" x 9 1/4" D . . . \$219.50

UL6 Speaker System

Two-way speaker system with 6" woofer, 6" ABR passive radiator, 1" dome tweeter; response 35-28,000 Hz; crossover 2500 Hz; min. driving power 20 W; max. power handling 40 W; walnut cabinet; 11 1/2" x 16" W x 8 3/4" D . . . \$169.50
 All quoted prices are slightly higher on the West Coast.

CERWIN-VEGA

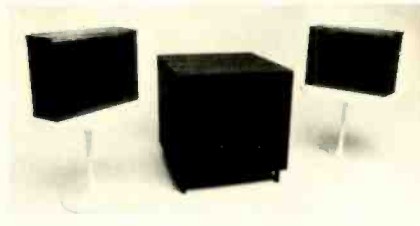
S-2 Three-Way Speaker System

250 W rms power capacity; 15" low-frequency driver, 8" midrange, horn tweeter; frequency response 28-17,000 Hz ± 3 dB; efficiency 103 dB/W/m; acoustic output 127 dB SPL/1 m; crossovers 200 & 4000 Hz; floor-standing enclosure . . . \$600.00
S-1. Bookshelf version; 200 W rms power capacity; 12" woofer, 6" midrange, dhorm tweeter;

response 28-20,000 Hz ± 4 dB; efficiency 100 dB/W/m; acoustic output 123 dB SPL/1 m; crossovers 300 & 4000 Hz . . . \$300.00

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. 14 1/2" H x 6" D x 18" W (back), 16 3/4" W (front) . . . \$385.00

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 x 20" W x 25" D . . . \$350.00

320D. Same as 320B but uses a 300 W ultra-compliant 18" woofer . . . \$485.00

15T "Tower" Speaker System

Four-speaker system with 15" floor-facing woofer, 8" midrange, 5" Superdhorm, tweeter; crossovers 150 & 3500 Hz; 150 W continuous program; frequency response 30-20,000 Hz ± 3 dB; max. sound level 124 dB at 1 m; imp. 4-8 ohms; oiled walnut enclosure, 40" H x 16 1/2" W x 16 1/2" D . . . \$600.00

12T Three-Way Speaker System

Three-way system; floor-facing woofer, 8" midrange, dhorm tweeter; frequency response 35-20,000 Hz $\pm 3 1/2$ dB; 100 W continuous program; max. sound level 120 dB at 1 m; crossovers 200 & 3500 Hz; imp. 4-8 ohms; oiled walnut cabinet with black grille; 40" H x 13 1/2" W x 13 1/2" D . . . \$299.50

36R Speaker System

Three-way system; 12" woofer, 5" midrange, 2 1/2" dhorm tweeter; 75 W continuous program; frequency response 38-20,000 Hz $\pm 3 1/2$ dB; crossovers 500 & 2500 Hz; oiled walnut cabinet with black foam grille; 25" H x 14 1/2" W x 12" D . . . \$199.50

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, 2 1/2" 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. 27 1/2" H x 20" W x 17" D . . . \$399.50

212 Two-Way Speaker System

Two-way system; 12" woofer & horn tweeter; frequency response 35-17,000 Hz ± 4 dB; power capacity 100 W rms (200 W/Excavator); crossover 2000 Hz; acoustic output 120 dB SPL/1 m . . . \$229.00

211 Two-Way Speaker System

Two-way, front-radiating system with 12" woofer & 2 1/2" 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 x 15" W x 15 1/2" D . . . \$199.50

211R. Same as Model 211 except direct radiating with controllable upper mid reflection; HF-91 horn driver assembly; crossovers 1500

GENESIS LOUDSPEAKERS

WHERE TO FIND THEM

ALABAMA - Sound Distributors - Birmingham, Decatur, Huntsville
 ARIZONA - Jerry's Audio Exchange - Phoenix, Tempe, Tucson
 ARKANSAS - Custom Audio - Little Rock
 COLORADO - Listen-Up - Denver
 CALIFORNIA - The Sound Company - San Diego
 DISTRICT OF COLUMBIA - Audio Associates, Myer-Emco
 DELAWARE - High Fidelity House - Wilmington
 FLORIDA - Sound Advice - Coral Gables, Ft. Lauderdale, Hialeah, North Miami Beach, Stereo Sales - Tallahassee
 ILLINOIS - Audio Consultants - Evanston, Albert Audio - Joliet, Audio Enterprises - Chicago Heights, Good Vibes - Champaign, Music World - Quincy, United Audio - Chicago, Deerfield, University Stereo - Charleston
 INDIANA - Alan Audio - Bloomington, Rlsley & Julian - Evansville, Classic Stereo - Ft. Wayne, Good Vibes - Lafayette, Audio Specialists - South Bend, Stereo Studio - Terra Haute
 IOWA - Stereo Shop - Cedar Rapids, Davenport
 Audio Labs - Des Moines
 KANSAS - Hayes Sight & Sound - Hutchinson, Kief's Records & Stereo - Lawrence, Custom Sound - Wichita
 KENTUCKY - High Fidelity, Inc. - Lexington, Louisville, Rlsley & Julian - Paducah
 MAINE - New England Music - Bangor, Lewiston, Portland, Waterville
 MARYLAND - Audio Associates - Bethesda, Wheaton, House of Sound - Baltimore, Meyer-Emco - Rockville
 MASSACHUSETTS - Audio Design - Pittsfield, Minuteman Radio - Cambridge, Lawrence, Nantucket Sound - Hyannis, North Dartmouth, Swansea, Waltham-Camera - Waltham
 MICHIGAN - Audlotland - Ann Arbor, Livonia, Mt. Clemens, Port Huron, Royal Oak, HiFi Buys - Ann Arbor, East Lansing, Jackson, The Sound Center - Houghton, Marquette
 MISSISSIPPI - Custom Audio - Jackson
 MISSOURI - Audio Village - Cape Girardeau, Best Sound - St. Louis, David Beatty Stereo - Kansas City, D & M Sound - Columbia, Flip's Stereo Place - Ballwin, Florrissant, The Stereo Buff - Springfield, High Fidelity Showroom - St. Louis
 NEBRASKA - Stereo Studio - Lincoln, Omaha
 NEW HAMPSHIRE - Audio Lab - Keene, Audiophile Studios - N. Hampton, The Inner Ear - Laconia
 NEW JERSEY - Audio Lab - New Brunswick, High Fidelity House - Cherry Hill, Sonex - Rocky Hill
 NEW MEXICO - Stereo Den - Albuquerque
 NEW YORK - Audio Workshop - Latham, Arnee Audio - Wappingers Falls, Audio Service Co. - Binghamton, Gordon Electronics - Syracuse, Lafayette Radio - Cortland, Ithaca, Middletown, Newburgh, Peekskill, The Sound Chamber - Rochester, Transcendental Audio - Amherst, Jamestown, Sound Room - Plattsburg
 NORTH CAROLINA - Vicker's Audio - Durham, Chapel Hill, Audio Systems - Charlotte, Atkinson Electronics - Greensboro
 OHIO - HiFi Audio - Cincinnati, Audio Arts - Youngstown
 OKLAHOMA - The Gramophone, Ltd. - Tulsa, Norman, Southwestern Music Co. - Altus
 PENNSYLVANIA - High Fidelity House - Broomall, Balacynwyd, Harrisburg, State College, Wayne, Whitehall, Opus One - Indiana, Pittsburgh, The Stereo House - Scranton, Wilkes Barre, Williamsport, Lewisburg
 TENNESSEE - HiFi House - Knoxville, Sound Concepts - Johnson City
 TEXAS - Hillcrest HiFi - Dallas
 VERMONT - Audio Den - Burlington
 VIRGINIA - Audio Associates - Springfield, Arlington, McLean, Myer-Emco - Falls Church, Audio Center - Roanoke, Sound World, Ltd. - Virginia Beach
 WISCONSIN - Echo Communications - Appleton, Cedarburg, Fond du Lac, Janesville, West Bend, Mid-West Hi-Fi - Madison

Some People Think 1975's 78th Largest Speaker Company Deserves To Be Number One In '76

MODERN HI-FI & MUSIC

Winter/Spring 1976

The Genesis Model I is not just another speaker system. A two-way acoustic suspension system incorporating a 6½" woofer and a 1" tweeter, it is, quite simply, an amazing value at \$188.00 for the pair. . .

The Genesis Model I has incredibly realistic response in the high end; cymbals, chimes and synthesizers seem to jump out of the speakers and bite you on the ear. The unobtrusive, yet highly adequate low end response, makes the Genesis I a truly outstanding buy.

The people at Genesis say they would like to be known as "The company whose people are dedicated to lowering the cost of, and therefore increasing the availability of the pleasure of listening to a truly accurate loudspeaker."

They've done it.

HIGH FIDELITY

May 1976

The announced aim of the designers (of the Genesis I) is to produce a small speaker with high performance capabilities and a modest price. We would agree that they have succeeded to a notable extent.

Omnidirectional frequency response, as measured in the anechoic chamber at the CBS Technology Center, is about ± 5 dB between 45 Hz and 18kHz, exactly as claimed. Moreover, the response curve about 63 Hz is one of the smoothest we have seen, varying by $\pm 2\frac{1}{2}$ dB or less up to 10 kHz, where it rolls off gradually. High frequency dispersion is good, with tones approaching 18kHz, audible to about 40 degrees off axis.

As with other accurate transducers, the very lack of coloration seems disappointing at first, but one soon realizes that it is possible to hear "through" these speakers to the music almost without effort.

STEREO REVIEW

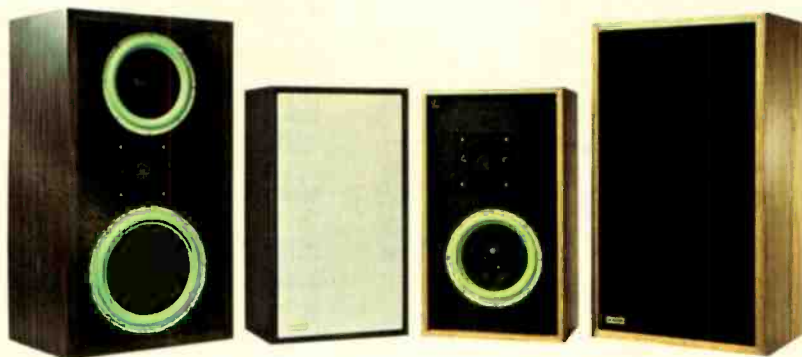
June 1976

Genesis Physics Corporation is a new name in the high fidelity industry, but its founders have had years of experience in loudspeaker design and manufacture. . . In direct listening tests and in A-B comparisons between the Genesis I and other speakers with whose sound we were familiar the diminutive Genesis I produced a caliber of sound that belied its size and price. It was basically very smooth and free of the sort of colorations that give so many speakers a heavy or "boxy" quality. . . with the clean, solid bass that we have come to associate with the better acoustic suspension systems but WITHOUT the upper bass coloration that mars the sound of some otherwise fine speakers. . . the Genesis I (is) an unusually accurate, smooth-sounding small loudspeaker system for the home, rivaling the performance of many speakers costing several times its modest price. . . you could hardly get a better sounding speaker in this price range."

In November of 1975 one of the country's largest hi fi specialty magazines did a survey of the top 100 speaker companies—Genesis ranked number 78. Fortunately we have very little chance of ever becoming number one. We say fortunately because we believe in the reasons why we probably won't even make the top ten. First of all, we hand build all our woofers and tweeters, one at a time, carefully testing each and every one to insure that every speaker that leaves our factory is as accurate as our laboratory standard. You won't find any conveyor belts either, since our final assembly workers handle each speaker cabinet one at a time, as a team, and they take pride in the results of their work. Without mass production we'll never get to be number one in quantity, but we have the satisfaction of knowing the lack of it makes us number one in quality.

The second reason is our exclusive dealer network. Less than 200 of America's 4000 outlets for stereo equipment display and demonstrate our loudspeakers. That's because only those dealers that carry quality equipment, and are willing to take the time to meet the needs of every customer, qualify as Genesis dealers. That way we can be sure that everyone of our customers will realize the full benefit of their hi fi investment, because each component will have been picked for its quality and represent the best value in its price range.

So if you're lucky enough to shop at a dealership that represents Genesis and purchase our speakers, you'll be a member of a very select, but very satisfied group of people, people who are quite content to stick with number seventy eight.



GENESIS
physics corporation

newington park
newington, n.h. 03801
telephone 603-431-5530

The GENESIS Loudspeakers

CIRCLE NO. 30 ON READER SERVICE CARD

10 Speaker Systems

& 3000 Hz \$299.50

24 Two-Way Speaker System

Direct-radiating, two-way system with 12" woofer & 2 1/2" dhorm tweeter; crossover 2500 Hz; frequency range 30-25,000 Hz; dynamic 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 x 14 1/2" W x 12" D \$149.50

26. Same as Model 24 except max. power input 60 W rms, 120 W peak \$169.50

R-123 Speaker System

Three-way system; 50 W rms power capacity (100 W/Excavator); 12" woofer, 5" midrange, dhorm tweeter; frequency response 38-20,000 Hz ±4 dB; crossovers 500 & 5000 Hz; acoustic output 115 dB SPL/1 m \$229.00

R-12. Two-way system; crossover 2000 Hz; acoustic output 115 dB SPL/1 m \$169.00

R-10. Two-way system; 40 W rms (80 W/Excavator); 10" woofer, 1" hard dome tweeter; crossover 1200 Hz \$149.00

CIZEK

Two-Way Speaker System

Two-way system; 10" woofer & 1" hemispherical dome tweeter; response 35-18,000 Hz + 1 1/2, -2 dB; crossover 1500 Hz acoustical and electrical; min. power 15 W rms into 4 ohms; will handle 150 W music power; sensitivity: 88 dB at 1 m with 1 W input into 4 ohms; high-frequency level & contour controls: walnut enclosure, transparent foam grille; 25" H x 15 1/2" W x 9 1/2" D \$189.00

CONTRARA

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 x 11 1/2" W x 11 1/2" D \$225.00

Vector One Speaker System

Two-way bookshelf/floor-standing system with 8" woofer & 1" tweeter; response 40-20,000 Hz; crossover 1750 Hz; 6 ohms; dispersion 180 degrees in all planes, 90 degrees at 18,000 Hz; will handle 50 W continuous program; rear-mounted passive low-frequency accentuator; has high-freq. equalization switch (+ 3 dB); oiled-walnut cabinet; cocoa brown or camel nylon stretch grille cloth; 23" H x 14" W x 10 3/4" D \$160.00

V-Base. Tilted stands for floor mounting; sold in pairs only \$40.00 pr.

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 x 18" W x 9 1/2" D \$125.00

Model S. Same specifications as Model R but square enclosure for bookshelf or floor use (with complementary base). 15" H x 15" W x 9 1/2" D \$125.00

CREATIVE

Autograph 500 4-Way System

Four-way tuned-port enclosure; two 10" woof-

ers, 5" midrange in acoustically isolated enclosure, 1" Mylar dome speaker, piezoelectric solid-state superhorn; response 25-22,000 Hz; will handle 125 W continuous music; imp. 4-6 ohms; midrange & tweeter controls; resettable circuit breaker opens at 105 dB; 44" x 14 3/4" x 13 1/4" \$400.00

Autograph 200 3-Way System

Three-way tuned port enclosure; 12" woofer, 5" midrange, dispersion tweeter; response 30-22,000 Hz; will handle 75 W continuous music; imp. 6-8 ohms; presence & brilliance controls; resettable circuit breaker; 23 3/4" x 14 3/4" x 12 1/4" (including grille) \$250.00

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. 25 1/2" x 20 1/4" x 17" \$249.95

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. 23 3/4" x 14 3/4" x 14 3/4" \$179.95

Audio Series 612-4 4-Way System

Four-way system; 12" woofer, 4" midrange, 2" tweeter, 3" phenolic-ring supertweeter; frequency response 33-20,000 Hz; min. power 5W; crossovers 1500, 5000 & 10,000 Hz; circuit breaker permits use with any amplifier/receiver; imp. 8 ohms; 26" x 15 3/4" x 13" \$175.00

612-3. Three-way system with 12" woofer, 4" midrange, 2" tweeter; response 35-20,000 Hz; crossovers 1500 & 5000 Hz; 23 3/4" x 14 3/4" x 10 3/4" \$150.00

610-3. Three-way system with 10" woofer, 4" midrange, 2" tweeter; response 40-20,000 Hz; crossovers 1500 & 4000 Hz; \$120.00

608-3. Three-way system; 8" woofer, 4" midrange, 2" tweeter; response 45-18,000 Hz; crossovers 2000 & 5000 Hz; 22" x 12 3/4" x 8 1/4" \$100.00

628-2T. Two-way system; two 8" woofers, 3" tweeter; response 35-20,000 Hz; crossover 2000 Hz; 34" H x 11" W x 8 3/4" D \$99.00

921 Four-Way Speaker System

Four-way system with 12" woofer, 7" compression horn mid-range, 3" and 2 1/2" 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" x 15 3/4" x 12 3/4" \$169.95

881 Three-Way Speaker System

Three-way system with 12" woofer, 6" mid-range, and 2 1/2" tweeter. Response 30-20,000 Hz; crossovers 1000 & 4000 Hz. Will handle 40 W continuous power. 8 ohms. 23 3/4" x 14 3/4" x 12 1/4" \$149.95

771 Three-Way Speaker System

Three-way system with 10" woofer, 4" mid-range, and 2 1/2" tweeter. Response 35-19,000 Hz; crossover 4000 & 8000 Hz. Will handle 30 W continuous power. 8 ohms 22" x 12 3/4" x 9 1/2" \$119.95

661 Two-Way Speaker System

Two-way system with 8" woofer & 2 1/2" tweeter. Response 40-18,000 Hz; crossover 4000 Hz. Will handle 25 W continuous power. 8 ohms. 18" x 11" x 9". Sold in pairs \$79.95 ea.

221 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" x 8" x 7". Sold in pairs \$49.95 ea.

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 x 26" W x 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, 3/4" dome tweeter; and piezoelectric ceramic super tweeter; crossovers 400, 1000, 6000 & 12,000 Hz. Nominal impedance 8 ohms. Response 37-27,000 Hz ±2 1/2 dB. Recommended power input 60-200 W. Features low-diffraction, time-delay correction; continuously variable treble-slope control for boost or cut. Grille cloth is black with solid walnut trim. 30 1/2" W x 31 1/2" H x 9" D \$395.00

DQ-1 W Sub-Woofer

Specially designed 13" woofer in heavy cast frame mounted in walnut enclosure with internal bracing; black grille cloth; recommended application is in bi-amp mode but will perform with passive crossovers; designed to add an octave of low bass response to most speaker systems; 28" H x 18" W x 14" D \$275.00

DISCO "77"

Magnum 357 Speaker System

Two heavy-duty 15" woofers, one 27" midrange, three piezoelectric supertweeters; 30 W rms min. power, 250 W rms max.; continuously variable midrange & tweeter controls; output 125 dB at 4 feet at 100 W; circuit breaker protection; 65 3/4" H x 30" D x 24" W \$1295.00

M16 PA Speaker System

Two heavy-duty 10" woofers, one 1 kHz mid-range horn, three piezoelectric supertweeters; 10 W rms min. power, 100 W rms max.; variable mid/high controls; circuit breaker protection; output 110 dB at 4 feet at 80 W; 49 1/2" H x 18" D x 16 1/2" W \$550.00

3006 Monitor Speaker System

Four heavy-duty 10" woofers, one 1 kHz mid-range horn, one piezoelectric supertweeter; 5 W rms min. power, 150 W rms max.; dynamic damping; midrange & tweeter controls; sound pressure level meter; circuit breaker protection; output 118 dB at 4 feet at 100 W; 28" W x 15 1/2" H x 13 3/4" D \$499.00



KLH Research Ten Column Bookshelf Loudspeakers: For people who care more about music than money.

You are looking at three pairs of truly unusual loudspeakers. From left to right, they are the CB-10, CB-8, and the CB-6. What makes them so unusual is that each pair is capable of reproducing an amount and quality of sound that has heretofore been impossible to achieve from such modest sized devices. They are efficient and can be driven effectively by any reasonable power source (the CB-6 and CB-8 need as little as 8 watts per channel; the CB-10 will do quite nicely with as little as 10 watts per side). Yet all three pairs have the ability to handle as much as 100 watts RMS per channel! Their performance is perhaps best characterized as uncommonly open and airy,



with notably good bass response. Indeed, the CB-8 and CB-10 use our famous Megaflux Woofer™; the CB-6 has a "special six"—a new woofer that is easily among the best used in today's smaller loudspeakers. The CB-6, the smallest of the series, delivers about a third of an octave less bottom than the CB-8; the CB-8 about a third of an octave less than the CB-10. But all three models share exceptional smoothness and perfect musical balance. They also share something else. They are incredibly *inexpensive*.

Which can be a problem. Unfortunately there's a sizeable number of people who believe that if a speaker

doesn't cost a lot of money, it can't deliver a lot of sound. But if you trust your ears more than your checkbook, we suggest you listen to our CB loudspeakers soon. We think you'll love them *and* their sensible prices a lot.

For more technical information, visit your KLH Research Ten dealer. Or write to KLH Research & Development Corp., 30 Cross St., Cambridge, Mass. 02139. (Distributed in Canada by The Pringle Group, Ontario, Canada.)



KLH Research Ten Division
KLH Research & Development Corp.
30 Cross St., Cambridge, Mass. 02139

DUNTECH

DL-15 Three-Way Speaker System

40 W rms (less than 15 sec.); 150 W integrated program material; 15" woofer, 5" midrange, 1 3/4" tweeter; frequency response 27-20,000 Hz \pm 3 dB, 40-18,000 Hz \pm 2 dB; 8 ohms; THD & IM 0.3% (30-20,000 Hz) at normal listening levels, 1.6% at 30 Hz at 100 dB SPL (measured on-axis at 1 meter); crossovers 350 & 4000 Hz; system resonance 35 Hz or below; 30 W rms/ch min. amp. power; efficiency: 2.83 V (1 W at 8 ohms) produces 90 dB SPL at 1 meter; hand-finished walnut veneer cabinet; 32 1/2" H x 23 1/2" W x 18" D \$449.00

DYNACO

A-50 Speaker System

Sealed, dual chamber aperiodic 2-way floor-standing system with two 10" woofers and 1 1/2" dome tweeter. 1000 Hz crossover. Has 5-position tweeter level control, 8 ohms impedance. 25 W recommended driving power; 50 W (DIN) power handling capacity. Features dual spectrum damping. 28" H x 21 1/2" W x 10" D. Oiled walnut finish \$249.00

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. 22 1/2" x 13 1/2" x 10" \$169.00

A-35 Speaker System

Sealed, dual-chamber 2-way bookshelf system with 10" woofer and 1 1/2" soft-dome tweeter. 1200 Hz crossover. 8 ohms impedance. 20 W recommended driving power. 35 W (DIN) power handling. Features aperiodic design. 22 1/2" x 12 1/2" x 10" D \$129.00

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. 11 1/2" x 20" x 10" D \$119.00

A-25 Speaker System

2-way bookshelf system with critically damped port 10" woofer and 1 1/2" soft-dome tweeter. 1500 Hz crossover. Has 5-position tweeter level control, 8 ohms impedance. Recommended amp. power 15 W or more; 35 W (DIN) power handling capacity. Features aperiodic enclosure design. Comes with wall-mounting brackets. 11 1/2" H x 20" W x 10" D. Oiled-walnut finish. \$92.50

D-20XL Speaker System

Two-way bookshelf system; ported 8" woofer & 2" tweeter; crossover 2000 Hz; high-efficiency design; 8 ohms; black grille cloth \$74.00

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 x 21 1/4" W x 17" D. Walnut finish \$220.50
Sentry IIA. Same except floor model 32" H x 20" W x 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. 28 1/2" x 20 1/2" x 34 1/2" H \$726.00
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 \pm 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

A "noteworthy example of intelligent engineering"¹ that "transcends the commonplace"² and "is, simply, a great speaker system."³



We couldn't have said it better ourselves.

In our time, the vented, equalized Interface:A has received a small deluge of complimentary reviews from high fidelity magazines. Including the one you're reading.

¹The *Stereo Review* test, 3/74. "Interface:A can deliver a level of undistorted bass far superior to any other speaker its size we have tested."

²The *High Fidelity* test, 2/74. "... unusually flat (plus or minus 1 3/4 dB from 63 Hz to 15 mHz!) in the omnidirectional measurement."



³The *Stereo & Hi-Fi Times* test, 4/75. "... clarity of the bass is most impressive."

The *FM Guide* test, 4/75. "... we measured sound pressure levels of 110 dB during the very loud passages ... the systems handled such musical moments with ease."

The *Sound* test, 2/76. "The on-axis position results in an exceptional curve which is — by speaker standards — virtually flat from 100 Hz out to 20 kHz."

The reviewers are convinced. Maybe you should be too. We've published a book with these sparkling reviews reprinted in full. For a copy, write us or see your E-V dealer.

Interface: A™

Electro-Voice, Inc., a Gulton company
678 Cecil Street, Dept. 1064SBC, Buchanan, Michigan
49107

CIRCLE NO. 26 ON READER SERVICE CARD

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" x 23" x 9 1/4" 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. 14 1/2" x 25" x 13 3/4" D \$167.95

EVS-15B. Three-way system with 10" woofer, 5" mid-range & 2" tweeter; response 40-20,000 Hz; 13 1/2" x 24" x 11 3/4" D \$146.95

EVS-14B. Two-way system with 10" woofer & 2" tweeter; response 40-18,000 Hz; crossover 1500 Hz \$125.95

EVS-13B. Two-way system with 8" woofer & 2" tweeter; response 50-18,000 Hz; 1500 Hz crossover; 10" x 19" x 8 1/2" \$83.95

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, 21 1/2" H x 21 1/2" W x 8 1/2" D. . . . \$120.00

Musicaster IIA: Same as 1A except has high-

frequency driver & horn tweeter; response 80-16,000 Hz; crossovers 4000 & 5000 Hz. . . . \$150.00
 Prices are suggested "net." Slightly higher in Western States.

EMPIRE

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 x 18" diameter. Walnut veneer cabinet with choice of smoked glass or walnut veneer top. . . . \$329.95

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. 24 3/8" H x 18" diameter. Walnut finish top with imported marble top or walnut finish top. . . . \$149.95

EPI

350 Speaker System

Multi-directional two-way speaker system; three 8" long-traverse woofers & three 1" air-spring tweeters; crossover 1800 Hz; response 36-20,000 Hz down 3 dB at 36 Hz; recommended rms power range 38-125 W; has treble control switch; 36 1/2" x 15 1/4" x 13 1/4". . . . \$399.00

250 Speaker System

Double-module two-way speaker system; two 8" woofers & two 1" air-spring tweeters; crossover 1800 Hz; response 38-20,000 Hz ± 3 dB; recommended rms power range 20-100 W; imp. 4 ohms; 15" x 15" x 25" \$249.95

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" x 16" x 12" \$190.95

120 Speaker System

Two-way system with 10" long-traverse woofer & 1" air-spring tweeter; crossover 1800 Hz; response 38-20,000 Hz ± 5 dB; recommended rms power range 25-80 W; imp. 4 ohms, 8 ohms nominal; 25" x 15" x 12 1/2" \$139.95

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 \$99.95

100V 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" x 11" x 9". . . . \$89.95

70 Speaker System

Two-way system with 6" woofer & 1" air-spring tweeter; crossover 1800 Hz; response 60-20,000 Hz ± 5 dB; 4 ohms; recommended rms power range 10-80 W \$69.95

EPICURE

1000 Speaker System

Omnidirectional floor-standing tower system with four 8" low-frequency transducers & four

We'd be nuts not to publicize these reviews.



Put yourself in our place. You've designed what you believe is an exceptional speaker system — the vented, equalized Interface:B. And then the reviewers agree. That really makes it all worthwhile.

The *Stereo Review* test, 4/76. "It retains virtually all the features and fine acoustic qualities of the Interface:A." "The dispersion of the highs was excellent — easily as good as we have ever heard from a forward facing cone driver and rivaling that of most dome radiators." "The bass was true and powerful when the program material called for it." "The



efficiency of the Interface:B was relatively high for a small enclosure. . . ."

The *High Fidelity* test, 4/76. "The peak level sound produced (114 dB) bespeaks good dynamic range." "... we found that fundamental bass tones remain audible to about 38 Hz. High frequencies are there up to about 17.5 kHz and are well dispersed, remaining audible to about 45 degrees of axis." It produces a well blended sound. . . . "It is capable of making a modest audio system rise to new heights — and, at quite an attractive price."

We've published a book with these excellent reviews reprinted in full. For a copy, write us or see your E-V dealer.

Interface: B™

Electro-Voice, Inc., a Gulton company
 678 Cecil Street, Dept. 1064SBG, Buchanan, Michigan
 49107

CIRCLE NO. 27 ON READER SERVICE CARD

1" air-spring tweeters; transducers matched to within 1 dB of efficiency; frequency response 20-20,000 Hz ± 3 dB; 8 ohms; 60-250 W rms power range; 75" x 18" x 18" \$1000.00

400+ Speaker System

Omnidirectional floor-standing tower system with four 6" low-frequency transducers & four 1" air-spring transducers matched within 1 dB of efficiency; crossover 1800 Hz; frequency response 27-19,000 Hz ± 3 dB; 8 ohms; 25-200 W rms power range; 3-pos. tweeter level control; 38" x 14" x 14" \$400.00

20 Speaker System

Floor-standing double-module system; two 8" low-frequency woofers & two 1" air-spring tweeters; 1800 Hz crossover with 12 dB/octave rolloff; frequency response 35-20,000 Hz ± 3 dB; 8 ohms; 20-100 W rms power range; dispersion nearly hemispherical from all radiating planes; 29" x 18 1/2" x 12" \$229.00

11 Speaker System

Two-way bookshelf system with 6" controlled-excursion woofer & 1" air-spring tweeter; 188 Hz min. distortion air-core choke in two-element 12 dB/octave passive crossover; response 38-20,000 Hz ± 3 dB; 8 ohms; 15-80 W rms power range; dispersion nearly hemispherical; 21 1/2" x 13 1/2" x 9 1/2" \$149.00

10 Speaker System

Two-way bookshelf system with 8" woofer & 1" air-spring transducer; 1800 Hz crossover with 12 dB/octave rolloff; frequency response 42-20,000 Hz ± 3 dB; 8 ohms; 12-75 W rms power range; dispersion nearly hemispherical; 22" x 12" x 9 3/8" \$109.00

5 Speaker System

Two-way bookshelf system with 6" controlled-excursion woofer & 1" air-spring tweeter; 1800 Hz crossover with 12 dB/octave rolloff; frequency response 50-20,000 Hz ± 3 dB; 8 ohms; 20-70 W rms power range; dispersion nearly hemispherical; 15" x 11" x 7 7/8" \$70.00

ESS

amt-1A Monitor Speaker System

75 W/ch continuous program material; 350 W peaks (circuit-breaker protected); 12" low-frequency driver, 12" passive radiator, Heil air-motion transformer; crossover 850 Hz (non-biamped); imp. 6 ohms; frequency response 35-25,000 Hz ± 3 dB; efficiency: 82 dB SPL at 15 ft at 1 W; controls: high-frequency, continuously variable attenuation or accentuation from 1200 Hz to beyond audibility; 3-pos. midrange control for frequency shelving; oiled walnut veneer cabinet; black grille cloth; 39.25" H x 15.88" D x 15.63" W \$526.00

amt-1A System. Same as Monitor system except tapered enclosure; 36" H x 16 1/4" W x 16 1/4" D. \$427.00

amt-1A Bookshelf. Same as Monitor system except without passive radiator; frequency response 50-20,000 Hz; presence/brilliance control; oiled walnut veneer cabinet; brown grille cloth; 24" h x 14" W x 14" D \$378.00

amt-1b Bookshelf System

40 W continuous program; 350 W peaks; frequency response 50-22,000 Hz ± 3 dB; crossover 1500 Hz; 6 ohms; 10" low-frequency driver & Heil air-motion transformer; presence/brilliance control for continuously variable attenuation or accentuation from 1500 Hz to beyond audibility; walnut finished cabinet; brown fabric grille; 24" H x 14" W x 14" D. \$298.00

FISHER

ST600 Speaker System

Three-way system with 12" passive radiator, 10" woofer, 6 1/2" front midrange, 6" backfiring midrange, one 4" tweeter, one 1" dome tweeter; frequency response 39-22,000 Hz ± 5 dB; 60 W max. rms power handling; efficiency 90.4 dB SPL at 1 meter with 1 W input; crossovers 400 & 7000 Hz; controls: 3-pos. midrange & 3-pos. tweeter switch; walnut-grained vinyl cabinet; sculptured grille; 29 1/2" H x 18 1/4" W x 12 7/8" D. \$249.95

ST640. Similar to ST600 except frequency response 42-20,000 Hz; 10" passive radiator; 5" midrange backfiring; 26 1/2" H x 16 1/2" W x 12" D \$199.95

FRAZIER

Eleven System

Three-way system with 12" & 15" woofer, four 4" midrange, two piezoelectric tweeters; crossovers 400 & 4000 Hz; 100 W rms continuous power; 4 ohms; stepped high-frequency & mid-range controls; oiled-walnut veneer on fiberboard; black foam grille; 55" x 30" x 18". \$1200.00

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" x 25 3/4" x 16" \$524.95

Seven System

Three-way system with 12" woofer, two 4" full-range mid-range, two piezoelectric tweeters; 500 Hz & 4000 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" x 18" x 16" \$399.95

Mark V System

Three-way system with 12" woofer; two 4" mid-range; piezoelectric tweeter; 800 Hz & 3000 Hz crossovers; 8 ohm imp.; 30 W continuous rms; variable high-frequency and midrange 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" x 14" x 12" \$299.95

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" x 16" x 16" \$264.95

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" x 14" x 12" \$179.95

Super Monte Carlo

Heavy-duty 8" l.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" x 10 1/2" x 12" \$124.95

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" x 6 3/4" x 9 1/2" \$59.95

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) 55-20,000 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 200 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" x 23 3/4" x 10 3/4" D \$450.00

GENESIS

II Two-Way Speaker System

Two-way bookshelf system; 4th order Butterworth alignment using passive radiator; 8" long-excursion woofer, 1" inverted dome tweeter, dual-suspension-point passive radiator; frequency response 28-18,000 Hz ± 4 dB at 90 dB SPL; crossovers 1800 Hz electronic & 45 Hz acoustic; 8 ohms; 80 W/ch max. power handling capability; may be used with amps up to 80 W; min. amp. driving power 10 W/ch; two-position tweeter level switch; 26 1/2" H x 14 1/2" W x 11 1/2" H \$144.00
Oak veneer finish \$169.00
Dark grille available at slight extra cost.

I Two-Way Speaker System

Two-way acoustic suspension bookshelf system; 8" high-compliance woofer, 1" inverted dome tweeter; crossover 1800 Hz; 8 ohms; may be used with amps up to 40 W/ch; min. recommended driving power 10 W/ch; frequency response 40-18,000 Hz ± 4 dB at 90 dB SPL; 21" H x 12" W x 8 3/4" D \$94.00
Oak veneer finish \$114.00
Dark grille available at extra cost.

HARTLEY

Concertmaster VI Speaker System

Semi-infinite baffle, 6-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 5-8 ohms. 40" H x 29" W x 18" D. \$980.00

Concertmaster III Speaker System

Semi-infinite baffle, 6-way floor-standing system with 18" woofer, 10" mid-range, 7" tweeter, and 1" super tweeter. Response 16-25,000 Hz; 200, 3000 & 7000 Hz crossover frequencies. 5-8 ohms impedance. 34" H x 29" W x 16" D. Walnut veneer \$900.00
Concertmaster IV. Same except Mediterranean styling. Walnut veneer \$925.00

Concertmaster Jr. Speaker System

Infinite baffle, 3-way floor-standing system with 10" full-range & 1" dome tweeter; 2000 & 5000 Hz crossovers. 8 ohms impedance. 100 W maximum input. Size with kickbase 30" H x 24" W x 14" D. Walnut veneer \$355.00

Holton A Speaker System

Infinite baffle, 3-way system with 10" full-range and 1" dome tweeter. 2000 & 5000 Hz crossovers. 8 ohms impedance. 100 W maximum input power. 34" H x 24" W x 14" D. Oiled walnut veneer \$340.00

Who's behind the remarkable DQ-10 speaker?

Some of the most remarkable men in audio—Jon G. Dahlquist and Saul B. Marantz, the founders of this company.

There's hardly an audiophile anywhere who doesn't know about Saul Marantz, one of the pioneers in the growth of this industry and a leading proponent of high quality performance.

Then there's our brilliant engineering head, Jon Dahlquist. His contribution in the Lunar Excursion Module project involved vibration and stress analysis. This eventually led him to more earthly projects such as loudspeaker wave-form behavior. His research was applied to the unique acoustical concepts that are incorporated in the DQ-10, Phased Array™ speaker system.

For the first time a single speaker system accurately controls time delay, phase shift, and diffraction effects. This advanced speaker design has caused quite a stir in the audio industry. Critical listeners and knowledgeable reviewers throughout the world have praised the DQ-10 for its superb definition, its 3 dimensional spaciousness, the ultra smooth coherency over the entire range, and its correct stereo imaging.

It doesn't take long to discover these qualities for yourself. Just take your most challenging record down to your nearest Dahlquist dealer and put yourself in front of a speaker that some remarkable men are behind.

DAHLQUIST

The boxless speaker

27 Hanse Ave. Freeport N.Y. 11520

10 Speaker Systems

Holton Jr. Speaker System

Same basic design as Concertmaster Jr. except measures 30" H x 15" W x 12" D. . . . \$290.00

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. 25 1/2" H x 23 1/2" W x 11 3/8" D. Walnut veneer \$225.00

Zodiac 76 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. Response 35-25,000 Hz. 8 ohms impedance. For use with amplifiers of 10-50 W. 30" x 15" W x 12" D. Oiled walnut veneer \$140.00

Zodiac 1 Speaker System

Same specifications as the Zodiac 76 except response 40-25,000 Hz. 21 3/4" H x 14 3/8" W x 8 3/4" D. \$100.00

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. 29 3/8" H x 27 3/4" W x 19 7/8" D. \$339.95

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 x 23 1/2" W x 12" D. \$249.95

AS-103A 3-Way Speaker System

Sealed-enclosure, 3-way bookshelf system with AR drivers: 12" woofer, 1 1/2" mid-range, and dome-type 3/4" 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-1373 3-Way Speaker System

Acoustic-suspension speaker; frequency response 40-20,000 Hz ±3 dB, useful response 40-30,000 Hz; 10" woofer, 4 1/2" midrange, 1" dome tweeter; special design permits tweeter to be installed for vertical or horizontal placement of system; individually fused drivers; 8 ohms; for use with amps from 10 to 200 W; walnut-veneer cabinet with foam grille; 26" H x 14 1/2" W x 12 1/4" D (kit) \$149.95

AS-1344 Column Speaker

Two woofer/tweeter modules mount on adjacent side of column; frequency response 55-20,000 Hz ±3 dB, useful response 35-22,000 Hz; two 6 1/2" woofers, two 1" dome tweeters; min. imp. 4 ohms; recommended for amplifiers from 10 to 100 W; individually fused drivers; foam grille; 40" H x 11" W x 11" D (kit) \$129.95

AS-104 3-Way Speaker System

Infinite-baffle, 3-way speaker system with 10" woofer, 4 1/2" mid-range, 3 1/2" tweeter. Response 30-18,000 Hz. 10-100 watts maximum input power. 8 ohms. Walnut veneer cabinet. 24" W x 13 1/2" H x 11 1/2" D. \$109.95

AS-1352 2-Way Speaker System

10" acoustic-suspension woofer & 1 3/4" phenolic ring tweeter; response 45-18,000 Hz ±3 dB; min. amp power 10 W, max. 50 W; imp. 8 ohms; tweeter level control; individually fused drivers; walnut-veneer cabinet; 24" H x 13 1/2" W x 11" D. (kit) \$99.95

AS-1332 2-Way Speaker System

8" acoustic-suspension woofer & 1 3/4" phenolic ring tweeter; frequency response 50-18,000 Hz ±3 dB; min. amp power 10 W, 50 W max.; imp. 8 ohms; tweeter level control; individually fused drivers; 19" H x 10 1/2" W x 8" D. (kit) \$59.95

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 x 7" W x 6" D. \$26.95

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.; 4 1/2" driver; response 70-16,000 Hz (10-10,000 Hz ±5 dB). Simulated walnut-grain vinyl-clad enclosure. 7" W x 12" H x 6" D. \$37.95 pr.

HED

V-10 Two-Way Speaker System

Two-way system with 10" woofer and dome-type tweeter, crossover 2500 Hz; power input 40 W rms; 120 degree dispersion; walnut-veneer cabinet; 25" H x 14" W x 10" D \$109.50

V-12. Same as V-10 but with 12" woofer; crossover at 2300 Hz; power input 25 W rms. 25" H x 14 1/2" W x 12" D \$149.00

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" x 8 3/4" x 26". Walnut with black grille. \$450.00 pr.

H-1AV. Same except Corinthian walnut vinyl \$390.00 pr.

H-2V 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" x 12" x 34" \$756.00 pr.

HB-80V 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. Walnut vinyl with black or brown foam grille. 17 1/4" x 11 1/2" x 8" D. \$168.00 pr.

HB-100V. Similar to HB-80V except 10" woofer; crossover 3000 Hz; response 50-40,000 Hz ±2.5 dB; will handle 25 W rms continuous. 22 7/8" x 12 7/8" x 10 9/8" D. \$228.00 pr.

HB-120V. Similar to HB-80V 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" x 14 1/4" x 11 1/4" D. \$300.00 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" x 18" x 16" D. \$600.00

HITACHI

HS/480 Three-Way Speaker System

Three-way system; 12" woofer, 5" cone mid-range, 1" ultra-linear horn tweeter; crossovers 620 & 4900 Hz; frequency response 45-20,000 Hz ±4 dB; 92 dB SPL (8 ohm, 1 W at 1 meter); 0 ±3 dB tweeter level control; walnut polyvinyl finish cabinet; brown removable grille cloth; 26 3/8" H x 14 3/8" W x 14 3/8" D \$199.95

HS/335. Similar to HS/480 except 10" woofer & 1" dome tweeter; crossovers 700 & 3000 Hz; frequency response 45-18,000 Hz ±4 dB; 91 dB SPL; 21 3/8" H x 12 3/8" W x 12 3/8" D. \$169.95

HS/320 Two-Way 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

INFINITY

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 15-30,000 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 x 22" x 22"; screens 59 1/2" H x 35 1/2" W x 8" D \$4500.00

Quantum Line Source

Four-way speaker system; 12" Infinity/Watkins dual-drive woofer (18-200 Hz), mid-bass coupler (200-600 Hz), six 1 1/2" dome midrange drivers (600-4000 Hz), 48" of Line Source high-frequency radiator (4000-32,000 Hz); frequency response 18-32,000 Hz ±2 dB; min. amp power 100 W rms/ch; bi-amp input; contour controls for mid-bass, upper midrange, tweeters; imp. 4 ohms; rosewood (15% additional) or walnut veneer over particle board; acoustically transparent grille cloth on steel frame; 66" H x 18" W x 15" D \$1100.00

POS II Speaker System

Two-way design with 10" woofer and closely coupled 2" tweeter; transmission-line loading and a frequency boost network for the tweeter; response 43-19,000 Hz ±3.5 dB; 1600 Hz crossover. 8 ohms. 15 W rms/ch minimum amplifier input 25" H x 13" x 11 1/4" D. \$106.00

Monitor IIA Speaker System

Four-way system with four different drive systems; a 12" woofer housed in a 2 1/2-cu ft tapered-transmission line enclosure; a specially designed 1 1/2" dome mid-range; 1" dome mid-tweeter; and a wave transmission line tweeter. Response 22-28,000 Hz ±4 dB; crossovers 450, 5000, 10,000 Hz; 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. 41 1/2" H x 15" W x 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.; 250 W rms continuous max.; same

enclosure as Monitor IIA; 27 $\frac{3}{4}$ " W x 20" W x 14" D \$329.00

Monitor Jr. Speaker System

Three-way system; 12" woofer terminated in transmission line enclosure (32-600 Hz), 1 $\frac{1}{2}$ " soft dome midrange (600-5000 Hz), 1" dome tweeter (4000-22,000 Hz); frequency response 32-22,000 Hz $\pm 3\frac{1}{2}$ dB; 25 W rms min. recommended power; midrange & tweeter controls; imp. 8 ohms; hand-rubbed oiled-walnut veneer; black cloth grille in removable frame; 25" H x 14 $\frac{1}{2}$ " W x 12" D \$225.00

1001A Speaker System

Terminated-line, 2-way loudspeaker system with 12" woofer and two tweeters (one in rear of enclosure to provide "ambiance"). Response 33-21,000 Hz ± 4.5 dB; 1300 Hz crossover. 8 ohms impedance. Requires 20 W rms power input. 25" H x 14 $\frac{1}{2}$ " W x 12" D. Walnut. \$149.00

INNOTECH

D-22 Three-Way System

Three-way floor-standing system; 5" Bextrene plastic piston low-frequency/midrange driver, 1" hard-dome high-frequency driver, 1" polyflex hard-dome ultra high frequency driver; l.f. driver loaded via transmission line for effective loading to 20 Hz; response 25-28,000 Hz; crossovers 1200 Hz at 12 dB/octave, 8000 Hz at 18 dB/octave; walnut-veneers on $\frac{3}{4}$ " high-density chip core; 35" H x 12.5" W x 7.5" D... \$475.00
D-11. Similar to D-22 except low-frequency driver is loaded via bass-reflex technique for fourth-order Butterworth-Thompson rolloff; frequency response 35-28,000 Hz; 24" H x 14" W x 7.5" D \$350.00

D-10. Similar to D-11 except frequency response 38-20,000 Hz; crossovers 2500 Hz at 12 dB in first octave, 6 dB/octave for each successive octave \$275.00

D-12 Sub-Woofer System

Has 8" Bextrene plastic piston woofer (operates from 20-100 Hz) in critically damped enclosure; asymmetrical array of 2" x 4" wood supports attached to inner walls to break up standing waves and increase system resonance; port for increase efficiency; walnut veneers on $\frac{3}{4}$ " high-density chip core; 40" H x 20" W x 10" D. \$300.00

SF-2 Subsonic Filter

12 dB/octave rolloff beginning at approx. 22 Hz for Bessel filter characteristic; can be placed via interconnecting RCA phono plug cables between preamp & power amp sections of amplifiers or in tape loop circuit \$50.00
Each pair of Innotech speakers supplied with one SF-2 filter.

JANSZEN

Z-824a 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. Pecan cabinet. 48" x 16" x 16" D. \$790.00

ZVS-4 Speaker System

Two-way ported electrostatic system with uniform spectral energy density; bi-radiation support of reverberent field; 4 non-destructible electrostatic elements; medium efficiency; high sound-pressure-level capability; black cabinet, cocoa brown or midnight blue grille cloth. 14.5" W x 48" H x 14.5" D \$450.00

ZVS-2 Tower System

Electrostatic system with 10" single-element dynamic acoustic-suspension woofer and two-element, electrostatic bipolar radiation h.f. transducer with refraction lens system; LC crossover 1800 Hz (12 dB/octave); radiating area 32 sq. in. (bipolar, each side); dispersion 50 degrees vertical, 90 degrees horizontal; fre-

quency response 45-20,000 Hz ± 3 dB, 38-30,000 Hz ± 6 dB; 10 W rms min. power, 100 W rms max.; min. system imp. 4.6 ohms, 8 ohms nominal; black cabinet, cocoa brown or midnight blue grille cloth; \$290.00

ZL-412hpb 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 brown or midnight blue grille cloth; 27" x 14 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " D \$350.00

ZL-410ah 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 brown or midnight blue grille cloth; 13 $\frac{3}{4}$ " x 24" x 11 $\frac{3}{4}$ " D \$250.00

ZL-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 brown or midnight blue grille cloth; 13 $\frac{3}{4}$ " x 24" x 11 $\frac{3}{4}$ " D \$200.00

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 \$125.00

132 UM. Same except unmounted ... \$100.00

134. Same except four electrostatic elements and 100 W rms maximum input power. Oiled-walnut enclosure \$190.00

134 UM. Same except unmounted ... \$150.00

JBL

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 x 104" W x 24" D \$3510.00

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 x 23" W x 22" D \$960.00

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 x 24" W x 21" D \$753.00

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

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10 Speaker Systems

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 x 12" W x 12" D... \$684.00

L65 Jubal Speaker System

Ducted-port, 3-way floor-standing system with 12" bass, 5" mid-range, and 1" 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 x 18" W x 13" D... \$462.00

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 x 14" H x 13" D... \$399.00

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 x 24" W x 14" D... \$333.00

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 x 24" W x 14" D... \$225.00

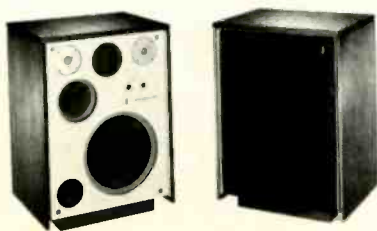
L26 Decade 26 Speaker System

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 x 24" W x 13" D... \$168.00

JENSEN

Model 15 Speaker System

Four-way, five-speaker system with 15" woofer, an 8" mid-range driver, a 5" rear-damped tweeter,



er, 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) x 23" x 17" D... \$479.00

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. 18 1/4" H x 11" W x 8 3/8" D... \$75.00

Model 22. Similar to Model 21 except with 10" woofer; frequency range 32-20,000 Hz; max. power 45 W. 22 1/2" H x 12 1/4" W x 10 3/4" D... \$99.00

Model 23 Speaker System

Two-way system with 10" woofer & 1 1/2" 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 x 13" W x 12" D... \$129.00

Model 24 Speaker System

Three-way system with 12" woofer, 3" mid-range, and 1 1/2" 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 x 15" W x 13" D... \$185.00

Model 25 Speaker System

Three-way system with 15" woofer, two 3" mid-range, and 1 1/2" 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) x 18 3/4" W x 15 3/4" D... \$249.00

Spectrum 550 System

Three-way system; 15" Flexair woofer, two 3" cone midrange in tuned isolation chambers, 1 1/2" Sonodome tweeter; frequency range 20-25,000 Hz; imp. 8 ohms; crossovers 1000 & 5000 Hz; dispersion 170 degrees; front-mounted mid-range & tweeter controls; amp power 10 W min, 90 W max; push-type binding posts; hardwood walnut molding & walnut veneers on wood products; 31" H (with base) x 19 1/2" W x 15 1/2" D... \$299.95

540. Similar to 550 except with 12" Flexair woofer; frequency range 25-25,000 Hz; amp power 10 W min, 75 W max; 26 1/2" H x 16" W x 13 1/2" D... \$239.95

530. Similar to 540 except with 10" Flexair woofer, one 3" cone midrange, 1 1/2" dome tweeter; frequency range 27-25,000 Hz; amp power 10 W min, 60 W max; 24 1/2" H x 14" W x 12" D... \$189.95

520. Similar to 530 except two-way system with 10" Flexair woofer & 2" cone tweeter; frequency range 32-20,000 Hz; crossover 4000 Hz; dispersion 160 degrees; front-mounted tweeter control; amp power 10 W min, 45 W max; 22 1/2" H x 12 1/4" W x 10 3/4" D... \$129.95

JVC

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. 20 1/2" H x 12 3/8" W x 11 1/8" D... \$159.95

KENWOOD

Model 7 Four-Way Speaker System

Four-way system with 14" woofer (under 400 Hz), 4 1/8" mid-range (400-4000 Hz), 1 1/2" high-



frequency driver (4000-8000 Hz), 3/4" 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. 18 1/2" W x 37" H x 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 x 25 1/4" H x 12 1/2" D... \$149.95

LS-405. 10" woofer, 1" dome tweeter; response 58-20,000 Hz; imp. 8 ohms; SPL 103 dB; crossover 3500 Hz. 12 1/2" W x 23 1/4" H x 11" D... \$119.95

LS-403. 8" woofer, 1 3/4" dome tweeter; response 65-20,000 Hz; imp. 8 ohms; SPL 101 dB; crossover 2000 Hz; 11 3/4" W x 17 3/4" H x 8 7/8" D... \$84.95

KING RESEARCH

Frankmann Stereo Speaker System

Integrated three-way system; eight 12" bass drivers, eight 8" treble drivers, eight diffraction horn tweeters; bass drivers mounted in single common bass enclosure; four 8" treble and four diffraction horn tweeters mounted in each of two satellite enclosures (different satellite units are available which may be composed of as many as nine tweeters and four 8" treble

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Responsive. Sensitive. Bold when they should be. Subtle when they should be. For a living room rock concert... or a tranquil laid-back evening spent with your moods. Eyes closed, ears open. Feet tapping or feet up.

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On some models, the Spectrum Series features true-to-life midrange drivers for the subtle in-between frequencies. And specially designed dome tweeters for extra-wide 170° dispersion of brilliant highs.

Behind the grill of each Spectrum speaker system—a continuously adjustable personalizing control (two on the Models 530, 540 and 550) graduated in decibels. It lets you adjust your Spectrum speaker to the room... to personal tastes... to the nuances of a guitar or a violin.

The Jensen Spectrum Series speakers. Models 520, 530, 540 and 550. Perhaps the clearest sound reproduction you have ever encountered.

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10 Speaker Systems

drivers or one tweeter and one 8" treble driver); frequency response 20-18,000 Hz \pm 4 dB; 10 W rms min. power requirement; will handle 200 W rms; fuse-protected; efficiency: 98 dB with 1 W input (pink noise 1 meter from source); imp. 8 ohms; crossovers 200 & 5,000 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; custom-built hutch to be placed on top of common bass unit available extra; bass unit 52 $\frac{1}{4}$ " W x 31" H x 25 $\frac{1}{4}$ " D; satellite 10" W x 43 $\frac{1}{4}$ " H x 6 $\frac{5}{8}$ " D. \$1995.00
Unfinished birch without cabinet for custom installation \$1495.00

Mini-Frank Speaker System

Acoustic-suspension three-way system; four 12" bass drivers, 8" treble driver, diffraction horn tweeter in each satellite unit; frequency response 35-18,000 Hz \pm 4 dB; efficiency: 91 dB with 1 W input (pink noise 1 meter from source); crossovers 200 & 5000 Hz; 8 ohms; 10 W rms min. power, 100 W rms max.; fuse protected; optional satellite attenuator available; company's different satellite units compatible with Mini-Frank bass unit; base unit 30" W x 25 $\frac{1}{2}$ " H x 16" D, satellite 12 $\frac{1}{2}$ " H x 9 $\frac{1}{2}$ " W x 7" D. \$800.00

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 \pm 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. Passive crossover for high-frequency speaker at 6000 Hz. Has level control and low- and high-frequency equalizer circuits. Input impedance 4700 ohms balanced & floating. Walnut finish. 19" x 12" x 9" D. \$775.00

KLH

Nine Speaker System

Electrostatic, floor-standing, full-range speaker system. 16 ohms impedance. Requires 40 W (IHF) driving power. 70" H x 23 $\frac{1}{2}$ " W x 2 $\frac{5}{8}$ " D. Mahogany or walnut. Should be used in pairs Each \$1495.00

Five 3-Way Speaker System

Sealed, 3-way bookshelf system with 12" woofer, two 3" mid-range, and 1 $\frac{3}{4}$ " tweeter; 2500 & 7000 Hz crossovers. Has mid-range and tweeter controls; 8 ohms impedance. 13 $\frac{3}{4}$ " H x 26" W x 11 $\frac{1}{2}$ " D. Oiled walnut \$225.00

Six 2-Way Speaker System

Sealed, 2-way bookshelf system with 12" woofer & 1 $\frac{3}{4}$ " tweeter. Has tweeter control. 8 ohms impedance. 12 $\frac{5}{8}$ " H x 23 $\frac{1}{4}$ " W x 11 $\frac{1}{8}$ " D. Walnut \$149.95
Walnut vinyl. \$129.95

Seventeen 2-Way Speaker System

Sealed, 2-way bookshelf system with 10" woofer & 1 $\frac{3}{4}$ " tweeter. Has tweeter control. 11 $\frac{1}{4}$ " H x 23 $\frac{1}{4}$ " W x 8 $\frac{1}{4}$ " D. \$89.95

Thirty-Two Speaker System

Sealed, 2-way bookshelf system with 8" woofer & 1 $\frac{1}{8}$ " tweeter. 8 ohms impedance. 19 $\frac{3}{8}$ " H x 10 $\frac{7}{8}$ " W x 7 $\frac{3}{8}$ " 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 1 $\frac{1}{8}$ " tweeter. 8 ohms impedance. Walnut grain enclosure with foam grille. 11" x 8 $\frac{7}{16}$ " W x 17 $\frac{1}{2}$ " D. Sold in pairs only (2 per carton) \$99.95 pr.

Research Ten Line

SCX3A Three-Way Speaker System

Three-way speaker system; 12" Megaflux woofer, two 44-mm dome midrange, one 1" dome tweeter, two DVR tweeters; frequency response 26-33,000 Hz \pm 2 dB; 8 ohm imp.; continuously variable mid- & high-frequency controls; amp power 40 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; brown jersey grille cloth with removable grille; 38" H x 15" W x 13 $\frac{1}{2}$ " D. \$450.00

SCX-A Three-Way Speaker System

Three-way speaker system; 12" Megaflux woofer, 4 $\frac{1}{2}$ " cone midrange, 1" dome tweeter, 1 DVR driver; frequency response 30-30,000 Hz \pm 2.5 dB; 8 ohm imp.; continuously variable mid & high-frequency controls; amp power 30 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; brown jersey grille cloth with removable grille; 34" H x 14" W x 12" D. \$298.00

CL-4 Three-Way Speaker System

Three-way speaker system; 10" Magaflux woofer, 4 $\frac{1}{2}$ " cone midrange, 1" dome tweeter; frequency response 35-20,000 Hz \pm 3.5 dB; mid- & high-frequency controls; amp power 25 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; brown jersey grille cloth; 26 $\frac{1}{8}$ " H x 14 $\frac{1}{4}$ " W x 12 $\frac{1}{8}$ " D. \$198.00

CL-3. Similar to CL-4 except two-way system; 10" Megaflux woofer & 2" cone tweeter; 26 $\frac{7}{8}$ " H x 13 $\frac{7}{8}$ " W x 11 $\frac{1}{8}$ " D. \$140.00

CB-10 Two-Way Speaker System

Two-way system with 10" "Megaflux" woofer & 2 $\frac{1}{2}$ " cone tweeter; response 40-18,000 Hz \pm 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. 19 $\frac{1}{2}$ " H x 14 $\frac{3}{4}$ " W x 7 $\frac{1}{4}$ " D. \$110.00

CB-8. Same except 8" Megaflux woofer; response 47-18,000 Hz; min. power capacity 8 W rms/ch. 19 $\frac{1}{2}$ " H x 11" W x 7 $\frac{1}{4}$ " D. \$89.00

CB-6 Two-Way Speaker System

Two-way speaker system; 6" woofer & 2 $\frac{1}{4}$ " cone tweeter; frequency response 55-18,000 Hz \pm 4 dB; 8 ohm imp.; amp power 6 W rms/ch min., 50 W rms/ch max.; oak vinyl cabinet; brown foam non-removable grille; 15 $\frac{3}{4}$ " H x 10 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " D. \$60.00

Dedicated Line

355 Three-Way Speaker System

Three-way high-efficiency "controlled acoustic compliance" system; 27.3 cm extended low-



frequency woofer, 44-mm dome midrange, 35-mm hemispherical dome tweeter; 8 ohm imp.; amp power 20 W rms/ch min., 175 W rms/ch max.; front-mount infinitely variable controls; walnut veneer on high-density particle board; removable front grille panel; smoked glass top; 35 $\frac{1}{2}$ " H x 14" W x 12 $\frac{3}{4}$ " D. \$395.00

354 Three-Way Speaker System

Three-way acoustic-suspension system; 12" woofer, 4 $\frac{1}{2}$ " midrange, 2 $\frac{1}{4}$ " cone tweeter; 8 ohm imp.; amp power 25 W rms/ch min., 17 W rms/ch max.; 3-pos. midrange & tweeter controls; frequency response 25-22,000 Hz; walnut-veneer on high-density particle board; removable front grille panel; 22" H x 14" W x 12 $\frac{5}{8}$ " D. \$249.00

353. Same as 354 except wood-grained vinyl cabinet; 2 $\frac{1}{2}$ " cone tweeter; 26" H x 14" W x 12 $\frac{5}{8}$ " D. \$219.95

364 Three-Way Speaker System

Three-way acoustic-suspension system; 12" woofer, 5" midrange, 2 $\frac{1}{4}$ " cone tweeter; frequency response 30-22,000 Hz; 8 ohms; 2-pos. midrange & 3-pos. tweeter controls; amp power 12 W rms/ch min., 150 W rms/ch max.; walnut veneer on high-density particle board; removable front grille panel; 24" H x 13" W x 12 $\frac{5}{8}$ " D. \$199.95

363. Same as 364 except wood-grained vinyl cabinet. \$179.95

374 Three-Way Speaker System

Three-way acoustic-suspension system, 10" woofer, three 3 $\frac{7}{8}$ " midrange, 2 $\frac{1}{4}$ " cone tweeter; frequency response 45-22,000 Hz; two-position presence control switch; amp power 10 W rms/ch min., 150 W rms/ch max.; walnut veneer on high-density particle board; removable front grille panel; 24" H x 13" W x 9 $\frac{5}{8}$ " D. \$179.95

373. Same as 374 except only one midrange speaker; wood-grain vinyl cabinet \$159.95

317 Two-Way Speaker System

Two-way high efficiency acoustic-suspension system; 10" woofer & 2 $\frac{1}{4}$ " cone tweeter; frequency response 45-18,000 Hz; 3-pos. tweeter control switch; amp power 10 W rms/ch min., 100 W rms/ch max.; wood-grain vinyl cabinet; 23" H x 12" W x 9 $\frac{3}{4}$ " D. \$119.95

331 Two-Way Speaker System

Two-way ported system; 8" woofer & 2 $\frac{1}{4}$ " tweeter; frequency response 50-18,000 Hz; amp power 8 W rms/ch min., 75 W rms/ch max.; wood-grain vinyl cabinet; removable front grille panel; 21" H x 12" W x 8 $\frac{3}{4}$ " D. \$159.95 pr.

KLIPSCH

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 \pm 5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave. 52" H x 31 $\frac{1}{4}$ " W x 28 $\frac{1}{2}$ " D. Furniture finishes. \$1040.00

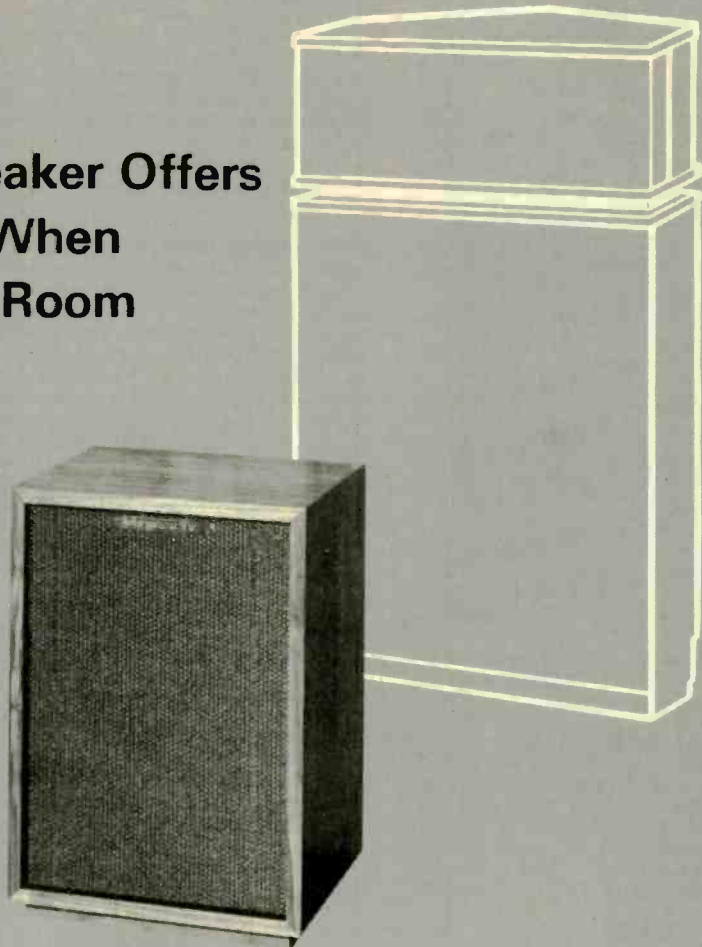
Cornwall II Speaker System

Tuned ducted-port, 3-way floor-standing system with 15" woofer, horn-loaded mid-range, and horn-type tweeter. Response 38-17,000 Hz \pm 5 dB; crossovers 600 & 6000 Hz. 8 ohms impedance. Recommended maximum amp: 105 W average sine wave power, 35 $\frac{3}{4}$ " H x 25 $\frac{1}{2}$ " W x 15 $\frac{1}{2}$ " D. Furniture finishes. \$525.00

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 \pm 5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave. 35 $\frac{1}{4}$ " H x 23 $\frac{3}{4}$ " W x 24 $\frac{1}{2}$ " D. Raw or theater black finish \$525.00

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10 Speaker Systems

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; cross-



overs 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave. 35 $\frac{3}{8}$ " H x 30 $\frac{1}{8}$ " W x 18 $\frac{3}{4}$ " D. . . . \$840.00

Heresy Speaker System

3-way floor-standing system with 12" direct-radiator 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: 105 W average sine wave power. 21 $\frac{3}{8}$ " H x 15 $\frac{1}{2}$ " W x 13 $\frac{1}{8}$ " D. Furniture finishes. \$297.00

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 x 32" W x 10" D (bottom), 7 $\frac{1}{2}$ " D (top) \$1050.00

Model Two Electrostatic/Dynamic

Combines electrostatic woofer & midrange with dynamic tweeter; 560-sq-in electrostatic woofer, 165-sq-in electrostatic midrange, 1" dome tweeter; frequency response 37-19,000 Hz ± 3 dB; crossovers 250 & 2500 Hz; imp. 4 ohms min 10-50,000 Hz; power requirements: 75 W rms min., 300 W rms max.; hand-rubbed oiled-walnut veneer on high-density particle board, back panel acoustically open hardboard; chocolate brown polyester grille cloth; 41" H x 24" W x 6 $\frac{1}{2}$ " (top), 11 $\frac{1}{2}$ " (bottom) D. \$650.00
West Coast \$660.00

LAFAYETTE

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 x 13 $\frac{1}{4}$ " W x 12 $\frac{1}{2}$ " D. \$199.95

Criterion 2001 Three-Way Speaker

High-efficiency system with 10" woofer (reinforced by three internal tuned ducts radiating through a base vent); 2" x 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 $\frac{3}{8}$ " high-density particle board; sculptured cafe brown polyester knit removable grille. 25" x 13 $\frac{1}{2}$ " x 13 $\frac{3}{8}$ " \$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" x 16" x 14" \$149.95

Criterion 28 Two-Way System

Acoustic-suspension system with 8" woofer, 3" sealed-back tweeter; response 45-20,000 Hz; capacitor crossover 2500 Hz; handles 30 W rms program; 8 ohm imp.; walnut-finished vinyl cabinet on $\frac{3}{8}$ " solid base; removable formed front grille. 11 $\frac{3}{8}$ " x 18" x 6 $\frac{1}{2}$ " \$39.95

310. Similar to 28 except 10" woofer, 5" mid-range 3" super tweeter; response 30-22,000 Hz ± 3 dB; RCL networks at 1000 & 5000 Hz for 12 dB/octave crossover; rear-panel mid- and high-frequency controls; $\frac{3}{8}$ " thick, fiber-glass-filled enclosure; handles 30 W rms program. 12 $\frac{3}{4}$ " x 22 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " D. \$79.95

LANIER

Concerto 5000 Speaker System

Four-way speaker system; 15" woofer, 10" woofer, 10" mid-range. 2" x 6" high-efficiency horn tweeter, 3 $\frac{1}{2}$ " piezoelectric tweeter; crossover frequencies adjustable; 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" x 36" x 21" \$475.00

Maestro 3000 Speaker System

Four-way speaker system; 15" woofer, 10" mid-range; 3 $\frac{1}{2}$ " piezoelectric horn, 2 $\frac{1}{2}$ " 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" x 19" x 22" \$300.00

Encore 1000 Speaker System

Three-way speaker system; 15" woofer, 5" mid-range, 2 $\frac{1}{2}$ " 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" x 26" x 14" D \$225.00

LEAK

2075 Speaker System

Transmission-absorber enclosure; 15" woofer, lower mid-range (500-2000 Hz), upper mid-range (2000-5000 Hz); dome tweeter; three of four speakers housed in upper cabinet which is directional through 360 degrees; max. input 100 W (DIN); frequency response 35-28,000

Hz; crossovers 450, 2000 & 5000 Hz; cabinet of selected woods & hand-matched veneers. \$875.00

2060 Three-Way Speaker System

Acoustic-suspension system; frequency response 45-25,000 Hz ± 4 dB; crossovers 600 & 3500 Hz; imp. 8 ohms; power requirements 20 W/ch min, 50 W rms/ch max; 300-mm woofer with viscous-damped roll surround; mid-range, dome tweeter; teak or walnut-veneer finishes, black grille cloth with aluminum grille surround. \$325.00

2030. Similar to 2060 except bass-reflex enclosure; 35 W (DIN) max. input; frequency response 60-25,000 Hz ± 4 dB; crossovers 700 & 3500 Hz; teak or walnut veneer finishes. \$195.00

2020. Similar to 2060 except two-way system; frequency response 75-20,000 Hz ± 4 dB; crossover 3500 Hz; 25 W (DIN) max. input; teak or walnut-veneer finishes \$135.00

LENTEK

4-Way Monitor Speaker

Four-way transmission-line speaker; frequency response 30-20,000 Hz; crossovers 400, 3500 & 10,000 Hz; 9-ft transmission line; system resonance 30 Hz; 8 ohms; will handle 50 W; teak finish on 19-mm chipboard; removable Declon grille; 42.25" H x 15.98" W x 15.48" D. (sold in matched pairs only) \$1150.00 pr.

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-



on/snap-off grilles in 13 different decorative motifs. 29 $\frac{3}{8}$ " H x 23 $\frac{3}{8}$ " W x 2" D. \$99.95
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 $\frac{1}{8}$ " thick; two-way full range; mid-range/bass radiating area 500 sq. in; tweeter radiation area 85 sq. in; response 50-16,000 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 oak frame with panel covered in light-colored fabric front & back (black fabric available). 22" x 71" x 2" mounted on 22" x 14" black base. 40 lbs each speaker. Sold in matched pairs. \$625.00



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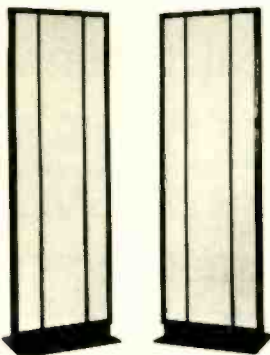
If you're starving for great sound, it's time to move up to MAGNEPLANARS. Our technical features will turn even ordinary ears into audio gourmets.

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- * purely resistive amplifier load
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CIRCLE NO. 42 ON READER SERVICE CARD

10

Speaker Systems

MARANTZ

HD-88 Speaker System

Four-way floor-standing system with 12" woofer, 4 1/2" mid-range, 1 1/2" 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. 43 3/4" H x 15" W x 12" D. \$399.95

HD-77 Speaker System

Four-way bookshelf system with 12" woofer, 4 1/2" mid-range, 1 1/2" 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. 25 1/2" H x 14 1/4" x 12 3/4" D. \$259.95

Imperial 7 Speaker System

Three-way bookshelf system with 12" woofer. 3 1/2" mid-range, 1 1/4" 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. 25 1/2" H x 14 1/4" W x 11 1/2" D. \$199.95

HD-66 Speaker System

Three-way, sealed or ported bookshelf system with 10" woofer, 4 1/2" mid-range, 1 1/2" dome tweeter; response 35-20,000 Hz ± 3 dB; crossovers 1000 & 4000 Hz; 8-ohm imp.; power handling capacity 150 W integrated program material. 24 1/4" H x 14 1/2" W x 11" D. . \$179.95

HD-55 Speaker System

Three-way, sealed-enclosure bookshelf system with 8" woofer, 4 1/2" mid-range, 1 1/2" 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 x 12" W x 9 1/2" D. \$129.95

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 x 11 1/4" W x 8 1/2" D. \$89.95

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. 10 1/4" H x 18 1/8" W x 7 1/2" D. Walnut. \$59.95

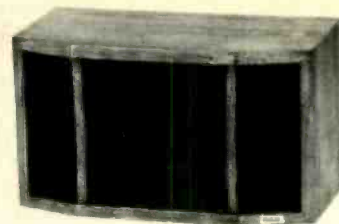
MARJEN

III Two-Way Speaker System

Two-way floor-standing speaker system; frequency response 42-20,000 Hz ± 3 dB; two 8" woofers & four 2" tweeters; crossover 2000 Hz; imp. 4 ohms; 90-degree dispersion; recommended amp power 20 W min, 150 W max; three-way pushbutton high-frequency level control (+3 dB/flat/-3 dB); spring-loaded terminals, color-coded for polarity; solid pine cabinet; acoustically transparent knit in black or natural; 36" H x 12" x 12" \$249.00

II Two-Way Speaker System

Two-way speaker system; frequency response 44-20,000 Hz ± 3 dB; one 8" woofer & four 2" tweeters; crossover 2000 Hz; imp. 8 ohms; 130-degree dispersion; recommended amp power 10 W min, 75 W max; three-way pushbutton high-frequency level control; spring-loaded terminals, color-coded for polarity; solid &



veneered pine cabinet; acoustically transparent knit grille (black or natural); 19" x 11" x 10 1/2". \$169.00
I. Similar to Model II but with one 8" woofer & two 2" tweeters; 90-degree dispersion; 22" x 10 1/2" x 10 1/2". \$139.00

MARTIN

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 x 16 1/4" W x 7 3/4" D. \$419.00

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. 37 1/2" H x 18" W x 14 3/4" D. \$409.00

Gamma 1500 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 x 18" W x 14" D. \$389.00

Gamma 412 Speaker System

3-way, sealed infinite baffle system with 12" woofer, 3 1/2" mid-range, and wide-dispersion 2 1/2" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. Walnut formica finish. 14 1/2" H x 25 1/2" W x 12" D. \$249.00

Super Spectrum Speaker System

3-way, sealed infinite baffle system with two 8" woofers, 3 1/2" mid-range, and wide-dispersion 2 1/2" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 4 ohms impedance; 60 watts (dynamic) maximum input power. Walnut formica finish. 12 1/2" H x 21 1/2" W x 10" D. \$219.00

Gamma 310 Speaker System

3-way, sealed infinite baffle system with 10" woofer, 3 1/2" mid-range, and wide-dispersion 2 1/2" tweeter. Response 35-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 50 watts (dynamic) maximum input power. Walnut formica finish. 12 1/2" H x 21 1/2" W x 10" D. \$169.00

Gamma 208 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. 10 3/4" H x 18" W x 9 3/4" D. \$89.00

MICRO/ACOUSTICS

FRM-1A Speaker System

Two-way speaker system; 10" acoustic-suspension woofer; five 1 1/4" drivers mounted in pentaxial array; dispersion 180 degrees horizontal & vertical at 10 kHz; frequency response 32-

18,000 Hz ± 4 dB; RC crossover 1700 Hz; power requirement 18W rms min, 70 W rms max; 8 ohms; high-frequency level control & dispersion control; walnut vinyl enclosure; choice of brown, black, blue, sandalwood, or orange grille cloth; 23 $\frac{3}{4}$ " H x 15 $\frac{3}{8}$ " W x 12 $\frac{3}{4}$ " D... \$199.00

FRM-2A Speaker System

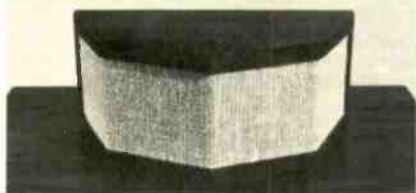
Two-way speaker system; 10" acoustic-suspension woofer; three 1 $\frac{1}{4}$ " tweeters mounted in triaxial array; dispersion 160 degrees; frequency response 40-16,000 Hz ± 4 dB; RC crossover 1750 Hz; power requirement 10 W rms min, 60 W rms max; 8 ohms; high-frequency level control; walnut vinyl enclosure; brown foam grille; 25 $\frac{3}{4}$ " H x 15 $\frac{3}{8}$ " W x 12 $\frac{3}{4}$ " D. \$155.00

FRM-3 Speaker System

Two-way speaker system; 8" woofer & one 1 $\frac{1}{2}$ " tweeter pivoted on vari-axis dispersion assembly; dispersion 140 degrees; frequency response 45-15,000 Hz ± 4 dB; LC crossover 2500 Hz; power requirement 7 W rms min, 50 W rms max; 8 ohms; mechanical vari-axis control; walnut vinyl enclosure; brown foam grille; 13" H x 22" W x 9 $\frac{1}{2}$ " D (packaged in matched pairs) \$119.00 ea.

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. 3 $\frac{3}{4}$ " H x 9 $\frac{1}{8}$ " W x 5 $\frac{1}{4}$ " D. Walnut. \$58.50

MICROTOWER

MT1 Speaker System

Spherical-sound design; suitable for front, rear, or four-channel use; has organ pipe low-frequency driver & two 4 $\frac{1}{2}$ " 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 x 8 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " \$69.95

MT2 Speaker System

Drivers are mounted on all sides for uniform response; uses two 1" wide-dispersion tweeters, two 4 $\frac{1}{2}$ " 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" x 8 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " \$129.95

MT3 Speaker System

Features organ-pipe low-frequency driver; four 4 $\frac{1}{2}$ " mid-range & two linear air-spring tweeters; response 35-18,000 Hz ± 3 dB; will handle 30-80 W rms. \$199.95

MIIDA

3150 4-Way Speaker System

Four-way system with 12" woofer, 4 $\frac{1}{2}$ " cone midrange, two 2 $\frac{3}{4}$ " tweeters; frequency response 25-22,000 Hz ± 5 dB; crossovers 750, 1800, 7500 & 12,000 Hz; 8 ohms; woodgrained vinyl laminated on particle board; 27" H x 17" W x 10 $\frac{3}{4}$ " D \$200.00 pr.

3140. Similar to 3150 except 3-way system; single 2 $\frac{3}{4}$ " tweeter; crossovers 750, 1800 & 7500 Hz; frequency response 30-20,000 Hz; 24" H x 15" W x 10 $\frac{3}{4}$ " D \$160.00 pr.

3130. Similar to 3140 except 2-way system with 10" woofer & 2 $\frac{3}{4}$ " tweeter; frequency response 40-18,000 Hz; crossover 1800 Hz; 18 $\frac{3}{8}$ " H x 11 $\frac{1}{2}$ " W x 9 $\frac{7}{8}$ " D \$120.00 pr.

MITSUBISHI

DS-303 Four-Way Speaker System

Four-way, acoustic air-suspension bookshelf system; 12" woofer, 2 $\frac{1}{2}$ " dome mid-range, 1" dome tweeter, 5 $\frac{1}{8}$ " 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. 14 $\frac{1}{4}$ " W x 24 $\frac{1}{2}$ " H x 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. 15 $\frac{3}{4}$ " W x 26 $\frac{3}{4}$ " H x 11 $\frac{1}{8}$ " D \$300.00

DS-28B Three-Way Speaker System

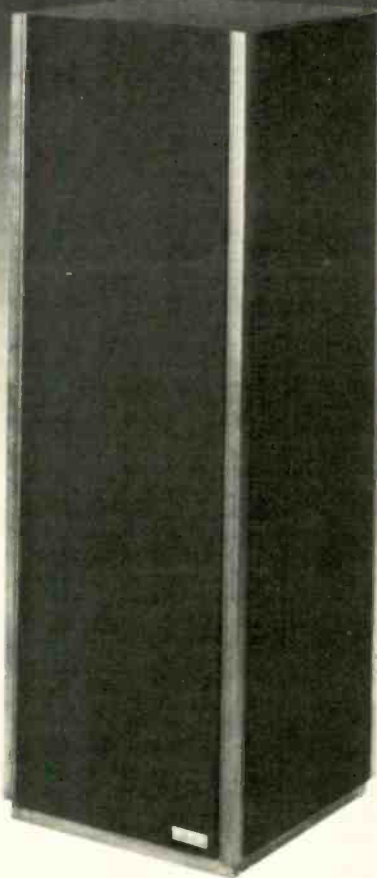
Three-way, hermetically sealed system; 10" woofer, 4" cone mid-range, 1 $\frac{1}{4}$ " dome tweeter; response 40-20,000 Hz; crossovers 800 & 5000 Hz; 8 ohms imp.; will handle 50 W peak; acoustic pressure level 91 dB/W at 1 meter. 13 $\frac{3}{8}$ " W x 23 $\frac{1}{4}$ " H x 10 $\frac{3}{8}$ " D \$200.00

DS-251 MKII Two-/Three-Way System

Switchable two- and three-way bookshelf system; 10" woofer, 2" cone tweeter, 1 $\frac{1}{4}$ " cone

THE ANTHEM ARRAY™

THE FIRST LOUDSPEAKER WITH UNIFORM POLAR RESPONSE



The high Polar Response is probably an unfamiliar term to you, audio engineers know it describes a critical aspect of loudspeaker performance. And one that's been a problem for decades. To understand it, visualize a circle with a loudspeaker at its center. The accuracy with which that speaker projects sound to all points along the circle's 360° radius is known as Polar Response.

Now bisect that circle with a straight line, representing a wall, and let the semicircle on one side of it represent your listening area. With virtually every speaker, the amplitude (or volume) of a given reproduced sound varies from point to point within this 180° arc. To make things even worse, the degree of variation at any given point will change as the musical frequencies do. The result? A confused stereo image. And tonal dropouts, actual absences of sound at specific frequencies, often at numerous points within the listening area.

Now, for the first time, this problem is solved. By the Anthem Array, the first speaker system to achieve Uniform Polar Response, unvarying amplitude within a 180° listening area at all significant frequencies. A major step forward in loudspeaker design. From Audioanalyst.

Also available: Models A-66, A-76X, A-100C, A-100X, A-100XW and A-200X

Audioanalyst

Audioanalyst, Inc., P.O. Box 262, Brookfield, Conn. 06804
Distributed in Canada by Superior Electronics, Inc.

10 Speaker Systems

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.; 12 1/2" W x 20 3/4" H x 9 1/2" D. \$170.00

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" x 20 1/4" x 14 1/4". \$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. 25 3/4" x 15 3/4" x 13 1/4". \$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. 23 1/2" x 15 1/4" x 12 1/2". \$299.95 pr.

2760 Speaker System

Two-way air-suspension system with 10" woofer & 3 1/2" 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; brown formed grille. 21 1/2" H x 12 1/2" W x 12" D. \$149.95 pr.

2770. Same as 2760 except 12" woofer; max. input power 50 W rms. 23" x 14 3/4" x 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. 34 3/8" H x 25 1/8" W x 17 1/8" D. . . \$1200.00
SV. Same as Reference Monitor but with 8" woofer, 1 1/2" tweeter; crossover 2000 Hz; 94 dB SPL; 40 W max. power; 16 ohm imp. 27 7/16" H x 20 7/8" W x 12 1/4" D. \$800.00

Slimline Reference Monitor

Two-way phase-inverter bass-reflex system; 8" woofer & 1 1/2" tweeter; mechanical crossover; response 50-16,000 Hz ± 5 dB (on axis); sensitivity: 94 dB SPL (1 W input at 1 meter); power rating 40 W max.; 16 ohms; walnut-finished cabinet; 36 3/4" H x 16 5/8" W x 12 3/4" D.

\$400.00

ONKYO

30 Speaker System

Three-way, linear-suspension design with 12" woofer, horn-type (10 1/2" x 3 1/2") mid-range, and 2 1/4" 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. 28 1/2" x 16 1/2" x 15 1/2". \$299.95

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. 25 1/2" x 14 3/4" x 11 5/8". \$249.95

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. 8 ohms. 23 1/4" x 13 1/2" x 11 5/8". \$199.95

Radian III Two-Way Speaker System

Bass-reflex design with two high-compliance 6 1/2" 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. 9 1/2" W x 33 1/2" H x 11 5/8" D. \$119.95

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. 13 1/2" x 23 1/4" x 11 1/8". \$129.95

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. 11 1/8" W x 21 5/8" H x 9 3/4" D. \$89.95

PANASONIC

SB-1600 Speaker System

Two-way passive-radiator system with 10" woofer, 10" passive radiator, 2 1/4" tweeter; passive-radiator tuned frequency 20 Hz; crossover 5000 Hz; maximum power input 40 W; 8 ohms; simulated wood cabinet . . . \$199.95 pr.

SB-1100 Speaker System

Two-way passive-radiator system with 8" woofer, 8" passive radiator, 2 1/4" tweeter; passive radiator tuned frequency 25 Hz; crossover 5000 Hz; maximum power input 30 W; 8 ohms; simulated wood cabinet . . . \$159.95 pr.

PEACETIME COMMUNICATIONS

L1101 Four-Way Speaker System

Bass equalized system; four 12" woofers, four 5" midrange (in array), six dome tweeters (in array), eight cone tweeters (in array), two piezoelectric tweeters; frequency response 20-45,000 Hz; crossovers 750, 3000, 4000 Hz; 5 A circuit breaker; controls: bass equalization switch, variable midrange, variable tweeter; 35 W rms min. power, 250 W rms max.; 36" W x 32" H x 18 1/2" D. \$1450.00
L901. Similar to L1101 except two 12" woofers with equalization sw., one 5" midrange, two dome tweeters (in array), six cone tweeters (in hemispheric array); 4.0 A circuit breaker; 20 W rms min. power, 150 W rms max.; 32" H x 18 1/2" D x 18" W \$650.00

NORDMENDE

804 Three-Way Speaker System

Three-way system; frequency range 30-20,000 Hz; two 8 1/2" woofers, 4 1/4" midrange 1" dome tweeter; sensitivity 3.5 W (96 dB/1 m); imp. 4-8 ohms; power handling capacity 90 W; walnut-veneer on wood; 25 1/2" H x 13 7/8" W x 8 3/4" D. \$199.00

803 Three-Way Speaker System

Three-way system; 8 1/2" woofer, 3 1/2" midrange, 1 1/2" dome tweeter; frequency range 35-20,000 Hz; sensitivity 2.8 W (96 dB/1 m); imp. 4-8 ohms; power handling capacity 50 W; walnut-veneer on wood; 17 5/8" H x 11" W x 9" D. \$124.95

802 Two-Way Speaker System

Two-way system; 8 1/2" woofer & 1 1/2" dome tweeter; frequency range 40-20,000 Hz; sensitivity 2.5 W (96 dB/1 m); power handling capacity 35 W; imp. 4-8 ohms; walnut-veneer on wood; 17 5/8" H x 11" W x 6 3/4" D. . . \$99.95

OHM ACOUSTICS

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 x 17 3/4" x 17 3/4" (bottom) tapering to 13" x 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 x 12 1/2" W x 11 1/2" 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. 3/4" stock oiled-walnut finish. 26" x 15" x 10 3/4" D. under \$300.00

Model C2 Speaker System

Three-way system with 10" woofer, 2" tweeter, and 1" super tweeter; vented (quasi 3rd order Butterworth filter design); response 37-20,000 Hz ± 4 dB; crossovers 1700 & 5000 Hz; 8/6 ohm imp.; 13 W rms min power required; three-position switch for tweeter-level control; oiled-walnut finish on 3/4" stock including baffleboard; black Formica back. 25" x 14" x 9 3/4" D. \$200.00

Model D2 Speaker System

Two-way system with 10" woofer, 2" tweeter; vented (quasi 3rd order Butterworth filter design); response 37-19,000 Hz ± 4 dB; crossover 1700 Hz; 8/6 ohm imp.; 12 W rms min power required; three-position switch for tweeter-level control; oiled-walnut finish on 3/4" stock. overall size: 25" x 14" x 9 3/4" D. \$155.00

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; 3/8" stock, walnut-finished vinyl. 21 1/2" x 11 1/2" x 7 1/4" D. \$90.00

L801. Similar to L901 except four 10" woofers, one 5" midrange, one dome tweeter, one piezoelectric tweeter; frequency response 26-45,000 Hz; dB meter; midrange & tweeter controls; 3.5 A circuit breaker; 5 W rms min. power, 150 W rms max.; 38" W x 15 1/4" H x 14" D \$459.99

L701. Similar to L801 except two 10" woofers, one 5" midrange, two dome tweeters (in array), two cone tweeters (in hemispheric array), one piezoelectric tweeter; frequency response 25-45,000 Hz; crossovers 500, 3000, 4000 Hz; midrange & tweeter controls; 3.0 A circuit breaker; 15 W rms min. power, 100 W rms max.; 28" H x 15 1/4" W x 13 3/4" D \$429.00

L601. Similar to L701 except imp. 4 ohms. Optional pedestal \$24.95

L501. Similar to L601 except frequency response 28-45,000 Hz; two 10" woofers, one 5" midrange, one 4" phenolic dome tweeter; one piezoelectric tweeter; crossovers 500, 3500, 4000 Hz; 8 W rms min. power, 100 W rms max.; 24" H x 14 1/2" W x 11" D \$269.95

L401 Four-Way Speaker System

Four-way acoustic-suspension system; 10" woofer, 5" midrange, dome tweeter, piezoelectric tweeter; imp. 8 ohms; frequency response 30-45,000 Hz; crossovers 500, 3000, 4000 Hz; 2.75 A circuit breaker; midrange & tweeter controls; 15 W rms min. power, 50 W rms max.; 24" H x 14 1/2" W x 11" D ... \$229.95

PT-265 Two-Way Speaker System

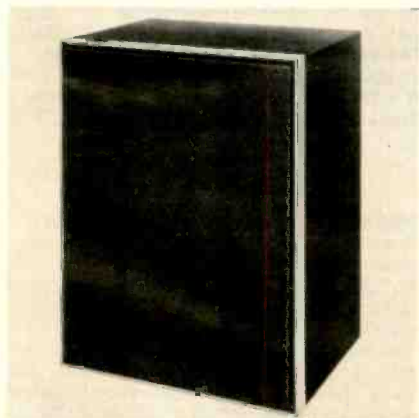
Two-way acoustic-suspension system; 10" woofer & 4" phenolic dome tweeter; crossover 3500 Hz; frequency response 35-20,000 Hz; imp. 8 ohms; 10 W rms min. power, 50 W rms max.; 2.65 A circuit breaker; dB meter; 24" H x 14 1/2" W x 11" D \$159.95

PT-261. Similar to PT-265 except does not have dB meter \$129.95

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 x 11" W x 8" D. \$365.00

PIONEER

HPM-200 Speaker System

Four-way acoustic-suspension system with two 10" woofers, 2 1/2" soft-dome mid-range, 1 mole-

cular 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 x 29" W x 19" D ... \$500.00

HPM-100 Speaker System

Four-way bass-reflex system with 12" woofer, 4" cone-type mid-range, 1 3/4" cone-type tweeter, high-polymer molecular-film super tweeter; frequency range 30-25,000 Hz; crossovers 1200, 4000, 12,000 Hz; imp. 8 ohms; max. input power 100 W; sensitivity 92.5 dB/W (at 1 meter). 26 3/8" H x 15 1/2" D x 15 3/8" W. \$300.00

HPM-60 Speaker System

Four-way bass-reflex system with 10" woofer, 4" cone-type mid-range, 1 3/4" cone-type tweeter, high-polymer molecular-film super tweeter; frequency range 35-25,000 Hz; crossovers 1200, 4000, 12,000 Hz; imp. 8 ohms; max. input power 60 watts; sensitivity 92.5 dB/W (at 1 meter). 24" H x 13 3/32" W x 12 3/8" D. \$225.00

HPM-40 Speaker System

Three-way bass-reflex system with 10" woofer, 1 3/4" cone-type tweeter, high-polymer molecular-film super tweeter; frequency range 35-25,000 Hz; crossovers 4000, 10,000 Hz; imp. 8 ohms; max. input power 40 watts; sensitivity 91 dB/W (at 1 meter). 22 7/16" H x 12 1 3/16" W x 12 1/2" D \$150.00

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. 28 3/8" H x 18 7/8" W x 13 1/16" D. Oiled walnut \$300.00

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 x 16" W x 11 1/4" D. Walnut \$250.00

CS-700G Speaker System

Sealed, 3-way floor-standing enclosure with 12" woofer, 4 3/4" 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 x 15" W x 12 3/4" D. Walnut ... \$200.00

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. 12 3/4" W x 22 1/2" H x 12 3/4" D. Walnut \$150.00

CS-66G Speaker System

Sealed, 3-way bookshelf enclosure with 10" woofer, 6 1/2" mid-range, and cone-type tweeter. Response 35-20,000 Hz. Has tweeter control. 8 ohms impedance. 40 W (dynamic) maximum input power. 12 1/4" H x 22" W x 11 1/2" D. \$125.00

Project 100 Speaker System

Three-way bass-reflex system with 10" woofer, 1 1/2" soft-dome midrange, 2" cone-type tweeter; frequency range 40-20,000 Hz; crossovers

The speaker of the house. Martin.

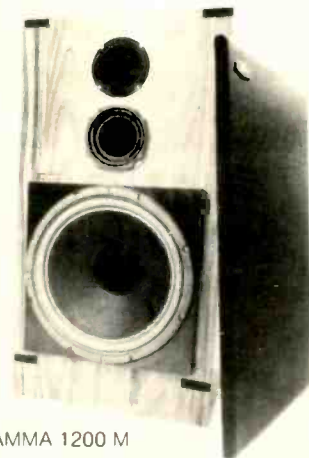
The test of a speaker is how it will sound at home, not just in a lab. And how it sounds at normal listening levels. Not just when it's blasting. And how it will fit into your home.

We test the new Martin Gamma Series in special chambers designed to recreate a multitude of listening conditions.

As a result, these new Martin's deliver "live" sound in real-life situations. The full range of the musical content

all the time. And the nine models of the Gamma Series assure you of finding the right speaker to suit your listening room.

The Martin Gamma Series. They bring home the sound.



GAMMA 1200 M

Martin

U.S.A.

Eastman Sound Mfg. Co. Inc., Mickelton, N.J. 08056

Exporter: Telesco Int'l. Corp., 1 Dupont St. So., Plainview, NY 11803

10 Speaker Systems

700 & 6000 Hz; max. input power 35 W; 23" H x 13" W x 10 1/2" D \$125.00

Project 60A Speaker System

Bass-reflex bookshelf speaker with 8" cone-type woofer, 1 3/4" cone-type tweeter; frequency range 50-20,000 Hz; crossover 3000 Hz; imp. 8 ohms. max. input power 20 W. 10 3/4" W x 18 1/2" H x 9 3/16" D \$80.00

POLK AUDIO

Ten Three-Way Speaker System

Three-way floor-standing system; 10" sub-bass radiator, two 6 1/2" bass midrange, 1" soft-dome high-frequency radiator, fourth order Butterworth tuned fluid coupler; frequency response 22-25,000 Hz, 32-20,500 Hz ±2 dB; crossovers 60 & 3000 Hz; imp. 6 ohms; system resonance 20 Hz; max. output level 112 dB; 10 W rms/ch min. power, 100 W max.; walnut wood-grained finish; 28" H x 16" W x 11 1/2" D \$199.95

Seven Three-Way Speaker System

Similar to Model 10 but with one 6 1/2" bass/midrange; frequency response 30-25,000 Hz, 40-20,500 ±2 dB; min. power 10 W/ch, max. 50 W; 8 ohm imp.; system resonance 30 Hz; max. output level 105 dB; 24" H x 14" W x 9 1/4" D \$129.00

Mini-Monitor System

Designed primarily for car, van, and other applications where space is limited; 4 1/2" fluid-coupled low-bass radiator, 4 1/2" bass/midrange, 1" soft-dome radiator; 15" W x 6 1/2" x 5" D \$79.95

PRESAGE

5 Three-Way Speaker System

Three-way speaker system; 10" "Piston Bass" passive radiator, 8" woofer, 4 1/2" midrange, 1" soft-dome tweeter; 100 W continuous program; amplifier power 10 W rms min, 150 W rms max; frequency response 30-20,000 Hz; crossovers 470 & 3500 Hz; 12 dB/octave slope; continuously variable midrange & tweeter controls ±6 dB; five-way binding posts; oak veneer cabinet on compressed wood; 26" H x 15" W x 12 1/2" D \$329.00

9 Two-Way Speaker System

Two-way speaker system; 10" long-excursion woofer & 1 3/4" phenolic-ring tweeter; frequency response 35-19,000 Hz ±4 dB; crossover: 1900 Hz; imp. 8 ohms; recommended power 25 W rms/ch, 100 W rms/ch max; 3-pos. tweeter output switch; natural oak or walnut cabinet; 25" H x 14" W x 11" D \$175.00

15 Two-Way Speaker System

Two-way speaker system; 8" woofer & 2" phenolic-ring tweeter; frequency response 60-19,000 Hz ±4 dB (-3 dB at 17,000 Hz); crossover 1300 Hz; imp. 8 ohms; can be driven by amps as low as 10 W rms; oak or walnut cabinet; 21 1/2" H x 11 1/2" W x 8 1/2" D \$119.95
Same but walnut-grained vinyl enclosure \$99.95

RADIO SHACK

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. 28 3/8" H x 17 3/8" W x 12" D ... \$199.50

Realistic Optimus T-100 Tower

Tower speaker system; two 8" woofers & 3" tweeter; 75 W peak-program power handling; frequency response 55-18,000 Hz ±3 dB; crossover 3500 Hz; 3-way L pad adjusts treble response; phono jacks & screw terminals recessed on bottom of enclosure; oiled-walnut veneer cabinet (finished all four sides); 35 1/2" H x 13" W x 12 1/2" D \$139.95

Nova 7B Speaker System

Sealed, 2-way bookshelf system with 10" woofer and two 3 1/2" tweeters. Response 20-20,000 Hz. 8 ohms impedance. 60 W rms maximum input power. 12 1/2" H x 22 1/8" W x 11" D. Oiled walnut \$119.50

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 x 14" W x 11 1/2" D. Oiled walnut \$114.50

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 x 23" W x 11 1/2" D. Walnut \$89.95

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. 23 3/8" H x 13 3/4" W x 8 1/2" D \$79.50

RECTILINEAR

5 Contemporary Lab Series

Sealed acoustic-suspension, 4-way bookshelf system with optional "Delta Dispersion Base;" 12" woofer, 7" upper bass/midrange woofer, 1 1/2" upper midrange/tweeter 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" x 15" x 14 1/2" \$349.00
Base \$59.00 pr.
7. Floor-standing version of Model 5; two 1 1/2" upper midrange/tweeter, two 1" supertweeters; min. power 30 W rms, max. 350 W rms. 36" H x 18" W x 12" D \$449.00
4 1/2. Smaller three-way version of Model 5 with 10" woofer, 2" dome midrange, 1" supertweeter; response 35-20,000 Hz ±2 dB; crossovers 800 & 6000 Hz; min. power 25 W rms, max. 200 W rms; 25" H x 14" D x 13" \$299.00
2. Two-way bookshelf version of Model 4 1/2 with 10" woofer & two 1 1/2" supertweeters; response 35-18,000 Hz ±3 dB; min. power 20 W rms, max. 100 W rms; 23 1/2" H x 13" W x 12" D \$169.00

Model IIIb Four-Way Speaker System

Four-way, floor-standing system with 12" woofer, 5" mid-range, two 2 1/2" 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 x 18" W x 12" D \$329.00

RICHARD ALLAN

RA828LP Three-Way Speaker System

Three-way speaker system; two 8" Bextrene cone units & 3/4" dome treble unit; frequency response 30-20,000 Hz ±3 dB; crossovers 250 Hz & 3500 Hz; imp. 5 ohms min. to 20 ohms max.; will handle 45 W rms; level-control adjustment: left-hand control bass/midrange, right-hand control treble, 6-pos. left-to-right in steps of 1 dB; sensitivity 30 W pink noise for 96 dB at 1 meter (pos. 2 of mid control); teak or walnut finish cabinet; 3.1 cu. ft enclosure;

31" H x 15" W x 12" D \$384.75

RA82L Two-Way Speaker System

High-power labyrinth speaker system; 8" woofer & 3/4" 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. 28 1/2" H x 13 1/2" W x 11 1/2" D \$247.95

RA8 Two-Way Speaker System

Two-way system with 8" "Bextrene" cone bass unit & 3/4" 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. 15 1/2" H x 10 1/2" W x 9 3/4" D \$128.25

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: 25 W pink noise for 96 dB at 1 meter (position 2 of control). 21 1/2" H x 11" W x 9 3/4" D \$205.20

ROYAL SOUND

SP-55 Speaker System

Three-way system with 10" external bass driver, 8" internal active compound driver, 5" midrange (with Sym-Pulse), and 1 1/2" dome tweeter; imp. 8 ohms; 80 W rms power; attenuators for mid-range & treble; walnut enclosure \$500.00
Rosewood cabinet \$550.00

PRO-250 Speaker System

Two-way bookshelf system with 10" resistive-port woofer and 1 1/2" 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 x 12" W x 10" D \$76.50
PRO-350. Same as 250 except response 30-20,000 Hz; power 100 W rms; 21 1/8" H x 12 3/8" W x 10" D; walnut enclosure \$150.00
Rosewood cabinet \$175.00

RTR

2500 Studio Master Speaker System

Three-way speaker system with 25" woofer, fifteen 5" slot-loaded mid-range, eighteen 2 1/2" 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 x 28" W x 23" D. Weight 265 pounds. \$1250.00

DR-1 Electrostatic Speaker System

Electrostatic system with built-in direct-drive amplifier; electrostatic response 350-30,000 Hz; two 10" and one 12" woofer; woofer response 30-350 Hz; Must be bi-amped, using 50-100 watts on bass section; 49" H x 16 1/2" W x 16 1/2" D \$1050.00

280DR Three-Way Speaker System

Features four 10" woofers, five 2 1/2" 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

We thought a lot about loudspeakers before we began building them. Here's [some of] what we concluded.

The first premise is obvious. Great sound.

Before we sat down to design our loudspeaker line, we chalked some fundamental goals on the blackboard. Such as extended frequency response, all the way from the lowest bass notes to the highest overtones high fidelity program material may contain. And evenness of response, to avoid predominance of one

frequency over another.

Cardinal principles punctuate the opening pages of our engineering log. Thou shalt not compromise accuracy or introduce distortion. Honor transients, and faithfully reproduce them. Achieve wide power response and superior dispersion.

Not that these and other fundamental dictates are unfamiliar to manufacturers of high quality speakers. Where Presage differs from the flock is in our rigid adherence to them, our almost fanatical refusal to make compromises which, at best, result in a passable high fidelity loudspeaker.

A loudspeaker is seen as well as heard.

Sonic excellence is only a beginning in the process resulting in a finished hi-fi speaker. At Presage, we set out to build loudspeakers for home, not studio listening, one reason we developed our unique Piston Bass system (patent pending), which results in superior low frequency response from an

enclosure small enough for bookshelf mounting.

Other than our budget model, every Presage loudspeaker is encased in natural oak, walnut or rosewood veneer. A flat lacquer is then applied to the wood, allowing it to retain the natural shadings of its

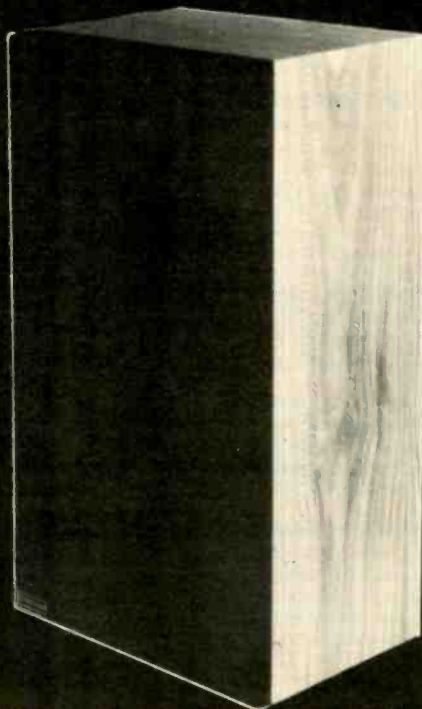
grain as well as affording lasting protection against fading or discoloration.

We then face each speaker with a grille cloth of stretched jersey, chosen as much for its sonic transparency as for elegance. Then comes the Presage logo, constructed of solid brass.

Ideally, a speakermaker is a matchmaker.

A high fidelity loudspeaker is a system, an integrated network of component parts no better than its weakest link. Every Presage loudspeaker begins with parts carefully matched, chosen for quality and checked to insure uniform standards are maintained.

Because a loudspeaker functions as part of a matched system of audio components, Presage speakers are designed to fit logically into systems consistent with their price categories. You can connect our moderately priced Model 15 to a 10 watt receiver, for example, without sacrificing its capacity for clean response at loud levels. Our more expensive models, while also highly efficient for the



broad band of frequencies they reproduce accurately, are engineered to handle power without breaking up under the strain.

To facilitate hookup, we utilize 5-way binding posts which accommodate virtually any kind of connection from spade lugs to bare wire. And every Presage loudspeaker model provides at least one tone control to help match the acoustics of the room in which it must ultimately perform.

PRESAGE

Listen.

Presage Corporation
Dumaine Avenue
Nashua, New Hampshire 03060
(603) 883-7828

vener cabinet. 16 1/2" x 39" x 16 1/2" D. \$389.95

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. 14 1/2" x 36" x 13" D. \$289.95

180D Two-Way Speaker System

Features two 10" woofers and four 2 1/2" 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" x 33 1/4" x 14" D. . \$269.95

240D Column Speaker System

Two-way speaker system with 10" woofer, 8" woofer, 3/4" high-definition tweeter, two 2 1/2" 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 x 14 1/2" W x 12 1/2" D. \$229.95

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. 14 1/2" x 12" x 14 1/2" D. \$199.95

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" x 20" x 23 1/2" D. \$329.95

EXP-10 Speaker System

Two-way bookshelf system with 10" woofer & 3/4" tweeter with contact damping; frequency response 30-20,000; imp. 8 ohms; crossover 1200 Hz; recommended amp. power 30-80 W rms; features continuously variable tweeter level control; hand-rubbed walnut veneer enclosure, 23" H x 12" W x 9 1/2" D. \$134.95

EXP-10S. Same but in oak. \$129.95

EXP-8 Speaker System

Two-way bookshelf system with 8" woofer & 3/4" 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. 19 1/8" H x 11 1/4" W x 8 1/2" D. \$79.95

SAE

Mark XIV Electrostatic Transducer

Has 12.3" low-frequency transducer; 5" mid-frequency transducer and constant-charge, bipolar-radiating electrostatic elements. Cross-

overs: 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. 42 3/4" H x 24" W x 18" D at base (6" D at top).

Oiled walnut Pair \$1800.00
Rosewood Pair \$2000.00

Mark XI Dynamic Transducer

Three-way system with 12" driver; two 5 mid-range; three 2 1/2" forward-radiating tweeters, and one 2 1/2" 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 x 17" W x 12 1/4" D. \$275.00

Mark X Dynamic Transducer

12" low frequency driver; 5" mid-frequency driver in an air-tight enclosure, and two 2 1/2" 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 x 14 1/2" W x 12" D. \$200.00

SANSUI

SP-2000 Speaker System

Three-way speaker system; 10" cone woofer, 10" passive radiator, 3 1/2" horn midrange, 1 1/8" horn tweeter; direct-drive diaphragms for mid-range & tweeter; frequency range 25-40,000 Hz; crossover (LC at 12 dB/octave) 1500 & 7000 Hz; max. input power 100 W peak; imp. 8 ohms; midrange & high-frequency level controls; Brazilian rosewood veneer finish top, side & bottom; removable grille; speaker stand included for each speaker; 30 1/8" H x 14 3/4" W x 12 3/8" D; sold in matched pairs only. \$590.00 ea.

SP-7500X Speaker System

Four-way speaker system with 16" woofer, 8" mid-range, 6 1/8" x 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. 17 1/2" W x 26 1/8" H x 11 1/8" D. \$290.00

SP-5500X. Similar to SP-7500X except 15" woofer, two 5 1/8" cone-type mid-range, 6 1/8" x 2" tweeter, 2 1/8" super tweeter; frequency range 25-20,000 Hz; power rating 120 W (peak). \$250.00

SP-2500X. Similar to SP-5500X except 12" woofer and two horn-type 2 1/8" tweeters; frequency range 30-20,000 Hz; crossovers 1200 & 5000 Hz; power rating 100 W (peak); 15 1/8" W x 24 3/8" H x 11 1/8" D. \$200.00

LM330 Speaker System

Linear-motion design with 10" cone-type woofer and 2 1/8" 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. 12 1/4" W x 28" H x 12" D. \$200.00

LM220. Similar to LM330 except 8 1/8" cone-type woofer; frequency range 32-20,000 Hz; power rating 45 W (peak). 11" W x 24 1/8" H x 9 7/8" D. \$170.00

LM110. Similar to LM220 except 6 1/2" cone-type woofer; frequency range 38-20,000 Hz; power rating 35 W (peak), 9 13/16" W x 21 1/8" H x 7 11/16" D. \$250.00 pr.

SCOTT, H.H.

PRO-100 Speaker System

Sealed, 3-way full-range floor-standing speaker system with high-compliance, long-throw 15" woofer with aluminum voice coil, two 4 1/2" 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. 29 1/4" H x 17 7/8" W x 14 1/2" D. Walnut \$399.95

PRO-70 Speaker System

Sealed, 3-way full-range floor-standing speaker system with 12" high-compliance long-throw woofer, 4 1/2" cone midrange, and two 1" dome tweeters; response 35-20,000 Hz ± 4 dB; crossovers 800 & 4000 Hz; separate 3-pos. mid-range & tweeter level switches; imp. 8 ohms; 15 W min. amp power, 100 W program max; 27" H x 16 1/4" W x 12 1/2" D. \$299.95

S-196 Speaker System

Sealed, 3-way full-range floor-standing (or large bookshelf) system with 12" high-compliance long-throw woofer, 4 1/2" cone midrange, and 1" dome tweeter; response 35-20,000 Hz ± 4 dB; crossovers 800 & 4000 Hz; imp. 8 ohms; separate 3-pos. midrange & tweeter level switches; 15 W min. amp power, 75 W program max.; 24 1/2" H x 14" W x 11" D. \$179.95

S-186. Similar to S-196 except with 10" woofer; response 40-20,000 Hz; 10 W min. amp power, 60 W program max; 23" H x 12 1/2" W x 10 1/2" D. \$139.95

S-177 Speaker System

Sealed, 3-way bookshelf system with 8" woofer, 5" cone midrange, 1 3/4" cone tweeter; response 45-18,000 Hz ± 4 dB; crossovers 1200 & 3500 Hz; will handle up to 45 W program; 19" H x 11" W x 9" D. \$109.95

S-176. Similar to S-177 except 2-way system; tuned port; response 60-18,000 Hz ± 4 dB; 3500 Hz crossover; will handle up to 30 W program; 18" H x 10 1/2" W x 8 1/2" D. \$79.95

SONAB

OA2212 Speaker System

Three-way system with two woofers in bass-reflex cabinet; two midrange in closed volume, twelve tweeters; frequency response 30-15,000 Hz ± 3 dB; frequency range 26-18,000 Hz; crossovers 450 & 2000 Hz; attenuation: 6 dB/oct. bass, 12 dB/oct. midrange, 24 dB/oct. treble; tone controls: three-way treble (range 1900-20,000 Hz) with 1.5 dB/step; two-way midrange (400-1200 Hz) with 2 dB/step; two-way for high end of bass range (120-500 Hz) with 1 dB/step; imp. 8 ohms; sold in matched pairs only. \$780.00 ea.

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 x 26" H x 17" D. \$489.00 ea.

SOUND CELL

SC-100 Speaker System

Mechanically tuned system; electrical-mechan-

ical 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 1/8 W, max. 4 1/2 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. 8 3/4" x 10 1/2" x 8 3/4" \$95.00 ea.
SC-200. Same as SC-100 but with double capacity for larger sound; 10 1/2" x 16 1/2" x 8 1/2" \$95.00

SOUNDCRAFTSMEN

Reflectrostatic SC-12ES System

Hybrid dynamic-electrostatic acoustic-suspension design; 12" woofer, 5" midrange, 144-sq in electrostatic radiators; frequency response 30-20,000 Hz ± 3 dB; crossovers 600-960 Hz variable & 1000 Hz; controls: low-frequency rolloff, midrange level, Reflectrostatic level, ultrasonic limiter; imp. 8 ohms; min. amp power 20 W, 200 W max.; oiled-walnut veneer and solids cabinet; removable brown foam grille; 28" H x 18" W x 14" D; sold in matched pairs only \$399.50 ea.

Lancer SC-9T Three-Way System

Dynamic acoustic-suspension system; 10" woofer, 5" midrange, two 1" dome tweeters; frequency response 20-20,000 Hz; crossovers 500 & 4500 Hz; min. amp power 10 W, 100 W max.; 8 ohms; midrange & high-frequency controls; multi-radiational tower design; oiled-walnut veneer and solids cabinet; removable black double-knit fabric grille; 38" H x 12" W x 12" D \$229.50

SC-7. Similar to SC-9 except 12" woofer, 5" midrange, one 1" dome tweeter; frequency response 20-20,000 Hz ± 5 dB; removable brown foam grille; 25 1/2" H x 15" W x 11 3/4" D. \$229.50

Lancer SC-4 Three-Way System

Dynamic acoustic-suspension system; 12" woofer, 5" midrange, 2 1/4" tweeter; frequency response 20-20,000 Hz; crossovers 750 & 6000 Hz; min. amp power 10 W, 50 W max.; 8 ohms; midrange & high-frequency controls; oiled-walnut veneers and solids cabinet; removable brown foam grille; 23 1/2" H x 15" W x 12 1/2" D \$169.50

SC-10A. Similar to SC-4 except two-way system with 10" woofer & 2 1/4" tweeter; crossover 2500 Hz; high-frequency control; 20 1/4" H x 12 1/2" W x 10" D \$119.50

Lancer 9535-2 Two-Way System

Dynamic bass-reflex design; 12" woofer, 2 1/2" tweeter; frequency response 30-20,000 Hz; crossover 3000 Hz; 8 ohms; min. amp power 5 W, 35 W max.; oiled-walnut veneer cabinet with brown/white grille cloth; 25" H x 14 1/4" W x 11 3/4" D \$99.50

9534X. Similar to 9535-2 except 8" woofer, 3" tweeter; min. amp power 5 W, 30 W max.; frequency response 40-18,000 Hz; 23 1/2" H x 11 1/2" W x 11 1/4" D \$69.50

9711. Similar to 9535-2 except 8" full-range driver; min. amp power 3W, 20 W max.; frequency response 45-15,000 Hz; 20 1/4" H x 10" W x 9 1/2" D \$54.50

SP

Model X Speaker System

Two-way bookshelf system with 10" woofer, Philips hard-dome tweeter; response 30-20,000 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. 27" H x 15 1/2" W x 13" D... \$139.00

Model VIII Speaker System

Two-way bookshelf system with 8" woofer and

1" soft-dome tweeter; response 35-20,000 Hz ± 5 dB; crossover 2000 Hz constant voltage/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 x 14" W x 10" D \$109.00

Model VII Speaker System

Two-way acoustic-suspension system with 8" rubber-surround woofer, 1" soft-dome tweeter; response 40-20,000 Hz ± 5 dB; crossover 2000 Hz; imp. 8 ohms; power handling 50 W; laminated simulated walnut enclosure; 20" H x 12" W x 8" D \$89.00

Model VI Speaker System

Two-way bookshelf system with 6" woofer and 2" cone tweeter; response 45-20,000 Hz

± 5 dB; crossover 2000 Hz; imp. 8 ohms; will handle 35 W power; laminated simulated walnut enclosure. 16" H x 10" W x 7 1/2" D. . \$59.00

SPEAKERLAB

K Three-Way Speaker System

Three-way horn-loaded speaker system; 15" woofer, 17" x 6" (mouth) horn midrange, 4 1/2" x 1 3/4" horn tweeter; crossovers 350 & 5000 Hz; imp. 4 ohms; 10 W min amp power; midrange & tweeter level controls; oiled-walnut finish; brown grille cloth; 50 1/2" W x 32 1/2" D x 28" H \$595.00
 Kit version \$389.00

Seven Three-Way Speaker System

Three-way acoustic-suspension speaker system; 10" & 12" woofers driven in parallel, 14"

**We're the fastest
 selling speaker
 you've never heard of**



We're a small company with a big idea. To produce quality loudspeakers at a reasonable price. Something everyone claims — then spends more on advertising than on research and craftsmanship.

For the past year and a half a group of us in Vermont have been achieving that idea — quality *and* reasonable price. But it hasn't left anything for advertising, so unless you've been to one of our dealers, you've probably never heard of us.

Acousti-phase speakers start at \$79, and incorporate a bass port at the rear of a heavy unyielding enclosure; employ massive woofers, efficient midrange drivers, mylar dome tweeters and sophisticated crossover networks. The results are highly efficient speaker systems with flat response that can be driven with less than 10 or more than 100 watts per channel.

Acousti-phase
 A Tribute to Sound

× 3 1/2" horn midrange, 4 1/2" × 1 1/4" horn tweeter; crossovers 700 & 5000 Hz; imp. 4 ohms; 15 W min amp power; midrange & tweeter level controls; oiled-walnut finish; brown grille cloth; 29" W × 18" D × 15" H \$389.00
Kit version \$272.00

Four Three-Way Speaker System

Acoustic-suspension speaker system; 12" woofer, 5" cone midrange, 4 1/2" × 1 1/4" horn tweeter; crossovers 700 & 6500 Hz; imp. 8 ohms; 15 W min amp power; midrange & tweeter level controls; oiled-walnut finish; brown grille cloth; 28" W × 16 1/4" D × 11 3/4" H \$249.00
Kit version \$179.00
Three. Same as Model Four except 3/4" dome tweeter \$219.00
Kit version \$148.00

Two Two-Way Speaker System

Two-way acoustic-suspension speaker system; 10" woofer & 1 1/2" dome tweeter; crossover 1000 Hz; 7 W min amp power; tweeter level control; 4 ohm imp.; oiled-walnut finish; brown grille cloth 23 1/2" W × 15 1/4" D × 11 1/8" H \$139.00
Kit version \$89.00

One Two-Way Speaker System

Acoustic-suspension speaker system; 8" woofer & 1/2" dome tweeter; crossover 2500 Hz; 5 W min amp power; tweeter level control; 4 ohm imp.; oiled-walnut finish; brown grille cloth; 18 3/4" W × 11 3/4" D × 9 1/2" H \$89.00
Kit version \$59.00

SYLVANIA

GTE-412 Speaker System

Sealed air-suspension design with 12" woofer, 4 1/2" mid-range, 1 1/2" Mylar dome tweeter, and 3/4" soft-dome super-tweeter. Response 30-25,000 Hz ±3.5 dB, crossovers at 500, 2000, 8000 Hz. 8 ohms. Capacity 150 W rms/ch. Walnut veneers. 28 1/2" H × 18 1/2" W × 12 1/2" D \$249.95

GTE-312. Same as GTE-412 except without 1 1/2" tweeter; crossovers at 500, 3500 Hz .. \$199.95

GTE 210 Speaker System

Sealed air-suspension design with 10" woofer, 1 1/2" 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 × 15 3/8" W × 11 3/4" D \$119.95

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. 25 3/8" × 16 1/8" × 11 7/8" D. Walnut-grained vinyl ... \$229.95 pr.

AS5710 Speaker System

Sealed air-suspension design with 10" woofer, 3" mid-range, and 2 1/2" tweeter. Response 30-18,000 Hz. 8 ohms. Capacity 50 W continuous. 22 7/8" × 14 3/8" × 11 3/8" D. Walnut-grained vinyl \$159.90 pr.

SYNERGISTICS

S-72 Four-Way Speaker System

Acoustic-suspension four-way speaker system; two 10" high compliance woofers, two 4 1/2" midrange, three 2 1/2" extended-range tweeters, one piezoelectric super tweeter; crossovers 750, 4000, 10,000 Hz; midrange & tweeter

level controls; imp. 8 ohms; min. amp power 6 W rms, max. 200 W rms; usable audio range 26-24,000 Hz; 40" H × 30" W × 12 1/2" D \$495.00

S-62 Tower Speaker System

Acoustic-suspension four-way speaker system; one 12" high-compliance woofer, 4 1/2" midrange, three 2 1/2" extended-range tweeters, one super tweeter; crossovers 750, 4000, 10,000 Hz; 8 ohms; midrange & tweeter level controls; min. amp power 8 W rms, max. 150 W rms; usable audio range 26-24,000 Hz; 33" H × 16 1/2" W × 12 1/2" D \$375.00

S-52 Tower Speaker System

Two-way speaker system; two 8" high-compliance woofers & three extended-range tweeters; crossover 2000 Hz; tweeter level control; imp. 8 ohms; min. amp power 6 W rms, max. 150 W rms; usable audio range 28-20,000 Hz; 30" H × 13 1/2" W × 13 1/2" D \$300.00

S-51 Three-Way Speaker System

Three-way acoustic-suspension system; 12" high-compliance woofer, 4 1/2" midrange, 2 1/2" extended-range tweeter; crossovers 700 & 5000 Hz; midrange & tweeter level controls; 8 ohms; min. amp power 8 W rms, max. 150 W rms; usable audio range 30-20,000 Hz; 25 1/2" H × 14 1/4" W × 11 1/2" D \$300.00

S-42 Three-Way Speaker System

Acoustic-suspension three-way system; 10" high-compliance woofer, 4 1/2" midrange, 2 1/2" extended range tweeter; crossovers 750 & 5000 Hz; tweeter level control; 8 ohms; min. amp power 10 W rms, max. 100 W rms; usable audio range 28-20,000 Hz; 25 1/2" H × 14 1/4" W × 11 1/2" D \$225.00

S-32 Two-Way Speaker System

Two-way acoustic-suspension system; 10" high-compliance woofer & 2 1/2" extended range tweeter; crossover 2500 Hz; tweeter level control; imp. 8 ohms; min. amp power 10 W rms, max. 80 W rms; usable audio range 28-20,000 Hz; 25 1/2" H × 14 1/4" W × 11 1/2" D ... \$150.00

S-22 Two-Way Speaker System

Two-way acoustic-suspension system; 8" high-compliance woofer & 2 1/2" extended-range tweeter; crossover 2000 Hz; tweeter level control; 8 ohms; min. amp power 6 W rms, max. 60 W rms; usable audio range 33-20,000 Hz; 23" H × 12" W × 9 1/2" D \$125.00

S-12. Similar to S-22 except without tweeter control; usable audio range 38-20,000 Hz; 17 3/4" H × 9 3/4" W × 8 1/2" D \$100.00

425 Tower Speaker System

Three-way system with 10" air-suspension woofer, 3 1/2" sealed mid-range, 3 1/2" aluminum-domed tweeter; frequency response 32-20,000 Hz; crossovers 1800 Hz & 4000 Hz; imp. 8 ohms; power requirement 8 W rms min., 40 W rms max. walnut-grained finish; acoustic-foam gridded in black or brown. 38 1/4" H × 11 3/4" W × 9 1/4" D \$149.95

100B Three-Way Speaker System

Three-way system featuring 12" woofer, 4 1/2" mid-range, and 2" tweeter; resettable circuit breaker; response 32-18,000 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). 24 3/8" × 14 1/2" × 12" \$119.95

55A Two-Way Speaker System

Two-way system with 10" foam-edge-suspension woofer, 3" wide-dispersion tweeter; frequency response 40-17,000 Hz; crossover 2500 Hz; imp. 8 ohms; power requirement 3 W rms min., 30 W rms max.; walnut-grained finish; Reverse-A-Foam grille. 23 1/8" H × 11 3/4" W × 9 1/4" D \$79.95

25 Two-Way Speaker System

Two-way system with 8" high-compliance woof-

er, 3" wide-dispersion tweeter; frequency response 50-17,000 Hz; crossover 4500 Hz; imp. 8 ohms; power requirement 2 W rms min., 25 W rms max.; walnut-grained finish; Reverse-A-Foam grille. 18" H × 11 3/4" W × 9 1/4" D ... \$69.95

TANNOY

Arden Speaker System

Incorporates company's 15" HPD385A speaker; will handle 85 W continuous program material; triple ducted port; oiled-walnut finish. 39" H × 26" W × 14 1/2" D \$555.00
Berkeley. Similar to Arden except dual ducted port. 33" W × 21" W × 12" D \$480.00

Cheviot Speaker System

Incorporates company's 12" HPD315A speaker; will handle 60 W continuous program material; oiled-walnut finish. 33" H × 17 1/2" W × 10 1/4" D \$345.00

Devon. Similar to Cheviot except is bookshelf size. 23" H × 15 3/4" W × 10 1/4" D \$315.00

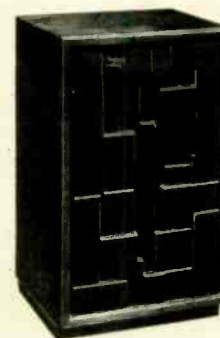
Eaton Speaker System

Incorporates company's 10" HPD295A speaker; will handle 50 W continuous program material; oiled-walnut finish. 20 3/4" H × 13 3/4" W × 9 3/4" D \$284.00

TECHNICS BY PANASONIC

T-500 Four-Way Floor System

Response 35-20,000 Hz ±3 dB; two 10" woofers, 5" mid-range, two 1 1/4" 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 × 18 1/4" W × 14 1/2" D (inc. base) \$429.95

T-400 Four-Way Floor System

Response 38-20,000 Hz ±3 dB; 12" woofer, 5" mid-range, 3 1/2" 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 × 13 1/4" D (inc. base) \$279.95

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 & 1 1/4" tweeter; 1800 Hz crossover; tweeter level control. Sculptured removable grille available in blue or brown. 21 3/4" H × 12" W × 10 1/2" 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. 24 $\frac{3}{8}$ " H x 13 $\frac{3}{4}$ " W x 12 $\frac{1}{2}$ " D. \$179.95

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 x 11" W x 10" D. \$79.95

P-90 Three-Way Bookshelf System

Response 58-20,000 Hz ± 3 dB; 10" acoustic-suspension woofer, 5" cone mid-range, 2 $\frac{1}{2}$ " cone tweeter; crossovers 2500, 5000 Hz; 5 W min. amp power, 20 W max for 5 minutes (400 Hz). 22 $\frac{1}{2}$ " H x 13" W x 8 $\frac{3}{4}$ " D. \$259.95 pr.

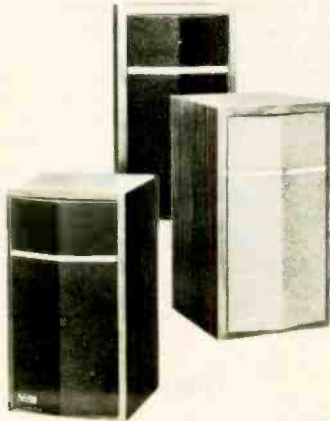
P-80 Two-Way Bookshelf System

Response 70-18,000 Hz ± 3 dB; 8" acoustic-suspension woofer, 1 $\frac{3}{4}$ " tweeter; crossover 2000 Hz; 5 W min. amp power, 15 W max for 5 minutes (400 Hz). 17 $\frac{3}{4}$ " H x 11 $\frac{3}{4}$ " W x 8 $\frac{3}{4}$ " D. \$149.95 pr.

TEMPEST

Lab Series 1 Bookshelf System

40 W continuous program, 160 W music peaks; frequency response 30-25,000 Hz; 6 ohms;



crossover 1500 Hz; dispersion 120 degrees horizontal, 40 degrees vertical; efficiency: 80 dB SPL at 1 W at 15 ft; 12" low-frequency driver & Heil air-motion transformer; controls: high-frequency attenuator, environmental equalizer; Corinthian walnut vinyl enclosure; choice brown, blue, rust, or green grille cloth; 27" H x 15" W x 13 $\frac{7}{8}$ " D. \$237.00

Lab Series 2. Same as above except 10" low-frequency driver; frequency response 35-25,000 Hz; 50 W continuous program, 140 W music peaks; 24 $\frac{1}{2}$ " H x 13 $\frac{1}{4}$ " W x 13 $\frac{1}{2}$ " D. \$186.00

Lab Series 3. Same except 8" low-frequency driver; frequency response 40-25,000 Hz; 40 W continuous program, 100 W music peaks; 22" H x 12 $\frac{1}{4}$ " W x 10 $\frac{3}{8}$ " D. \$142.00

Lab Series 3a. Same as Lab Series 3 except without individual control provision; factory adjusted for flat response. \$124.00

TRANS-BASS SYSTEM

TZ-102 Two-Way Speaker System

Transmission line tower speaker with 10" woofer; two 3 $\frac{1}{2}$ " tweeters; 35-22,000 Hz response; 8 ohms impedance; 200 W max. rated power, 20 W min.; efficiency: 90 dB for 1 W input at 1 meter; white or rosewood finish; 48" H x 15 $\frac{1}{2}$ " D x 13 $\frac{3}{4}$ " W. \$269.95

82 Two-Way Speaker System

Floor-standing, tower speaker features 8" woofer; 1 $\frac{1}{2}$ " dome tweeter; 40-18,000 Hz response; 8 ohms impedance; 35 W max. rated power;

oiled walnut finish; 36" H x 9" W x 9" D. \$119.95

TransMini Three-Way Speaker System

Floor-standing, tower speaker with 6 $\frac{1}{2}$ " woofer; 3" tweeter; 1 $\frac{1}{2}$ " supertweeter; 50-18,000 Hz response, 90-18,000 Hz ± 3 dB; 8 ohms impedance; efficiency: 88 dB for 1 W at 1 meter; 25 W max. rated power; crossovers 1650 & 5000 Hz with 6 dB/octave slopes; oiled walnut finish; 31" H x 7 $\frac{1}{4}$ " W x 7 $\frac{1}{4}$ " D. \$69.95

100 Sub-Woofers

10" woofer; 100 Hz crossover; 8 ohms impedance; 25-100 Hz response; white or rosewood finish; 48" H x 15 $\frac{1}{2}$ " D x 13 $\frac{3}{4}$ " W. \$229.95

ULTRALINEAR

250 Four-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 $\frac{3}{4}$ " particle board; sculptured foam grille. 25" H (incl. base) x 23 $\frac{1}{2}$ " W x 12" D. \$239.95

450 Tower System

Two-way system with 10" woofer, 10" passive radiator, 1" dome tweeter; frequency response 27-22,000 Hz; crossover 1750 Hz with h.f. level control; 8 ohms; min. 10 W rms, max. 50 W rms; walnut-grained finish; removable acoustical foam grille; 43 $\frac{1}{2}$ " H x 12" W x 12" D. \$199.95

225 Three-Way Speaker System

Three-way system with 12" air-suspension woofer, 6" mid-range in separate sealed en-

Footprints in the sounds of time.

The sound of Cizek. A brave new world in loudspeaker technology.

Brave, because we dared to embark on a complex journey into the center of sound. A journey destined to explore each element of sound reproduction, to seek out imperfection and institute change.

But mere change was not enough. At Cizek Audio Systems, we found it necessary to go beyond refinement to the point of creation. Creation which resulted in 8 new patents to bring you closer to sound at its source. Sound rated by the experts to be superior to loudspeakers selling for many times the price.

Yet Cizek's primary breakthrough

lies in a crossover network that eclipses all others. A system so precise, so accurately formulated, that we can guarantee response specifications to within ± 1 DB.

Combined with a power handling capability of 15 to 150 watts per channel, this full range, 2-way acoustic-suspension loudspeaker yields a frequency curve that is exceptionally flat.

Come compare. Cizek — making footprints in the sounds of time.

For more information and the name of the dealer in your area, write Cizek Audio Systems, 149 California St., Newton, MA 02158.



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CIRCLE NO. 18 ON READER SERVICE CARD

10

Speaker Systems

closure, 1" dome super tweeter; frequency response 28-22,000 Hz; crossover 500 Hz & 5000 Hz with mid-range control; imp. 8 ohms; power requirement 10 W rms min., 60 W rms max.; walnut-grained finish; acoustic-foam grille (available in choice of three colors). 24 $\frac{3}{8}$ " H x 14 $\frac{1}{2}$ " W x 12" D \$189.95

200B Three-Way Speaker System

Air-suspension design with 12" woofer, 5" sealed mid-range, 2" super-tweeter; response 28-20,000 Hz; crossover at 1500 Hz & 4000 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). 24 $\frac{3}{8}$ " x 14 $\frac{1}{2}$ " x 12" D \$159.95

UTAH

HS10C Three-Way Speaker System

Three-way system; 15" woofer, horn midrange, two 1 $\frac{3}{4}$ " tweeters; frequency response 25-20,000 Hz; crossovers 800 & 3500 Hz; 8 ohms; midrange & tweeter controls; will handle 80 W rms; walnut-veneer enclosure; 27" x 20 $\frac{1}{2}$ " x 14" D \$299.95

HS4C. Similar to HS10C except 12" woofer and one 1 $\frac{3}{4}$ " tweeter; frequency response 30-20,000 Hz; will handle 60 W rms; 25 $\frac{3}{4}$ " x 15" x 14" D \$229.95

HS2C. Similar to HS4C except 5" tweeter; response 40-20,000 Hz; crossovers 2000 & 5000 Hz; tweeter control; will handle 40 W rms; \$159.95

DX120A Three-Way Speaker System

Three-way system; 12" woofer, 3 $\frac{1}{2}$ " x 8" compression-horn midrange; two 3" cone tweeters; frequency response 25-20,000 Hz; crossovers 2500 & 5000 Hz; continuously variable mid-range & tweeter controls; 8 ohms; max. power handling 60 W rms, min. 10 W rms; walnut vinyl on particle board; black or cafe brown knit grille; 25 $\frac{3}{8}$ " x 15 $\frac{3}{4}$ " x 11 $\frac{1}{4}$ " \$169.96

DX100A Three-Way Speaker System

Three-way system; 10" woofer, 5" midrange, 3" tweeter; frequency response 40-20,000 Hz; 1500 & 4000 Hz crossovers; tweeter control; 45 W rms max. power handling; 10 W rms min.; walnut vinyl on particle board; black or cafe brown knit grille; 24 $\frac{1}{2}$ " x 14" x 10" \$139.95

VIDEOTON

D-258-A Speaker System

Four-way system with 10" woofer, 5" midrange, 1 $\frac{1}{2}$ " dome midrange, and 1" dome tweeter; crossovers 600, 2000 & 7000 Hz; 12-element crossover network, 12 dB/octave roll-off; front-mounted midrange & h.f. level controls; continuous power capacity 60 W; music power capacity 90 W; response 30-20,000 Hz \pm 2 dB; 6-8 ohms imp.; oiled walnut finish; removable grille; 27 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 10 $\frac{3}{8}$ " D \$200.00

D-402-A Supermax Speaker System

Two-way, six-driver system with two 8" woofers, two 4" tweeters, two 1" hemispherical dome tweeters; continuous power capacity 50 W; music power capacity 50 W; response 35-20,000 Hz \pm 3 dB; 6-8 ohms imp.; oiled walnut finish; 27 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 11" D \$189.00

DP-202-A Saphir I Speaker System

Two-way system with 8" woofer, 4" tweeter; con-

tinuous power capacity 15 W; music power capacity 35 W; response 45-20,000 Hz \pm 3 dB; 6-8 ohms imp.; oiled walnut finish; 15 $\frac{1}{2}$ " H x 10" W x 8 $\frac{3}{8}$ " D \$65.00

D-132-A Minimax 2 Speaker System

Compact two-way system; 5 $\frac{1}{4}$ " woofer, 4" tweeter; continuous power capacity 15 W; music power capacity 30 W; response 50-20,000 Hz \pm 5 dB; 6-8 ohms imp.; oiled walnut finish; 11" H x 6 $\frac{3}{8}$ " W x 8 $\frac{3}{8}$ " D \$52.00

D-93 "Encyclopedia" System

Ultra-compact, two-way system; two 3 $\frac{1}{2}$ " woofers, 2 $\frac{3}{8}$ " tweeter; enclosure resembles bound encyclopedia volume; continuous power capacity 15 W; music power capacity 20 W; response 60-22,000 Hz \pm 5 dB; 8 ohms; black or brown grille; 11 $\frac{1}{2}$ " H x 8 $\frac{3}{8}$ " D x 4 $\frac{1}{2}$ " W \$47.00

VERIT

400SL Three-Way Speaker System

Three-way tuned-port reflex speaker system; 12" woofer, 4" midrange, 1" dome tweeter; RC crossovers 500 & 2000 Hz; frequency response 28-22,000 Hz \pm 3 dB; 10 W rms min, 60 W rms max power handling; enclosure 45# density pine particle board with genuine white oak veneer; 23" H x 14" W x 12" D \$249.00

300SL Two-Way Speaker System

Two-way tuned-port reflex speaker system; 10" woofer & 1" dome tweeter; RC crossover 2000 Hz; frequency response 30-22,000 Hz \pm 3 dB; 10 W rms min, 35 W rms max power handling; enclosure same as 400SL; 24" H x 13" D x 12" W \$179.00

200SL Two-Way Speaker System

Two-way acoustic-suspension speaker system; 8" woofer & 1" dome tweeter; RC crossover 2000 Hz; frequency response 40-22,000 Hz \pm 3 dB; 10 W rms min, 25 W rms max power handling; enclosure same as 400SL; 19" H x 11" W x 9" D \$119.00

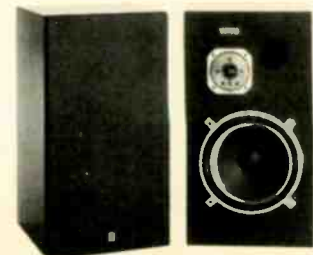
YAMAHA

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. 15 $\frac{1}{2}$ " W x 28" H x 14 $\frac{1}{2}$ " D. Sold in mirror-image pairs only \$1350.00 pr.
NS-1000 M. Same specifications but different enclosure. Semi-gloss black with detachable black grille. 14 $\frac{3}{4}$ " W x 26 $\frac{1}{2}$ " H x 12 $\frac{3}{4}$ " D \$980.00 pr.

NS-500 Two-Way Speaker System

Two-way system with 10" woofer, 1 $\frac{1}{2}$ " beryllium dome tweeter; crossover at 1800 Hz; frequency response 40-20,000 Hz; power handling capacity 60 W; imp. ohms; black with detachable grille. Overall size 24 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D \$500.00 pr.



IF YOU OWN A PIONEER YOU SHOULD HEAR IT THROUGH ULTRALINEAR SPEAKERS

Your Pioneer receiver, no matter how minute the distortion, will sound only as good as your speakers. Speakers with a clean, full sound. Speakers that will pick up the highs and bring out the lows. Speakers that will sound smooth in the middle. The ULTRALINEAR 450 TowerPower Speaker System. The efficient speakers.

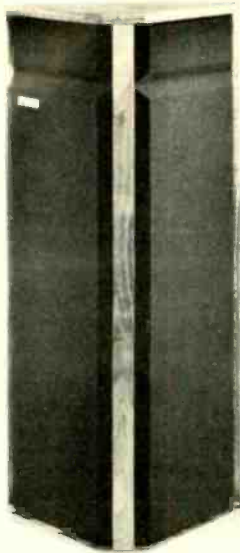
ULTRALINEAR speakers are designed for your Pioneer—or any moderately-priced receiver. Designed to bring out all its good, solid features with full, round sound. There's nothing "thin" about a pair of 450 TowerPowers. Listen to them through your Pioneer. Ask your dealer to play a pair of Ultralinear speakers for you.

Ultralinear

HEAR WHAT YOUR RECEIVER SHOULD SOUND LIKE!

CIRCLE NO. 70 ON READER SERVICE CARD

Press comment:



HIGH FIDELITY

April 1976

"A Full Warranty"

"Allison Acoustics has implemented the first full warranty, as the word 'full' is defined under the recently enacted Magnuson-Moss Warranty Act, that we know of on a consumer audio product. The document begins: 'Allison Acoustics warrants that each of our loud-speaker systems will perform within ± 2 dB for five years from the date of original purchase.' It provides that the manufacturer will pay shipping both ways if it is necessary to return the equipment to the factory for warranty service. Abuse and damage resulting from unauthorized repair are among the few conditions omitted from coverage, and Roy Allison, president of the company, indicated in a clarifying letter to us that any reasonable doubt will be resolved in favor of the consumer. One provision of the new federal law is that a full warranty must be transferable with the ownership of the product, and that is fulfilled by Allison as well.

"Allison's letter concludes: 'The Magnuson-Moss Warranty Act gives the consumer some remedies against non-compliance that he did not have before and prohibits some deceptive practices in warranty statements. . . . It should be welcomed by every manufacturer who sincerely wishes to deal honestly and fairly with his customers.'

"Well said, Roy Allison. And congratulations to you and your company on apparently setting a precedent for the high fidelity industry."

Descriptive literature on Allison loudspeakers, which includes technical specifications and a statement of warranty, is available on request.

ALLISON ACOUSTICS INC.
7 Tech Circle, Natick, Massachusetts 01760
CIRCLE NO. 6 ON READER SERVICE CARD

10

Speaker Systems

NS-690 Three-Way Speaker System

Three-way system with 12" woofer, 3" mid-range, and 1 1/4" 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. 24 3/4" H x 13 3/4" W x 11 1/2" D. \$560.00 pr.

NS-670 Three-Way Speaker System

Three-way system with 10" woofer, 2 1/2" mid-range, and 1 1/4" 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. 22 3/4" H x 12 3/4" W x 10 5/8" D. \$460.00 pr.

NS-3 Three-Way Speaker System

Three-way system with 10" woofer, 1 1/2" 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 x 13 3/8" W x 10 1/2" 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. 24 3/4" H x 11 1/4" W x 11" D. \$200.00 pr.

ZENITH

Allegro 300 Speaker System

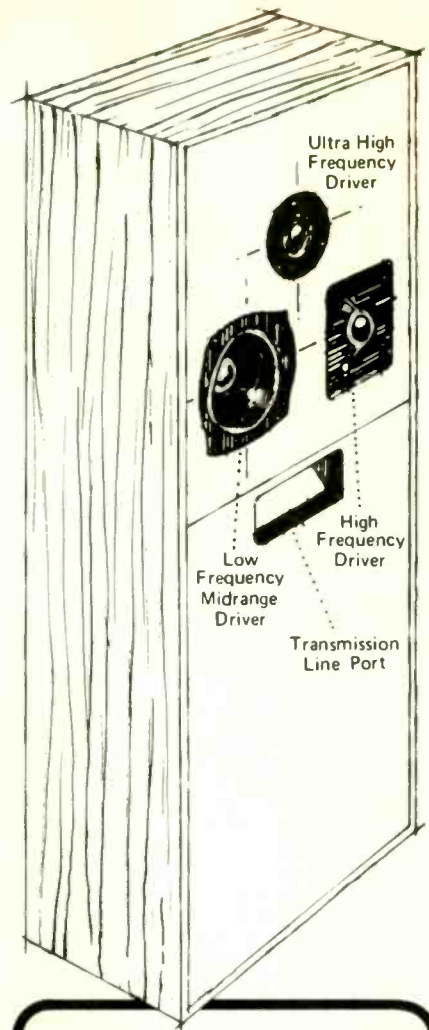
Two-way system with 10" woofer, 3 1/2" treble horn; RLC crossover; frequency response 40-15,000 Hz; imp. 8 ohms; grained walnut-colored cabinet with formed grille; 24 3/4" H x 15 3/8" W x 10" D. \$170.00 pr.

Allegro 2000. Similar to 3000 except 8" woofer; frequency response 50-15,000 Hz; 20 3/8" H x 13" W x 10" D. \$140.00 pr.

Allegro 1000. Similar to 3000 except 6 1/2" woofer, 3" tweeter; response 60-15,000 Hz; 18" H x 10 1/2" W x 7 1/2" D. \$110.00 pr.

AN IMPORTANT WORD ABOUT PRICES. . . .

All prices quoted in this Directory are manufacturers' "Suggested Retail" or "Fair Retail Value," in conformance with new FTC rules following discontinuance of Fair Trade Laws. There may be a price differential for various sections of the U.S. depending on the manufacturer's location.



Innotech: Radical design, exceptional performance

Unlike conventional models, our Transmission Line and Bass Reflex speakers permit accurate reproduction of the "transient" information in all music. This, combined with wide & linear frequency response, plus low distortion, gives Innotech speakers an uncanny accuracy in reproducing music and other sonic inputs; all pitch and tone nuances are accurately portrayed.

A dynamic piston-type cone woofer/midrange driver is uniquely combined with dome-type tweeters in a phase-coherent array. The woofer has a 5 inch plastic cone capable of long movement without breakup. The motor size of this woofer is extremely large for a cone of such low mass and size. Thus, the woofer reproduces all frequencies in its range with accurate transient definition.

The dome tweeters and super-tweeters also combine low diaphragm mass with large motor size to yield accurate frequency and transient information. Drivers are front-mounted and positioned as closely as possible. By utilizing a unique crossover design with these clustered drivers, Innotech speakers generate an integrated, phase-coherent, sonic wave front with a wide dispersion pattern.

Innotech speakers are an advancement from the current state-of-the-art; a step closer to being "at the performance." Write for details.

innotechTM
42 Tiffany Place, Brooklyn, New York 11231
CIRCLE NO. 33 ON READER SERVICE CARD

Come and wrap the sounds around you.



The album was recorded live at an outdoor concert, and now it's all coming back to you. The heady magical electricity of a hot, metallic blue night—the air crackling with energy as the musicians tune up—the stage has become an island of colored light, chrome and glitter. Suddenly you're part of the interplay between rhythm, bass, lead and harmony as every note flowers.

Each unfolding in your head. You're wrapped in the sound of KOSS PRO 4AA Stereophones, hearing all ten audible octaves. It's a power you can hear and feel as though you were in the spotlights with the musicians. And yet you're home, free to explore this private realm of listening pleasure. This uncluttered expanse of pure sound that makes KOSS PRO 4AA's the most popular

stereophones in the world.

Your audio specialist has a pair of KOSS PRO 4AA's you can try. Visit him, and gather the sounds of musical perfection around you. Or write for a free, full color catalog c/o Virginia Lamm. Either way, remember that, for the price you'll pay, KOSS PRO 4AA's are a rather inexpensive ticket to a performance that begins at your command and

goes on and on, encore after encore, for as long as you want. It's like buying a stairway to heaven.

© Koss Corporation
Koss PRO 4AA Stereophones



 **KOSS** stereophones
from the people who invented Stereophones.

KOSS CORPORATION, 4229 N. Port Washington Ave., Milwaukee, Wisconsin 53212 • Koss International/London, Milan, Dublin, Paris, Frankfurt • Amsterdam • Koss Limited/Burlington, Ontario
CIRCLE NO. 38 ON READER SERVICE CARD

11

HEADPHONES & MICROPHONES

AKG

K-140 "Supra-Aural" Headphones

Frequency response 20-20,000 Hz; imp. 600 ohms \pm 20%, each channel over band; sensitivity 15 μ bar/V (approx. 97.5 dB SPL); continuous power level 240 mW at 1% THD (100 Hz); comes with 4-cond. cable, 3-cond. 1/4" telephone plug; soft ear cushions; cardan construction. Weight 6.2 ounces \$39.50

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 \pm 2 dB; impedance 4-16 ohms; 94 dB SPL at 1000 Hz. THD 0.1% 10.8 ounces impedance matching adapter 3 1/4" H x 3 1/4" W x 8 1/2" D. Comes with carrying case. \$129.95

AUDIOTEX

Professional Stereo Headphones

Frequency response 30-20,000 Hz; imp. 8-16 ohms; padded earpieces with adjustable padded headband; comes with 10-ft coiled cord, black vinyl carrying case. 30-5207 \$59.95

Mark IV Stereo Headphones

Wide-range dynamic type. Frequency range to 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

Deluxe Stereo Headphones

Frequency response 20-25,000 Hz; imp. 8 ohms; adjustable padded headband; padded earpieces; matches amps with output from 4 to 16 ohms; comes with 10-ft coiled cord, black vinyl carrying case. 30-5203 \$49.95

Marquis Stereo Headphones

Open-air, lightweight design. Response 20-20,000 Hz; 8 ohms imp. matches all amplifier 4-16 ohm outputs 6-ft cord and plug. Cushioned earpieces and adjustable padded headband. 30-5205 \$39.95

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 \pm 2 dB. Response virtually flat. Comes with 10-ft cord \$140.00
DT48-K. Same as DT-48 except with plug-in coiled cable. \$145.00

DT480 Dynamic Headphones

Moving coil type. Response 20-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 115 dB (re 2 x 10⁻⁴ μ bar). 25-200 ohms impedance. 1 W maximum input per phone. \$100.00

DT202 Dynamic Headphones

Moving-coil type; response 20-20,000 Hz; sensitivity 1 mW produces 100 dB; 400 ohms imp.; 100 mW max. input produces 120 dB SPL \$75.00

DT100 Dynamic Headphones

Moving coil type. Response 30-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 110 dB (re 2 x 10⁻⁴ μ bar). 5-100-400-2000 ohms impedance. 1 W maximum input per phone

. \$70.00

DT440 Dynamic Headphones

Open high-velocity type; response 20-20,000 Hz; sensitivity 1 mW produces 100 dB; 600 ohms imp.; 42 mW max. input produces 116 dB SPL \$55.00

DT96A Dynamic Headphones

Moving coil type. Response 30-17,000 Hz. Sensitivity 1.0 mW at 400 Hz produces 110 dB (re 2 x 10⁻⁴ μ bar). 50-200 ohms impedance. 100 mW maximum input per phone. 5-ft. cord. 8 ounces. \$52.50

DT900 Dynamic Headphones

Moving coil type. Response 30-18,000 Hz. 5-2000 ohms impedance. 200 mW maximum input per phone. 6-ft. cord \$37.50

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 \$22.50

4-CHANNEL

DT-204 4-Channel Headphones

Frequency range 20-20,000 Hz; impedance 4 x 200 ohms (4-channel), 2 x 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

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.

11 Headphones

input 14,000 mV; square-wave risetime 15 μ sec at 5000 Hz; comes with 14-foot coiled cord. 14 ounces \$97.00

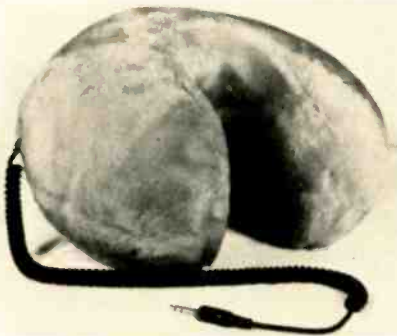
HEAR-MUFFS

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

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

4-CHANNEL

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; 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

INFINITY

ES-1 Stereo Headphone System

System consists of one headphone set and walnut-enclosed adapter housing power supply & matching transformers; front-panel output accommodates two headsets; frequency response 20-25,000 Hz \pm 2 dB; THD 0.3% at 100 dB SPL; sensitivity: 98 dB SPL (2 V at 1000 Hz); max. output 118 dB SPL at 1000 Hz; max. input 50 W at 100 Hz; imp. 4-16 ohms; phones operate in push-pull mode; Polyurethin diaphragms; adjustable headband; 98-in headphone cord; adapter size 5 1/4" W x 3" H x 7 1/4" D... \$275.00

JENSEN

230 Stereo Headphones

Frequency response 15-22,000 Hz; 0.8% HD at 1 kHz, 100 dB SPL; max. input power 50 mW;

imp. 4-600 ohms; ambient noise isolation 40 dB at 1 kHz; patented dual cavity; liquid-filled ear cushions; volume control for each earphone; 14-ft coiled cord with strain relief; chrome-plated headband; 19 oz without cord. . \$59.95
220. Similar to 230 except frequency response 18-20,000 Hz; 0.9% HD; weight 18 oz. . \$49.95

210 Stereo Headphones

Frequency response 20-18,000 Hz; 0.9% HD at 1 kHz, 100 dB SPL; max. input power 50 mW; imp. 4-600 ohms; ambient noise isolation 18 dB at 1 kHz; foam-filled ear cushions; polypropylene headband; 14-ft coiled cord with strain relief; 9 oz without cord. \$29.95

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

ESP-9B Electrostatic Headphones

Frequency response 15-15,000 Hz \pm 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

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

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. 22 ounces \$75.00

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

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. 20.5 ounces. Pneumalite earcushions for ambient noise isolation \$65.00

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); 10 ounces \$49.95
HV/1LC. Same except response 20-20,000 Hz; volume/balance control per earcup. 10.75 ounces \$54.95

K/145 Dynamic Stereophone

Features 1.5-in polyester driver; frequency response 20-20,000 Hz; imp. 90 ohms at 1 kHz; level controls; "Pneumalite" earcushions; padded simulated leather earcups; adjustable brushed stainless steel yokes & sidebars; 10-ft coiled Y cord; molded plug; sensitivity at 100 dB SPL 0.25 V rms sine wave at 1 kHz, 0.11 V rms pink noise; THD 0.5% at 1 kHz for 100 dB SPL; weight (less cord) 16 ounces. \$45.00
K/135. Similar to K/145 except response 10-18,000 Hz; 2.5-in dynamic elements; imp. 100 ohms at 1 kHz; sensitivity at 100 dB SPL 0.2 V rms sine wave, 0.22 V rms pink noise; THD 1% at 1 kHz for 100 dB SPL; weight (less cord) 15 ounces \$35.00
K/125. Similar to K/135 except response 10-16,000 Hz; sensitivity at 100 dB SPL 0.05 V rms sine wave, 0.10 V rms pink noise; weight (less cord) 13.5 ounces \$25.00

"Easy Listener" Stereophones

Frequency response 20-20,000 Hz; 2" dynamic elements; imp. 161 ohms at 1 kHz; sensitivity 0.8 V rms sine wave at 1 kHz, 0.5 V rms pink noise (for 100 dB SPL); THD 0.5% at 1 kHz, 100 dB SPL; SPL at 1% THD at 1 kHz 116 dB; acoustical sponge earcushions; extendible headband with self-adjusting yokes & soft denim cover; 3-conductor 10-ft coiled cord; weight (less cord) 10 ounces \$40.00

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. 10 ounces. 10-ft coiled cord. \$39.95

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. 16.5 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. 18 ounces. Brown/beige \$29.95
Model K/6. Same except without volume controls \$19.95

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; 10.3 ounces \$15.95

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 \$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 stereo-phone jack. Connects to speaker terminals of amplifier or receiver. Adds low-impedance jack to system for wide-range performance of stereophones \$7.95

4-CHANNEL

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. 17.3 ounces \$145.00

K/6LCQ 4-Ch. Quadrafones

Can be used for either 2- or 4-channel operation; dual 1 1/2" dynamic drivers in each ear-



piece; 3.2-600 ohm imp; dist. 0.5% at 109 dB SPL; capacity 5 V continuous, 14 dB transient peaks; response 20-17,000 Hz; foam-filled vinyl earcushions for average 18 dB ambient noise isolation; 22 ounces \$49.95

K/2 + 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

LAFAYETTE

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; 9 1/2-ft cord with plug; 10 ounces. \$59.95

F-750 "Lighthead II" Headphones

Lightweight design; nylon-type diaphragms; frequency response 18-22,000 Hz; max. input 100 mV; imp. 4-100 ohms; adjustable vinyl headband; 6 1/2-ft cable with plug \$49.95

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; 6 1/2-ft cord with 1/4" plug. 4.6 ounces \$34.95

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

4-CHANNEL

F-4400 4-Channel Headphones

Four separate 2 1/4" 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. With 9 1/2-ft cable, connectors \$44.95

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; 16 oz. . . \$39.95

MURA

The lightweight stereo headphone for comfortable listening.

This technologically advanced headphone weighs only 4 ounces. The Model HB-1500 has a frequency response from 18 Hz to 22 kHz and will match any impedance from 4 to 150 ohms per channel meaning these light, lively headphones can be used with any stereo system.

For the sparkling sound of music, go to your nearest Mura dealer today and ask him to show you the HB-1500 and other fine headphones from Mura.

MURA

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177 Cantiague Rock Road, Westbury, N. Y. 11590

CIRCLE NO. 49 ON READER SERVICE CARD

11 Headphones

MIIDA

HX-140 Headphones

Electrostatic stereo headphones; frequency response 20-25,000 Hz; SPL 96 dB/10 V rms; max. sound pressure 115 dB/400 Hz; dist. 0.5% at 200 Hz; power supply 6 W (400 Hz) continuous max. input; 35 W inst. max. input; response 10-30,000 Hz ± 2 dB; dist. 0.2% at 50 Hz, 0.02% at 1 kHz; comes with 6 1/2-ft cord; 9.17 ounces (headphones) \$129.00

HX-130 Dynamic Headphones

Lightweight dynamic stereo headphones; imp. 8 ohms; frequency response 80-20,000 Hz; sensitivity: 90 dB (1 mW); max. input 300 mW; 8-ft-cord; weight 11.2 oz \$79.00
HX-100. Similar to HX-130 except frequency response 20-20,000 Hz; sensitivity: 112 dB; 8.2-ft cord; weight 10.25 oz \$59.00

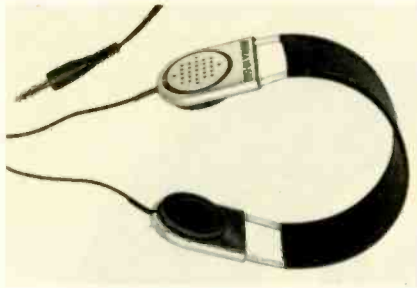
MURA

SP-205 Dynamic Headphones

Stereo headphones; Mylar cone elements; separate volume & tone controls on each earcup; stereo/mono switch; frequency response 30-20,000 Hz ± 5 dB; imp. 8 ohms; padded adjustable headband, cushioned earcups, 15-ft coiled cord with plug \$62.50

HB-1500 Polymer Headphones

Stereo headphones; high-polymer diaphragm transducers; sensitivity: 100 dB SPL/1 mW;



frequency response 18-22,000 Hz; imp. 8 ohms; open-air design; max. input 0.1 W; 10-ft coiled cord with plug; 4 ounces \$59.95

SP-505 Dynamic Headphones

Stereo headphones; 3" dynamic speakers; separate volume & tone controls on each earcup; stereo/mono switch; frequency response 20-20,000 Hz; imp. 8 ohms; padded headband, vinyl-covered earcups, 10-ft coiled cord with plug \$39.95

SP-504 Dynamic Headphones

Stereo headphones; 3" dynamic speakers; separate slide-type volume & tone controls; stereo/mono switch; frequency response 20-18,000 Hz; imp. 8 ohms; adjustable padded headband, 10-ft coiled cord with plug .. \$29.50

SP-502. Similar to SP-504 but without tone controls; cushioned headband & earcups; response 30-18,000 Hz \$19.95

SP-94 Stereo Headphones

Lightweight dynamic headphones; 2 1/4" speakers; frequency response 35-15,000 Hz; imp. 8 ohms; 8-ft cord with plug \$9.95

4-CHANNEL

QP-280 Quad Headset

Two 2 1/4" dynamic speakers in each earcup; stereo/quad switch; frequency response 20-20,000 Hz; max. input 0.2 W; 8 ohms imp.; adjustable padded headband & earcups; 10-ft coiled cord with coded dual plugs \$39.95

NAKAMICHI

HP-100 Monitoring Headphones

Dynamic type designed primarily for monitoring; response 20-20,000 Hz; imp. 8 ohms $\pm 20\%$ (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

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

OA-3 Headphones

Lightweight, open-audio design. 15 ohms $\pm 10\%$ at 1000 Hz; max. power input 0.2 Wrms/ch; response 20-20,000 Hz; dist. 1/2% at 100 dB SPL; sensitivity 100 dB SPL at 0.10 V input at 1000 Hz each channel. 1 1/2" 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

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

PIONEER

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 \$80.00

Monitor 10 Stereo Headphones

Dynamic type covering a frequency range of 20-20,000 Hz, with 2 1/4" free-edged polyester-film cone speaker in each earpiece; sensitivity 100 dB/mW; max. input power 700 mW/ch; comes with 16-ft, 5-in coiled cord. 23 ounces. \$70.00

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 \$60.00

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 \$50.00

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. 16 1/2-ft coiled cord \$45.00

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 \$35.00

SE-205 Stereo Headphones

Dynamic type covering a frequency range of 20-20,000 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 \$25.00

RADIO SHACK

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. \$49.95

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

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

Custom Pro Headphones

Dynamic type. Response 20-20,000 Hz. Impedance 4 to 16 ohms; bass port \$24.95

Nova-15 Headphones

Dynamic type. Ported open-back earcups. Response 20-20,000 Hz. 10-ft cord. 4 to 16 ohms impedance \$21.95

RECOTON

ST31 Stereo Headphones

Frequency response 50-19,000 Hz; 3" speakers; separate volume control with stereo/mono switch; imp. 8 ohms; foam-filled headband & ear cushions; 10-ft coiled cord \$36.95

ST26 Stereo Headphones

Frequency response 20-21,000 Hz; 2 1/4" Mylar speakers; foam ear cushions; adjustable padded headband; separate slide volume controls; stereo/mono switch; imp. 8 ohms; 10-ft coiled cord \$31.95

ST18 Stereo Headphones

Frequency response 25-18,000 Hz; 2 1/4" dynamic speakers; foam padded adjustable headband & ear cushions; separate volume controls; imp. 8 ohms; 8-ft coiled cord \$20.95

ROYAL SOUND

HP-60 Stereo Headphones

Expanded frequency response through 20,000 Hz; 100 g; 10-ft coiled cord; 1/2" thick at earcups \$75.00

SANSUI

SS100 Stereo Headphones

Omni-dynamic driver full-range speaker in each earpiece; matching amp imp. 4-100 ohms, 600 ohms nominal; frequency response range 20-20,000 Hz; HD 0.3% at 94 dB SPL; max. input power 250 mW; sensitivity 94 dB/mW (at 200 Hz); 6.5-ft cord; weight 13.2 oz .. \$90.00

SS-50 Stereo Headphones

Two-way, 4-speaker dynamic phones; 3" cone-type woofer & 1 1/2" dome tweeter in each ear piece; imp. 8 ohms; frequency response range 20-20,000 Hz; max. power input 500 mW peak; sensitivity 106 dB at 200 Hz; LC crossover network 6 dB/octave; crossover frequency 1000 Hz; separate click-stop tone controls for left & right headphones; separate volume controls; 9.8-ft coiled cord, Y-shaped extension cord; 28.2 oz \$64.00

SS-22. Similar to SS-50 except 3 3/4" woofer & 2" cone-type tweeter in each ear piece; sensitivity 105 dB; 8-ft coiled cord, 6 1/2-ft extension cord; 27.4 oz \$40.00

SH-15 Stereo Headphones

Non-isolating headphones with 3/4" 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) \$60.00

SH-5. Same as SH-15 but lightweight version; 6.6-ft cord; weight 8.6 ounces (headphones only) \$30.00

SS-10 Stereo Headphones

Mechanical 2-way speaker in each ear piece; max. input 500 mW; imp. 8 ohms; SPL 110 dB; frequency response 20-20,000 Hz; separate volume controls; 9.8-ft coiled cord, Y-shaped extension cord (6.5 ft); 22 oz \$40.00

SS-2 Stereo Headphones

Dynamic stereo phones; imp. 8 ohms; frequency response 20-18,000 Hz; dist. 1% at 1 mW input; input power 1 mW; max. rated power input 500 mW; 6-ft cord; 12.6 oz \$20.00

4-CHANNEL

QH-44 4-/2-Ch Headphones

Features four 3/4" 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) \$70.00

SENNHEISER

HD424 Headphone

Deluxe dynamic headphone with patented "open-*aire*" design. 2000 ohms/ch. Response 15-20,000 Hz. Sensitivity 17.7 μ bar/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

HD414 Headphone

Patented dynamic "open-*aire*" design. 2000 ohms/ch. Response 20-20,000 Hz. Sensitivity 17.7 μ bar/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

HD400 Headphone

Patented dynamic "open-*aire*" design. 600 ohms/ch; response 20-18,000 Hz; sensitivity 88 dB sound-pressure level for 1 mW power; under 3 ounces without cord; 10-ft cable \$29.95

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

Stereo/Wafers XXI Headphones

Ultra-lightweight professional standard. Response 20-22,000 Hz \pm 4 dB. Sensitivity 100



dB for 2-V input. Maximum power input 0.1 W rms. Distortion less than 1/2% at 200 dB SPL; 100 ohms impedance at 1 kHz. 10-ft. flat cord with heavy-duty plug; weight 5.9 ounces. Brushed blue denim finish \$70.00

Dynaphase Sixty Headphones

Dynamic design; two-way system—woofer & tweeter with individual LC crossover. Response 40-11,000 Hz \pm 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 \pm 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 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

4-CHANNEL

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. 1/2% at 110

THE LEAST EXPENSIVE ALTERNATIVE TO A MORE EXPENSIVE SYSTEM.

Sennheiser headphones deliver such vastly improved sound from most amplifiers and receivers, they're an economical alternative to a more expensive system.

Their wide response, unusual smoothness and superior transient abilities have been compared with the finest loudspeakers. But they don't need monster power for optimal results.

For a gradual way to move up, first add a pair of Sennheiser headphones to your present system. Then add an expensive amp or receiver to your Sennheiser headphones.

(Finally, if you feel the need, add expensive speakers. Or spend the money on a hundred or so albums.)

Since there are three models to choose from, all featuring our uniquely comfortable Open-Aire[®] design, even our alternative has alternatives.



HD-400
\$29.95*

HD-414
\$49.75*

HD-424
\$79.75*

SENNHEISER

10 West 37th Street, New York 10018 (212) 239-0190
Manufacturing Plant: Bissendorf/Hannover, West Germany

*Manufacturer's suggested list

dB SPL. Input imp. (at 1 kHz) 15 ohms \pm 20%. Vinyl-covered foam ear cushions; adjustable headband. 11-ft coiled cord with four-channel/stereo switch, front & rear plugs. 19 ounces.
..... \$69.95

STAX

SRX-III Earspeakers

Electrostatic push-pull type; response 20-27,000 Hz \pm 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 \pm 2 dB; distortion 0.02% at 1 W, 1000 Hz. 2 $\frac{7}{8}$ " W \times 4 $\frac{3}{4}$ " H \times 8" D..... \$230.00

SR-5 Earspeakers

Electrostatic push-pull type; response 30-25,000 Hz \pm 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 \pm 1 dB; dist. 0.1% at 1 W, 1000 Hz. Overall size 2 $\frac{1}{16}$ " W \times 2 $\frac{3}{8}$ " H \times 6 $\frac{1}{2}$ " D..... \$130.00

SRA-12S Headphone Preamp/Amp

Input sensitivity: phono 2.0 mV, tuner, tape, aux. 250 mV; phono overload 100 mV; hum &



noise: phono 58 dB, tuner, aux. 80 dB; frequency response 10-60,000 Hz \pm 1.5 dB; THD 0.05%; DIN output jacks; preamp can be used separately; designed specifically for use with Stax Earspeakers \$500.00

SUPEREX

PEP-81 Electrostatic Headphones

System consists of PEP-81 stereophones and CC81 control console; frequency response 15-18,000 Hz \pm 2 dB; 10-22,000 Hz \pm 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" \times 3 $\frac{1}{4}$ " \times 6 $\frac{1}{2}$ ". Headphones 8 $\frac{1}{2}$ ounces. . \$150.00
Extra set PEP-81 stereophones \$78.00
Extension cord for PEP-81 \$9.95

PEP-79E Electrostatic Headphones

Electrostatic system consisting of PEP-74 stereophones and CC-79 control console; response 10-22,000 Hz \pm 5 dB; accommodates 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 \times 2 $\frac{1}{2}$ " H \times 4" D..... \$90.00

STEX-15-P. 15-ft extension cord for PEP-74 \$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

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

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. weight 10.6 ounces excluding cable. \$55.00

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

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

927 Headphones

Woofer/tweeter headphone. Response 25-19,000 Hz. Dynamic woofer, ceramic tweeter, L-R crossover. Fully adjustable stainless steel headband. 10-ft coiled cord \$35.00

TL-77 Stereophones

Features Trans-aire principle; response 30-25,000 Hz; fully adjustable stainless-steel headband; snap-on soft-foam replaceable cushions; 7-ft. cord with molded plug and strain relief \$30.00

SW-IV Headphones

Dynamic element. Response 30-15,000 Hz. Adjustable headband. 10-ft coiled cord. Black with red trim \$24.95

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

4-CHANNEL

QT-4B "Quad-Tette" Headphones

Has four identical reproducers (two to an ear-piece) with frequency response of 20-18,000



Hz. 15-ft. cord and 2-4 ch. sw \$65.00

QT-4 "Quad-Tette" Headphones

Has four identical reproducers (two to an ear-cup) with frequency response of 25-17,000 Hz. 15-ft. cord. Ivory/Cordovan \$50.00

SYLVANIA

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

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

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

4-CHANNEL

EAH-420 4-Channel Headphones

Dynamic type using six drivers; each earpiece



has center-mounted 3" woofer with two isolated front-back 1 1/4" 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

TELEX

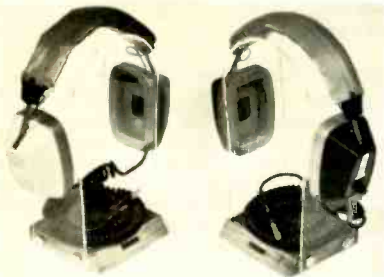
Studio 1 Headphones

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

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

ZENITH

839-34 2/4 Ch Headphones

Has 2-ch or 4-ch compatible slide switch; separate volume controls on each earpiece; frequency response 20-19,500 Hz; 8 ohms imp.; 10-ft coiled cord. 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



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. \$58.00

D-120E Dynamic Microphone

Sensitivity -54 dB ASA; response 50-17,000 Hz ± 3 dB; 200 ohms impedance; cardioid pattern; use for tape recording; comes with snap-in stand adapter, built-in windscreen; chrome finish; XLR connector \$50.00

D-140E Dynamic Microphone

Sensitivity -51 dB; 0.23 mV/ μ bar; 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 \times 1 1/4" dia. 6.2 oz. \$150.00

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 XLR connector, and chrome finish \$69.00

D-170E Dynamic Microphone

Sensitivity -53.5 dB ASA; response 50-15,000 Hz ± 3 dB; 200 ohms impedance; cardioid pat-



tern; use for vocals; comes with slip-in stand adapter, built-in windscreen; chrome finish; XLR connector \$95.00

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 \$65.00

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 wind-

screen. Comes with XLR connector, matte grey finish \$85.00

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, and XLR connector \$75.00

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-5 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-5 \$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 \$120.00

CE-502E. For omnidirectional operation; consists of CE-2 capsule, SE-5E powering module, SA-11/1 stand adapter, W-3 windscreen \$120.00

CE-505E. For cardioid operation; consists of integral suspension and windscreen, CE-5 capsule, SE-5E powering module, and SA-11/1 stand adapter \$124.00

CE-510E. For lavalier operation; consists of CE-10 lavalier element and SE-5E powering module \$145.00

AUDIOTEX

Electret Condenser Microphone

Unidirectional pattern to minimize pickup from rear and sides; on-off slide switch; frequency response 50-13,000 Hz; imp. 600 ohms; sensitivity -69 dB (1 kHz); comes with 20-ft cable, desk stand, black vinyl storage case .. \$74.96

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 \$35.75

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

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 \$31.95

Tie Tack Lapel Microphone

For p.a. and voice taping; frequency response 40-16,000 Hz; imp. 1000 ohms; sensitivity -65 dB \pm 3 dB; comes with 13-ft cord with mini-plug, tie-tack holder, mercury battery \$29.95

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 \$8.45
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

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 1/4" 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 5/8-27 thread. 31" long. 30-2370 \$18.95

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 5/8-27 thread to fit all standard mikes. 30-2360 \$19.95

Folding Microphone Stand

Folds and unfolds in seconds; weight 3 1/2 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-160 Double-Ribbon Microphone

Super-cardioid dynamic type. Response 40-18,000 Hz \pm 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-88 Moving-Coil Microphone

Super-cardioid dynamic type. Response 30-20,000 Hz \pm 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 \$222.50

M-201 Moving-Coil Microphone

Super-cardioid dynamic type. Response 40-



18,000 Hz. Sensitivity: -149 dBm (EIA); 200 ohms imp. 6" x 1 1/8". Cannon XLR termination. Comes with clamp and presentation case \$165.00

M-500 Dynamic Ribbon Microphone

Super-cardioid; response 40-18,000 Hz \pm 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 \$147.50

M-67 Moving-Coil Microphone

For tape recording, interviewing, and general outdoor/indoor work. Cardioid type. Response 40-18,000 Hz \pm 2.5 dB. Sensitivity: -148 dBm (EIA); 200 ohms imp. Special transducer mounting minimizes handling noise. Has built-in "on-off" bass-cut switch. 7 3/4" x 1 1/2". Cannon XLR termination \$130.00

M-260 Dynamic Ribbon Microphone

Super-cardioid design. Response 50-18,000 Hz \pm 2.5 dB. Sensitivity -153 dBm (EIA). High-energy ribbon. 200 ohms imp. Suitable for speech, music, or vocals 1 3/4" mesh head x 6" long. Cannon XLR termination \$127.50
M-260SM. Same as M-260 except with "on-off" and bass-cut switch \$132.50

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. 4 1/2" x 7/8". Cannon XLR termination \$127.50

M-69 Moving-Coil Microphone

Dynamic cardioid design. Response 50-16,000 Hz \pm 3 dB. Sensitivity: -144 dBm (EIA); 200 ohms imp. For indoor/outdoor applications; unaffected by temperature or humidity. \$102.50
M-69-SM. Same as M-69 but with "on-off" and bass-cut switch \$107.50

"Soundstar" X1N Dynamic Microphone

Dynamic cardioid design. Response 30-18,000 Hz \pm 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 ... \$85.00
"Soundstar" X1HL. Same as X1N except with high/low imp. switch \$100.00

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

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

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 x 1" max. dia. Fawn beige finish \$225.00
PS8. Inline battery power supply; takes 126-type 8.4 V mercury battery; A3-type professional connectors \$48.00

635A Dynamic Microphone

Sensitivity -149 dB EIA. Response 80-13,000 Hz \pm 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 \$63.00

670 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 1/4" from source). Features an anodized brass finish \$78.00

670V 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. \$84.00

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. 6 3/4" x 1 3/8" with carrying case. \$114.00
RE11. Same as RE10 but with built-in super pop- & wind filter. \$126.00

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. 10 1/2" x 1 7/32" with carrying case. \$195.00

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-fre-

cies when used close-up. Satin chrome finish.
 \$72.00

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. \$75.00

661. Same as Model 660 except stud-mounted and with "on-off" switch \$78.00

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 \$51.00

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 \$139.50

Ext 14 Extension Boom

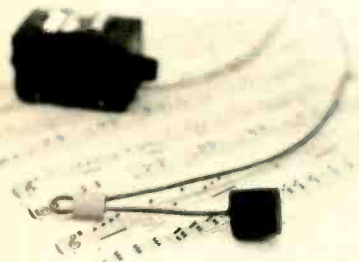
Lightweight extension boom option for either model SD mike; adds 14 inch reach to mike; several can be used for long-reach applications. \$5.95

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

P700 Horn Pickup Mike

Universal instrument pickup electret condenser element housed in protective foam wind-



screen; gain-control power module; adhesive backed clips permit use of pickup with any five instruments; hi-Z phone jack output; available with XLR/Cannon output as P700-Z for low-Z preamps \$99.50

LAFAYETTE

Tie-Tac Lavalier Mike

Ultra-miniature omnidirectional mike; 1 $\frac{1}{4}$ " dia. \times 3 $\frac{1}{2}$ " 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 1/2 ounce, power supply 3 ounces. \$49.95

MU-101 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. \$34.95

MO-102. Same as MU-101 except response 50-13,000 Hz; -58 dB output; for use where feedback or background noise is not a problem. \$39.95

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 1/4" 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 \times 1" dia. \$24.50

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 6 $\frac{1}{4}$ " long \times 2 $\frac{1}{2}$ " max. dia. of ball. \$24.25

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.; 1 $\frac{1}{2}$ " \times 3/4" dia.; comes with "AA" battery, shielded cable, phone plug. \$19.50

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, 1/4" dia. plug. 1 $\frac{1}{32}$ " dia. \times 6 $\frac{7}{32}$ " 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, 1/4" dia. plug. 7/8" dia. \times 6 $\frac{1}{16}$ " 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, 1/4" dia. plug. 1 $\frac{1}{16}$ " dia. \times 6 $\frac{1}{16}$ " 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. 1 $\frac{3}{8}$ " dia. \times 5 $\frac{3}{8}$ " 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 $\frac{1}{32}$ " dia. \times 5 $\frac{3}{4}$ " 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. \times 4 $\frac{1}{16}$ " H. \$9.95

MURA

DX-129 Cardioid Microphone

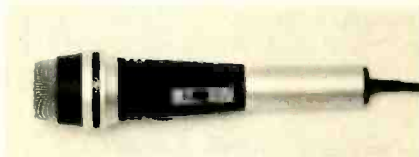
Ball-type cardioid dynamic mic; dual imp. 600/50 k; on/off switch; sensitivity: -58 dB at 1000 Hz; frequency response 40-14,000 Hz; built-in pop and blast filters; comes with stand adapter, 20-ft cable; black satin & chrome finish. \$41.95

DX-285 Electret Condenser Mic

Omnidirectional pattern; for general recording & vocal work; frequency response 50-13,500 Hz ± 3 dB; imp. 600 ohms; sensitivity: -71 dB at 1000 Hz (0 dB = 1 V/1 μ bar); removable windscreen; comes with 1.5 V battery, 20-ft cable with 1/4" phone plug, desk stand. \$39.95

DX-247 Dynamic Microphone

Omnidirectional pattern; for vocals and recording; dual imp. 600/50 k (sw. on mic); sensi-



tivity: -57 dB at 1000 Hz; frequency response 50-14,000 Hz; removable windscreen; on/off switch; comes with 20-ft cable with 1/4" phone plug; black satin/chrome finish. \$39.95

DX-242 Dynamic Microphones

Matched set of two ball-type omnidirectional mics for stereo recording; frequency response 60-12,000 Hz; sensitivity: -70 dB at 1000 Hz; imp. 500 ohms; comes with adapters to convert from miniature to standard phone plug, 5-ft cable. \$24.95

DX-211. Similar to DX-242; single omnidirectional mic with miniature plug, adapter to convert to standard plug. \$7.95

DX-118 Dynamic Microphone

Replacement unit for most cassette recorders; dual plugs (audio & remote) plus remote switch; frequency response 60-12,000 Hz; imp. 500 ohms; sensitivity: -70 dB at 1000 Hz. \$7.95

NAKAMICHI

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

DM-1000 Dynamic Microphone

Dynamic moving-coil mic designed especially for vocals; special low-mass diaphragm and voice coil for extended high-end response; triple metal screen filter eliminates pops, blasts, and wind noise; cardioid directivity

pattern; double-casing & foam suspension reduces sensitivity to vibration; immune to hum & mag. fields; frequency response 30-20,000 Hz ± 3.5 dB; sensitivity: -76 dB at 1 kHz (0 dB = 1 V/ μ bar); imp. 250 ohms; Cannon-type XLR-3 connector; anodized matte black finish; 10.4 ounces. \$200.00

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 x 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

NEUMANN

fet-80 Condenser Microphones

A line of studio microphones that comes 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 \$650.00
N-80. 117-V a.c. portable power supply for powering one or two fet-80 microphones. \$50.00

PIONEER

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. x 8.37" long; weight 10.56 ounces; comes with 18-ft cable. \$100.00

CM-2S Electret Microphone

Dual-element electret condenser unit; hyper-cardioid 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 x 4.33" W; weight 11.2 ounces; 21-ft cable; pair comes mounted on desk stand. \$60.00

RADIO SHACK

Highball Dynamic Microphone

Cardioid design. Response 50-15,000 Hz. Fea-

tures "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

RECOTON

MM740 Dynamic Microphone

Cardioid pattern; selection switch to shape response characteristics; 600 ohms; sensitivity 71 dB; frequency response 50-15,000 Hz; brushed gold finish; comes with 18-ft cord with plug & desk stand. \$59.95

MM730 Dynamic Microphone

Features boom and feedback suppression; 600 ohms; sensitivity 69 dB; frequency response 50-15,000 Hz; brushed gold finish; comes with 18-ft cord with plug & desk stand. \$49.95

MM720 "Echo" Microphone

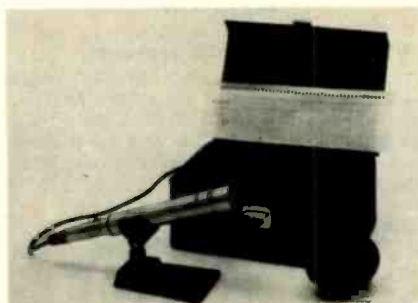
Features reverb volume control for special effects; unidirectional; 600 ohms; sensitivity 74 dB; frequency response 20-10,000 Hz; reverb time 1.5 sec at 1 kHz; 15-ft cord with plug & desk stand. \$44.95

MM220 Dual-Impedance Microphone

Dynamic type; 500 ohm/50,000 ohm imp.; pop-proof wire mesh grille; frequency response 100-10,000 Hz; sensitivity 58 dB at 50 k, 74 dB at 600 ohms; comes with 20-ft cable, $\frac{3}{8}$ x 27 adapter. \$25.95

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

MD441 Dynamic Microphone

Super-cardioid design. Response 40-20,000 Hz; sensitivity 0.2 mV/ μ bar ± 3 dB. Has brilliance switch for nominal 5 dB boost at 5 kHz; 5-position bass attenuator. Front-to-back ratio is 20 dB, -3 dB. Comes with cable and quick-release mount that fits on floor stand or acces-

sory table stand MZT-441. Windscreen for microphone is Model MZW441. 1.3" H x 1.4" W x 9.6" long. \$275.00

MD-211U Dynamic Microphone

Omnidirectional unit. Response 40-20,000 Hz. Sensitivity -58 dBm (0.13 mV/ μ bar) ± 2.5 dB. Has extremely wide, flat response unusual in a moving-coil microphone. $4\frac{3}{4}$ " x 1" dia. Fitted with Cannon XLR connector and cable. \$214.50

MD421U Dynamic Microphone

Cardioid, 200-ohm impedance design. Response 30-17,000 Hz ± 5 dB. Sensitivity 0.2 mV/ μ bar ± 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" x $1\frac{7}{8}$ " x $1\frac{13}{16}$ ". \$193.00

MD416 Dynamic Microphone

Cardioid type especially designed for close miking. Response 50-15,000 Hz; sensitivity 0.13 mV/ μ bar ± 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

MD21N Dynamic Microphone

Omnidirectional, 200-ohm impedance design. Response 50-15,000 Hz ± 3 dB. Sensitivity 0.2 mV/ μ bar 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. $4\frac{3}{4}$ " x $1\frac{7}{8}$ " x $1\frac{7}{8}$ ". \$126.00

Electret Condenser Mic System

One common powering module in balanced version (K2U) or unbalanced version (K1) serves three different compact heads: ME20 omnidirectional head, response 50-15,000 Hz, sensitivity 49 dBm, S/N 64 dBm min.; ME40 super-cardioid head, response 50-15,000 Hz, sensitivity 49 dBm, S/N 64 dBm min.; ME80 shotgun head, response 50-15,000 Hz, sensitivity 45 dB, S/N 70 dB min.

K2U. Powering module \$79.00
K1. Powering module \$71.50
ME20. Omnidirectional head \$55.00
ME40. Super-cardioid head \$78.00
ME80. Shotgun head \$108.00

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 \$123.00

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 \$111.00

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 \$85.80

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 \$77.40

Model 565SD. Same as Model 565 except has "on-off" switch \$81.00
Model 566. Similar to Model 565 except with shock mount \$118.20

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 \$68.40
Model 545S. Similar to Model 545 but has cable connection through hinge and "on-off" switch in upright \$73.20
Model 545SD. Same as Model 545 but has "on-off" switch on microphone barrel. . . \$73.20
Model 545L. Similar to Model 545 but has lavalier cord and clip \$64.20

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. \$68.40
Model 55SW. Same as Model 55S except has built-in "on-off" switch \$70.20

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 \$64.20
Model 578S. Similar to Model 578 except has swivel assembly \$72.00

579SB "Vocal Sphere" Microphone

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 \$54.45

585SA(B) "Unisphere A" Microphone

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 \$54.45
Model 585SAV. Similar to Model 585SA(B) but has volume control on microphone barrel \$59.25

589S "Unidyne C" Microphone

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" x 1 1/4"; weight 12 ounces less cable. . . . \$54.45

588SA(B) "Unisphere B" Microphone

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 \$46.65

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 \$32.40
Model 515SB. Same as Model 515SA except low impedance \$32.40

SONY from SUPERSCOPE

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

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-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-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-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-99 Condenser Microphone

Sensitivity -53 dB (0 dB = 1 V/10 μ bar). 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

ECM-16 Tie Clasp/Lapel Mike

Sensitivity -57.8 dB (0 dB = 1 V/10 μ bar). 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. x 1 1/16" long. Silver \$34.95

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

RF-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 \$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

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

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

TDK SA. WE DEFY ANYONE TO MATCH OUR VITAL STATISTICS.

Manufacturer	Brand	MAGAZINE A		MAGAZINE B	
		S/N Ratio Weighted in dB	Output @ 3% THD	S/N in dB (re: 3% THD)	THD at 0 dB (%)
TDK	SA	66.5	+4.2	66.0	0.9
AMPEX	20:20+	56.4	+1.9	—	—
FUJI	FX	60.0	+2.3	—	—
MAXELL	UD	—	—	58.5	1.1
MAXELL	UDXL	62.5	+2.7	—	—
NAKAMICHI	EX	60.0	+2.3	55.0	1.1
SCOTCH	CHROME	—	—	64.0	1.3
SCOTCH	CLASSIC	62.5	+2.0	—	—
SONY	FERRICHROME	64.0	+2.1	64.0	1.8

Decks used for tests: Magazine A-Pioneer CT-F9191 (cross-checked on DUAL 901, TEAC 450); Magazine B-NAKAMICHI 1000.

Two leading hi-fi magazines working independently tested a wide variety of cassettes. In both tests, TDK SA clearly outperformed the other premium priced cassettes.

The statistics speak for themselves. TDK SA provides a greater S/N ratio (66.5 dB weighted and 66.0 dB @ 3% THD), greater output sensitivity (+4.2 dB @ 3% THD), and less distortion (THD 0.9%) than these tapes.

When you convert these statistics into sound, TDK SA allows you to play back more of the original signal with less distortion and noise.

Put these facts and figures together and TDK SA adds up to the State of the Art because it provides greater dynamic range. This means cleaner, clearer, crisper recordings, plain and simple. Sound for sound, there isn't a cassette that can match its vital statistics.

Statistics may be the gospel of the audiophile, but the ultimate judge is your own ear. Record a piece of music with the tape you're using now. Then record that same music at the same levels using TDK SA. You'll hear why TDK SA defies anyone to match its sound.

Or its vital statistics.

TDK Electronics Corp., 755 Eastgate Boulevard, Garden City, New York 11530. Also available in Canada.



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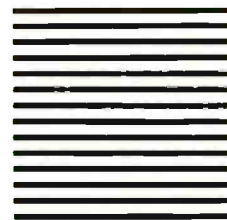


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SPECTACULAR SOUND... ON THE MOST IMPORTANT DISCS IN YOUR ENTIRE COLLECTION!

*A Remarkable Listening Experience
For Stereo Headphone Owners.*



Binaural Demonstration Record

Binaural recording re-creates the directions, distances, and even the elevations of sounds better than any other recording method. The super-realism of binaural recording is accomplished by recording the acoustical input for each ear separately, and then playing it back through stereo headphones. Thus the sound intended for the left ear cannot mix with the sound for the right ear, and vice versa.

Binaural recording offers the listener the identical acoustical perspective and instrument spread of the original. The sound reaching each ear is exactly the same as would have been heard at the live scene.

STARTLING REALITY. The Binaural Demonstration Record offers 45 minutes of sound and music of startling reality. You'll marvel at the eerie accuracy with which direction and elevation are re-created as you embark on a street tour in binaural sound—Sounds of The City... Trains, Planes & Ships... a Basketball Game, a Street Parade, a Steel Fabrication Plant, The Bird House at the Zoo—all demonstrating the incredible realism of binaural sound reproduction.

MUSIC IN BINAURAL. The musical performances presented on the Binaural Demonstration Record transport you to the concert hall for a demonstration of a wide variety of music. Selections total 23 minutes, and include examples of jazz, organ, and chamber music.

The Stereo Review Binaural Demonstration Record is the ultimate in sound reproduction. It has been made without compromise. **\$5.98**

*The Most Spectacular Sound Exhibition
Of Stereo Fidelity Ever Available
on One Disc And Cassette.*



Stereo Demonstration Record And Cassette

The result of two years of intensive research in the sound libraries of Deutsche Grammophon Gesellschaft, Connoisseur Society, Westminster and Cambridge. The editors of Stereo Review have selected those excerpts that best demonstrate the many aspects of the stereo reproduction of music. It's the greatest variety of sound ever included on a single disc or cassette.

Electrifying Experience in Listening. A series of independent demonstrations designed to show many aspects of musical sound and its reproduction. Self-sufficient capsule presentations are arranged in a contrasting and pleasing order, isolated and pointed up to give you a basis for future critical listening.

Wide Range of Demonstrations. Techniques of separation and multiple sound sources. Acoustic depth. The ambiance of a concert hall. Sharp contrasts of dynamics. Crescendo and diminuendo. Very high and very low pitched musical sounds. Polyphony (two or more melodies going on at once) with both similar and contrasting instruments. Tonal qualities of wind, string and percussion instruments. Sounds of ancient instruments. Sounds of oriental instruments. The singing voice, both classically trained and untrained. Plus a large sampling of finger snapping, hand clapping, foot stamping and other musical and percussive sounds.

13 Superb Selections. Strauss: Festive Prelude, Op. 61 (excerpt) DGG. Debussy: Feux d'artifice (excerpt) Connoisseur Society. Beethoven: Wellington's Victory (Battle Symphony) (excerpt from the first movement) Westminster. Massaino: Canzona XXXV à 16 (complete) DGG Archive. Corrette: Concerto Comique Op. 8 No. 6, "Le Plaisir des Dames" (third movement) Connoisseur Society. Khan: Raga Chadrannandan (excerpt) Connoisseur Society. Rodrigo: Concert-Serenade for Harp and Orchestra (excerpt from the first movement) DGG. Manitas de Plata: Gypsy Rhumba (complete) Connoisseur Society. Marcello: (arr. King): Psalm XVIII "The Heavens are Telling" (complete) Connoisseur Society. Praetorius: Terpsichore: La Bourrée XXXII (complete) DGG Archive. Berg: Wozzeck (excerpt from Act III) DGG. Bartók: Sonata for Two Pianos and Percussion (excerpt from the first movement) Cambridge. Beethoven: Wellington's Victory (Battle Symphony) (excerpt from the last movement) Westminster. Booklet discusses and describes each selection.

RECORD—\$5.98

CASSETTE—\$6.98

HERE'S HOW TO ORDER

CASH: Mail your order along with your name, address and remittance in the amount indicated above. Residents of Calif., Colo., Fla., Ill., Mich., Mo., N.Y. State, D.C. and Texas add applicable sales tax.

CHARGE: To your American Express, BankAmericard, Master Charge or Diners Club account! Mail your order, name, address, credit card number and expiration date (Master Charge customers include 4-digit interbank number above your name). Be sure your signature is on your order. You will be billed in the amounts indicated above plus sales tax, if applicable.

OUTSIDE U.S.A. RECORDS AND CASSETTES ARE \$8 EACH

MAIL ORDERS TO: RECORDS, CONSUMER SERVICE DIVISION,
595 BROADWAY, NEW YORK, N.Y. 10012.

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BLANK TAPE & ACCESSORIES

TO some extent, one's choice of a blank magnetic tape is dictated by the design of the recorder and the intended use for the recording. But there is plenty of opportunity for individual choice as well.

Open Reel. Non-professional, open-reel recording is relatively non-critical as to tape, except between broad categories, such as "standard" or "high energy" (which require different bias levels). Lower priced "standard" tapes will often have more noise and more restricted high-frequency response than premium tapes, although they may be perfectly satisfactory for many purposes. For serious recording, the extra cost of the best tapes is easily justified.

In general, 1-mil-thick tape, with its 1800 feet on a 7-inch reel, offers the best compromise between tape storage bulk and quality. Formerly, 1.5-mil tape was more widely used, because of its reduced sensitivity to "print-through." Sometimes the thinner "double-play" (0.5-mil) tape is advantageous, but if recording time considerations permit, the 1-mil thickness is preferable.

Almost all open-reel tapes use ferric-oxide coatings, but there are some differences between the products of different manufacturers. Recently, Ferrichrome, a two-layer tape originally developed for cassettes, has been introduced in open-reel format. In a properly biased machine, Ferrichrome tape offers extended high-frequency response and excellent freedom from saturation effects. However, at present only one company's machines are designed to use it with optimum results, and the tape is expensive.

Cassettes: In contrast to open-reel recording, the quality of a cassette recording is critically

dependent on the match between the cassette tape and the recorder. The rated performance of any cassette recorder can be achieved only when using the tape for which it was specifically adjusted, or one having very similar magnetic properties. Fortunately, a growing number of recorder manufacturers make specific suggestions as to suitable tapes for their machines, and these should be heeded.

Most of the cassette tapes once called "standard" have either disappeared from the market or are to be found only as private label or "white box" tapes. Today's standard tape is what we used to call a low-noise or premium tape a couple of years ago.

The most advanced and truly "premium" cassettes use cobalt-doped ferric-oxide coatings for enhanced performance. They provide a higher output level, wider frequency response, lower distortion, and less noise than was possible only a couple of years ago. Chromium-dioxide (CrO₂) was once hailed as the tape to use for highest possible cassette recording quality, but it has now fallen somewhat out of favor. In spite of its real advantages in high-frequency performance, CrO₂ tape distorts at relatively low levels, preventing its full dynamic range from being realized. Considerable skill and care was needed to make a really good CrO₂ recording, with acceptable distortion and full dynamic range. Last year, new ferric oxide tapes with cobalt treatment were offered as a logical successor to CrO₂. They are designed to be used with CrO₂ bias and equalization, and frequency response is comparable to chrome, although distortion is lower and output is higher.

Ferrichrome, with a layer of CrO₂ over a layer

of ferric oxide, is used in some cassette tapes, too. Although both tapes are capable of excellent results, very few machines are designed to properly use either of them.

Cartridges: For those people who prefer to "roll their own" cartridge recordings, there are a number of cartridge tapes to choose from. "High-fidelity" considerations that apply to cassette and open-reel recordings really do not apply to the cartridge medium, and in any case almost no manufacturers of machines make any specific tape recommendations.

Nevertheless, in some ways the cartridge tape is more important than any of the others. Acceptable levels of wow and flutter are vitally dependent on smooth mechanical operation of the cartridge, so it is well not to skimp in selecting a cartridge.

ACCESSORIES for high-fidelity systems are also numerous and varied that it is difficult to classify them, let alone comment on their features. For the tape recordist, there are editing devices, cassette repair kits, head demagnetizers, tape erasers, cassette fast winders, a host of microphone mixers and preamplifiers, and cassette storage racks. The discophile can choose from a number of record care devices and preparations, including cloths, brushes, and vacuum cleaners, plus liquids and radioactive gadgets that will clean his dirty records, keep clean ones from gathering dirt, and preserve their grooves against damage and wear.

Other accessories include speaker and head-phone switch boxes, antennas (hardly an "accessory" for the serious FM listener), audio oscilloscopes, four-channel decoders, mixers, and many more.

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-C45, 45 min	.....	\$2.89
364-C60, 60 min	.....	\$3.39
364-C90, 90 min	.....	\$4.99
364-C120, 120 min	.....	\$6.49

363 Series Chromium-Dioxide Cassettes

363-C60, 60 min	.....	\$3.39
363-C90, 90 min	.....	\$4.99

370 Series Cassettes

Low-noise/high-output type.

370-C45, 45 min	.....	\$1.79
370-C60, 60 min	.....	\$1.89
370-C90, 90 min	.....	\$2.89
370-C120, 120 min	.....	\$3.99

350 Series "Super" Cassettes

350-C45, 45 min	.....	\$1.09
350-C60, 60 min	.....	\$1.29
350-C90, 90 min	.....	\$1.89
350-C120, 120 min	.....	\$2.99

371 Plus Series Cassettes

Extended low-noise/high-output type.

371-C45, 45 min	.....	\$2.19
371-C60, 60 min	.....	\$2.49
371-C90, 90 min	.....	\$3.59
371-C120, 120 min	.....	\$4.99

381 Series 8-Track Cartridges

381-42E, 42 min	.....	\$2.49
381-84E, 84 min	.....	\$2.99

382 Plus Series Cartridges

Extended low-noise/high-output type.

382-45, 45 min	.....	\$2.79
382-90, 90 min	.....	\$3.29

388 Series 20/20+ Cartridges

388-45E, 45 min	.....	\$3.29
388-90E, 90 min	.....	\$3.89

20/20+ Series Open-Reel Tapes

Back-coated professional mastering tape.

372-15, 1200 ft, 7" reel, 1.5-mil	.....	\$7.49
373-15, 1800 ft, 7" reel, 1.0-mil	.....	\$9.39
373-17, 3600 ft, 10 1/2" NAB reel, 1.0-mil	.....	\$25.39

Plus Series Open-Reel Tapes

Extended low-noise/high-output type.

332-151111, 1200 ft, 7" reel, 1.5 mil	..	\$5.69
342-151111, 1800 ft, 7" reel, 1.0 mil	..	\$7.49

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 ...

12 Blank Tape

E3228BL. For 8-track players/recorders \$6.29
 \$7.49

BASF

Professional Series Reel-to-Reel

7" x 1800 ft \$9.99
 10 1/2" x 3600 ft \$22.99

Studio Series Reel-to-Reel

7" x 1800 ft \$8.49
 7" x 2400 ft \$10.99
 10 1/2" x 3600 ft \$18.99

Performance Series Reel-to-Reel

7" x 1800 ft \$6.99
 7" x 2400 ft \$8.99
 7" x 3600 ft \$12.99

Chromium-Dioxide Cassettes

60 min \$2.99
 90 min \$4.49
 120 min \$5.99

Studio Series Cassettes

60 min \$2.99
 90 min \$4.49
 120 min \$5.99

Performance Series Cassettes

45 min \$1.99
 60 min \$2.29
 90 min \$3.39
 120 min \$4.59

Studio Series Cartridges

45 min \$2.99
 64 min \$3.29
 90 min \$3.49

Performance Series Cartridges

45 min \$2.49
 64 min \$2.69
 90 min \$2.99

Accessories

8-Track Headcleaner \$1.99
 Cassette Headcleaner \$1.79

CAPITOL

The Mod 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

The Mod 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 60 min \$6.48
 4 pk of 80 min \$7.12
 4 pk of 90 min \$7.84
 Cartridge head cleaner \$1.19

The Mod 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) \$11.98

Chromium-dioxide

C-60. 60 min \$3.79
 C-90. 90 min \$5.59

"the music tape" Cartridges

High-output/low noise.
 8T-45. 45 min. \$3.19
 8T-60. 60 min. \$3.49
 8T-90. 90 min. \$3.69
 8T-100. 100 min. \$3.89
 8T-120. 120 min. \$4.69

"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, 10 1/2" reel \$20.00
 FDS-3600. 3600 ft, 10 1/2" 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
 2CB-80012. 120 min \$4.49
 2CB-800HC. Head cleaner \$1.49

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" x 1200 ft, 1.5-mil polyester. \$4.49
 4CB-80418. 7" x 1800 ft, 1.0-mil polyester. \$5.49
 4CB-80424. 7" x 2400 ft, 0.5-mil polyester. \$7.49
 4CB-80436. 7" x 3600 ft, 0.5-mil polyester. \$8.99

FUJI

FC Chromium-Dioxide Cassettes

C60-FC \$3.50
 C90-FC \$4.70

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

8T-45 \$3.20
 8T-90 \$4.20

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, 10 1/2" metal reel \$30.00

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, 1 1/2-mil, polyester base, 1/4"
 231-131, 600 ft., 5" reel \$3.55
 231-151, 1200 ft., 7" reel \$5.90

Extra-length, 1-mil, polyester base, 1/4"

241-131, 900 ft., 5" reel \$3.95
 241-151, 1800 ft., 7" reel \$6.75
 241-173, 3600 ft., 10 1/2" NAB aluminum reel \$22.00

Double-length, 1/2-mil polyester tensilized base.

251-151, 2400 ft., 7" reel \$8.90

0.5-mil, polyester tensilized base, 1/4"

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, 10 1/2" NAB aluminum reel \$19.60
 276-273, 2500 ft, 10 1/2" 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

Drop in a Fuji



and you'll drop all the others.

There is a new cassette on the market. The FUJI FX, a Pure Ferrix cassette that soon will be the standard of excellence for top quality, truly high fidelity reproduction. It already is in many parts of the world.

FUJI FX gives you the music you want, the way you want your music. Clear, crisp sound over the entire audio frequency range without perceptible distortion. A signal-to-noise ratio of better than 58 db. No hiss. Virtually failure-proof. The finest music at your fingertips without the need for any special bias. Drop in at your FUJI dealer today; then drop in a FUJI and hear music as you have never heard it before.

FUJI FX cassettes come in lengths of 46, 60 and 90. Also available, a full line of FUJI FL Low Noise cassettes in lengths of 30, 60, 90 and 120 minutes. FUJI Photo Film U.S.A., Inc. The Empire State Building, New York, New York 10001.



FUJI FILM

THE TAPE THAT'S HEARD AROUND THE WORLD

CIRCLE NO. 29 ON READER SERVICE CARD

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
CP45, 45 min	\$2.30
CP60, 60 min	\$2.45
CP90, 90 min	\$3.45
CP120, 120 min	\$3.95

Cassette Head Cleaner

CHC	\$1.85
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Fliptape Cassettes

Low-noise cassettes designed specifically for youth market. Packaged in poly box.

FL45, 45 min	\$2.00
FL60, 60 min	\$2.15
FL90, 90 min	\$3.15
FL120, 120 min	\$3.65

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	\$4.60
UDXL-C-90, 45 min./side	\$6.50

Ultra-Dynamic Cassettes (High Bias)

UDC-46, 23 min./side	\$3.25
UDC-60, 30 min./side	\$3.60
UDC-90, 45 min./side	\$5.30
UDC-120, 60 min./side	\$7.20

Ultra-Dynamic 8-Track (High Bias)

UD8T-46, 46 minutes	\$4.10
UD8T-90, 90 minutes	\$5.00

Low-Noise Cassettes (Normal Bias)

LNC-46, 23 min./side	\$2.10
LNC-60, 30 min./side	\$2.35
LNC-90, 45 min./side	\$3.75
LNC-120, 60 min./side	\$5.00

Low-Noise Tape (Normal Bias)

1.5-mil polyester	
LNE-50-60, 1200 ft., 7" reel	\$7.35
LNE-50-120, 2500 ft., 10½" reel ...	\$16.10
1-mil polyester	
LNE-35-90, 1800 ft., 7" reel	\$8.00
LNE-38-180, 3600 ft., 10½" reel ...	\$22.00
0.5-mil polyester	
LNE-25-120, 2400 ft., 7" reel	\$12.35
0.5-mil polyester	
LNE-18-180, 3600 ft., 7" reel	\$15.35

Back-Coated Extended-Range

Back-coated, ultra-dynamic, high-energy, high-bias type.

1.5-mil polyester	
UD50-60B, 1200 ft., 7" reel	\$9.60
UD50-120B, 2500 ft., 10½" reel ...	\$28.50
1-mil polyester	
UD35-90B, 1800 ft., 7" reel	\$11.35
UD35-180B, 3600 ft., 10½" reel ...	\$32.30

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)

LN8T-46, 46 minutes	\$3.10
LN8T-60, 60 minutes	\$3.35
LN8T-90, 90 minutes	\$3.75

MEMOREX**"Quantum" Open-Reel Tape**

90, 1800 ft, 7" reel	\$8.59
120, 2400 ft, 7" reel	\$11.39
180, 3600 ft, 10½" reel	\$21.49

Low-Noise, High-Output Tape

Standard play, 1.5-mil polyester, ¼"

600 ft, 5" reel	\$3.19
1200 ft, 7" reel	\$5.49
2500 ft, 10½" reel	\$13.49

Long-play, 1-mil polyester, ¼"

900 ft, 5" reel	\$4.09
1800 ft, 7" reel	\$6.59
3600 ft, 10½" reel	\$16.49

Double-play, tensilized polyester, ¼"

1200 ft, 5" reel	\$5.49
2400 ft, 7" reel	\$8.99

MRX₂ Oxide Cassettes

C-30, 15 min./side	\$2.09
C-45, 22½ min./side	\$2.29
C-60, 30 min./side	\$2.49
C-90, 45 min./side	\$3.59
C-120, 60 min./side	\$4.79

Chromium-Dioxide Cassettes

C-45, 22½ min./side	\$2.99
C-60, 30 min./side	\$3.19
C-90, 45 min./side	\$4.69

8-Track Cartridges

45 min	\$2.79
60 min	\$2.99
90 min	\$3.19

MERITON**Ferri-Chrome Cassette**

FeCr C-60, 31 min./side	\$3.79
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Chromium-Dioxide Cassette

CrO ₂ C-60, 31 min./side	\$3.19
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Low-Noise, High-Output Cassettes

LH C-60, 31 min./side	\$2.49
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LH C-90, 46 min./side	\$3.59
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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	\$3.70
C-90	\$4.80

EX II Cassette Tapes

Single-coated ferricobalt formulation; has same bias and EQ (120 μs) as EX.

C-60	\$4.40
C-90	\$5.80

SX Cassette Tapes

Single-coated formulation of ionized cobalt and ferric oxide; high coercivity permits use of chromium-dioxide bias and EQ (70 μs) for 4-5 dB better S/N.

C-60	\$4.60
C-90	\$6.00

RECOTON**Cassettes**

Low-noise, ferric-oxide tape.

CD-40, 40 min	\$1.49
CD-60, 60 min	\$1.79
CD-90, 90 min	\$2.29
CD-120, 120 min	\$2.79

8-Track Cartridges

8T-35, 35 min	\$2.25
8T-40, 40 min	\$2.45
8T-70, 70 min	\$2.95
8T-80, 80 min	\$3.25
8T-100, 100 min	\$3.75

ROYAL SOUND**Chromium Dioxide Cassettes**

CDC-60, 60 min	\$2.99
CDC-90, 90 min	\$4.49

Ultra-Linear Cassettes

High-density ferric-oxide tape.

ULC-60, 60 min	\$2.99
ULC-90, 90 min	\$4.49

Low-Noise Cassettes

APC-30, 30 min	\$1.49
APC-45, 45 min	\$1.69
SPC-60, 60 min	\$1.98
APC-90, 90 min	\$2.98
APC-120, 120 min	\$3.98

8-Track Cartridges

45 min	\$2.59
60 min	\$2.69
90 min	\$2.97
Automatic head cleaner	\$1.95

Open-Reel Tape

Polyester, 1-mil extra play.

AP5900, 5" reel, 900-ft	\$3.60
AP7180, 7" reel, 1800-ft	\$6.20

Polyester, ½-mil tensilized.

AP5120, 5" reel, 1200-ft double play ..	\$4.15
AP7240, 7" reel, 2400-ft double play ..	\$9.50
AP7360, 7" reel, 3600-ft triple play ..	\$11.95

SCOTCH**Cassettes**

Master

Features professional oxide; improved cassette

Chrome Cassettes

Features chromium-dioxide tape for extended high-frequency range; designed specifically for tape decks equipped to handle CrO₂; "Posi-Trak" back treatment. Album.

45 min	\$2.85
60 min	\$3.25
90 min	\$4.50
120 min	\$6.25

Open-Reel Tapes

High-Output/Low-Noise

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 7 1/2 ips; 7" reel	\$7.50
2 hrs (2400') at 7 1/2 ips, 10 1/2" reel ...	\$13.60
No. 207. Polyester base, "Posi-Trak" backing, leader, and trailer, 1-mil. 90 min at 7 1/2 ips; 7" reel	\$9.35
3 hrs (3600') at 7 1/2 ips, 10 1/2" reel ...	\$19.10

Low-Noise/Dynarange

Provides high-fidelity recording even at 3 3/4 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 7 1/2 ips (5" reel); 60 min (7" reel). 30 min	\$3.75
60 min	\$5.60
2 hrs (2400') at 7 1/2 ips, 10 1/2" reel ...	\$10.75
No. 212. 1.0-mil. 45 min at 7 1/2 ips (5" reel);	\$4.35
90 min (7" reel)	\$7.50
3 hrs (3600') at 7 1/2 ips, 10 1/2" reel ...	\$13.20
No. 213. 0.5-mil tensilized. 120 min at 7 1/2 ips (7" reel)	\$11.25
4 hrs (4800') at 7 1/2 ips, 10 1/2" reel ...	\$23.50
No. 214. 0.5-mil tensilized. 90 min at 7 1/2 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 7 1/2 ips (7" reel)	\$5.00
No. 229. 1-mil. 90 min at 7 1/2 ips (7" reel)	\$6.85

"Classic" Open-Reel Tapes

High-frequency performance 3 dB higher than shell for critical mechanical performance & three-head recorder design; "Posi-Trak" back treatment; album or "C-Box" packaging (35 cents additional for C-60 & C-90).

45 min	\$2.85
60 min	\$3.25
90 min	\$4.50
120 min	\$6.25

Low-Noise/High-Density

Multi-purpose cassette featuring full dynamic range throughout the audible sound spectrum. "Posi-Trak" back treatment. Album package. (60 & 90 also in C-Box package for 35 cents additional).

45 min	\$2.35
60 min	\$2.75
90 min	\$4.00
120 min	\$5.60

Highlander/Low-Noise

For all-purpose cassette use. Polyester base.

45 min	\$1.60
60 min	\$1.85
90 min	\$2.75
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 CrO₂ in low-frequency range; fully compatible with all recorders; "Posi-Trak" back treatment. Album package. (60 & 90 also in C-Box package for 35 cents additional).

45 min	\$3.10
60 min	\$3.75
90 min	\$5.00



The only thing better than being there is being there again



Music. Record it right. On the only premium blank tape good enough to wear the name—The Music Tape™ by Capitol. It's designed specifically to record music with wide frequency response, low noise and low distortion. Nobody knows music better than Capitol... knows the subtle colors of treble, bass and mid-range.

Listen. Record. Listen. The Music Tape by Capitol takes you there again and again and again.



the music tape™
BLANK CASSETTES, CARTRIDGES & REEL TO REEL
BY CAPITOL.

records music

CAPITOL MAGNETIC PRODUCTS A DIVISION OF CAPITOL RECORDS, INC. HOLLYWOOD, CA

CIRCLE NO. 16 ON READER SERVICE CARD

12 Blank Tape

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 7 1/2 ips (7" reel)	\$8.75
CL-7R90. 1.0-mil, 90 min. at 7 1/2 ips (7" reel)	\$10.60
CL-7R120. 0.5-mil, 120 min. at 7 1/2 ips (7" reel)	\$13.75
CL-10R120. 1.5-mil, 120 min. at 7 1/2 ips (10" reel)	\$22.50
CL-10R180. 1.0-mil, 180 min at 7 1/2 ips (10" reel)	\$26.25
CL-10R240. 0.5-mil, 240 min at 7 1/2 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	\$4.35
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" x 8" x 8 1/2" 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

C-Box Cassette Storage System

Stackable/interlocking cassette storage/carrying boxes with pushbutton drawers; easy access and index label for quick identification.

Sleeve of three empty C-Box units	\$1.99
C-Box wall bracket	\$0.99
C-Box carrying handle	\$0.99

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, 3 1/4" 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, 10 1/2" 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, 10 1/2" 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
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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

Ferri-Chrome Recording Tape

FeCr-11-3600. 3600 ft	\$39.95
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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" x 1200 ft.	\$3.49
4SR-80518. 7" x 1800 ft.	\$3.99
4SR-80524. 7" x 2400 ft.	\$4.49
4SR-80536. 7" x 3600 ft.	\$7.49

TDK

"Audua" Cassettes

Improved version of ED, with added high-end brilliance; broad dynamic range, high output, minimum noise. Use high (or normal) bias/EQ.

Audua-C60, 60 min	\$2.69
Audua-C90, 90 min	\$3.99

"Super Avilyn" Cassettes

Features new magnetic particle (Avilyn), low abrasiveness, high S/N, low distortion. Use CrO₂ bias/EQ.

SA-C60, 60 min	\$3.29
SA-C90, 90 min	\$4.79

"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

"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
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"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-45SD, 45 min	\$2.99
8TR-90SD, 90 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	\$4.99
L-1800. 1800 ft, 7" reel	\$5.99
L-3600P. Plastic reel	\$15.49
L-3600M. Metal reel	\$19.95

"Audua-LB" Open-Reel Tape

Back-treated open-reel tape; high bias/equalization.

LB-1800. 1800-ft, 7" plastic reel	\$8.69
LB-3600. 3600-ft, 10 1/2" NAB metal reel	\$22.95

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

12 Accessories

ACOUSTIC-MOUNT

Turntable Isolation System

Designed to reduce acoustic feedback caused by sound waves and vibrations from speakers reaching the phono cartridge; consists of four specially designed springs & dampers mounted on 3/4" platform; 4-Hz resonance in both horizontal & vertical planes; said to improve isolation 20-40 dB; 16" x 13 1/2" . . . \$15.00

19" x 13 1/2" . . . \$17.50

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. 5 3/4" x 2 3/4" x 1" D . . . \$34.95

ALL-TEST

ATD-25 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

AUDIO-TECHNICA

AT-6002 Disc Cleaner

Double-action cleaning system combines soft carbon-conductive brush and plush pad to loosen and remove groove dirt; small arm on weighted base may be placed on motorboard; may be used with most manual turntables or automatic when in manual mode; replacement pad & brush kit available. . . . \$9.95
AT-602. Replacement kit for AT-6002. . . \$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

AUDIOTEX

The company carries a complete line of tape accessories for use with open-reel, cassette, and 8-track equipment.

30-126. Kleentape for open-reel recorder heads \$2.50
30-129. Tape Care Kit, Jr. contains head cleaner, cotton swabs, and cleaning cloth \$1.75
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. \$1.25
30-124-2. Recording head lubricant, 2-oz bottle. \$1.25
30-636. Tape player care kit contains cleaner and head lubricant, two 6" brushes, 10 plastic pouches to protect tape reels, cassettes, or cartridges \$4.40

CERWIN-VEGA

DB-10 Bass "Excavator"

Two-channel active device designed to be inserted in tape monitor circuit of receiver or between preamp & power amp; switch selects either of two response curves (Pos. #1 10 dB boost at 32 Hz, decreasing to 6 dB at 40 Hz; Pos. #2 40 dB boost at 32 Hz, decreasing to 3 dB at 50 Hz); filters out signals below 20 Hz caused by warped records, turntable rumble, acoustic feedback, etc.; standard RCA inputs & outputs; compact steel enclosure. . . \$39.50

CROWN INTERNATIONAL

OC-150A Stereo Output Control Center

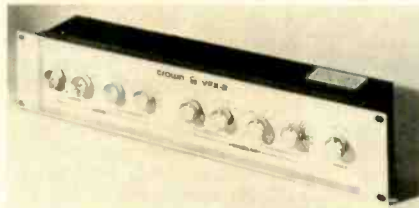
Designed to increase system flexibility in sophisticated audio installations. Provides

The Directory of Manufacturers appears on pages 16 and 185. If you need additional information, write the companies direct.

output monitoring capabilities supplied by two $3\frac{1}{2}$ " 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. $5\frac{1}{4}$ " x 17 " x $8\frac{1}{8}$ ". . . . \$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 x $3\frac{1}{2}$ " H x $5\frac{3}{4}$ " D. \$329.00

DB SYSTEMS

DB-3 Active Crossover

Designed for bi- and tri-amplified speaker systems; asymptotic slope 12 dB/octave; fixed crossover frequencies (to be specified on order); available as two- or three-way crossover (for common bass channel, designation is $1\frac{1}{2}$ - or $2\frac{1}{2}$ -way, respectively); individual channel gains screwdriver adjustable; THD 0.0008% 20-20,000 Hz; noise -100 dB (shorted input); frequency response of summed output within 1 dB 5-50,000 Hz.

$1\frac{1}{2}$ -way crossover \$187.00
2-way crossover \$200.00
 $2\frac{1}{2}$ -way crossover \$213.00
3-way crossover \$226.00
DB-2. Power supply \$75.00

DISCWASHER

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 " x 22 ". \$45.00

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

Zerostat

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

Gold-ens

Gold-plated connector cables; gold-flashed connector pins will never corrode or add resistance with age; protective steel strain reliefs; ultra-low-capacitance cords; per 1-meter length matched pair. \$8.00

DYMEK

DA5 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 540-1600 kHz medium-wave band. 13 " W x 11 " H x 9 " D; ferrite rod length 12 "; head tilt range 53 degrees; rotational range 270 degrees. (kit) \$110.00
Assembled \$175.00

DA7. Same except frequency range 150-300 kHz long-wave plus 540-1600 kHz medium-wave bands. (kit) \$120.00
Assembled \$195.00

EDITALL

KP-2 Editing Kit

Complete kit includes splicing block, 30 splicing tapes, demagnetized razor blade, and grease pencil for $\frac{1}{4}$ " audio tape. \$4.50

KS-2 Editing Kit

For $\frac{1}{4}$ " tape, includes a 4 " x $\frac{3}{4}$ " x $1\frac{1}{4}$ " block, marking pencil, roll of splicing tape, and cutting blade. \$12.00

KS-3 Editing Kit

Same as KS-2 except includes larger block ($5\frac{3}{4}$ " x 1 " x $\frac{3}{8}$ ") \$14.00

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 min-

utes 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 $\frac{3}{4}$ " W x 4 $\frac{1}{2}$ " D x 2 $\frac{1}{2}$ " H. \$59.00

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 $\frac{1}{4}$ V. Gain is unity. Maximum input 4 V rms. Response 20-20,000 Hz \pm 1 dB. 2 $\frac{3}{4}$ " x 8" x 7" D. \$99.95



imum input 4 V rms. Response 20-20,000 Hz \pm 1 dB. 2 $\frac{3}{4}$ " x 8" x 7" D. \$99.95

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 $\frac{3}{8}$ " x 10" x 5 $\frac{1}{8}$ " H. \$1300.00

FIDELITONE

Fidelistat #3044

Push record cleaner designed to reduce static and remove grit from records. \$3.99

Disc Jockey #3045

Attaches to turntable; soft bristle brush removes dust; push 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

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 gen-

erated signals. 5 $\frac{1}{8}$ " H x 18 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D. Kit, less cabinet. \$209.95
ARA-1500-1. Walnut-stained veneer cabinet. \$24.95

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 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 \pm 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". 166" long x 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 x 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 x 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 x 112" W. \$24.85

FM500 Electronic FM Antenna

Has omnidirectional condensed dipole element; balanced output feeds directly into solid-state r.f. amplifier; provides up to 8 dB average gain over standard reference folded dipole; shielded coax cable; 75-300 ohm matching transformer; 11" dia.; comes with power supply, 10-ft coax, mounting hardware; can be installed in attic or on shelf, wall, or eaves. \$25.65
Optional outdoor mounting kit with 75-ft coax. \$6.60

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. 3 $\frac{1}{8}$ " x 6 $\frac{1}{8}$ " x 11 $\frac{1}{2}$ ". \$129.95

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 x 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 x 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

LAFAYETTE

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. 5 $\frac{3}{4}$ " W x 4 $\frac{1}{16}$ " C x 2 $\frac{7}{16}$ " H. \$14.95

LENCO

Lencoclean Record Cleaner

Consists of a hollow tube reservoir arm with applicator brush; tube is filled with fast-drying fluid which is laid upon grooves just ahead of the pickup stylus; brush picks up dirt & dust; hardware for permanent or temporary mounting; fluid will clean up to 15 LP sides. . . \$9.75
"L" Kit. Same except king-sized storage reservoir (cleans up to 20 sides). \$13.25
Super Tonic. Refills for either system. \$1.95

LUXMAN

A-2003 Electronic Crossover

For use in bi- and tri-amplification systems; purchaser selects any two crossover frequen-



cies between 125 Hz & 8 kHz and unit is customized; plug-in modules available for other crossovers; frequency shift switch trims each crossover point \pm $\frac{3}{8}$ of an octave in $\frac{1}{8}$ octave increments; selectable 6 & 12 dB/octave slopes and adjustable signal levels for each driver; center-channel switch & output on rear panel. \$425.00

MAGNESONICS

Erase-Sure Tape Eraser

Will erase a cassette or 8-track cartridge to -65

Record them over and over again.
The life of a Scotch® brand cassette is a long one. Even when you record on it time after time after time.

Because there's a tough binder that keeps the magnetic coating from wearing off. So even after hundreds of replays or re-recordings, you get great sound quality.

We wish you a long and happy life. 'Cause you'll need it to keep up with your Scotch cassettes.



Play them back without jamming.
The life of a Scotch® brand cassette is a long one. Even when you play it time after time after time.

Because there's a Posi-Trak® backing that helps prevent jamming and reduces wow and flutter. And the cassette shell is made with a plastic that can withstand 150°F.

We wish you a long and happy life. 'Cause you'll need it to keep up with your Scotch cassettes.

Scotch® Cassettes. They just might outlive you.



12

Accessories

dB from 0 reference. Battery operated (four "AA" cells, included). 4" x 3 1/2" x 2 3/4" . . . \$19.95
A.C. adapter \$7.50

Rapid Rewind

Will rewind a C-60 cassette in 30 seconds. Battery operated (four "AA" cells, included). 4" x 3 1/2" x 2 3/4" \$19.95
A.C. adapter \$7.50

METROSOUND**M3 Metrocare Kit #1**

Combines dust-removing sponge applicator and spirit-based anti-static applicator; brush can be used to clean stylus. \$4.49

M4 Klenszatep Kit

For use with open-reel tape recorders; consists of non-abrasive band and fluid cleaning agent; removes normal residue and dirt. \$5.98

M11 Stylus Cleaning Kit

Combines a non-residue-producing fluid and finely cut brush. \$2.98

M43 Super Groovemaster

Device rests on weighted, height adjustable stand; counterbalanced cleaning arm; roller/brush with roller before the brush; no fluids required. \$10.98

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. \$23.49

M52 Metrocare Kit #2

Contains small version of loniser, anti-static fluid, stylus brush. \$5.98
M54 Kit #4. Same as M52 except includes Super Groovemaster, loniser, and stylus cleaning kit. \$19.98

M55 Autochange Groovemaster

Similar to Super Groovemaster but for automatic turntables; attaches to tonearm with adhesive shoe; brush/shoe assembly add 1 1/2 gr of weight. \$5.49

M64 Phono Cartridge Kit

Kit includes stylus microscope, stylus cleaning fluid, all tools to change & install cartridges and styli \$11.98

M66 Stylus Balance Kit

Kit consists of base pivot, flat spatula, weighing mechanism complete with bubble level to balance tonearm with movable counterbalance weight; tracking force measurements within 1/10th gram \$13.98

M81s Metrostatic

Hand-held record cleaning device; cylinder uses two different fabrics to remove dust & dirt and to remove static charge; spring-loaded release mechanism controls rotation and position of cylinder \$9.98

MURA**Muradapter**

Converts cassette into 8-track cartridge; cassette loads directly into unit, which then functions as regular 8-track cartridge; includes fast-

forward \$59.95

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. 3 3/4" H x 9 1/4" W x 1 1/2" D \$129.95

NAKAMICHI**Head Demagnetizer**

Slim-line, easy-to-use recorder head demagnetizer, specially designed for the company's cassette decks \$16.00

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 μ m gap spacer. For use with vacuum-tube or transistor circuits. No-mount type \$111.20
#5602. Low imp., 90 mH, 100 μ m gap spacer. For use with vacuum-tube or transistor circuits. No-mount type \$111.20
#5603. Medium imp., 370 mH, 100 μ m gap spacer. For use with vacuum-tube or transistor circuits. No mount type \$111.20

Replacement Tape Heads

Replacement heads are available for 4100 models of recorders. Universal head #5800 for 8-track players; #5130 and #5230A for cassette recorders.

8-Track \$10.00
2-track mono cassette \$23.15
4-track stereo cassette \$11.80
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

PEACETIME COMMUNICATIONS**VU 45 Readout Meter**

Multi-channel VU readout permits individual monitoring of each channel; monitors remote speakers; in-line circuit breakers prevent electrical speaker overloads; walnut or black lacquer finish; 16" W x 9 1/2" D x 5" H . . . \$149.00

PICKERING**PST-2 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. 2 7/8" long x 1" W x 1" H. Comes with replaceable mercury battery \$15.95

PIONEER**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

the \$15 solution . . .



to hi-fi's most unrecognized problem.

The Problem: acoustic feedback
The Solution: Netronics Acousti-Mount

Feedback may be the mysterious reason why your sound is muddy, your turntable rumbles, and in severe cases, you can't turn up the bass or volume controls without speaker howl. Designed specifically to accommodate today's fine turntables, the Netronics Acousti-Mount sub-base platform suppresses acoustic feedback by effectively decoupling the entire turntable assembly from structure-borne vibration. A computer designed high-Q conical-spring suspension achieves a system resonance of approximately 4 Hz in both the horizontal and vertical planes. The apparent simplicity of the Acousti-Mount belies the sophistication of its design and the effectiveness — up to 30 dB! — of its isolation. The better your system, the more you may need Acousti-Mount.

Julian Hersh's test report: "We doubt that any other \$15 investment could make such an improvement in a record-playing system."

Please Send **ACOUSTI-MOUNTS** @ 15.00 (16 x 13 1/2") } Post Paid
U.S. and foreign patents applied for 17.50 (19 x 13 1/2") }

Canadian residents add \$1.00 Conn. residents add 7% tax

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I am also interested in receiving information on your new turntable kits.

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THE PREAMP For Home or Studio

The SRA-12S drives any Stax electrostatic headphone directly for personal listening—and simultaneously switches to drive any two-channel power amp.

Small wonder that away from the studio the Stax SRA-12S is one of the world's best sounding phono preamps.

\$500.00 from franchised American Audioport dealers.

STAX

AMERICAN AUDIOPORT INC. A DIVISION OF DISCWASHER GROUP. COLUMBIA, MISSOURI 65201
CIRCLE NO. 4 ON READER SERVICE CARD

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). 15 3/4" W x 5 3/16" H x 10 3/8" D... \$250.00

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. 13 3/4" W x 15 1/2" H x 21 7/8" D \$200.00

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 \$150.00

RECOTON

RBM-9 "Total Magic" Record Care

Record maintenance kit with automatic record cleaning arm, slow-drying anti-static cleaning solution, needle brush in cleaning solution, super-soft nylon-pile cleaning roller... \$15.99

RBM-8. Record cleaning kit with revolving record cleaning pad and 9 fluid oz. of anti-static record cleaning solution with applicator. \$7.49

ROBINS

8-Track Tape Cleaner

Cleans tape within 8-track cartridge; removes dirt, grime and oil picked up from use in automobiles; utilizes power from tape player. #30-001 \$11.99

Cleaning and Anti-Static System

Eliminates static and removes dust; corduroy velvet pad mounted on oak wood handle; anti-static fluid; cleaner brush. #41-060 \$11.95

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. #25-011 \$9.95
Economy Model. Features plastic-shielded probe. #25-013 \$6.29

Record Cleaner

Automatically removes dirt and dust from record surfaces and grooves; vertical-bristle brush; rotatable velvet roller \$6.99
 #41-037

"Whiskee" Record Cleaner Kit

Record cleaning kit includes portable record cleaner; stylus cleaner and fluid. #40-061 \$5.79

8-Track Demagnetizer and Cleaner

Cordless cleaner for operation with home or auto units; rotary magnet; magnetic window; non-abrasive cleaning tape. #46-015... \$4.29

Cleaner and Anti-Static System

Uses velvet covered roller to remove dust and dirt; sliding partition stores water or anti-static fluid which moistens roller. #41-046 .. \$3.99

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 \$3.49
 #36-008

Stylus Pressure Gauge

Measures phono stylus pressure to within 1/10 gram. #41-073 \$2.59

Disc Cleaner

Stops static and removes dust & grime; soft velvet-cushioned cylinder; comes with storage tube & cleaning brush. #41-195 \$1.99

RPM INDUSTRIES

"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

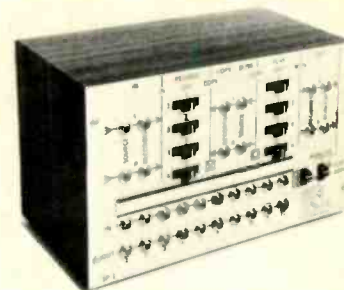
RUSSOUND

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 x 4 3/4" H x 5" D \$249.95

SP-1. Similar to QT-1 but two channel \$249.95



..... \$149.95

TMS-2 Tape Recorder Selector

Allows up to five 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 \$69.95

TM-1. Simplified economy model in utility steel cabinet \$34.95

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. \$84.95

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

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) x 3 1/2" H x 12" D \$350.00

QSD-2 Vario-Matrix Decoder

Decoder/synthesizer adapter; permits any 4-channel receiver/amplifier to be used for Type-A QS decoding of QS-encoded sources, including FM broadcasts; master volume control for all 4 channels; source/playback jacks; function control: 2-ch, QS synthesizer-hall, QS synthesizer-surround, QS, SQ; frequency response 20-30,000 Hz; dist. 0.1% at 1000 Hz; separation

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20 dB (adj. channels), 30 dB (diagonal channels); 11 7/8" D x 5" W x 4 1/4" H \$140.00

RA-500 Reverberation Amplifier

Continuously adjustable reverb time with visual indication; can handle two tape recorders



simultaneously; adds echo effects during recording or playback; frequency response 20-30,000 Hz ±2 dB (at reverb time min.), 20-30,000 Hz ±10 dB (reverb max.); S/N 65 dB at 300-mV output; reverb time 1.9-3.2 sec (at 1000 Hz); input/output jacks; tape recording A & B, tape playback A & B; load imp. 100,000 ohms; simulated walnut-grain enclosure; 11 7/8" W x 10 7/16" D x 6 3/8" H \$150.00

SHURE

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. 11 3/8" x 7 1/2" x 2 1/2" \$193.80

M677 Add-On Microphone Mixer

Add-on accessory microphone mixer, adds six

additional low-impedance balanced microphone inputs (switchable to line level) to a sound system; powered from attached master mixer or from A67B battery power supply; transistorized, portable; six input controls; six low-cut/flat filter switches; six mic/line switches; high/low output impedance switch; frequency response: flat +2 dB (30-20,000 Hz) \$181.20

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 \$100.20

M688 Stereo Microphone Mixer

Same as M68 except has stereo capability: stereo high-impedance auxiliary outputs; stereo high-level auxiliary inputs; pan control; stereo master volume control \$136.80

M64 Stere Phono-Cartridge Preamp

Stereo preamp provides the voltage gain and equalization for operating magnetic phono cartridges, and tape playback heads with audio amplifiers that have no equalization; may also be used without equalization for microphones or as buffer amplifier. Slide switch for phono/tape/flat equalization. Frequency response: flat, ±2 dB (20-20,000 Hz); phono ±2 dB of Standard RIAA curve, 40-15,000 Hz; tape, ±2 dB of 7 1/2 ips NAB curve, 50-15,000 Hz; Channel separation 50 dB or better at 1000 Hz. 5 1/2" x 4 1/2" D x 2 1/2" H \$57.50

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. 10 1/4" x 3 1/2" x 3 7/8" D \$54.00

SFG-2 Stylus Tracking Force Gauge

Beam-balance type gauge for measuring stylus tracking force from 0.5 to 3 g, in increments of 0.05 or 0.1 g, depending on which notch stylus tip is set into on lever arm; angled mirror helps see when balance is achieved \$5.75

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. 5 7/8" H x 15 3/4" W x 12 7/8" D \$250.00

SONY from SUPERSCOPE

MX-510 Stereo/Mono Mixer

Active five-channel mixer with variable pan pot; a.c.-d.c. operation (with optional AC-12 power adapter); five channels in/ two channels out; slide master volume control; input selector (ea. ch.): mic in/line in 1, 2 & 5; mic in/phono in 3 & 4; -20 dB mic attenuator (ea. ch.); two VU meters; stereo headphone jack; pan pot (chan-

The Most Spectacular Sound Exhibition of STEREO FIDELITY Ever Available on Disc and Cassette



This record is the result of two years of intensive research in the sound libraries of Deutsche Grammophon Gesellschaft, Connoisseur Society, Westminster Recording Company and Cambridge Records Incorporated. The Editors of Stereo Review have selected and edited those excerpts that best demonstrate each of the many aspects of the stereo reproduction of music. The record offers you a greater variety of sound than has ever before been included on a single disc. It is a series of independent demonstrations, each designed to show off one or more aspects of musical sound and its reproduction. Entirely music, the Record has been edited to provide self-sufficient capsule presentations of an enormous variety of music arranged in a contrasting and pleasing order. It includes all the basic musical and acoustical sounds that you hear when you listen to records, isolated and pointed up to give you a basis for future critical listening.

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- MASSAINGO:** Canzona XXXV & 16 (complete) DGG Archive.
- CORRETTI:** Concerto Comique Op. 8, No. 6, "Le Plaisir des Dames" (third movement) Connoisseur Society.
- KHAN:** Raga Chandramandan (excerpt) Connoisseur Society.
- RODRIGO:** Concerto-Serenade for Harp and Orchestra (excerpt from the first movement) DGG.
- MANITAS DE PLATA:** Gypsy Rhumba (complete) Conn. Soc.
- MARCELLO:** (arr. King). Psalm XVII "The Heavens are Telling" (complete) Connoisseur Society.
- PRAETORIUS:** Terpsichore: La Bourrée XXXII (complete) DGG Archive.
- BERG:** Wozeck (excerpt from Act III) DGG.
- BARTOK:** Sonata for two pianos and Percussion (excerpt from the first movement) Cambridge Records.
- BEETHOVEN:** Wellington's Victory (Battle Victory) (excerpt from the last movement) Westminster.

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Accessories

nel 5); battery check button; slide indicator for straight-line level control; comes with one RK-74 patchcord, eight "C" cells; 13 3/4" W x 9 1/2" D x 3" H. \$169.95

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

SOUND GUARD

Record Preservation Kit

Dry lubricant spray; provides record surfaces with strong protective coating without impairing record fidelity; kit includes special formulation, buffing pad, pump spray; one kit treats about 20 LPs, both sides \$6.99

TEAC

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. 3 1/4" H x 13 1/4" W x 10 1/4" D. . . \$350.00

TECHNICS BY PANASONIC

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

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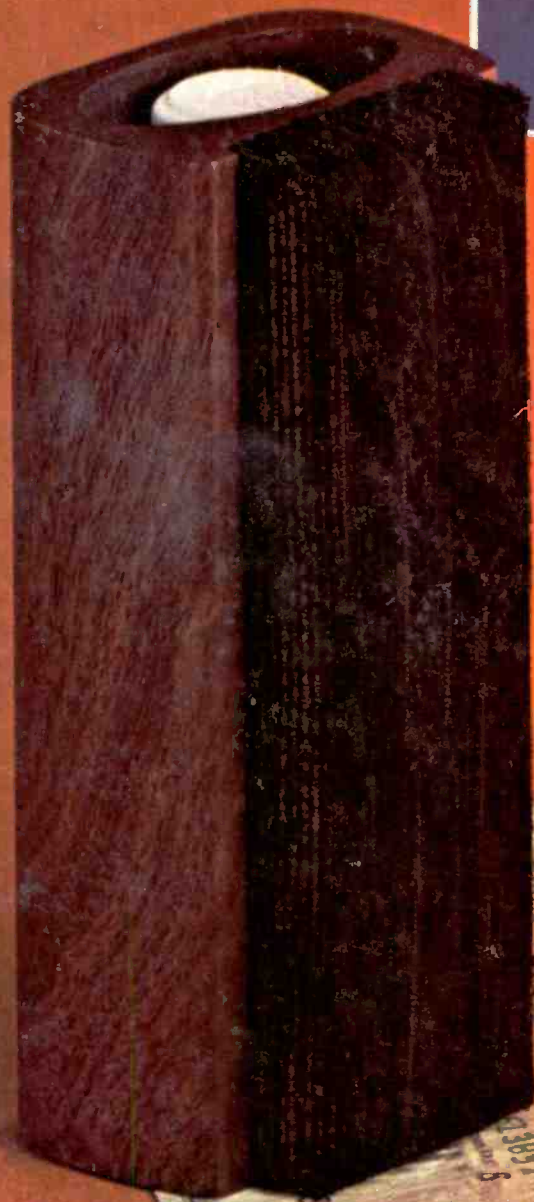
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